



ORANGE COUNTY SANITATION DISTRICT SPECIAL NOTICE REGARDING CORONAVIRUS (COVID-19) AND ATTENDANCE AT PUBLIC MEETINGS

Governor Newsom signed Assembly Bill (AB) 361 on September 16, 2021, which, in part, addresses the conduct of public meetings in light of the continued State of Emergency order.

Effective October 1, 2021, AB 361 suspends the requirements located in California Government Code, Section 54953, Subdivision (b), Paragraph (3) specifically pertaining to the conduct of public meetings. As such, the Orange County Sanitation District (OC San) Board of Directors has determined that due to the size of OC San's Board of Directors (25), and the health and safety of the members, the Board of Directors will be participating in meetings of the Board telephonically and via Internet accessibility.

PUBLIC PARTICIPATION

Your participation is always welcome. OC San offers several ways in which to interact during meetings. You will find information as to these opportunities below.

ONLINE MEETING PARTICIPATION

You may join the meeting live via Teams on your computer or similar device or web browser by using the link below:

[Click here to join the meeting](#)

We suggest testing joining a Teams meeting on your device prior to the commencement of the meeting. For recommendations, general guidance on using Teams, and instructions on joining a Teams meeting, [please click here](#).

Please mute yourself upon entry to the meeting. Please raise your hand if you wish to speak during the public comment section of the meeting. The Clerk of the Board will call upon you by using the name you joined with.

Meeting attendees are not provided the ability to make a presentation during the meeting. Please contact the Clerk of the Board at least 48 hours prior to the meeting if you wish to present any items. Additionally, camera feeds may be controlled by the meeting moderator to avoid inappropriate content.

HOW TO PARTICIPATE IN THE MEETING BY TELEPHONE

To join the meeting from your phone: Dial (213) 279-1455
When prompted, enter the Phone Conference ID: 235 746 789#

All meeting participants may be muted during the meeting to alleviate background noise. If you are muted, please use *6 to unmute. You may also mute yourself on your device.

Please raise your hand to speak by using *5 during the public comment section of the meeting. The Clerk of the Board will call upon you by using the last 4 digits of your phone number as identification.

NOTE: All attendees will be disconnected from the meeting at the beginning of Closed Session. If you would like to return to the Open Session portion of the meeting, please login or dial-in to the Teams meeting again and wait in the Lobby for admittance.

VIEW THE MEETING ONLINE ONLY

The meeting will be available for online viewing only at:

<https://ocsd.legistar.com/Calendar.aspx>

HOW TO SUBMIT A COMMENT

You may provide verbal comment in real time during the meeting. In order to provide a verbal comment, please raise your hand as described above or alert the Clerk of the Board before or during the public comment period.

You may also submit your comments and questions in writing for consideration in advance of the meeting by using the eComment feature available online at: <https://ocsd.legistar.com/Calendar.aspx> or sending them to OCSanClerk@ocsan.gov with the subject line "PUBLIC COMMENT ITEM # (insert the item number relevant to your comment)" or "PUBLIC COMMENT NON-AGENDA ITEM".

You may also submit comments and questions for consideration during the meeting by using the eComment feature available online at: <https://ocsd.legistar.com/Calendar.aspx>. The eComment feature will be available for the duration of the meeting.

All written public comments will be provided to the legislative body and may be read into the record or compiled as part of the record.

TECHNICAL SUPPORT PRIOR TO AND DURING MEETINGS

For technical assistance before and during the meeting, please call 714-593-7431. For any other questions and/or concerns, please contact the Clerk of the Board's office at 714-593-7433. Thank you, in advance, for your patience in working with these technologies. We appreciate your interest in OC San!

December 1, 2021

NOTICE OF MEETING

**ADMINISTRATION COMMITTEE
ORANGE COUNTY SANITATION DISTRICT**

Wednesday, December 8, 2021 – 5:00 P.M.

ACCESSIBILITY FOR THE GENERAL PUBLIC

Your participation is always welcome. Specific information as to how to participate in this meeting is detailed in the Special Notice attached to this agenda. In general, OC San offers several ways in which to interact during meetings: you may join the meeting live via Teams on your computer or similar device or web browser, join the meeting live via telephone, view the meeting online, and/or submit comments for consideration before or during the meeting.

A regular meeting of the Administration Committee of the Orange County Sanitation District will be held in the manner indicated herein on
Wednesday, December 8, 2021 at 5:00 p.m.

Serving:

- Anaheim
- Brea
- Buena Park
- Cypress
- Fountain Valley
- Fullerton
- Garden Grove
- Huntington Beach
- Irvine
- La Habra
- La Palma
- Los Alamitos
- Newport Beach
- Orange
- Placentia
- Santa Ana
- Seal Beach
- Stanton
- Tustin
- Villa Park
- County of Orange
- Costa Mesa Sanitary District
- Midway City Sanitary District
- Irvine Ranch Water District
- Yorba Linda Water District

ADMINISTRATION COMMITTEE MEETING DATE	BOARD MEETING DATE
12/08/21	12/15/21 *
JANUARY DARK	01/26/22
02/09/22	02/23/22
03/09/22	03/23/22
04/13/22	04/27/22
05/11/22	05/25/22
06/08/22	06/22/22
07/13/22	07/27/22
AUGUST DARK	08/24/22
09/14/22	09/21/22
10/12/22	10/26/22
11/09/22	11/16/22 *

**** Meeting will be held on the third Wednesday of the month***

ROLL CALL
ADMINISTRATION COMMITTEE
Finance, Information Technology, Environmental Services
and Human Resources

Meeting Date: December 8, 2021

Time: 5:00 p.m.

Adjourn: _____

COMMITTEE MEMBERS (13)

Glenn Parker, Chair	
Anthony Kuo, Vice-Chair	
Brad Avery	
Art Brown	
Kim Carr	
Mark Chirco	
Rose Espinoza	
Marshall Goodman	
Patrick Harper	
Andrew Nguyen	
David Shawver	
John Withers (Board Chair)	
Chad Wanke (Board Vice-Chair)	

OTHERS

Brad Hogin, General Counsel	

STAFF

Jim Herberg, General Manager	
Rob Thompson, Assistant General Manager	
Lorenzo Tyner, Assistant General Manager	
Celia Chandler, Director of Human Resources	
Kathy Millea, Director of Engineering	
Lan Wiborg, Director of Environmental Services	
Kelly Lore, Clerk of the Board	

ORANGE COUNTY SANITATION DISTRICT
BOARD OF DIRECTORS
Complete Roster

Effective 7/13/2021

AGENCY/CITIES	ACTIVE DIRECTOR	ALTERNATE DIRECTOR
Anaheim	Stephen Faessel	Jose Diaz
Brea	Glenn Parker	Steven Vargas
Buena Park	Art Brown	Connor Traut
Cypress	Paulo Morales	Anne Hertz
Fountain Valley	Patrick Harper	Glenn Grandis
Fullerton	Jesus J. Silva	Nick Dunlap
Garden Grove	Steve Jones	John O'Neill
Huntington Beach	Kim Carr	Dan Kalmick
Irvine	Anthony Kuo	Farrah N. Khan
La Habra	Rose Espinoza	Jose Medrano
La Palma	Marshall Goodman	Nitesh Patel
Los Alamitos	Mark A. Chirco	Ron Bates
Newport Beach	Brad Avery	Joy Brenner
Orange	Kim Nichols	Chip Monaco
Placentia	Chad Wanke	Ward Smith
Santa Ana	Johnathan Ryan Hernandez	Nelida Mendoza
Seal Beach	Sandra Massa-Lavitt	Schelly Sustarsic
Stanton	David Shawver	Carol Warren
Tustin	Ryan Gallagher	Austin Lumbard
Villa Park	Chad Zimmerman	Robert Collacott

Sanitary/Water Districts

Costa Mesa Sanitary District	Bob Ooten	Art Perry
Midway City Sanitary District	Andrew Nguyen	Sergio Contreras
Irvine Ranch Water District	John Withers	Douglas Reinhart
Yorba Linda Water District	Brooke Jones	Phil Hawkins

County Areas

Board of Supervisors	Doug Chaffee	Donald P. Wagner
----------------------	--------------	------------------



ADMINISTRATION COMMITTEE
Regular Meeting Agenda
Wednesday, December 8, 2021 - 5:00 PM
Board Room
Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

AGENDA POSTING: In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted outside the main gate of the Orange County Sanitation District's Administration Building located at 10844 Ellis Avenue, Fountain Valley, California, and on the Orange County Sanitation District's website at www.ocsan.gov not less than 72 hours prior to the meeting date and time above. All public records relating to each agenda item, including any public records distributed less than 72 hours prior to the meeting to all, or a majority of the Board of Directors, are available for public inspection in the office of the Clerk of the Board.

AGENDA DESCRIPTION: The agenda provides a brief general description of each item of business to be considered or discussed. The recommended action does not indicate what action will be taken. The Board of Directors may take any action which is deemed appropriate.

MEETING AUDIO: An audio recording of this meeting is available within 24 hours after adjournment of the meeting at <https://ocsd.legistar.com/Calendar.aspx> or by contacting the Clerk of the Board at (714) 593-7433.

NOTICE TO DIRECTORS: To place items on the agenda for a Committee or Board Meeting, the item must be submitted in writing to the Clerk of the Board: Kelly A. Lore, MMC, (714) 593-7433 / klore@ocsan.gov at least 14 days before the meeting.

FOR ANY QUESTIONS ON THE AGENDA, BOARD MEMBERS MAY CONTACT STAFF AT:

General Manager: Jim Herberg, jherberg@ocsan.gov / (714) 593-7300
Asst. General Manager: Lorenzo Tyner, ltyner@ocsan.gov / (714) 593-7550
Asst. General Manager: Rob Thompson, rthompson@ocsan.gov / (714) 593-7310
Director of Human Resources: Celia Chandler, cchandler@ocsan.gov / (714) 593-7202
Director of Engineering: Kathy Millea, kmillea@ocsan.gov / (714) 593-7365
Director of Environmental Services: Lan Wiborg, lwiborg@ocsan.gov / (714) 593-7450

CALL TO ORDER**PLEDGE OF ALLEGIANCE****ROLL CALL AND DECLARATION OF QUORUM:**

Clerk of the Board

PUBLIC COMMENTS:

Your participation is always welcome. Specific information as to how to participate in a meeting is detailed in the Special Notice attached to this agenda. In general, OC San offers several ways in which to interact during meetings: you may join the meeting live via Teams on your computer or similar device or web browser, join the meeting live via telephone, view the meeting online, and/or submit comments for consideration before or during the meeting.

You may provide verbal comment in real time during the meeting. In order to provide a verbal comment, please raise your hand (directions provided in the Special Notice attached to this agenda) or alert the Clerk of the Board before or during the public comment period.

You may submit your comments and questions in writing for consideration in advance of the meeting by using the eComment feature available online at: <https://ocsd.legistar.com/Calendar.aspx> or sending them to OCSanClerk@ocsan.gov with the subject line "PUBLIC COMMENT ITEM # (insert the item number relevant to your comment)" or "PUBLIC COMMENT NON-AGENDA ITEM".

You may also submit comments and questions for consideration during the meeting by using the eComment feature available online at: <https://ocsd.legistar.com/Calendar.aspx>. The eComment feature will be available for the duration of the meeting.

All written public comments will be provided to the legislative body and may be read into the record or compiled as part of the record.

REPORTS:

The Committee Chairperson and the General Manager may present verbal reports on miscellaneous matters of general interest to the Directors. These reports are for information only and require no action by the Directors.

CONSENT CALENDAR:

Consent Calendar Items are considered to be routine and will be enacted, by the Committee, after one motion, without discussion. Any items withdrawn from the Consent Calendar for separate discussion will be considered in the regular order of business.

1. APPROVAL OF MINUTES**[2021-2005](#)****RECOMMENDATION:**

Approve Minutes of the Regular Meeting of the Administration Committee held November 10, 2021.

Originator: Kelly Lore

Attachments: [Agenda Report](#)
[11-10-2021 Administration Committee Minutes](#)

2. ADD RIALTO BIOENERGY FACILITY CONTRACT TO BIOSOLIDS ACCOUNT POOL [2021-1954](#)

RECOMMENDATION: Recommend to the Board of Directors to:

Ratify the addition of the Rialto Bioenergy Facility, LLC. biosolids contract to the Biosolids Account Pool effective July 28, 2021.

Originator: Lan Wiborg

Attachments: [Agenda Report](#)

3. PROFESSIONAL RISK MANAGEMENT CONSULTANT AGREEMENT [2021-2000](#)

RECOMMENDATION:

Approve a sole source Professional Consultant Services Agreement with John J. Preston, Specification No. SSJ 2468, to perform professional risk management consulting services for the Orange County Sanitation District, which includes overseeing property and general liability loss control and setting loss control requirements on public bids and contracts, risk transfer, loss prevention, and risk reduction in an amount not to exceed \$150,000 per year, for a term of one year beginning December 1, 2021 through November 30, 2022; with up to two (2) one-year renewal options.

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Professional Consultant Services Agreement](#)

4. INVEST AND/OR REINVEST ORANGE COUNTY SANITATION DISTRICT'S FUNDS AND ADOPT INVESTMENT POLICY STATEMENT [2021-1705](#)

RECOMMENDATION: Recommend to the Board of Directors to:

Adopt Resolution No. OC SAN 21-XX, entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District Authorizing the Orange County Sanitation District's Treasurer to Invest and/or Reinvest the Orange County Sanitation District's Funds, Adopting the Orange County Sanitation District's Investment Policy Statement and Performance Benchmarks, and Repealing Resolution No. OCSD 20-13".

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Orange County Sanitation District Calendar Year 2022](#)
[Investment Policy Statement \(Clean\)](#)
[Orange County Sanitation District Calendar Year 2021](#)
[Investment Policy Statement \(Redline\)](#)
[Proposed Resolution No. OC SAN 21-XX](#)

5. ADOPT ORANGE COUNTY SANITATION DISTRICT'S DEBT POLICY [2021-1909](#)

RECOMMENDATION: Recommend to the Board of Directors to:

Adopt Resolution No. OC SAN 21-XX, entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District Adopting the Orange County Sanitation District's Debt Policy and Repealing Resolution No. OCSD 20-12".

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Orange County Sanitation District Debt Policy \(Clean\)](#)
[Orange County Sanitation District Debt Policy \(Redline\)](#)
[Proposed Resolution No. OC SAN 21-XX](#)

NON-CONSENT:

6. DEFERRED PAYMENT AGREEMENT REQUEST FOR CHARGES AND FEES OWED BY NOR-CAL BEVERAGE CO., INC. INDUSTRIAL WASTEWATER DISCHARGE PERMITTEE [2021-2009](#)

RECOMMENDATION: Recommend to the Board of Directors to:

Approve a deferred payment agreement with Nor-Cal Beverage Co., Inc. for charges owed for user fees in the amount of \$496,231.50.

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Deferred Payment Agreement - Nor-Cal Beverage Co., Inc.](#)
[Resolution No. OC SAN 21-05](#)

7. WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A [2021-1838](#)

RECOMMENDATION: Recommend to the Board of Directors to:

A. Adopt Resolution No. OC SAN 21-XX entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District authorizing the execution and delivery by the District of an Installment Purchase Agreement, a Trust Agreement, and a Continuing Disclosure Agreement in connection with the Orange County Sanitation District Wastewater Refunding Revenue Obligations,

Series 2022A, authorizing the execution and delivery of such Revenue Obligations evidencing principal in an aggregate amount of not to exceed \$107,315,000, approving a Notice of Intention to Sell, authorizing the distribution of an Official Notice Inviting Bids and an Official Statement in connection with the offering and sale of such Revenue Obligations and authorizing the execution of necessary documents and related actions”; and

- B. That the Orange County Sanitation District Financing Corporation approve the documents supporting and authorizing the Revenue Obligations in an aggregate amount not to exceed \$107,315,000.

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Proposed Resolution No. OC SAN 21-XX](#)
[Proposed Financing Corporation Resolution No. FC-29](#)
[Draft Installment Purchase Agreement](#)
[Draft Trust Agreement](#)
[Draft Notice of Intention to Sell](#)
[Draft Official Notice Inviting Bids](#)
[Draft Preliminary Official Statement](#)
[Draft Continuing Disclosure Agreement](#)

8. NINTEX APPLICATION DEVELOPMENT SERVICES [2021-1980](#)

RECOMMENDATION: Recommend to the Board of Directors to:

Approve a Professional Services Agreement to AgreeYa Solutions, Inc. to provide Nintex Application Development Services, Specification No. CS-2021-1243BD, for a total amount not to exceed \$300,000.

Originator: Lorenzo Tyner

Attachments: [Agenda Report](#)
[Draft Agreement](#)

INFORMATION ITEMS:

9. ORANGE COUNTY SANITATION DISTRICT 2021 ASSET MANAGEMENT PLAN [2021-1994](#)

RECOMMENDATION:

Information Item.

Originator: Kathy Millea

Attachments: [Agenda Report](#)
[2021 Asset Management Plan](#)
[Presentation - Asset Management Plan](#)

**10. PURCHASING, CONTRACTS, AND MATERIALS MANAGEMENT
DEPARTMENT OVERVIEW**[2021-1428](#)**RECOMMENDATION:**

Information Item.

Originator: Lorenzo Tyner**Attachments:** [Agenda Report
Presentation - Purchasing, Contracts & Materials
Management](#)**DEPARTMENT HEAD REPORTS:****CLOSED SESSION:**

None.

OTHER BUSINESS AND COMMUNICATIONS OR SUPPLEMENTAL AGENDA ITEMS, IF ANY:**BOARD OF DIRECTORS INITIATED ITEMS FOR A FUTURE MEETING:**

At this time Directors may request staff to place an item on a future agenda.

ADJOURNMENT:

Adjourn the meeting until the Regular Meeting of the Administration Committee on February 9, 2022 at 5:00 p.m.



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-2005

Agenda Date: 12/8/2021

Agenda Item No: 1.

FROM: James D. Herberg, General Manager
Originator: Kelly A. Lore, Clerk of the Board

SUBJECT:

APPROVAL OF MINUTES

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Approve Minutes of the Regular Meeting of the Administration Committee held November 10, 2021.

BACKGROUND

In accordance with the Board of Directors Rules of Procedure, an accurate record of each meeting will be provided to the Directors for subsequent approval at the following meeting.

RELEVANT STANDARDS

- Resolution No. OC SAN 21-04

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Minutes of the Administration Committee meeting held November 10, 2021



CALL TO ORDER

A regular meeting of the Administration Committee of the Orange County Sanitation District was called to order by Committee Chair Glenn Parker on Wednesday, November 10, 2021 at 5:00 p.m. in the Administration Building of the Orange County Sanitation District. Chair Parker stated that the meeting was being held telephonically and via Internet accessibility in accordance with new provisions in California Government Code Section 54953 and Resolution No. OC SAN 21-14, due to the continued State of Emergency Order. Chair Parker announced the teleconference meeting guidelines. Vice-Chair Anthony Kuo led the Pledge of Allegiance.

ROLL CALL AND DECLARATION OF QUORUM:

Roll call was taken and a quorum was declared present, as follows:

PRESENT: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

ABSENT: Rose Espinoza

STAFF PRESENT: Kelly Lore, Clerk of the Board, and Joshua Martinez were present in the Board Room. Jim Herberg, General Manager; Rob Thompson, Assistant General Manager; Lorenzo Tyner, Assistant General Manager; Celia Chandler, Director of Human Resources; Kathy Millea, Director of Engineering; Lan Wiborg, Director of Environmental Services; Jennifer Cabral; Mortimer Caparas; Kim Cardenas; Brian Engeln; Tina Knapp; Rob Michaels; Wally Ritchie; Thomas Vu; and Ruth Zintzun were in attendance telephonically.

OTHERS PRESENT: Brad Hogin, General Counsel; and Mitch Barker, Christopher Parker, and Peter George from MGO were in attendance telephonically.

PUBLIC COMMENTS:

No public comments were provided.

Clerk of the Board Kelly Lore announced that after the publication of the agenda, Assistant General Manager Lorenzo Tyner informed her that Item No. 2 was being pulled from consideration.

REPORTS:

Chair Parker announced that OC San's Administrative offices will be closed on November 11th in observance of Veterans Day and on November 25th and 26th in observance of Thanksgiving. He also stated that the Steering and Board meetings would be held one week early on November 17th.

General Manager Jim Herberg did not provide a report.

CONSENT CALENDAR:

1. APPROVAL OF MINUTES [2021-1939](#)

Originator: Kelly Lore

MOVED, SECONDED, AND DULY CARRIED TO:

Approve Minutes of the Regular Meeting of the Administration Committee held October 13, 2021.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

2. PROFESSIONAL RISK MANAGEMENT CONSULTANT AGREEMENT [2021-1925](#)

Originator: Lorenzo Tyner

ITEM PULLED FROM CONSIDERATION

Approve a sole source Professional Consultant Services Agreement with John J. Preston, Specification No. SSJ 2468, to perform professional risk management consulting services for the Orange County Sanitation District, which includes overseeing property and general liability loss control and setting loss control requirements on public bids and contracts, risk transfer, loss prevention, and risk reduction in an amount not to exceed \$150,000 per year, for a term of one year beginning December 1, 2021 through November 30, 2022; with up to two (2) one-year renewal options.

3. OCEAN MODELING SUPPORT PROJECT [2021-1883](#)

Originator: Lan Wiborg

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

- A. Approve Amendment extending the Agreement between the Orange County Sanitation District and Southern California Coastal Water Research Project regarding Ocean Outfall Plume Modeling, to provide physical and biogeochemical modeling of the Orange County Sanitation District's ocean discharge, at a cost not to exceed \$135,000, for a total amount not to exceed \$383,000;
- B. Approve a contingency of 13,500 (10%); and
- C. Approve an agreement performance period extension to December 31, 2024.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

4. REPROGRAPHICS AND DOCUMENT SERVICES FOR PREVIOUSLY CONSTRUCTED PROJECTS [2021-1942](#)

Originator: Lorenzo Tyner

MOVED, SECONDED, AND DULY CARRIED TO:

- A. Authorize a Purchase Order Contract with ARC Document Solutions, LLC for document scanning, indexing, and hyperlinking services per County of Orange Master Contracts #RCA MA-017-16010366, for an amount not to exceed \$125,000; and
- B. Approve a contingency of \$15,000.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

5. CONSOLIDATED FINANCIAL REPORT FOR THE FIRST QUARTER ENDED SEPTEMBER 30, 2021 [2021-1704](#)

Originator: Lorenzo Tyner

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

Receive and file the Orange County Sanitation District First Quarter Financial Report for the period ended September 30, 2021.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

6. MICROSOFT ENTERPRISE LICENSE AGREEMENT (ELA) FOR MICROSOFT ENTERPRISE SOFTWARE LICENSES [2021-1906](#)

Originator: Lorenzo Tyner

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

A. Approve a Purchase Order for a three-year contract to purchase Microsoft Enterprise licenses under the Microsoft ELA in accordance with Microsoft Volume Enterprise Enrollment - for State and Local government, Riverside County Master Licensing Agreement 01E73970, payable annually and with a contract expiration date of December 31, 2024, for a total amount not to exceed \$1,470,495; and

B. Approve a contingency of 220,574 (15%).

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

7. PROPERTY MANAGEMENT SERVICES FOR 18350 MT. LANGLEY STREET AND 18368-18375-18381-18384 BANDILIER CIRCLE, FOUNTAIN VALLEY [2021-1926](#)

Originator: Lorenzo Tyner

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

Approve Amendment No. 5 to the sole source agreement with The Muller Company for Property Management Services for 18350 Mt. Langley Street and 18368-18375-18381-18384 Bandilier Circle in Fountain Valley, for the period of January 1, 2022 through January 31, 2023 for a management fee of \$3,200 per month plus other incurred expenses, including an additional renewal period of twelve (12) months.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

8. GENERAL MANAGER APPROVED PURCHASES AND ADDITIONS TO THE PRE-APPROVED OEM SOLE SOURCE LIST [2021-1952](#)

Originator: Lorenzo Tyner

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

- A. Receive and file Orange County Sanitation District purchases made under the General Manager’s authority for the period of July 1, 2021 to September 30, 2021; and
- B. Approve the following additions to the pre-approved OEM Sole Source List for the period of July 1, 2021 to September 30, 2021:
 - ACCUSONIC (A BRAND OF ADS LLC) - Maintenance and Repair of Accusonic Equipment
 - DR. KRISTY FORSGREN - Fish Liver Histopathology Analysis and Reporting
 - EATON - Uninterruptible Power Supply (UPS) Parts and Service
 - MOBIUS INSTITUTE - Mobius iLearnReliability Enterprise Training Product
 - NIXON-EGLI EQUIPMENT CO. - Modifications & Custom Equipment Installation on Welder Service Truck
 - OVIVO - Trickling Filter Materials and Repairs
 - TRIMBLE WATER - Trimble Unity Software and Support

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

NON-CONSENT:

9. IMPLEMENTATION OF SERVICENOW IT SERVICE MANAGEMENT SOFTWARE [2021-1907](#)

Originator: Lorenzo Tyner

Mr. Tyner introduced IT Manager Rob Michaels who provided a brief overview of the item.

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

- A. Approve a Professional Services Agreement to Computer Aid, Inc. (CAI) to provide ServiceNow IT Service Management software and implementation services, Specification No. CS-2021-1244BD, for a total amount not to exceed \$474,505; and
- B. Approve a contingency of 47,451 (10%).

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

10. **ORANGE COUNTY SANITATION DISTRICT ANNUAL COMPREHENSIVE FINANCIAL REPORT FOR THE YEAR END JUNE 30, 2021** [2021-1908](#)

Originator: Lorenzo Tyner

Mr. Tyner introduced Accounting Supervisor Kim Cardenas who provided an informative PowerPoint presentation regarding the Annual Comprehensive Financial Report.

Peter George, MGO provided a PowerPoint presentation regarding the audit basis and responded to questions from the Committee.

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

Receive and file the Orange County Sanitation District's Annual Comprehensive Financial Report (ACFR) for the year ended June 30, 2021, prepared by staff and audited by Macias Gini & O'Connell LLP (MGO), Certified Public Accountants, along with the following reports prepared by MGO:

- 1. Report to the Board of Directors; and
- 2. Independent Accountants' Report on Agreed-Upon Procedures Applied to Appropriations Limit Worksheets.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

11. SECTION 115 TRUST PENSION ACCOUNT CONTRACT AWARD [2021-1731](#)

Originator: Lorenzo Tyner

Mr. Tyner provided an overview of the history of the item and the evaluation process. After discussion of the item, an alternate motion was made to award to only one firm.

MOVED, SECONDED, AND DULY CARRIED TO: Recommend to the Board of Directors to:

- A. Approve Professional Services Agreements to ~~three firms: Chandler Asset Management, Inc.; PFM Asset Management, Inc.; and Public Agency Retirement Services~~ to establish and oversee Orange County Sanitation District's Internal Revenue Service (IRS) Code Section 115 pension trust administration and investment management services;
- ~~B. Adopt Resolution No. OC SAN 21-XX entitled: "A Resolution of the Board of Directors of Orange County Sanitation District Adopting a Post-Employment Benefit Trust Agreement with Chandler Asset Management, Inc.; and Authorizing Officers to Execute Documents and Agreements";~~
- ~~C. Adopt Resolution No. OC SAN 21-XX entitled: "A Resolution of the Board of Directors of Orange County Sanitation District Adopting a Post-Employment Benefit Trust Agreement with PFM Asset Management, Inc.; and Authorizing Officers to Execute Documents and Agreements";~~
- D. Adopt Resolution No. OC SAN 21-XX entitled: "A Resolution of the Board of Directors of Orange County Sanitation District Adopting a Post-Employment Benefit Trust Agreement with Public Agency Retirement Services; and Authorizing Officers to Execute Documents and Agreements"; and
- E. Authorize staff to make an initial investment of up to \$15 million into the Section 115 pension trusts.

AYES: Glenn Parker, Anthony Kuo, Brad Avery, Art Brown, Kim Carr, Mark Chirco, Marshall Goodman, Patrick Harper, Andrew Nguyen, David Shawver, Chad Wanke and John Withers

NOES: None

ABSENT: Rose Espinoza

ABSTENTIONS: None

INFORMATION ITEMS:

12. HUMAN RESOURCES DEPARTMENT OVERVIEW

[2021-1955](#)

Originator: Celia Chandler

Human Resources and Risk Manager Laura Maravilla provided a PowerPoint presentation that gave an overview of the three main areas in the Human Resources Department: Employee & Labor Relations, HR Operations, and Risk Management. Ms. Maravilla explained OC San University, the current Compensation and Classification Study, negotiations, and succession management.

ITEM RECEIVED AS AN:

Information Item.

DEPARTMENT HEAD REPORTS:

None.

CLOSED SESSION:

None.

OTHER BUSINESS AND COMMUNICATIONS OR SUPPLEMENTAL AGENDA ITEMS, IF ANY:

None.

BOARD OF DIRECTORS INITIATED ITEMS FOR A FUTURE MEETING:

None.

ADJOURNMENT:

Chair Parker declared the meeting adjourned at 6:11 p.m. to the next Regular Administration Committee meeting to be held on Wednesday, December 8, 2021 at 5:00 p.m.

Submitted by:

Kelly A. Lore, MMC
Clerk of the Board



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1954

Agenda Date: 12/8/2021

Agenda Item No: 2.

FROM: James D. Herberg, General Manager
Originator: Lan C. Wiborg, Director of Environmental Services

SUBJECT:

ADD RIALTO BIOENERGY FACILITY CONTRACT TO BIOSOLIDS ACCOUNT POOL

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

Ratify the addition of the Rialto Bioenergy Facility, LLC. biosolids contract to the Biosolids Account Pool effective July 28, 2021.

BACKGROUND

Biosolids are the solid product of municipal wastewater processing which have been treated. They are safely recycled to amend soil directly or create composted soil amendments, and other beneficial uses. Currently, the Orange County Sanitation District (OC San) produces approximately 525-550 tons of biosolids per day. OC San manages its biosolids by transporting approximately 50% to composting facilities, 30% to land application fields in Arizona, and 20% to the recently approved Rialto Bioenergy Facility, LLC (RBF).

The Board of Directors approved the RBF contract in July 2021. This contract needs to be added to the Biosolids Account Pool (BAP), which is an instrument to tie the biosolids contracts together so that funds can be moved between contracts to effectively manage OC San's biosolids and prevent wastewater treatment interruptions.

RELEVANT STANDARDS

- Ensure the public's money is wisely spent
- 24/7/365 treatment plant reliability
- Comply with environmental permit requirements
- Safe, beneficial reuse of Biosolids
- Comply with OC San Policy: Resolution No. OCSD 13-03 - Biosolids Recycling Policy
- Maintain a culture of improving efficiency to reduce the cost to provide the current service level or standard

PROBLEM

The RBF contract was recently awarded but has not yet been added to the Biosolids Account Pool.

PROPOSED SOLUTION

Add the RBF contract to the Biosolids Account Pool.

TIMING CONCERNS

N/A

RAMIFICATIONS OF NOT TAKING ACTION

If OC San does not add the RBF contract to the BAP, the RBF funds will not be available to move to and from other contracts if needed to ensure flexibility of management of biosolids management contracts to allow for uninterrupted wastewater treatment service.

PRIOR COMMITTEE/BOARD ACTIONS

July 2021 - Approved a Sole Source Service Contract to Rialto Bioenergy Facility (RBF) to pilot a biosolids drying and thermal conversion service for approximately 100 wet tons per day at a base fee of \$94 per wet ton, plus monthly fuel surcharge, annual CPI (consumer price index) adjustment, and special sampling events at a rate of \$3,950 per event (6 events) for targeted Per- and Polyfluoroalkyl Substances (PFAS) compounds. The term of this Contract is for three (3) years with two (2) optional one-year renewals for a total annual amount not to exceed \$3,463,095; and approved an annual contingency of \$346,310 (10%).

October 2020 - Authorized the General Manager to amend biosolids management contracts in the Biosolids Account Pool (BAP) to move funds from one contract to another within the BAP, as necessary due to anticipated changes in climate, regulations, contractor performance, or to realize operational and financial efficiencies; with the total of all contracts not to exceed the Board authorized annual amount of \$19,000,000.

April 2020 - Ratify the addition of Denali Water Solutions, Inland Empire Regional Composting Authority, Liberty Composting Inc., and Nursery Products, LLC biosolids contracts to the BAP, effective November 16, 2016.

February 2013 - Approved re-establishment of BAP utilizing a Blanket Purchase Order for the management of all biosolids contracts.

March 2000 - Authorized staff to 1) reallocate funds for OC San's four biosolids management contracts with Pima Gro, Bio Gro, Tule Ranch, and the Yakima Company, into one account; and 2) move funds from one contract to another, as deemed necessary, due to unanticipated changes in climate, regulations, and contractor performance.

ADDITIONAL INFORMATION

The BAP currently has six (6) Board approved contracts associated with it for the hauling of biosolids products produced by OC San's wastewater processing. The BAP was created to provide efficiency in the operational and financial management of OC San's biosolids program and provide management diversity to allow for uninterrupted wastewater treatment service. The biosolids are hauled to a number of different locations varying by vendor and are transported to both land application sites and composting facilities.

There are no additional costs associated with adding the RBF into the BAP.

CEQA

The project is within the scope of the OC San's Biosolids Mater Plan EIR. (Orange County Sanitation District Biosolids Master Plan Project No. PS15-01, State Clearinghouse Number 2017071026, certified June 27, 2018.) The potential environmental impacts caused by RBF (the receiving facility) treatment of biosolids are within the operational baseline established by RBF EIR. (Final Environmental Impact Report, State Clearinghouse Number 2017071026, Rialto Bioenergy Facility Project, certified March 27, 2018.) Therefore, no additional analysis is required. (Public Resources Code § 21166; CEQA Guidelines §§ 15168, 15162.)

FINANCIAL CONSIDERATIONS

N/A

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

N/A



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-2000

Agenda Date: 12/8/2021

Agenda Item No: 3.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

PROFESSIONAL RISK MANAGEMENT CONSULTANT AGREEMENT

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Approve a sole source Professional Consultant Services Agreement with John J. Preston, Specification No. SSJ 2468, to perform professional risk management consulting services for the Orange County Sanitation District, which includes overseeing property and general liability loss control and setting loss control requirements on public bids and contracts, risk transfer, loss prevention, and risk reduction in an amount not to exceed \$150,000 per year, for a term of one year beginning December 1, 2021 through November 30, 2022; with up to two (2) one-year renewal options.

BACKGROUND

The Orange County Sanitation District (OC San) entered into an agreement with John J. Preston in December 2019 to provide risk management consulting services. Previously, OC San contracted with Keenan and Associates (Keenan) to provide these services. OC San had an existing relationship with John J. Preston through Keenan providing risk management consulting services. Staff has worked with the consultant to proactively review and provide regular updates and make recommendations regarding risk management, including insurance performance and renewals.

RELEVANT STANDARDS

- Commitment to safety & reducing risk in all operations

PROBLEM

The current agreement with John J. Preston ends on November 30, 2021. OC San will be without professional risk management personnel during the evaluation of the program and its management as of this date. This scenario will expose OC San to greater risk and potential liability.

PROPOSED SOLUTION

Approve a sole source Professional Consultant Services Agreement with John J. Preston in accordance with Ordinance No. OC SAN-56.

TIMING CONCERNS

The existing agreement ends November 30, 2021.

RAMIFICATIONS OF NOT TAKING ACTION

Potentially exposing OC San to risk and liability.

PRIOR COMMITTEE/BOARD ACTIONS

November 2019 - Approved a sole source Professional Consultant Services Agreement with John J. Preston.

ADDITIONAL INFORMATION

Entering into a separate agreement with John J. Preston has provided a cost savings compared to the contract with Keenan and allowed OC San to have greater direction and control of the services provided. Mr. Preston is familiar with OC San, has exhibited a clear understanding of OC San processes, and is well-versed in OC San operations. It would be in the best interest of OC San to retain John J. Preston's services for risk management consulting needs to ensure business continuity. Staff previously contacted risk management firms including Bickmore Risk Management Consulting (Bickmore) and Marsh Risk Consulting (Marsh) to inquire about their risk management services; however, Bickmore was unresponsive and Marsh does not provide the requested services.

CEQA

N/A

FINANCIAL CONSIDERATIONS

Mr. Preston will be paid for his work as needed on an hourly basis, as work requirements will vary throughout the year. It is estimated that the cost for professional risk management consulting services will not exceed \$150,000. This request complies with authority levels of the OC San Purchasing Ordinance. This item has been budgeted in Division 220 Financial Management Professional Services.

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Professional Consultant Services Agreement

**PROFESSIONAL CONSULTANT SERVICES AGREEMENT
RISK MANAGEMENT LOSS CONTROL SERVICES AGREEMENT
Specification No. SSJ #2468**

THIS AGREEMENT is made and entered into as of the date fully executed below, by and between Orange County Sanitation District, with a principal place of business at 10844 Ellis Avenue, Fountain Valley, CA 92708 (hereinafter referred to as "OC San") and John J. Preston with a principal place of business at 166 Fox Lane, Calimesa, CA 92320 (hereinafter referred to as "Consultant") collectively referred to as the "Parties".

WITNESSETH

WHEREAS, based on Consultant's expertise and experience, OC San desires to temporarily engage Consultant to provide risk management loss control services "Services" as described in Exhibit "B"; and

WHEREAS, Consultant submitted its Proposal, and

WHEREAS, on December 8, 2021, the Administration Committee of OC San, by minute order, authorized execution of this Agreement between OC San and Consultant; and

WHEREAS, OC San has chosen Consultant to conduct Services in accordance with Ordinance No. OC SAN-56; and

NOW, THEREFORE, in consideration of the mutual promises and mutual benefits exchanged between the Parties, the Parties mutually agree as follows:

1. Introduction

1.1 This Agreement and all exhibits hereto (called the "Agreement") is made by OC San and the Consultant. The terms and conditions herein exclusively govern the purchase of Services as described in Exhibit "B".

1.2 Exhibits to this Agreement are incorporated by reference and made a part of this Agreement as though fully set forth at length herein.

Exhibit "A" Not Used
Exhibit "B" Proposal
Exhibit "C" Acknowledgement of Insurance Requirements
Exhibit "D" Contractor Safety Standards
Exhibit "E" Human Resources Policies

1.3 In the event of any conflict or inconsistency between the provisions of this Agreement and any of the provisions of the exhibits hereto, the provisions of this Agreement shall in all respects govern and control.

1.4 This Agreement may not be modified, changed, or supplemented, nor may any obligations hereunder be waived or extensions of time for performance granted, except by written instrument signed by both Parties.

1.5 The various headings in this Agreement are inserted for convenience only and shall not affect the meaning or interpretation of this Agreement or any section or provision hereof.

- 1.6 The term “days”, when used in the Agreement, shall mean calendar days, unless otherwise noted as workdays.
- 1.7 The term “workday”. Workdays are defined as all days that are not Saturday, Sunday, or OC San observed holidays. Meetings with OC San staff shall be scheduled from Monday through Thursday between the hours of 8 a.m. and 4 p.m. (exception is Operations staff who maintain plant operations 24/7 and work a rotated 12-hour shift) and shall conform to OC San work schedules. OC San review periods shall not include OC San observed holidays.
- 1.8 OC San holidays (non-working days) are as follows: New Year’s Day, Lincoln’s Birthday, Presidents’ Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day.
- 1.9 Work Hours: All work shall be scheduled Monday through Friday, between the hours of 7:30 a.m. and 5:30 p.m. OC San will not pay for travel time.
- 1.10 Consultant shall provide OC San with all required premiums and/or overtime work at no charge beyond the total amount of the Agreement.
- 1.11 Except as expressly provided otherwise, OC San accepts no liability for any expenses, losses, or action incurred or undertaken by Consultant as a result of work performed in anticipation of purchases of said services by OC San.
2. **Scope of Work** Subject to the terms of this Agreement, Consultant shall perform the Services identified in Exhibit “B”. Consultant warrants that all of its Services shall be performed in a competent, professional, and satisfactory manner.
3. **Modifications to Scope of Work** Requests for modifications to the Scope of Work hereunder can be made by OC San at any time. All modifications must be made in writing and signed by both Parties. A review of the time required for the modification will be made by OC San and Consultant and the Agreement period adjusted accordingly.
4. **Compensation** Compensation to be paid by OC San to Consultant for the Services provided under this Agreement shall be a total amount not to exceed One Hundred Fifty Thousand Dollars (\$150,000.00).
5. **California Department of Industrial Relations (DIR) Registration and Record of Wages**
 - 5.1 To the extent Consultant’s employees and/or subconsultants who will perform work for which Prevailing Wage Determinations have been issued by the DIR and as more specifically defined under Labor Code Section 1720 et seq, Consultant and subconsultants shall comply with the registration requirements of Labor Code Section 1725.5. Pursuant to Labor Code Section 1771.4, the work is subject to compliance monitoring and enforcement by the DIR.
 - 5.2 The Consultant and subconsultants shall maintain accurate payroll records and shall comply with all the provisions of Labor Code Section 1776, and shall submit payroll records to the Labor Commissioner pursuant to Labor Code 1771.4(a)(3). Penalties for non-compliance with the requirements of Section 1776 may be deducted from progress payments per Section 1776.

5.3 Pursuant to Labor Code Section 1776, the Consultant and subconsultants shall furnish a copy of all certified payroll records to OC San and/or general public upon request, provided the public request is made through OC San, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement of the Department of Industrial Relations.

5.4 The Consultant and subconsultants shall comply with the job site notices posting requirements established by the Labor Commissioner per Title 8, California Code of Regulation Section 16461(e).

6. Payment and Invoicing

6.1 OC San shall pay, net thirty (30) days, upon receipt and approval, by OC San's Project Manager or designee, of itemized invoices submitted monthly for Services rendered in accordance with Exhibit "B". OC San, at its sole discretion, shall be the determining party as to whether the Services have been satisfactorily completed.

6.2 Invoices shall be emailed by Consultant to OC San Accounts Payable at APStaff@OCSan.gov and "INVOICE" with the Purchase Order Number shall be referenced in the subject line.

7. **Audit Rights** Consultant agrees that, during the term of this Agreement and for a period of three (3) years after its termination, OC San shall have access to and the right to examine any directly pertinent books, documents, and records of Consultant relating to the invoices submitted by Consultant pursuant to this Agreement.

8. **Commencement and Term** The Services provided under this Agreement shall be for the period of one (1) year commencing on the date of the Notice to Proceed.

9. Renewals

9.1 OC San may exercise the option to renew this Agreement for up to two (2) one-year periods, under the terms and conditions contained herein. OC San shall make no obligation to renew nor give reason if it elects not to renew.

9.2 This Agreement may be renewed by OC San Purchase Order.

10. **Extensions** The term of this Agreement may be extended only by written instrument signed by both Parties.

11. **Performance** Time is of the essence in the performance of the provisions hereof.

12. Termination

12.1 OC San reserves the right to terminate this Agreement for its convenience, with or without cause, in whole or in part, at any time, by written notice from OC San. Upon receipt of a termination notice, Consultant shall immediately discontinue all work under this Agreement (unless the notice directs otherwise). OC San shall thereafter, within thirty (30) days, pay Consultant for work performed (cost and fee) to the date of termination. Consultant expressly waives any claim to receive anticipated profits to be earned during the uncompleted portion of this Agreement. Such notice of termination shall terminate this Agreement and release OC San from any further fee, cost or claim hereunder by Consultant other than for work performed to the date of termination.

12.2 OC San reserves the right to terminate this Agreement immediately upon OC San's

determination that Consultant is not complying with the Scope of Work requirements, if the level of service is inadequate, or any other default of this Agreement.

12.3 OC San may also immediately terminate for default of this Agreement in whole or in part by written notice to Consultant:

- if Consultant becomes insolvent or files a petition under the Bankruptcy Act; or
- if Consultant sells its business; or
- if Consultant breaches any of the terms of this Agreement; or
- if total amount of compensation exceeds the amount authorized under this Agreement.

12.4 All OC San property in the possession or control of Consultant shall be returned by Consultant to OC San on demand, or at the termination of this Agreement, whichever occurs first.

13. Indemnification and Hold Harmless Provision Consultant shall assume all responsibility for damages to property and/or injuries to persons, including accidental death, which may arise out of or be caused by Consultant's services under this Agreement, or by its subconsultant(s) or by anyone directly or indirectly employed by Consultant, and whether such damage or injury shall accrue or be discovered before or after the termination of the Agreement. Except as to the sole active negligence of or willful misconduct of OC San, Consultant shall indemnify, protect, defend and hold harmless OC San, its elected and appointed officials, officers, agents and employees, from and against any and all claims, liabilities, damages or expenses of any nature, including attorneys' fees: (a) for injury to or death of any person or damage to property or interference with the use of property, arising out of or in connection with Consultant's performance under the Agreement, and/or (b) on account of use of any copyrighted or uncopyrighted material, composition, or process, or any patented or unpatented invention, article or appliance, furnished or used under the Agreement, and/or (c) on account of any goods and services provided under this Agreement. This indemnification provision shall apply to any acts or omissions, willful misconduct, or negligent misconduct, whether active or passive, on the part of Consultant or anyone employed by or working under Consultant. To the maximum extent permitted by law, Consultant's duty to defend shall apply whether or not such claims, allegations, lawsuits, or proceedings have merit or are meritless, or which involve claims or allegations that any of the parties to be defended were actively, passively, or concurrently negligent, or which otherwise assert that the parties to be defended are responsible, in whole or in part, for any loss, damage, or injury. Consultant agrees to provide this defense immediately upon written notice from OC San, and with well qualified, adequately insured, and experienced legal counsel acceptable to OC San. This section shall survive the expiration or early termination of the Agreement.

14. Insurance Consultant and all subconsultants shall purchase and maintain, throughout the life of this Agreement and any periods of warranty or extensions, insurance in amounts equal to the requirements set forth in the signed Determined Insurance Requirement Form, Exhibit "C". Consultant shall not commence work under this Agreement until all required insurance is obtained in a form acceptable to OC San, nor shall Consultant allow any subconsultant to commence service pursuant to a subcontract until all insurance required of the subconsultant has been obtained. Failure to maintain required insurance coverage shall result in termination of this Agreement.

15. Key Personnel Personnel, as provided in Exhibit "B", are considered "key" to the work

under this Agreement and will be available for the term of the Agreement. No person designated as key under this Agreement shall be removed or replaced without prior written consent of OC San. If OC San asks Consultant to remove a person designated as key under this Agreement, Consultant agrees to do so immediately regardless of the reason, or the lack of reason, for OC San's request. Consultant shall assign only competent personnel to perform services pursuant to this Agreement.

16. Confidentiality and Non-Disclosure

16.1 Consultant acknowledges that in performing the Services hereunder, OC San may have to disclose to Consultant orally and in writing certain confidential information that OC San considers proprietary and has developed at great expense and effort.

16.2 Consultant agrees to maintain in confidence and not disclose to any person, firm, or corporation, without OC San's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of OC San.

16.3 Consultant further agrees to maintain in confidence and not to disclose to any person, firm, or corporation any data, information, technology, or material developed or obtained by Consultant during the term of this Agreement.

16.4 Consultant agrees as follows:

- To use the confidential information only for the purposes described herein; to not reproduce the confidential information; to hold in confidence and protect the confidential information from dissemination to and use by anyone not a party to this Agreement; and to not use the confidential information to benefit itself or others.
- To restrict access to the confidential information to its subconsultant or personnel of Consultant who (1) have a need to have such access and (2) have been advised of and have agreed in writing to treat such information in accordance with the terms of this Agreement.
- To return all confidential information in Consultant's possession upon termination of this Agreement or upon OC San's request, whichever occurs first.
- To hold in confidence information and materials, if any, developed pursuant to the Services hereunder.

16.5 The provisions of this section shall survive termination or expiration of this Agreement and shall continue for so long as the material remains confidential.

17. Ownership of Documents All drawings, specifications, reports, records, documents, memoranda, correspondence, computations, and other materials prepared by Consultant, its employees, subconsultants, and agents in the performance of this Agreement shall be the property of OC San and shall be promptly delivered to OC San upon request of OC San's Project Manager or designee, or upon the termination of this Agreement, and Consultant shall have no claim for further employment or additional compensation as a result of the exercise by OC San of its full rights of ownership of the documents and materials hereunder. Any use of such completed documents for other projects and/or use of incomplete documents without specific written authorization by the Consultant will be at OC San's sole risk and without liability to Consultant. Consultant shall ensure that all its subconsultants shall provide for assignment to OC San of any documents or materials prepared by them.

18. Ownership of Intellectual Property

- 18.1 Consultant agrees that all designs, plans, reports, specifications, drawings, schematics, prototypes, models, inventions, and all other information and items made during the course of this Agreement and arising from the Services (hereinafter referred to as "New Developments") shall be and are assigned to OC San as its sole and exclusive property.

Consultant agrees to promptly disclose to OC San all such New Developments. Upon OC San's request, Consultant agrees to assist OC San, at OC San's expense, to obtain patents or copyrights for such New Developments, including the disclosure of all pertinent information and data with respect thereto, the execution of all applications, specifications, assignments, and all other instruments and papers which OC San shall deem necessary to apply for and to assign or convey to OC San, its successors and assigns, the sole and exclusive right, title and interest in such New Developments. Consultant agrees to obtain or has obtained written assurances from its employees and contract personnel of their agreement to the terms hereof with regard to New Developments and confidential information.

- 18.2 Consultant warrants that Consultant has good title to any New Developments, and the right to assign New Developments to OC San free of any proprietary rights of any other party or any other encumbrance whatever.
- 18.3 The originals of all computations, drawings, designs, graphics, studies, reports, manuals, photographs, videotapes, data, computer files, and other documents prepared or caused to be prepared by Consultant or its subconsultants in connection with these Services shall be delivered to and shall become the exclusive property of OC San. OC San may utilize these documents for OC San applications on other projects or extensions of this project, at its own risk.

19. No Solicitation of Employees

- 19.1 Consultant agrees that it shall not, during the term of this Agreement and for a period of one (1) year immediately following termination of this Agreement, or any extension hereof, call on, solicit, or take away any of the employees whom Consultant became aware of as a result of Consultant's Services to OC San.
- 19.2 Consultant acknowledges that OC San's employees are critical to its business and OC San expends significant resources to hire, employ, and train employees. Should Consultant employ or otherwise engage OC San's employees during the term of this Agreement and for a period of one (1) year following termination of this Agreement, Consultant will pay OC San fifty percent (50%) of the former employee's most recent annual salary earned at OC San to accurately reflect the reasonable value of OC San's time and costs. This payment is in addition to any other rights and remedies OC San may have at law.

20. Independent Contractor Capacity

- 20.1 The relationship of Consultant to OC San is that of an independent contractor and nothing herein shall be construed as creating an employment or agency relationship.
- 20.2 Consultant shall act independently and not as an officer or employee of OC San. OC San assumes no liability for Consultant's action and performance, nor assumes responsibility for taxes, funds, payments or other commitments, implied or expressed, by or for Consultant.
- 20.3 Consultant shall not be considered an agent of OC San for any purpose whatsoever, nor shall

Consultant have the right to, and shall not, commit OC San to any agreement, contract or undertaking. Consultant shall not use OC San's name in its promotional material or for any advertising or publicity purposes without expressed written consent.

- 20.4 Consultant shall not be entitled to any benefits accorded to those individuals listed on OC San's payroll as regular employees including, without limitation, worker's compensation, disability insurance, vacation, holiday or sick pay. Consultant shall be responsible for providing, at Consultant's expense, disability, worker's compensation or other insurance as well as licenses and permits usual or necessary for conducting the Services hereunder.
- 20.5 Consultant shall be obligated to pay any and all applicable Federal, State and local payroll and other taxes incurred as a result of fees hereunder. Consultant hereby indemnifies OC San for any claims, losses, costs, fees, liabilities, damages or penalties suffered by OC San arising out of Consultant's breach of this provision.
- 20.6 Consultant shall not be eligible to join or participate in any benefit plans offered to those individuals listed on OC San's payroll as regular employees. Consultant shall remain ineligible for such benefits or participation in such benefit plans even if a court later decides that OC San misclassified Consultant for tax purposes.
21. **Licenses, Permits** Consultant represents and warrants to OC San that it has obtained all licenses, permits, qualification and approvals of whatever nature that are legally required to engage in this work. Any and all fees required by Federal, State, County, City and/or municipal laws, codes and/or tariffs that pertain to work performed under the terms of this Agreement will be paid by Consultant.
22. **Consultant's Representations** In the performance of duties under this Agreement, Consultant shall adhere to the highest fiduciary standards, ethical practices and standards of care and competence for their trade/profession. Consultant agrees to comply with all applicable Federal, State and local laws and regulations.
23. **Familiarity with Work** By executing this Agreement, Consultant warrants that: 1) it has investigated the work to be performed; 2) it has investigated the site of the work and is aware of all conditions there; and 3) it understands the facilities, difficulties and restrictions of the work under this Agreement. Should Consultant discover any latent or unknown conditions materially differing from those inherent in the work or as represented by OC San, it shall immediately inform OC San of this and shall not proceed, except at Consultant's risk, until written instructions are received from OC San.
24. **Right to Review Services, Facilities, and Records**
- 24.1 OC San reserves the right to review any portion of the Services performed by Consultant under this Agreement, and Consultant agrees to cooperate to the fullest extent possible.
- 24.2 Consultant shall furnish to OC San such reports, statistical data, and other information pertaining to Consultant's Services as shall be reasonably required by OC San to carry out its rights and responsibilities under its agreements with its bondholders or noteholders and any other agreement relating to the development of the project(s) and in connection with the issuance of its official statements and other prospectuses with respect to the offering, sale, and issuance of its bonds and other obligations.
- 24.3 The right of OC San to review or approve drawings, specifications, procedures, instructions,

reports, test results, calculations, schedules, or other data that are developed by Consultant shall not relieve Consultant of any obligation set forth herein.

25. **Force Majeure** Neither party shall be liable for delays caused by accident, flood, acts of God, fire, labor trouble, war, acts of government or any other cause beyond its control, but said party shall use reasonable efforts to minimize the extent of the delay. Work affected by a Force Majeure condition may be rescheduled by mutual consent or may be eliminated from the Agreement.
26. **Severability** If any section, subsection, or provision of this Agreement, or any agreement or instrument contemplated hereby, or the application of such section, subsection, or provision is held invalid, the remainder of this Agreement or instrument in the application of such section, subsection or provision to persons or circumstances other than those to which it is held invalid, shall not be affected thereby, unless the effect of such invalidity shall be to substantially frustrate the expectations of the Parties.
27. **Waiver** The waiver of either party of any breach or violation of, or default under, any provision of this Agreement, shall not be deemed a continuing waiver by such party of any other provision or of any subsequent breach or violation of this Agreement or default thereunder. Any breach by Consultant to which OC San does not object shall not operate as a waiver of OC San's rights to seek remedies available to it for any subsequent breach.
28. **Remedies** In addition to other remedies available in law or equity, if the Consultant fails to make delivery of the goods or Services or repudiates its obligations under this Agreement, or if OC San rejects the goods or Services or revokes acceptance of the goods or Services, OC San may (1) terminate the Agreement; (2) recover whatever amount of the purchase price OC San has paid, and/or (3) "cover" by purchasing, or contracting to purchase, substitute goods or Services for those due from Consultant. In the event OC San elects to "cover" as described in (3), OC San shall be entitled to recover from Consultant as damages the difference between the cost of the substitute goods or Services and the Agreement price, together with any incidental or consequential damages.
29. **Governing Law** This Agreement shall be governed by and interpreted under the laws of the State of California and the Parties submit to jurisdiction in Orange County, in the event any action is brought in connection with this Agreement or the performance thereof.
30. **Environmental Compliance** Consultant shall, at its own cost and expense, comply with all Federal, State, and local environmental laws, regulations, and policies which apply to the Consultant, its sub-consultants, and the Services, including, but not limited to, all applicable Federal, State, and local air pollution control laws and regulations.
31. **Attorney's Fees** If any action at law or inequity or if any proceeding in the form of an Alternative Dispute Resolution (ADR) is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which it may be entitled.
32. **Dispute Resolution**
 - 32.1 In the event of a dispute as to the construction or interpretation of this Agreement, or any rights or obligations hereunder, the Parties shall first attempt, in good faith, to resolve the dispute by mediation. The Parties shall mutually select a mediator to facilitate the resolution of the dispute. If the Parties are unable to agree on a mediator, the mediation shall be conducted in accordance with the Commercial Mediation Rules of the American Arbitration Agreement, through the alternate dispute resolution procedures of Judicial Arbitration

through Mediation Services of Orange County ("JAMS"), or any similar organization or entity conducting an alternate dispute resolution process.

- 32.2 In the event the Parties are unable to timely resolve the dispute through mediation, the issues in dispute shall be submitted to arbitration pursuant to California Code of Civil Procedure, Part 3, Title 9, Sections 1280 et seq. For such purpose, an agreed arbitrator shall be selected, or in the absence of agreement, each party shall select an arbitrator, and those two (2) arbitrators shall select a third. Discovery may be conducted in connection with the arbitration proceeding pursuant to California Code of Civil Procedure Section 1283.05. The arbitrator, or three (3) arbitrators acting as a board, shall take such evidence and make such investigation as deemed appropriate and shall render a written decision on the matter in question. The arbitrator shall decide each and every dispute in accordance with the laws of the State of California. The arbitrator's decision and award shall be subject to review for errors of fact or law in the Superior Court for the County of Orange, with a right of appeal from any judgment issued therein.
33. **Damage to OC San's Property** Any OC San property damaged by Consultant will be subject to repair or replacement by Consultant at no cost to OC San.
34. **Contractor Safety Standards and Human Resources Policies** OC San requires Consultant and its subconsultants to follow and ensure their employees follow all Federal, State and local regulations as well as Contractor Safety Standards while working at OC San locations. If during the course of the Agreement it is discovered that Contractor Safety Standards do not comply with Federal, State or local regulations, then the Consultant is required to follow the most stringent regulatory requirement at no additional cost to OC San. Consultant and all of its employees and subconsultants, shall adhere to all applicable Contractor Safety Standards attached hereto in Exhibit "D" and the Human Resources Policies in Exhibit "E".
35. **Freight (F.O.B. Destination)** Consultant assumes full responsibility for all transportation, transportation scheduling, packing, handling, insurance, and other services associated with delivery of all products deemed necessary under this Agreement.
36. **Assignments** Consultant shall not delegate any duties nor assign any rights under this Agreement without the prior written consent of OC San. Any such attempted delegation or assignment shall be void.
37. **Conflict of Interest and Reporting**
- 37.1 Consultant shall at all times avoid conflicts of interest or appearance of conflicts of interest in performance of this Agreement.
- 37.2 Consultant affirms that to the best of its knowledge there exists no actual or potential conflict between Consultant's families, business or financial interest or its Services under this Agreement, and in the event of change in either its private interests or Services under this Agreement, it will raise with OC San any question regarding possible conflict of interest which may arise as a result of such change.
38. **Third Party Rights** Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than OC San and Consultant.

39. **Non-Liability of OC San Officers and Employees** No officer or employee of OC San shall be personally liable to Consultant, or any successor-in-interest, in the event of any default or breach by OC San or for any amount which may become due to Consultant or to its successor, or for breach of any obligation of the terms of this Agreement.
40. **Authority to Execute** The persons executing this Agreement on behalf of the Parties warrant that they are duly authorized to execute this Agreement and that by executing this Agreement, the Parties are formally bound.
41. **Read and Understood** By signing this Agreement, Consultant represents that it has read and understood the terms and conditions of the Agreement.
42. **Entire Agreement** This Agreement constitutes the entire agreement of the Parties and supersedes all prior written or oral and all contemporaneous oral agreements, understandings, and negotiations between the Parties with respect to the subject matter hereof.

43. **Notices** All notices under this Agreement must be in writing. Written notice shall be delivered by personal service or sent by registered or certified mail, postage prepaid, return receipt requested, or by any other overnight delivery service which delivers to the noticed destination and provides proof of delivery to the sender. Any facsimile notice must be followed within three (3) days by written notice. Rejection or other refusal to accept or the inability to deliver because of changed address for which no notice was given as provided hereunder shall be deemed to be receipt of the notice, demand or request sent. All notices shall be effective when first received at the following addresses:

OCSD: Cori Voss, Senior Buyer
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708-7018

Consultant: John J. Preston
166 Fox Ln
Calimesa, CA 92320

Each party shall provide the other party written notice of any change in address as soon as practicable.

IN WITNESS WHEREOF, intending to be legally bound, the Parties hereto have caused this Agreement to be signed by the duly authorized representatives.

ORANGE COUNTY SANITATION DISTRICT

Dated: _____ By: _____
Glenn Parker
Chair, Administration Committee

Dated: _____ By: _____
Kelly A. Lore
Clerk of the Board

Dated: _____ By: _____
Ruth Zintzun
Purchasing and Contracts Manager

JOHN J. PRESTON

Dated: _____ By: _____

Print Name and Title of Officer

CMM



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1705

Agenda Date: 12/8/2021

Agenda Item No: 4.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

INVEST AND/OR REINVEST ORANGE COUNTY SANITATION DISTRICT'S FUNDS AND ADOPT INVESTMENT POLICY STATEMENT

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

Adopt Resolution No. OC SAN 21-XX, entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District Authorizing the Orange County Sanitation District's Treasurer to Invest and/or Reinvest the Orange County Sanitation District's Funds, Adopting the Orange County Sanitation District's Investment Policy Statement and Performance Benchmarks, and Repealing Resolution No. OCSD 20-13".

BACKGROUND

As there were no significant changes in State law governing the Orange County Sanitation District's (OC San) investments, this agenda item presents an update to the OC San Investment Policy Statement to the Administration Committee for consideration in the Committee's capacity as the oversight committee for the Investment Policy (Section 18.2). With adoption of the Resolution, the Board of Directors would readopt OC San's Investment Policy Statement, portfolio performance benchmarks, and monitoring and reporting requirements for calendar year 2022.

The following is a summary of the changes to the Investment Policy Statement:

- Changed: "The Sanitation District" to "OC San"
- Changed: "Comprehensive Annual Financial Report" to "Annual Financial Comprehensive Report"
- Changed: "The Bond Market Association" to "The Securities Industry and Financial Markets Association"

OC San's Investment Policy Statement was previously approved by the Administration Committee and the Board of Directors for calendar year 2021 in December 2020.

RELEVANT STANDARDS

- Comply with OC San Policy: Orange County Sanitation District Investment Policy
- California Government Code Sections 53607 and 53646

PROBLEM

California Government Code Section 53607 allows for the Board of Directors to delegate authority to invest and/or reinvest OC San's funds to the Treasurer for a one-year period. California Government Code Section 53646 requires OC San to review its Investment Policy annually and readopt its Policy at a public meeting, which will establish specific performance benchmarks and objectives, and specific monitoring and reports. Pursuant to California Government Code Section 53646, OC San's Investment Policy must be reviewed and readopted prior to December 31, 2021.

PROPOSED SOLUTION

With adoption of the proposed Resolution, the Board of Directors would renew its delegation of investment authority to the Assistant General Manager & Director of Finance and Administrative Services/Treasurer for a one-year period, January 1, 2022 to December 31, 2022, in compliance with the requirements of California Government Code Section 53607. Each year, the Board of Directors will consider similar actions, along with the annual reconsideration of OC San's Investment Policy.

TIMING CONCERNS

The Board of Directors delegation of authority to the Assistant General Manager & Director of Finance and Administrative Services/Treasurer to invest and/or reinvest OC San's funds will expire on December 31, 2021.

RAMIFICATIONS OF NOT TAKING ACTION

OC San's Assistant General Manager & Director of Finance and Administrative Services/Treasurer will not have the authority to invest and/or reinvest OC San's funds and OC San will not be in compliance with California Government Code Section 53646.

PRIOR COMMITTEE/BOARD ACTIONS

December 2020 - Board adopted Resolution No. OCSD 20-13, entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District, Authorizing the Orange County Sanitation District's Treasurer to Invest and/or Reinvest the Orange County Sanitation District's Funds, Adopting the Orange County Sanitation District's Investment Policy Statement and Performance Benchmarks, and Repealing Resolution No. OCSD 19-21".

ADDITIONAL INFORMATION

OC San's Investment Policy Statement is a comprehensive document describing the policy, authorizations, benchmarks, delegations, and investment limitations. The Investment Policy will

govern the investment activities of Chandler Asset Management, OC San's external money manager, on behalf of OC San.

Annual Review of Investment Policy

The Investment Policy includes the requirement that OC San shall review its Investment Policy annually (Sections 1.2 and 18.1). Chandler Asset Management reviewed the existing policy to ensure that the language remains current with the California Government Code. The proposed Investment Policy is attached with redlined changes from the most recent approved policy in December 2020.

Annual Delegation of Investment Authority

Effective January 1, 1997, California Government Code Section 53607 states that governing boards of local agencies may only delegate authority to invest and/or reinvest agency funds to the agency's Treasurer for a one-year period.

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Orange County Sanitation District Calendar Year 2022 Investment Policy Statement (Clean)
- Orange County Sanitation District Calendar Year 2021 Investment Policy Statement (Redline)
- Proposed Resolution No. OC SAN 21-XX

ORANGE COUNTY SANITATION DISTRICT

INVESTMENT POLICY STATEMENT

1.0 **Policy:**

It is the policy of the Orange County Sanitation District (OC San) to invest public funds in a manner which ensures the safety and preservation of capital while meeting reasonably anticipated operating expenditure needs, achieving a reasonable rate of return and conforming to all state and local statutes governing the investment of public funds.

1.1. This Investment Policy is set forth by OC San for the following purposes:

1.1.1. To establish a clear understanding for the Board of Directors, OC San management, responsible employees, and third parties of the objectives, policies, and guidelines for the investment of OC San's idle and surplus funds.

1.1.2. To offer guidance to investment staff and any external investment advisors on the investment of OC San funds.

1.1.3. To establish a basis for evaluating investment results.

1.2. OC San establishes investment policies which meet its current investment goals. OC San shall review this policy annually and may change its policies as its investment objectives change.

2.0 **Scope:**

This Investment Policy applies to all financial assets of OC San; except for the proceeds of OC San's capital projects financing program, which are invested in accordance with provisions of their specific bond indentures; and such other funds excluded by law or other Board-approved covenant or agreement.

These funds are accounted for by OC San as Enterprise Funds as represented in OC San's Annual Comprehensive Financial Report.

3.0 **Standard of Prudence:**

The standard of prudence to be used by OC San internal staff, and any authorized investment advisor(s), shall be as described in Section 53600.3 of the California Government Code as follows: Except as provided in subdivision (a) of Section 27000.3, all governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds pursuant to this chapter are trustees and therefore fiduciaries subject to the **prudent investor** standard. When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of the agency, that a **prudent person** acting in a like capacity and

familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law.

4.0 **Investment Objectives:**

The primary objectives of OC San's investment activities, in priority order, and as described in Section 53600.5 of the California Government Code, shall be:

- 4.1 **Safety:** The safety and preservation of principal is the foremost objective of the investment program of OC San. Investments shall be selected in a manner that seeks to ensure the preservation of capital in OC San's overall portfolio. This will be accomplished through a program of diversification, more fully described in Section 13.0, and maturity limitations, more fully described in Section 14.0, in order that potential losses on individual securities do not exceed the income generated from the remainder of the portfolio.
- 4.2 **Liquidity:** The investment program will be administered in a manner that will ensure that sufficient funds are available for OC San to meet its reasonably anticipated operating expenditure needs.
- 4.3 **Return on Investments:** The OC San investment portfolio will be structured and managed with the objective of achieving a market rate of return throughout budgetary and economic cycles, commensurate with legal, safety and liquidity considerations.

5.0 **Delegation of Authority:**

- 5.1 Authority to manage OC San's investment program is derived from the California Government Code Sections 53600 *et seq.* and Sections 53635 *et seq.* The Board of Directors hereby delegates management responsibility for OC San's investment program to its Assistant General Manager & Director of Finance and Administrative Services/Treasurer, who shall establish written procedures for the operation of the investment program, consistent with this Policy. The Controller/Assistant Treasurer shall be responsible for day-to-day administration, monitoring, and the development of written administrative procedures for the operation of the investment program, consistent with this Policy. No person may engage in an investment transaction except as provided under the terms of this Policy and the procedures established by the Treasurer. The Treasurer shall be responsible for all transactions undertaken by OC San internal staff and shall establish a system of controls to regulate the activities of internal staff and external investment advisors engaged in accordance with Section 5.3.
- 5.2 The administrative procedures for the operation of OC San's investment program will provide for, but not be limited to, the following:

- 5.2.1 Formats for monthly and quarterly reports to the Administration Committee and the Board of Directors.
 - 5.2.2 Compliance with generally accepted accounting principles of the Government Accounting Standards Board.
 - 5.2.3 Establishment of benchmarks for performance measurement.
 - 5.2.4 Establishment of a system of written internal controls.
 - 5.2.5 Establishment of written procedures for competitive bids and offerings of securities that may be purchased or sold by internal OC San staff.
 - 5.2.6 Establishment of a Desk Procedures Manual for treasury operations and management.
- 5.3 The Board of Directors may, in its discretion, engage the services of one or more registered investment advisors to assist in the management of OC San's investment portfolio in a manner consistent with OC San's objectives. Such external investment advisors, which shall be selected through a competitive process, shall be granted discretion to purchase and sell investment securities in accordance with this Investment Policy. Such advisors must be registered under the Investment Advisers Act of 1940 or be exempt from such registration.

6.0 **Ethics and Conflicts of Interest:**

Officers and employees of OC San involved in the investment process shall refrain from personal business activities that could conflict with proper execution of OC San's investment program, or which could impair their ability to make impartial investment decisions. Employees and investment officials shall disclose to the General Manager any material financial interests in financial institutions that conduct business within OC San's boundaries, and they shall further disclose any large personal financial/investment positions, the performance of which could be related to the performance of positions in OC San's portfolio.

7.0 **Authorized Financial Dealers and Institutions:**

- 7.1 For investment transactions conducted by OC San internal staff, the Treasurer will maintain a list of financial institutions authorized to provide investment services to OC San, including "primary" or regional dealers that qualify under Securities and Exchange Commission Rule 15C3-1 (Uniform Net Capital rule) and Federal or State of California chartered banks. No public deposit shall be made except in a qualified public depository as established by State law.

All financial institutions which desire to become qualified bidders for investment transactions with OC San must supply the following for evaluation by the Treasurer:

7.1.1. Audited financial statements for the institution's three (3) most recent fiscal years.

7.1.2. A statement, in the format prescribed by the Government Finance Officers Association (GFOA), certifying that the institution has reviewed OC San's Investment Policy and that all securities offered to OC San shall comply fully and in every instance with all provisions of the California Government Code and with this Investment Policy. The current statement is presented in Appendix "A."

7.1.3. A statement describing the regulatory status of the dealer, and the background and expertise of the dealer's representatives.

Selection of financial institutions, broker/dealers and banks authorized to engage in transactions with OC San shall be made through a competitive process. An annual review of the financial condition of qualified institutions will be conducted by the Treasurer.

7.2 Selection of broker/dealers used by external investment advisors retained by OC San, shall be in compliance with contract provisions between OC San and any external investment advisors and shall be in substantially the following form:

Use of Securities Brokers: Neither the Investment Advisor nor any parent, subsidiary or related firm shall act as a securities broker with respect to any purchases or sales of securities which may be made on behalf of OC San, provided that this limitation shall not prevent the Investment Advisor from utilizing the services of a securities broker which is a parent, subsidiary or related firm, provided such broker effects transactions on a "cost only" or "nonprofit" basis to itself and provides competitive execution. The Investment Advisor shall provide OC San with a list of suitable independent brokerage firms (including names and addresses) meeting the requirements of Government Code Section 53601.5, and, unless otherwise directed by OC San, the Investment Advisor may utilize the service of any of such independent securities brokerage firms it deems appropriate to the extent that such firms are competitive with respect to price of services and execution.

8.0 **Authorized and Suitable Investments:**

All investments shall be made in accordance with the California Government Code including Sections 16429.1 *et seq.*, 53600 *et seq.*, and 53684, and as described within this Investment Policy. Permitted investments under this Policy shall include:

- 8.1 **Securities, obligations, participations, or other instruments of, or issued by, or fully guaranteed as to principal and interest by the US Government**, a federal agency, or a US Government-sponsored enterprise pursuant to Section 53601 (f) of the California Government Code. US Treasury securities must make up at least 10% of the portfolio.
- 8.2 **Supranational Obligations** issued or unconditionally guaranteed by the International Bank for Reconstruction and Development, International Finance Corporation, or Inter-American Development Bank. Securities must be eligible for purchase in the United States and be US dollar denominated senior unsecured unsubordinated obligations, with a maximum maturity of five years. Securities eligible for purchase under this section must be rated "AA" or better by a Nationally Recognized Statistical Rating Organization (NRSRO) and shall not exceed 30% of the total portfolio.
- 8.3 **Mortgage pass-through security, collateralized mortgage obligation, mortgage-backed or other pay-through bond, equipment lease-backed certificate, consumer receivable pass-through certificate, or consumer receivable-backed bond.** Securities eligible for investment under this subdivision shall be rated in a rating category of "AA" or its equivalent or better by an NRSRO and have a maximum remaining maturity of five years or less. Purchase of securities authorized by this subdivision may not exceed 20 percent of the agency's surplus moneys that may be invested pursuant to this section. Purchase of mortgage derivatives, which include interest-only payments (IOs) and principal-only payments (POs); inverse floaters, and RE-REMICs (Real Estate Mortgage Investment Conduits), is hereby prohibited.
- 8.4 **Commercial paper** of "prime" quality of the highest ranking or of the highest letter and number rating as provided by an NRSRO, and issued by a domestic corporation organized and operating in the United States with assets in excess of \$500 million and having a rating of "A" or better on its long-term debt as provided by an NRSRO. Purchases of eligible commercial paper may not exceed 270 days to maturity from the date of purchase. Purchases of commercial paper shall not exceed 40% of the market value of the portfolio. No more than 5% of the market value of the portfolio, or 10% of the issuer's outstanding paper, may be invested in commercial paper issued by any one (1) eligible corporation.
- 8.5 **Banker's acceptances** issued by institutions, the short-term obligations of which are rated of the highest ranking or the highest letter and number rating as provided by an NRSRO provided that: (a) the acceptance is eligible for purchase by the Federal Reserve System; (b) the maturity does not exceed 180 days; (c) no more than 40% of the total portfolio may be invested in banker's acceptances; and (d) no more than 5% of the total portfolio may be invested in the banker's acceptances of any one (1) commercial bank.

- 8.6 **Medium term (or corporate) notes** of a maximum of five (5) years maturity issued by corporations organized and operating within the United States, or issued by depository institutions licensed by the United States, or any state, and operating within the United States with assets in excess of \$500 million, and which is rated in a rating category of “A” or better on its long-term debt as provided by an NRSRO. If, after purchase, the rating of an eligible note falls below the minimum rating category stipulated above, the external investment advisor shall notify OC San of the downgrade and shall present an analysis and recommendations as to the disposition of the note consistent with the investment objectives of this Investment Policy. No more than 30% of the portfolio may be invested in medium term notes.
- 8.7 **Notes, bonds, or other obligations** that are at all times secured by a valid first priority security interest in securities of the types listed by California Government Code Section 53651 as eligible securities for the purpose of securing local agency deposits having a market value at least equal to that required by California Government Code Section 53652 for the purpose of securing local agency deposits. The securities serving as collateral shall be placed by delivery or book entry into the custody of a trust company or the trust department of a bank that is not affiliated with the issuer of the secured obligation, and the security interest shall be perfected in accordance with the requirements of the Uniform Commercial Code or federal regulations applicable to the types of securities in which the security interest is granted.
- 8.8 **Shares of mutual funds** investing in securities permitted under this policy and under Section 53601 (l) of the California Government Code. Such funds must either: (1) attain the highest ranking, or the highest letter and numerical rating, provided by not less than two of the three largest nationally recognized rating services; or (2) have an Investment Advisor registered with the Securities and Exchange Commission with not less than five (5) years of experience investing in the securities and obligations authorized under this Policy and under California Government Code Section 53601 and with assets under management in excess of \$500 million. The purchase price of shares of beneficial interest purchased pursuant to this policy and the California Government Code may not include any commission that the companies may charge and shall not exceed 20% of OC San’s surplus money that may be invested pursuant to this section. No more than 10% of OC San’s surplus funds may be invested in shares of beneficial interest of any one (1) mutual fund pursuant to this section. Money market mutual funds are limited to 20% per issuer and are not subject to the 10% stipulation.
- 8.9 **Certificates of deposit:**
- 8.9.1 **Secured (collateralized) time deposits** issued by a nationally or state-chartered bank or state or federal savings and loan association, as defined by Section 5102 of the California Financial Code, and having a net operating profit in the two (2) most recently completed fiscal years. Collateral must comply with Chapter 4, Bank Deposit Law, Section 16500

et seq., and Chapter 4.5, Savings and Loan Association and Credit Union Deposit Law, Section 16600 *et seq.*, of the California Government Code.

8.9.2 **Negotiable certificates of deposit (NCDs)** issued by a nationally or state-chartered bank or state of federal savings and loan association, as defined by Section 5102 of the California Financial Code; *and* which shall have a rating of "A" or better on its long-term debt as provided by a NRSRO; or which shall have the highest letter and number rating for deposits as provided by a NRSRO; or as otherwise approved by the Board of Directors. No more than 30% of the portfolio may be invested in securities pursuant to this section.

8.9.3 To be eligible to receive local agency money, a bank, savings association, federal association, or federally insured individual loan company shall have received an overall rating of not less than "satisfactory" in its most recent evaluation by the appropriate federal financial supervisory agency of its record of meeting the credit needs of California's communities, including low and moderate income neighborhoods, pursuant to Section 2906 of Title 12 of the United States Code.

8.10 **Taxable or tax-exempt municipal bonds** issued by any of the 50 United States. Such securities must be rated "A" or higher by a NRSRO; or as otherwise approved by the Board of Directors.

8.11 **The State of California Local Agency Investment Fund (LAIF)**. LAIF is an investment alternative for California's local governments and special districts managed by the State Treasurer's Office. LAIF is more fully described in the Glossary (See Appendix "C"). OC San shall use LAIF as a short-term cash management facility. Investment of OC San funds in LAIF shall be subject to investigation and due diligence prior to investing, and on a continual basis to a level of review pursuant to Section 3.0, Standard of Prudence, of this Policy.

8.12 **The Orange County Treasurer's Money Market Commingled Investment Pool (OCCIP)**. The OCCIP is a money market investment pool managed by the Orange County Treasurer's Office. OCCIP is more fully described in the Glossary (See Appendix "C"). OC San has no funds invested in OCCIP at this time. Investment of OC San funds in OCCIP would be subject to investigation and due diligence prior to investing, and on a continual basis to a level of review pursuant to Section 3.0, Standard of Prudence, of this Policy.

8.13 **Repurchase agreements** provided that:

8.13.1 All repurchase agreements shall be collateralized with securities eligible for purchase under this Policy. In order to anticipate market changes and to provide a level of security for all repurchase agreement transactions, collateralization shall be maintained at a level of at least 102% of the market

value of the repurchase agreements and shall be adjusted no less than weekly.

8.13.2 All repurchase agreements must be the subject of a Master Repurchase Agreement between OC San and the provider of the repurchase agreement. The Master Repurchase Agreement shall be substantially in the form developed by the Securities Industry and Financial Markets Association.

8.14 **Reverse repurchase agreements** provided that:

8.14.1 No more than five percent (5%) of OC San's portfolio shall be invested in reverse repurchase agreements, and there shall be no long-term reverse repurchase agreements unless otherwise authorized by the Board of Directors.

8.14.2 The maximum maturity of reverse repurchase agreements shall be ninety (90) days.

8.14.3 Reverse repurchase agreements shall mature on the exact date of a known cash flow which will be unconditionally available to repay the maturing reverse repurchase agreement.

8.14.4 Proceeds of reverse repurchase agreements shall be used solely to supplement portfolio income or to provide portfolio liquidity and shall not be used to speculate on market movements.

8.14.5 All reverse repurchase agreements must be the subject of a Master Repurchase Agreement between OC San and the provider of the reverse repurchase agreement. The Master Repurchase Agreement shall be substantially in the form developed by the Securities Industry and Financial Markets Association.

8.15 **Public Bank Obligations** of a maximum of five (5) years maturity which includes commercial paper, debt securities, or other obligations of a public bank, a public bank as defined in California Government Code Section 57600-57607.

8.16 Sales of OC San-owned securities in the secondary market may incur losses in order to improve the risk or return characteristics of the portfolio, to prevent anticipated further erosion of principal, or when trading for securities that result in an expected net economic gain to OC San.

8.17 If securities owned by OC San are downgraded below the quality required by this Investment Policy, it shall be OC San's policy to review the credit situation and make a determination as to whether to sell or retain such securities in the portfolio. If a decision is made to retain the downgraded securities in the portfolio, their presence in the portfolio will be monitored

and reported quarterly to the OC San General Manager, the Administration Committee and Board of Directors.

- 8.18 OC San is authorized to invest in securities issued by or backed by the United States Government that could result in zero or negative interest accrual if held to maturity.

9.0 **Review of Investment Portfolio:**

The securities held by OC San must be in compliance with Section 8.0 “Authorized and Suitable Investments” at time of purchase. If at a later date, a security is no longer in compliance with Section 8.0, the Treasurer shall report the non-compliant security to the Administration Committee and the Board of Directors and shall include a disclosure in the quarterly Treasurer’s Report if the security is held at the date the report is prepared.

10.0 **Investment Pools/Mutual Funds:**

A thorough investigation of the pool/fund is required prior to investing, and on a continual basis. A questionnaire shall be developed that will provide the following information:

- 10.1 A description of eligible investment securities, and a written statement of investment policy and objectives.
- 10.2 A description of interest calculations and how they are distributed, and how gains and losses are treated.
- 10.3 A description of how the securities are safeguarded (including the settlement processes) and how often the securities are priced and the program audited.
- 10.4 A description of who may invest in the program, how often and what size deposits and withdrawals are allowed.
- 10.5 A schedule for receiving statements and portfolio listings.
- 10.6 A description of the utilization and level of reserves, retained earnings or other collateral and how they are used by the fund.
- 10.7 A fee schedule, and when and how is it assessed.
- 10.8 Whether the pool/fund is eligible for bond proceeds and/or whether it will accept such proceeds.

11.0 **Collateralization:**

Generally, the value to secure deposits under this Policy shall comply with Section 53652 of the California Government Code. Collateralization will be required for secured time deposits, as more fully described in Section 8.9.1; and repurchase agreements, as more fully described in Section 8.13.1. Collateral will always be held by an independent third-

party, as more fully described in Section 12.0. The right of collateral substitution is granted. Under provisions of the California Government Code, California banks and savings and loans associations are required to secure OC San's deposits by pledging government securities with a value of 110% of principal and accrued interest. State law also allows financial institutions to secure OC San's deposits by pledging first trust deed mortgage notes having a value of 150% of OC San's total deposits.

12.0 **Safekeeping and Custody:**

All securities transactions, including collateral for repurchase agreements, entered into by, or on behalf of OC San, shall be conducted on a **delivery-versus-payment (DVP)** basis. Securities will be held by OC San's third-party custodian bank, which shall be selected through a competitive process, or that agent's representative, or in the agent's account at the Federal Reserve Bank, **or within clearing corporations in the U.S.**, and evidenced by book entry statements. Third-party safekeeping arrangements will be approved by the Treasurer and will be corroborated by a written custodial agreement.

13.0 **Diversification:**

OC San will diversify its investments by security type, issuer and financial institution in accordance with the following:

- 13.1 There is no limit on investment in securities issued by or guaranteed by the full faith and credit of the U.S. government.
- 13.2 No more than 20% of the portfolio may be invested in securities of a single agency of the U.S. government, which does not provide the full faith and credit of the U.S. government.
- 13.3 No more than 5% of the portfolio may be invested in securities of any one issuer, other than Supranationals, the U.S. government or its agencies. Investment in mutual funds is not governed by this Section 13.3. See Section 13.8 for conditions of purchase of mutual funds.
- 13.4 No individual holding shall constitute more than 5% of the total debt outstanding of any issuer.
- 13.5 No more than 40% of the portfolio may be invested in banker's acceptances.
- 13.6 No more than 40% of the portfolio may be invested in commercial paper.
- 13.7 No more than 30% of the portfolio may be invested in medium-term (corporate) notes.
- 13.8 No more than 20% of the portfolio may be invested in mutual funds. No more than 10% of OC San's portfolio may be invested in shares of beneficial interest of any one (1) mutual fund. Money market mutual funds are limited to 20% per issuer and are not subject to the 10% stipulation.

- 13.9 No more than 30% of the portfolio may be invested in negotiable certificates of deposit.
- 13.10 No more than 10% of the portfolio may be invested in eligible municipal bonds.
- 13.11 No more than 20% of the Long Term Operating Monies portfolio may be invested in a combination of mortgage-backed securities, CMOs and asset-backed securities.
- 13.12 No more than the statutory maximum may be invested in LAIF.
- 13.13 No more than 15% of the portfolio may be invested in the Orange County Investment Pool.
- 13.14 No more than 20% of the portfolio may be invested in repurchase agreements.
- 13.15 No more than 5% of the portfolio may be invested in reverse repurchase agreements.

14.0 **Maximum Maturities:**

To the extent possible, OC San will attempt to match its investments with reasonably anticipated cash flow requirements. The Treasurer shall develop a five-year cash flow forecast, which shall be updated quarterly. Based on this forecast, the Treasurer shall designate, from time-to-time, the amounts to be allocated to the investment portfolio. OC San monies invested in accordance with this Policy are divided into two (2) categories:

- 14.1 **Liquid Operating Monies.** Funds needed for current operating and capital expenditures are known as Liquid Operating Monies.
 - 14.1.1 The maximum final stated maturity of individual securities in the Liquid Operating Monies account portfolio shall be one (1) year from the date of settlement.
 - 14.1.2 The average duration of the Liquid Operating Monies account portfolio shall be recommended by the Treasurer based on OC San's cash flow requirements but may never exceed 180 days.
- 14.2 **Long Term Operating Monies.** Funds needed for longer term purposes are known as the Long Term Operating Monies.
 - 14.2.1 The maximum final stated maturity of individual securities in the Long Term Operating Monies account portfolio shall be five (5) years from the date of settlement.

14.2.2 The duration of the Long Term Operating Monies account portfolio shall be recommended by the Treasurer based on OC San's five-year cash flow forecast but may never exceed 60 months.

14.2.3 The duration of the Long Term Operating Monies account portfolio shall never exceed 120% of the duration as established in accordance with Section 14.2.2.

14.2.4 The duration of the Long Term Operating Monies account portfolio shall never be less than 80% of the duration as established in accordance with Section 14.2.2.

15.0 **Internal Control:**

The Treasurer shall establish an annual process of independent review by an external auditor. This review will provide internal control by assuring compliance with policies and procedures.

16.0 **Performance Objectives and Benchmarks:**

16.1 **Overall objective.** The investment portfolio of OC San shall be designed with the overall objective of obtaining a rate of return throughout budgetary and economic cycles, commensurate with investment risk constraints and reasonably anticipated cash flow needs.

16.2 **The Liquid Operating Monies.** The investment performance objective for the Liquid Operating Monies shall be to earn a total rate of return over a market cycle which exceeds the return on a market index approved by the Administration Committee and by the Board of Directors, when the duration of the portfolio is established. This market index is more fully described in Board Resolution No. OC SAN 21-XX (see Appendix "B").

16.3 **The Long Term Operating Monies.** The investment performance objective for the Long Term Operating Monies shall be to earn a total rate of return over a market cycle which exceeds the return on a market index selected by the Administration Committee and approved by the Board of Directors, when the duration of the portfolio is established. This market index is more fully described in Board Resolution No. OC SAN 21-XX (See Appendix "B").

17.0 **Reporting:**

17.1 Monthly transaction reports in accordance with California Government Code Section 53607 shall be submitted by the Treasurer to the Board of Directors.

17.2 Quarterly investment reports will be submitted by the Treasurer to the Administration Committee which shall forward the reports to the Board of Directors. The quarterly reports shall provide clear and concise status

information on OC San's portfolios at the end of each reporting period, including performance measures using the benchmarks described in Section 16.0 of this Investment Policy. These reports shall contain listings of individual securities held at the end of each reporting period, and shall disclose, at a minimum, the following information about the risk characteristics of OC San's portfolio:

- 17.2.1 Cost and accurate and complete market value of the portfolio.
 - 17.2.2 Modified duration of the portfolio compared to Benchmark.
 - 17.2.3 Dollar change in value of the portfolio for a one percent (1%) change in interest rates.
 - 17.2.4 Percent of portfolio invested in reverse repurchase agreements, and a schedule which matches the maturity of such reverse repurchase agreements with the cash flows which are available to repay them at maturity.
 - 17.2.5 For the Liquid Operating Monies account only, the percent of portfolio maturing within 90 days.
 - 17.2.6 Average portfolio credit quality.
 - 17.2.7 Percent of portfolio with credit ratings below "A" by any rating agency, and a description of such securities.
 - 17.2.8 State that all investments are in compliance with this policy and the California Government Code or provide a listing of any transactions or holdings which do not comply with this policy or with the California Government Code.
 - 17.2.9 Time-weighted total rate of return for the portfolio for the prior three months, twelve months, year to date, and since inception compared to the Benchmark returns for the same periods.
 - 17.2.10 State that sufficient funds are available for OC San to meet its operating expenditure requirements for the next six months, or if not, state the reasons for the shortfall.
- 17.3 OC San's Treasurer shall meet quarterly with the Administration Committee to review investment performance, proposed strategies, and compliance with this Investment Policy. External investment advisors may be required to attend said meetings at the discretion of the Chairman of the Administration Committee.

18.0 **Investment Policy Adoption and Revision:**

- 18.1 The Investment Policy of OC San shall be adopted by resolution of the Board of Directors. The Investment Policy shall be reviewed on an annual basis in accordance with California Government Code Section 53646, by the Administration Committee, which shall recommend revisions, as appropriate, to the Board of Directors. Any modifications made thereto shall be approved by the Board of Directors.

- 18.2 The Administration Committee shall serve as the oversight committee for OC San's Investment program and shall adopt guidelines for the ongoing review of duration, quality and liquidity of OC San's portfolio.

ORANGE COUNTY SANITATION DISTRICT

INVESTMENT POLICY STATEMENT

1.0 **Policy:**

It is the policy of the Orange County Sanitation District (~~OC SanSanitation-District~~) to invest public funds in a manner which ensures the safety and preservation of capital while meeting reasonably anticipated operating expenditure needs, achieving a reasonable rate of return and conforming to all state and local statutes governing the investment of public funds.

1.1. This Investment Policy is set forth by ~~OC Santhe-Sanitation-District~~ for the following purposes:

1.1.1. To establish a clear understanding for the Board of Directors, ~~OC SanSanitation-District~~ management, responsible employees, and third parties of the objectives, policies, and guidelines for the investment of ~~OC Santhe-Sanitation-District's~~ idle and surplus funds.

1.1.2. To offer guidance to investment staff and any external investment advisors on the investment of ~~OC SanSanitation-District~~ funds.

1.1.3. To establish a basis for evaluating investment results.

1.2. ~~OC SanThe-Sanitation-District~~ establishes investment policies which meet its current investment goals. ~~-OC SanThe-Sanitation-District~~ shall review this policy annually and may change its policies as its investment objectives change.

2.0 **Scope:**

This Investment Policy applies to all financial assets of ~~OC Santhe-Sanitation-District~~; except for the proceeds of ~~OC Santhe-Sanitation-District's~~ capital projects financing program, which are invested in accordance with provisions of their specific bond indentures; and such other funds excluded by law or other Board-approved covenant or agreement.

These funds are accounted for by ~~OC Santhe-Sanitation-District~~ as Enterprise Funds as represented in ~~OC Santhe-Sanitation-District's~~ Annual Comprehensive ~~Annual~~ Financial Report.

3.0 **Standard of Prudence:**

The standard of prudence to be used by ~~OC SanSanitation-District~~ internal staff, and any authorized investment advisor(s), shall be as described in Section 53600.3 of the California Government Code as follows: Except as provided in subdivision (a) of Section 27000.3, ~~-~~all governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds pursuant

to this chapter are trustees and therefore fiduciaries subject to the **prudent investor** standard.- When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of the agency, that a **prudent person** acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency.-Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law.

4.0 **Investment Objectives:**

The primary objectives of ~~OC Santhe Sanitation District~~'s investment activities, in priority order, and as described in Section 53600.5 of the California Government Code, shall be:

- 4.1 **Safety:** The safety and preservation of principal is the foremost objective of the investment program of ~~OC Santhe Sanitation District~~. -Investments shall be selected in a manner that seeks to ensure the preservation of capital in ~~OC Santhe Sanitation District~~'s overall portfolio. -This will be accomplished through a program of diversification, more fully described in Section 13.0, and maturity limitations, more fully described in Section 14.0, in order that potential losses on individual securities do not exceed the income generated from the remainder of the portfolio.
- 4.2 **Liquidity:** The investment program will be administered in a manner that will ensure that sufficient funds are available for ~~OC Santhe Sanitation District~~ to meet its reasonably anticipated operating expenditure needs.
- 4.3 **Return on Investments:** The ~~OC SanSanitation District~~ investment portfolio will be structured and managed with the objective of achieving a market rate of return throughout budgetary and economic cycles, commensurate with legal, safety, and liquidity considerations.

5.0 **Delegation of Authority:**

- 5.1 Authority to manage ~~OC Santhe Sanitation District~~'s investment program is derived from the California Government Code Sections 53600 *et seq.* and Sections 53635 *et seq.* -The Board of Directors hereby delegates management responsibility for ~~OC Santhe Sanitation District~~'s investment program to its Assistant General Manager & Director of Finance and Administrative Services/Treasurer, who shall establish written procedures for the operation of the investment program, consistent with this Policy. -The Controller/Assistant Treasurer shall be responsible for day-to-day administration, monitoring, and the development of written administrative procedures for the operation of the investment program, consistent with this Policy. -No person may engage in an investment transaction except as provided under the terms of this Policy and the procedures established by the Treasurer. -The Treasurer shall be responsible for all transactions

undertaken by ~~OC SanSanitation-District~~ internal staff and shall establish a system of controls to regulate the activities of internal staff and external investment advisors engaged in accordance with Section 5.3.

5.2 The administrative procedures for the operation of ~~OC Santhe-Sanitation District~~'s investment program will provide for, but not be limited to, the following:

5.2.1 Formats for monthly and quarterly reports to the Administration Committee and the Board of Directors.

5.2.2 Compliance with generally accepted accounting principles of the Government Accounting Standards Board.

5.2.3 Establishment of benchmarks for performance measurement.

5.2.4 Establishment of a system of written internal controls.

5.2.5 Establishment of written procedures for competitive bids and offerings of securities that may be purchased or sold by internal ~~OC SanSanitation-District~~ staff.

5.2.6 Establishment of a Desk Procedures Manual for treasury operations and management.

5.3 The Board of Directors may, in its discretion, engage the services of one or more registered investment advisors to assist in the management of ~~OC Santhe-Sanitation-District~~'s investment portfolio in a manner consistent with ~~OC Santhe-Sanitation-District~~'s objectives. -Such external investment advisors, which shall be selected through a competitive process, shall be granted discretion to purchase and sell investment securities in accordance with this Investment Policy. -Such advisors must be registered under the Investment Advisers Act of 1940 or be exempt from such registration.

6.0 **Ethics and Conflicts of Interest:**

Officers and employees of ~~OC Santhe-Sanitation-District~~ involved in the investment process shall refrain from personal business activities that could conflict with proper execution of ~~OC Santhe-Sanitation-District~~'s investment program, or which could impair their ability to make impartial investment decisions. -Employees and investment officials shall disclose to the General Manager any material financial interests in financial institutions that conduct business within ~~OC Santhe-Sanitation-District~~'s boundaries, and they shall further disclose any large personal financial/investment positions, the performance of which could be related to the performance of positions in ~~OC Santhe Sanitation-District~~'s portfolio.

7.0 **Authorized Financial Dealers and Institutions:**

7.1 For investment transactions conducted by ~~OC SanSanitation-District~~

internal staff, the Treasurer will maintain a list of financial institutions authorized to provide investment services to ~~OC Santhe Sanitation District~~, including "primary" or regional dealers that qualify under Securities and Exchange Commission Rule 15C3-1 (Uniform Net Capital rule); and Federal or State of California chartered banks. -No public deposit shall be made except in a qualified public depository as established by State law.

All financial institutions which desire to become qualified bidders for investment transactions with ~~OC Santhe Sanitation District~~ must supply the following for evaluation by the Treasurer:

7.1.1. Audited financial statements for the institution's three (3) most recent fiscal years.

7.1.2. A statement, in the format prescribed by the Government Finance Officers Association (GFOA), certifying that the institution has reviewed ~~OC Santhe Sanitation District~~'s Investment Policy and that all securities offered to ~~OC Santhe Sanitation District~~ shall comply fully and in every instance with all provisions of the California Government Code and with this Investment Policy. -The current statement is presented in Appendix "A."

7.1.3. A statement describing the regulatory status of the dealer, and the background and expertise of the dealer's representatives.

Selection of financial institutions, broker/dealers, and banks authorized to engage in transactions with ~~OC Santhe Sanitation District~~ shall be made through a competitive process. -An annual review of the financial condition of qualified institutions will be conducted by the Treasurer.

7.2 Selection of broker/dealers used by external investment advisors retained by ~~OC Santhe Sanitation District~~, shall be in compliance with contract provisions between ~~OC Santhe Sanitation District~~ and any external investment advisors, and shall be in substantially the following form:

Use of Securities Brokers: Neither the Investment Advisor nor any parent, subsidiary or related firm shall act as a securities broker with respect to any purchases or sales of securities which may be made on behalf of ~~OC Santhe Sanitation District~~, provided that this limitation shall not prevent the Investment Advisor from utilizing the services of a securities broker which is a parent, subsidiary or related firm, provided such broker effects transactions on a "cost only" or "nonprofit" basis to itself and provides competitive execution. -The Investment Advisor shall provide ~~OC Santhe Sanitation District~~ with a list of suitable independent brokerage firms (including names and addresses) meeting the requirements of Government Code Section 53601.5, and, unless otherwise directed by ~~OC Santhe Sanitation District~~, the Investment Advisor may utilize the service of any of

such independent securities brokerage firms it deems appropriate to the extent that such firms are competitive with respect to price of services and execution.

8.0 **Authorized and Suitable Investments:**

All investments shall be made in accordance with the California Government Code including Sections 16429.1 *et seq.*, 53600 *et seq.*, and 53684, and as described within this Investment Policy. -Permitted investments under this Policy shall include:

- 8.1 **Securities, obligations, participations, or other instruments of, or issued by, or fully guaranteed as to principal and interest by the US Government,** a federal agency, or a US Government-sponsored enterprise pursuant to Section 53601 (f) of the California Government Code. -US Treasury securities must make up at least 10% of the portfolio.
- 8.2 **Supranational Obligations** issued or unconditionally guaranteed by the International Bank for Reconstruction and Development, International Finance Corporation, or Inter-American Development Bank. -Securities must be eligible for purchase in the United States and be US dollar denominated senior unsecured unsubordinated obligations, with a maximum maturity of five years. -Securities eligible for purchase under this section must be rated "AA" or better by a Nationally Recognized Statistical Rating Organization (NRSRO) and shall not exceed 30% of the total portfolio.
- 8.3 **Mortgage pass-through security, collateralized mortgage obligation, mortgage-backed or other pay-through bond, equipment lease-backed certificate, consumer receivable pass-through certificate, or consumer receivable-backed bond.** -Securities eligible for investment under this subdivision shall be rated in a rating category of "AA" or its equivalent or better by an NRSRO and have a maximum remaining maturity of five years or less. -Purchase of securities authorized by this subdivision may not exceed 20 percent of the agency's surplus moneys that may be invested pursuant to this section. -Purchase of mortgage derivatives, which include interest-only payments (IOs) and principal-only payments (POs); inverse floaters, and RE-REMICs (Real Estate Mortgage Investment Conduits), is hereby prohibited.
- 8.4 **Commercial paper** of "prime" quality of the highest ranking or of the highest letter and number rating as provided by an NRSRO, and issued by a domestic corporation organized and operating in the United States with assets in excess of \$500 million and having a rating of "A" or better on its long-term debt as provided by an NRSRO. -Purchases of eligible commercial paper may not exceed 270 days to maturity from the date of purchase. -Purchases of commercial paper shall not exceed 40% of the market value of the portfolio. -No more than 5% of the market value of the portfolio, or 10% of the issuer's outstanding paper, may be invested in

commercial paper issued by any one (1) eligible corporation.

8.5 Banker's acceptances issued by institutions, the short-term obligations of which are rated of the highest ranking or the highest letter and number rating as provided by an NRSRO provided that: (a) the acceptance is eligible for purchase by the Federal Reserve System; (b) the maturity does not exceed 180 days; (c) no more than 40% of the total portfolio may be invested in banker's acceptances; and (d) no more than 5% of the total portfolio may be invested in the banker's acceptances of any one (1) commercial bank.

~~8.5~~

8.6 Medium term (or corporate) notes of a maximum of five (5) years maturity issued by corporations organized and operating within the United States, or issued by depository institutions licensed by the United States, or any state, and operating within the United States with assets in excess of \$500 million, and which is rated in a rating category of "A" or better on its long-term debt as provided by an NRSRO. -If, after purchase, the rating of an eligible note falls below the minimum rating category stipulated above, the external investment advisor shall notify ~~OC Santhe Sanitation District~~ of the downgrade, and shall present an analysis and recommendations as to the disposition of the note consistent with the investment objectives of this Investment Policy. -No more than 30% of the portfolio may be invested in medium term notes.

8.7 Notes, bonds, or other obligations that are at all times secured by a valid first priority security interest in securities of the types listed by California Government Code Section 53651 as eligible securities for the purpose of securing local agency deposits having a market value at least equal to that required by California Government Code Section 53652 for the purpose of securing local agency deposits. -The securities serving as collateral shall be placed by delivery or book entry into the custody of a trust company or the trust department of a bank that is not affiliated with the issuer of the secured obligation, and the security interest shall be perfected in accordance with the requirements of the Uniform Commercial Code or federal regulations applicable to the types of securities in which the security interest is granted.

8.8 Shares of mutual funds investing in securities permitted under this policy and under Section 53601 (l) of the California Government Code. -Such funds must either: (1) attain the highest ranking, or the highest letter and numerical rating, provided by not less than two of the three largest nationally recognized rating services; or (2) have an Investment Advisor registered with the Securities and Exchange Commission with not less than five (5) years of experience investing in the securities and obligations authorized under this Policy and under California Government Code Section 53601, and with assets under management in excess of \$500 million. -The purchase price of shares of beneficial interest purchased pursuant to this policy, and the California Government Code may not include any

commission that the companies may charge, and shall not exceed 20% of ~~OC Santhe Sanitation District~~'s surplus money that may be invested pursuant to this section. -No more than 10% of ~~OC Santhe Sanitation District~~'s surplus funds may be invested in shares of beneficial interest of any one (1) mutual fund pursuant to this section. -Money market mutual funds are limited to 20% per issuer and are not subject to the 10% stipulation.

8.9 Certificates of deposit:

8.9.1 **Secured (collateralized) time deposits** issued by a nationally or state-chartered bank or state or federal savings and loan association, as defined by Section 5102 of the California Financial Code, and having a net operating profit in the two (2) most recently completed fiscal years. Collateral must comply with Chapter 4, Bank Deposit Law, Section 16500 *et seq.*, and Chapter 4.5, Savings and Loan Association and Credit Union Deposit Law, Section 16600 *et seq.*, of the California Government Code.

8.9.2 **Negotiable certificates of deposit (NCDs)** issued by a nationally or state-chartered bank or state of federal savings and loan association, as defined by Section 5102 of the California Financial Code; *and* which shall have a rating of "A" or better on its long-term debt as provided by a NRSRO; or which shall have the highest letter and number rating for deposits as provided by a NRSRO; or as otherwise approved by the Board of Directors. No more than 30% of the portfolio may be invested in securities pursuant to this section.

8.9.3 To be eligible to receive local agency money, a bank, savings association, federal association, or federally insured individual loan company shall have received an overall rating of not less than "satisfactory" in its most recent evaluation by the appropriate federal financial supervisory agency of its record of meeting the credit needs of California's communities, including low and moderate income neighborhoods, pursuant to Section 2906 of Title 12 of the United States Code.

8.10 **Taxable or tax-exempt municipal bonds** issued by any of the 50 United States. -Such securities must be rated "A" or higher by a NRSRO; or as otherwise approved by the Board of Directors.

8.11 **The State of California Local Agency Investment Fund (LAIF).** ~~The~~ LAIF is an investment alternative for California's local governments and special districts managed by the State Treasurer's Office. -LAIF is more fully described in the Glossary (See Appendix "C"). ~~OC Santhe Sanitation District~~ shall use LAIF as a short-term cash management facility. Investment of ~~OC SanSanitation District~~ funds in LAIF shall be subject to investigation and due diligence prior to investing, and on a continual basis to a level of review pursuant to Section 3.0, Standard of Prudence, of this Policy.

8.12 **The Orange County Treasurer's Money Market Commingled Investment Pool (OCCIP).** -The OCCIP is a money market investment pool managed by the Orange County Treasurer's Office. -OCCIP is more fully described in the Glossary (See Appendix "C"). ~~-The Sanitation District~~OC San has no funds invested in OCCIP at this time. -Investment of OC San~~Sanitation District~~ funds in OCCIP would be subject to investigation and due diligence prior to investing, and on a continual basis to a level of review pursuant to Section 3.0, Standard of Prudence, of this Policy.

8.13 **Repurchase agreements** provided that:

8.13.1 All repurchase agreements shall be collateralized with securities eligible for purchase under this Policy. -In order to anticipate market changes and to provide a level of security for all repurchase agreement transactions, collateralization shall be maintained at a level of at least 102% of the market

-value of the repurchase agreements and shall be adjusted no less than weekly.

8.13.2 All repurchase agreements must be the subject of a Master Repurchase Agreement between OC San~~the Sanitation District~~ and the provider of the repurchase agreement. -The Master Repurchase Agreement shall be substantially in the form developed by ~~t~~The Securities Industry and Financial Markets Association~~Bond Market Association~~.

8.14 **Reverse repurchase agreements** provided that:

8.14.1 No more than five percent (5%) of OC San~~the Sanitation District~~'s portfolio shall be invested in reverse repurchase agreements, and there shall be no long-term reverse repurchase agreements unless otherwise authorized by the Board of Directors.

8.14.2 The maximum maturity of reverse repurchase agreements shall be ninety (90) days.

8.14.3 Reverse repurchase agreements shall mature on the exact date of a known cash flow which will be unconditionally available to repay the maturing reverse repurchase agreement.

8.14.4 Proceeds of reverse repurchase agreements shall be used solely to supplement portfolio income or to provide portfolio liquidity and shall not be used to speculate on market movements.

8.14.5 All reverse repurchase agreements must be the subject of a

Master Repurchase Agreement between ~~OC Santhe Sanitation District~~ and the provider of the reverse repurchase agreement. -The Master Repurchase Agreement shall be substantially in the form developed by ~~tThe Securities Industry and Financial Markets Association. Bond Market Association.~~

8.15 **Public Bank Obligations** of a maximum of five (5) years maturity which includes commercial paper, debt securities, or other obligations of a public bank, a public bank as defined in California Government Code Section 57600-57607.

8.16 Sales of ~~OC SanSanitation District~~-owned securities in the secondary market may incur losses in order to improve the risk or return characteristics of the portfolio, to prevent anticipated further erosion of principal, or when trading for securities that result in an expected net economic gain to ~~OC Santhe Sanitation District~~.

8.17 If securities owned by ~~OC Santhe Sanitation District~~ are downgraded below the quality required by this Investment Policy, it shall be ~~OC Santhe Sanitation District~~'s policy to review the credit situation and make a determination as to whether to sell or retain such securities in the portfolio. If a decision is made to retain the downgraded securities in the portfolio, their presence in the portfolio will be monitored

_____ and reported quarterly to the ~~Sanitation District~~~~OC San~~ General Manager, the Administration Committee, and Board of Directors.

8.18 ~~OC SanThe Sanitation District~~ is authorized to invest in securities issued by or backed by the United States Government that could result in zero or negative interest accrual if held to maturity.

9.0 **Review of Investment Portfolio:**

The securities held by ~~OC Santhe Sanitation District~~ must be in compliance with Section 8.0 "Authorized and Suitable Investments" at time of purchase. -If at a later date, a security is no longer in compliance with Section 8.0, the Treasurer shall report the non-compliant security to the Administration Committee and the Board of Directors and shall include a disclosure in the quarterly Treasurer's Report if the security is held at the date the report is prepared.

10.0 **Investment Pools/Mutual Funds:**

A thorough investigation of the pool/fund is required prior to investing, and on a continual basis. -A questionnaire shall be developed that will provide the following information:

10.1 A description of eligible investment securities, and a written statement of investment policy and objectives.

10.2 A description of interest calculations and how they are distributed, and how gains and losses are treated.

- 10.3 A description of how the securities are safeguarded (including the settlement processes) and how often the securities are priced and the program audited.
- 10.4 A description of who may invest in the program, how often, and what size deposits and withdrawals are allowed.
- 10.5 A schedule for receiving statements and portfolio listings.
- 10.6 A description of the utilization and level of reserves, retained earnings or other collateral and how they are used by the fund.
- 10.7 A fee schedule, and when and how is it assessed.
- 10.8 Whether the pool/fund is eligible for bond proceeds and/or whether it will accept such proceeds.

11.0 Collateralization:

Generally, the value to secure deposits under this Policy shall comply with Section 53652 of the California Government Code. ~~Collateralization will be required for secured time deposits, as more fully described in Section 8.9.1; and repurchase agreements, as more fully described in Section 8.13.1. Collateral will always be held by an independent third-party, as more fully described in Section 12.0. The right of collateral substitution is granted. Under provisions of the California Government Code, California banks and savings and loans associations are required to secure OC Santhe Sanitation District's deposits by pledging government securities with a value of 110% of principal and accrued interest. State law also allows financial institutions to secure OC Santhe Sanitation District's deposits by pledging first trust deed mortgage notes having a value of 150% of OC Santhe Sanitation District's total deposits.~~

12.0 Safekeeping and Custody:

All securities transactions, including collateral for repurchase agreements, entered into by, or on behalf of OC Santhe Sanitation District, shall be conducted on a **delivery-versus-payment (DVP)** basis. ~~Securities will be held by OC Santhe Sanitation District's third-party custodian bank, which shall be selected through a competitive process, or that agent's representative, or in the agent's account at the Federal Reserve Bank, *or within clearing corporations in the U.S.*, and evidenced by book entry statements. Third-party safekeeping arrangements will be approved by the Treasurer and will be corroborated by a written custodial agreement.~~

13.0 Diversification:

~~OC SanThe Sanitation District will diversify its investments by security type, issuer, and financial institution in accordance with the following:~~

- 13.1 There is no limit on investment in securities issued by or guaranteed by the full faith and credit of the U.S. government.
- 13.2 No more than 20% of the portfolio may be invested in securities of a single agency of the U.S. government, which does not provide the full faith and credit of the U.S. government.
- 13.3 No more than 5% of the portfolio may be invested in securities of any one issuer, other than Supranationals, the U.S. government or its agencies. Investment in mutual funds is not governed by this Section 13.3. -See Section 13.8 for conditions of purchase of mutual funds.
- 13.4 No individual holding shall constitute more than 5% of the total debt outstanding of any issuer.
- 13.5 No more than 40% of the portfolio may be invested in banker's acceptances.
- 13.6 No more than 40% of the portfolio may be invested in commercial paper.
- 13.7 No more than 30% of the portfolio may be invested in medium-term (corporate) notes.
- 13.8 No more than 20% of the portfolio may be invested in mutual funds. -No more than 10% of ~~OC Santhe Sanitation District~~'s portfolio may be invested in shares of beneficial interest of any one (1) mutual fund. -Money market mutual funds are limited to 20% per issuer and are not subject to the 10% stipulation.
- 13.9 No more than 30% of the portfolio may be invested in negotiable certificates of deposit.
- 13.10 No more than 10% of the portfolio may be invested in eligible municipal bonds.
- 13.11 No more than 20% of the Long Term Operating Monies portfolio may be invested in a combination of mortgage-backed securities, CMOs and asset-backed securities.
- 13.12 No more than the statutory maximum may be invested in LAIF.
- 13.13 No more than 15% of the portfolio may be invested in the Orange County Investment Pool.
- 13.14 No more than 20% of the portfolio may be invested in repurchase agreements.
- 13.15 No more than 5% of the portfolio may be invested in reverse repurchase

agreements.

14.0 **Maximum Maturities:**

To the extent possible, ~~OC Santhe Sanitation District~~ will attempt to match its investments with reasonably anticipated cash flow requirements. -The Treasurer shall develop a five-year cash flow forecast, which shall be updated quarterly. -Based on this forecast, the Treasurer shall designate, from time-to-time, the amounts to be allocated to the investment portfolio. -~~OC Santhe Sanitation District~~ monies invested in accordance with this Policy are divided into two (2) categories:

14.1 **Liquid Operating Monies.** -Funds needed for current operating and capital expenditures are known as Liquid Operating Monies.

14.1.1 The maximum final stated maturity of individual securities in the Liquid Operating Monies account portfolio shall be one (1) year from the date of settlement.

14.1.2 The average duration of the Liquid Operating Monies account portfolio shall be recommended by the Treasurer based on ~~OC Santhe Sanitation District~~'s cash flow requirements but may never exceed 180 days.

14.2 **Long Term Operating Monies.** -Funds needed for longer term purposes are known as the Long Term Operating Monies.

14.2.1 The maximum final stated maturity of individual securities in the Long Term Operating Monies account portfolio shall be five (5) years from the date of settlement.

14.2.2 The duration of the Long Term Operating Monies account portfolio shall be recommended by the Treasurer based on ~~OC Santhe Sanitation District~~'s five-year cash flow forecast but may never exceed 60 months.

14.2.3 The duration of the Long Term Operating Monies account portfolio shall never exceed 120% of the duration as established in accordance with Section 14.2.2.

14.2.4 The duration of the Long Term Operating Monies account portfolio shall never be less than 80% of the duration as established in accordance with Section 14.2.2.

15.0 Internal Control:

The Treasurer shall establish an annual process of independent review by an external auditor. -This review will provide internal control by assuring compliance with policies and procedures.

16.0 Performance Objectives and Benchmarks:

16.1 **Overall objective.** -The investment portfolio of ~~OC Santhe Sanitation District~~ shall be designed with the overall objective of obtaining a rate of return throughout budgetary and economic cycles, commensurate with investment risk constraints and reasonably anticipated cash flow needs.

16.2 **The Liquid Operating Monies.** -The investment performance objective for the Liquid Operating Monies shall be to earn a total rate of return over a market cycle which exceeds the return on a market index approved by the Administration Committee and by the Board of Directors, when the duration of the portfolio is established. -This market index is more fully described in Board Resolution No. OC_~~SAN~~~~D~~ 210-XX (see Appendix "B").

16.3 **The Long Term Operating Monies.** -The investment performance objective for the Long Term Operating Monies shall be to earn a total rate of return over a market cycle which exceeds the return on a market index selected by the Administration Committee and approved by the Board of Directors, when the duration of the portfolio is established. -This market index is more fully described in Board Resolution No. OC_~~SAN~~~~D~~ 210-XX (See Appendix "B").

17.0 Reporting:

17.1 Monthly transaction reports in accordance with California Government Code Section 53607 shall be submitted by the Treasurer to the Board of Directors.

17.2 Quarterly investment reports will be submitted by the Treasurer to the Administration Committee which shall forward the reports to the Board of Directors. -The quarterly reports shall provide clear and concise status information on ~~OC Santhe Sanitation District~~'s portfolios at the end of each reporting period, including performance measures using the benchmarks described in Section 16.0 of this Investment Policy. -These reports shall contain listings of individual securities held at the end of each reporting period, and shall disclose, at a minimum, the following information about the risk characteristics of ~~OC Santhe Sanitation District~~'s portfolio:

17.2.1 Cost and accurate and complete market value of the portfolio.

17.2.2 Modified duration of the portfolio compared to Benchmark.

17.2.3 Dollar change in value of the portfolio for a one percent (1%) change in interest rates.

17.2.4 Percent of portfolio invested in reverse repurchase agreements, and a schedule which matches the maturity of such reverse repurchase agreements with the cash flows which are available to repay them at maturity.

17.2.5 For the Liquid Operating Monies account only, the percent of portfolio maturing within 90 days.

17.2.6 Average portfolio credit quality.

17.2.7 Percent of portfolio with credit ratings below "A" by any rating agency, and a description of such securities.

17.2.8 State that all investments are in compliance with this policy and the California Government Code or provide a listing of any transactions or holdings which do not comply with this policy or with the California Government Code.

17.2.9 Time-weighted total rate of return for the portfolio for the prior three months, twelve months, year to date, and since inception compared to the Benchmark returns for the same periods.

17.2.10 State that sufficient funds are available for OC Santhe Sanitation to meet its operating expenditure requirements for the next six months, or if not, state the reasons for the shortfall.

17.3 OC SanThe Sanitation District's Treasurer shall meet quarterly with the Administration Committee to review investment performance, proposed strategies, and compliance with this Investment Policy. —External investment advisors may be required to attend said meetings at the discretion of the Chairman of the Administration Committee.

18.0 **Investment Policy Adoption and Revision:**

18.1 The Investment Policy of OC Santhe Sanitation District shall be adopted by resolution of the Board of Directors. —The Investment Policy shall be reviewed on an annual basis in accordance with California Government Code Section 53646, by the Administration Committee, which shall recommend revisions, as appropriate, to the Board of Directors. —Any modifications made thereto shall be approved by the Board of Directors.

18.2 The Administration Committee shall serve as the oversight committee for OC Santhe Sanitation District's Investment program and shall adopt

guidelines for the ongoing review of duration, quality, and liquidity of OC
~~Santhe Sanitation District~~'s portfolio.

RESOLUTION NO. OC SAN 21-XX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT AUTHORIZING THE ORANGE COUNTY SANITATION DISTRICT'S TREASURER TO INVEST AND/OR REINVEST THE ORANGE COUNTY SANITATION DISTRICT'S FUNDS, ADOPTING THE ORANGE COUNTY SANITATION DISTRICT'S INVESTMENT POLICY STATEMENT AND PERFORMANCE BENCHMARKS, AND REPEALING RESOLUTION NO. OCSD 20-13

WHEREAS, on December 16, 2020, the Board of Directors adopted Resolution No. 20-13, readopting the Orange County Sanitation District's Investment Policy Statement, and establishing specific performance benchmarks and objectives, together with a schedule of frequency of investment performance reports; and

WHEREAS, pursuant to California Government Code Section 53607, the Board of Directors may delegate authority to invest and/or reinvest the Orange County Sanitation District's funds to the Treasurer for a one-year period; and

WHEREAS, pursuant to California Government Code Section 53646, the Orange County Sanitation District is required to review its Investment Policy annually and readopt its Policy at a public meeting, which Policy will establish specific performance benchmarks and objectives, and specific monitoring and reports.

NOW, THEREFORE, the Board of Directors of the Orange County Sanitation District, DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1: That the authority of the Board of Directors to invest or reinvest surplus funds, or to sell or exchange securities so purchased, or to deposit for safekeeping the funds and investments of the Orange County Sanitation District with depositories, as provided for in California Government Code Sections 53608 and 53630, is hereby delegated to the Orange County Sanitation District's Treasurer for a one-year period, January 1, 2022 through December 31, 2022, as authorized by California Government Code Section 53607.

Section 2: That the Board of Directors hereby adopts the Investment Policy Statement of the Orange County Sanitation District.

Section 3: That the Board of Directors hereby adopts the following specific performance benchmarks for their two investment funds in accordance with Section 16.0 of the Orange County Sanitation District's Investment Policy:

LIQUID OPERATING MONIES: The Short-Term Operating Fund will be compared to the three-month Bank of America Merrill Lynch T-Bill Index and the Callan Money Market Funds.

LONG-TERM OPERATING MONIES: The Long-Term Operating Fund will be compared to the Bank of America Merrill Lynch Corporate and Government One-to-Five Year Maturity Index and to the Callan Short Term Fixed Income Group.

Section 4: That the Board of Directors hereby adopts a performance monitoring and reporting schedule, as required by Section 17.0 of the Orange County Sanitation District's Investment Policy.

Section 5: That Resolution No. OCSD 20-13 is hereby repealed.

PASSED AND ADOPTED at regular meeting of the Board of Directors, Orange County Sanitation District held December 15, 2021.

John B. Withers
Board Chairman

ATTEST:

Kelly A. Lore, MMC
Clerk of the Board

STATE OF CALIFORNIA)
) ss
COUNTY OF ORANGE)

I, Kelly A. Lore, Clerk of the Board of Directors of the Orange County Sanitation District, do hereby certify that the foregoing Resolution No. OC SAN 21-XX was passed and adopted at a regular meeting of said Board on the 15th day of December 2021, by the following vote, to wit:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of Orange County Sanitation District this 15th day of December 2021.

Kelly A. Lore, MMC
Clerk of the Board of Directors
Orange County Sanitation District



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1909

Agenda Date: 12/8/2021

Agenda Item No: 5.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

ADOPT ORANGE COUNTY SANITATION DISTRICT’S DEBT POLICY

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

Adopt Resolution No. OC SAN 21-XX, entitled: “A Resolution of the Board of Directors of the Orange County Sanitation District Adopting the Orange County Sanitation District’s Debt Policy and Repealing Resolution No. OCSD 20-12”.

BACKGROUND

As there were no significant changes in State law governing Orange County Sanitation District’s (OC San) ability to issuance debt, changes to the OC San Debt Policy are only administrative. The OC San Debt Policy sets forth the parameters for issuing debt and managing outstanding debt and provides guidance to decision makers regarding the timing and purposes for which debt may be issued, types and amounts of permissible debt, methods of sale that may be used, and structural features that may be incorporated. The debt policy should recognize a binding commitment to full and timely repayment of all debt as an intrinsic requirement for entry into the capital markets. The goals of a debt policy are to ensure that a government maintains a sound debt position and that credit quality is protected.

California Government Code Section 8855(i) requires any issuer of public debt to provide to the California Debt and Investment Advisory Commission (CDIAC) a report of any proposed debt issuances. Issuers must certify on the Report of the Proposed Debt Issuance that they have adopted local debt policies concerning the use of debt and that the proposed debt issuance is consistent with those policies, specifically an updated debt policy. Staff has reviewed and updated the attached Debt Policy and there are no material changes to the Debt Policy or its structure.

RELEVANT STANDARDS

- Comply with OC San Policy: OC San Debt Policy
- California Government Code Section 8855(i)
- Easy access to low cost credit

PROBLEM

Prior to any debt issuance (including debt refunding), issuers must certify on CDIA's Report of the Proposed Debt Issuance that they have adopted local debt policies concerning the use of debt and that the proposed debt issuance is consistent with those policies, specifically an updated debt policy.

PROPOSED SOLUTION

Staff has reviewed and updated OC San's Debt Policy.

TIMING CONCERNS

A portion of OC San's Wastewater Refunding Revenue Obligations Series 2012A and Series 2012B are subject to optional redemption on February 1, 2022 in the amount of \$107,315,000. OC San must update its Debt Policy prior to completing any debt issuance (including debt refunding).

RAMIFICATIONS OF NOT TAKING ACTION

Not taking action will result in OC San not being able to have the option to take advantage of the opportunity to refinance old debt in a low interest rate environment.

PRIOR COMMITTEE/BOARD ACTIONS

December 2020 - The Board adopted Resolution No. OCSD 20-12, entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District Adopting the Orange County Sanitation District's Debt Policy and Repealing Resolution No. OCSD 18-16".

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Orange County Sanitation District Debt Policy (Clean)
- Orange County Sanitation District Debt Policy (Redline)
- Proposed Resolution No. OC SAN 21-XX

FINANCIAL MANAGEMENT POLICY AND PROCEDURE

Subject: Debt Policy	Index: Finance Administration Number: 201-3-1
Effective Date: December 15, 2021	Prepared by: Financial Management Division
Supersedes: December 16, 2020	Approved By: Board of Directors

1.0 **PURPOSE:**

The foundation of any well-managed debt program is a comprehensive debt policy. A debt policy sets forth the parameters for issuing debt and managing outstanding debt and provides guidance to decision makers regarding the timing and purposes for which debt may be issued, types and amounts of permissible debt, methods of sale that may be used and structural features that may be incorporated. The debt policy should recognize a binding commitment to full and timely repayment of all debt as an intrinsic requirement for entry into the capital markets. The goals of a debt policy are to ensure that a government maintains a sound debt position, and that credit quality is protected, and is intended to comply with applicable California Government Code Sections prescribed by the California Debt and Investment Advisory Commission (CDIAC) to ensure all debt issuance is consistent with the Orange County Sanitation District's (OC San) debt policy and all the required reports are submitted to CDIAC on time.

2.0 **OBJECTIVES:**

Each debt issuance must accomplish the following objectives:

- a. Accelerate the delivery of projects. Debt financing allows the delivery of projects on an accelerated basis;
- b. Spread cost over the useful life of an asset. Debt financing allows OC San to spread the cost of a project over its useful life rather than paying for it at one time;
- c. Smooth out annual cash flow. Debt financing spreads the cost of a project over a period of years, thereby smoothing out OC San's cash flow;

- d. Optimize overall financial resources. To enable existing cash to be invested at a rate higher than the cost of borrowing;
- e. Refundings: It may become desirable for OC San to issue bonds or other securities to refinance outstanding obligations. The reasons for refinancing include:
 - i) To Achieve Debt Service Savings. In general, the net present value savings generated by the refunding bonds shall be at least 3% of the refunded bond amount.
 - ii) For Programmatic Reasons. Such as: restructuring outstanding debt, changing the type of debt instruments originally used, retiring a bond issue, removing covenants/pledges that have become restrictive, or retiring debt prior to maturity.
- f. The debt policy must be viewed as an integral component of its overall financial practices and in the context of OC San's capital-intensive expenditure plans. OC San's issuance of debt must be generally consistent with its planning goals, capital improvement programs and budget. OC San's financial practices, including the issuance of debt, must be designed to assure sufficient resources to fund all of its operating and capital requirements in all foreseeable circumstances.

Advantages of a debt policy are as follows:

- 1.1 enhances the quality of decisions by imposing order and discipline, and promotes consistency and continuity in decision making;
- 1.2 rationalizes the decision-making process;
- 1.3 identifies objectives for staff to implement;
- 1.4 demonstrates a commitment to long-term financial planning objectives;
- 1.5 is viewed positively by the rating agencies in reviewing credit quality;
- 1.6 minimizes debt service and issuance costs;
- 1.7 ensures full and timely repayment of debt;
- 1.8 maintains full and complete financial disclosures and reporting and adequate internal controls;
- 1.9 ensures use of debt is consistent with OC San's policies and the proceeds will be directed to the intended use;

3.0 **ORGANIZATIONS AFFECTED:**

General Manager's Department, Financial Management Division, General Counsel, bond rating agencies, municipal advisors, bond underwriters, bond counsel and external independent auditors.

4.0 **REFERENCES:**

4.1 Strategic Plan 2021

4.2 2017 Facilities Master Plan

4.3 Government Finance Officers Association's Best Practice on Debt Management Policy.

4.4 California Debt and Investment Advisory Commission's "Employing a Debt Management Policy – Practices Among California Local Agencies" (CDIAC No. 14.02)

5.0 **POLICY:**

5.1 Limitations on Indebtedness

5.1.1 OC San's debt capacity shall not exceed legal limitations such as coverage requirements or additional bonds tests imposed by existing bond covenants.

5.1.2 Before any new debt is issued, the impact of debt service payments on total annual fixed costs shall be analyzed. In accordance with existing COP indenture agreements, Net Operating Revenues must be at least a 1.25 coverage ratio to the maximum annual debt service.

5.1.3 OC San shall restrict long-term borrowing to capital improvements that provide long-term benefits to OC San.

5.1.4 Proceeds from long-term debt shall not be used for current on-going operations.

5.1.5 The decision to incur new indebtedness shall be integrated with the OC San's biennial Operating Budget and Capital Improvement Program Budget. The annual debt service payment shall be included in the Operating Budget.

5.1.6 OC San shall integrate its debt issuances with the goals of its Capital Improvement Program by timing the issuance of debt to ensure that funds for projects are available when needed.

5.2 Types of Debt

- 5.2.1 OC San may use short-term debt to cover temporary or emergency cash flow shortages. All short-term borrowing shall be subject to Board of Directors approval by resolution.
- 5.2.2 **Commercial Paper** – OC San may issue short-term debt in the form of Commercial Paper.
- 5.2.3 **Revenue Bonds** – OC San may issue as special obligations various types of revenue securities including notes, warrants, interim debentures, bonds and temporary bonds. Securities issued as special obligations do not constitute outstanding indebtedness of OC San nor do they exhaust its legal debt-incurring power. Bonding should be limited to projects with available revenue sources, whether self-generated or dedicated from other sources such as user fees. Adequate financing feasibility studies should be performed for each revenue issue. Sufficiency of revenues should continue throughout the life of the bonds.
- 5.2.4 **Certificates of Participation** – Certificates of participation are essentially leases which are sold to the public. The lease payments are subject to annual appropriation. Investors purchase certificates representing their participation in the lease. Often, equipment or facilities being acquired serve as collateral. These securities are most useful when other means to finance are not available under state law.
- 5.2.5 **Refundings** – A refunding is generally the underwriting of a new bond issue whose proceeds are used to redeem an outstanding issue.
- 5.2.5.1 Prior to beginning a refunding bond issue, OC San shall review and estimate the savings achievable from the refunding. OC San may also review a pro forma schedule estimating the savings assuming that the refunding is done at various points in the future. Following are the conditions under which OC San shall consider refunding outstanding bonds:
- 5.2.5.1.1 Net present value savings are at least three (3) percent of the par amount of the refunded bonds. Net present value savings of less than three (3) percent of refunded bonds are acceptable when compared to savings that could be achieved by waiting for more favorable interest rates and/or call premiums.

5.2.5.1.2 Net present value savings exceed the costs of issuing the bonds.

5.2.5.1.3 The bonds to be refunded have restrictive or outdated covenants.

5.2.5.1.4 Restructuring debt is deemed to be desirable.

5.3 Debt Structure

5.3.1 Debt shall be structured to achieve the lowest possible net overall cost to OC San balanced against potential risks given market conditions, the urgency of the capital program and the nature and type of security to be provided. Structuring options shall also consider available opportunities related to maximizing earnings and minimizing costs while complying with all Arbitrage federal tax regulations, including the timing of issuance and current market conditions.

5.3.2 The term of OC San debt issues shall not extend beyond the useful life of the project and generally shall not extend beyond 30 years unless there are compelling factors which make it necessary to extend the term further.

5.3.3 For the issuance of new money debt, OC San shall consider the appropriate amount to be sold based on the overall debt versus revenue funding targets as part of its long-term capital plan and prior to each issuance of new money debt.

5.3.4 New money debt issued by OC San shall be structured to provide for either level principal or level debt service on an individual issuance or aggregate debt service basis. Deferring the repayment of principal shall be avoided except in select instances where it will take a period of time before project revenues are sufficient to pay debt service. Ascending debt service shall generally be avoided.

5.3.4.1 OC San shall consider target financial ratios (including debt service coverage) and future financial flexibility when determining the structure of its new money debt.

5.3.5 **Variable Rate Obligations** – When appropriate, OC San may choose to issue variable rate obligations or securities that pay a rate of interest that varies according to a predetermined formula or results from a periodic remarketing or auction of the securities.

5.3.5.1 The maximum level of net variable rate obligations incurred shall not exceed 150% of the level of available

invested reserves. The percentage is intended to reflect the inherent relationship between taxable and tax-exempt interest rates based on the highest marginal federal income tax rate. Such percentage should be adjusted as the highest marginal federal income tax changes.

5.4 Credit Objectives

5.4.1 OC San's goal is to maintain or improve its bond ratings. To that end, prudent financial management policies shall be adhered to in all areas.

5.4.1.1 OC San shall monitor its current and projected key financial ratios (e.g., debt service coverage, debt-to-equity, net floating rate exposure, reserve level) in comparison to those of other similar municipal entities. These ratios shall be updated and compared prior to the issuance of new money debt or the restructuring of existing debt. OC San shall consider these ratios in its financial management policies.

5.4.2 Rating Agencies

5.4.2.1 Full disclosure of operations shall be made to the bond rating agencies. OC San staff, with the assistance of the municipal advisors and bond counsel, shall prepare the necessary materials for and presentation to the rating agencies.

5.4.2.2 OC San shall maintain a line of communications with the rating agencies (Fitch, Moody's and/or Standard & Poor's), informing them of major financial events at OC San as they occur. The Annual Comprehensive Financial Report (ACFR) shall be distributed to the rating agencies after it has been accepted by the Board of Directors.

5.4.2.3 The rating agencies shall be notified when OC San begins preparation for a debt issuance. After the initial contact, a formal ratings application shall be prepared and sent along with the draft of the Official Statement relating to the bond sale to the rating agencies. This application and related documentation shall be sent several weeks prior to the bond sale to give the rating agencies sufficient time to perform their review.

5.4.2.4 A meeting with representatives of the rating agencies shall be scheduled at least once every three years or whenever a major project is initiated.

5.4.3 **Credit Enhancements** – Credit enhancements are mechanisms which guarantee principal and interest payments. They include bond insurance and a line or letter of credit. A credit enhancement, while costly, shall sometimes bring a higher rating from the rating agencies and a lower interest rate on debt, thus lowering overall costs. Credit enhancements shall only be used when net debt service is reduced by more than the cost of the enhancement. During the debt issuance planning, the municipal advisor or underwriter shall advise OC San which credit enhancements if any, should be purchased.

5.4.4 **Dedicated Revenue Sources** – In order to ensure the most favorable credit ratings, OC San revenues are dedicated to debt service in the following order:

5.4.4.1 Ad valorem property tax.

5.4.4.2 Sanitary sewer service charges.

5.4.4.3 Other revenues.

5.5 Method of Sale

5.5.1 OC San shall select a method of sale that is the most appropriate in light of financial, market, transaction-specific, and issuer-related conditions and explain the rationale for its decision.

5.5.1.1 **Competitive Sales** – Debt obligations are generally issued through a competitive sale. OC San and its municipal advisor shall set the terms of the sale to encourage as many bidders as possible. By maximizing bidding, OC San seeks to obtain the lowest possible interest rates on its bonds.

5.5.1.2 **Negotiated Sales** – When certain conditions favorable for a competitive sale do not exist and when a negotiated sale will provide significant benefits to OC San that would not be achieved through a competitive sale, OC San may elect to sell its debt obligations through a private or negotiated sale. Such determination may be made on an issue-by-issue basis, for a series of issues, or for part or all of a specific financing program upon approval by the Administration Committee.

5.6 Methods of Selecting Consultants

- 5.6.1 **Municipal Advisor** – OC San shall retain an external independent municipal advisor, selected through a competitive process, and renewed at the discretion of the Administration Committee. The municipal advisor contract shall be administered by the OC San Financial Management Division. The utilization of the municipal advisor for a particular bond sale shall be on a case by case basis upon recommendation by the Director of Finance and Administrative Services and approval by the Administration Committee, pursuant to a municipal advisory service contract.
- 5.6.2 **Underwriters** – For negotiated sales, underwriters shall be required to demonstrate sufficient capitalization and experience related to the debt issuance. The selection of underwriters may be for an individual or series of financings or a specified time period.
- 5.6.3 **Bond Counsel** – OC San shall retain external bond counsel for all debt issues. All debt issued by OC San shall include a written opinion by bond counsel affirming that OC San is authorized to issue the debt, stating that OC San has met all state constitutional and statutory requirements necessary for issuance and determining the debt's federal income tax status. Bond counsel shall be selected through a competitive process administered by OC San's Financial Management Division. The selection process shall require comprehensive municipal debt experience.
- 5.6.4 **Disclosure Counsel** – OC San shall retain, when appropriate, Disclosure Counsel for debt issues. Disclosure Counsel shall be responsible for ensuring that the official statement complies with all applicable rules, regulations and guidelines. Disclosure Counsel for a particular transaction may also serve OC San as bond counsel on the same issue. Disclosure counsel shall be selected through a competitive process administered by OC San's Financial Management Division. The selection process shall require comprehensive municipal debt experience.
- 5.6.5 **Trustee and Paying Agent** – OC San shall retain a trustee and paying agent for all debt issues. The trustee and paying agent shall be responsible for carrying out the administrative functions that are required under the bond documents. These functions include, but are not limited to, establishing the accounts and holding the funds relating to bond issues, maintaining a list of bondholders, and paying principal and interest on the debt. Trustee and paying agent shall be selected through a competitive process administered by OC San's Financial Management Division. Selection shall be based on the cost

of providing such services, along with other qualitative measurements.

5.6.6 Compensation for municipal advisor, underwriters, bond counsel, disclosure counsel, trustee and paying agent and other financial service providers shall be as low as possible, given desired qualification levels and consistent with industry standards. All costs and fees related issuance of bonds shall be paid out of bond proceeds.

5.7 Disclosure and Arbitrage Compliance

5.7.1 OC San shall follow all State and Federal regulations and requirements regarding bond provisions, issuance, taxation and disclosure.

5.7.2 The Financial Management Division shall be responsible for providing trustees and/or dissemination agents ongoing disclosure information for filing with the Municipal Standards Rulemaking Board (MSRB) via the Electronic Municipal Market Access (EMMA). OC San may elect to utilize the services of a dissemination agent for continuing disclosure reporting; however, the responsibility for ensuring the reports are filed timely remains with OC San.

5.7.2.1 Copies of the ACFR and updated tables from the Official Statement shall be provided to EMMA within six months of year end.

5.7.3 OC San shall maintain compliance with disclosure standards promulgated by State and Federal regulatory bodies, such as annual reporting to the California Debt and Investment Commission of the State Treasurer's Office in accordance with SB 1029 for debt issued after January 1, 2017.

5.7.4 Official Statements accompanying debt issues, ACFRs and continuing disclosure statements shall meet, at a minimum, the standards articulated by the MSRB, the Government Accounting Standards Board (GASB), the National Federation of Municipal Analysts, the Securities and Exchange Commission (SEC) and Accounting Principles Generally Accepted in the United States (US GAAP).

5.7.5 OC San shall monitor compliance with bond covenants, continuing disclosure requirements and adhere to federal arbitrage regulations. Occurrence of any event, specified in Rule 15c2-12 under the Securities and Exchange Act of 1934, which must be filed with EMMA shall be immediately reported to the Administration

Committee. Examples of such events are credit rating downgrades, major disasters, major litigation, default on existing debt, bankruptcy, etc.

5.7.6 OC San shall maintain good communications with bond rating agencies about its financial condition and shall follow a policy of full disclosure in every financial report and bond prospectus (Official Statement).

5.8 Administration and Internal Control Procedures

5.8.1 **Expenditure of Proceeds** – Whenever reasonably possible, proceeds of OC San’s debt shall be held by a third party trustee which shall release such proceeds upon written requisition signed by the Director of Finance and Administrative Services, or authorized designee. The bank statements for money managed by trustees shall be reconciled on a monthly basis.

5.8.2 **Requisition of Bond Proceeds** – To reimburse OC San for expenditures incurred, bond proceeds requisitions shall be prepared by staff and shall include summary expenditure data listing the projects funded and related dollar amounts, all totaling to the requisition amount.

5.8.3 **Investment of Debt Proceeds** – Proceeds raised in a debt financing shall be invested in a manner that is consistent with the bond indenture and pursuant to OC San’s Investment policy for investments not addressed by the indenture.

5.8.4 **Continuing Disclosure** – OC San shall remain in compliance with SEC Rule 15c2-12 by filing its annual financial statements and other financial and operating data for the benefit of its bondholders within the period required by each Continuing Disclosure Agreement.

5.8.5 **Reporting and Filing Requirements** – OC San shall comply with the applicable reporting and filing requirements in California Government Code Section 8855.

5.8.6 **Federal Tax Compliance** – OC San shall comply with any federal tax requirements, including without limitation, private use tracking, Arbitrage and Arbitrage Rebate Compliance.

5.8.7 **Debt Service Payments** – OC San shall make debt service payments electronically, on time and error free.

6.0 **DEFINITIONS:**

- 6.1 **ACCRUED INTEREST** – In the sale of a new issue of municipal bonds, the dollar amount, based on the stated rate or rates of interest, which has accrued on the bonds from the dated date, or other stated date, up to but not including the date of delivery. When a bond is purchased in the secondary market, the dollar amount, based upon the stated rate of interest, which has accrued on the bond from the most recent interest payment date, up to but not including the date of settlement. Accrued interest is paid to the seller by the purchaser and is usually calculated on a 360-day year basis (assumes each month has 30 days).
- 6.2 **ADDITIONAL BONDS TEST** – Refers to legal test found in resolution or ordinance securing bonds; governs ability to issue additional bonds having the same lien on pledged revenues. Usually expressed as a ratio in which historic earnings meet certain levels of future debt service coverage.
- 6.3 **ADDITIONAL OBLIGATIONS TEST** – Refers to legal test found in the resolution which governs an agency's ability to issue additional obligations having the same lien on pledged revenues. OC San's additional obligations test is expressed as a ratio in which historic earnings must meet or exceed certain levels of future obligation service coverage.
- 6.4 **AD VALOREM TAX** – A direct tax based "according to value" of property. Counties and school districts and municipalities usually are, and special tax districts may be, authorized by law to levy ad valorem taxes on property other than intangible personal property. Local government bodies with taxing powers may issue bonds or short-term certificates payable from ad valorem taxation.
- 6.5 **ADVANCE REFUNDING** – A transaction in which new debt is issued to provide monies to pay interest on old, outstanding debt as it becomes due and to pay the principal on the old debt either as it matures or at an earlier call date. An advance refunding occurs before the maturity or call date (more than 90 days before the maturity or call date) of the old debt and the proceeds of the new debt are invested until the maturity or call date of the old debt. Most advance refundings result in defeasance of debt.
- 6.6 **AMORTIZATION** – The process of paying the principal amount of an issue of bonds by periodic payments either directly to certificate holders or to a sinking fund for the benefit of certificate holders. Payments are usually calculated to include interest in addition to a partial payment of the original principal amount.
- 6.7 **ARBITRAGE** – Classically, the simultaneous purchase and sale of the same or an equivalent security in order to profit from price discrepancies. The most common occurrence in the public sector involves the investment

of the proceeds from the sale of tax-exempt securities in a taxable money market instrument that yields a higher rate, resulting in interest revenue in excess of interest costs.

- 6.8 **ARBITRAGE REBATE REQUIREMENTS** – Arbitrage profits (interest revenue in excess of interest costs) from investment bond proceeds that are invested in taxable instruments must be rebated to the U.S. Treasury Department.
- 6.9 **AVERAGE COUPON** – Weighted average interest cost of an issue.
- 6.10 **BANK INVESTMENT CONTRACT** – A separate account at a financial institution that functions like a guaranteed investment contract, whereby the contract is designed to provide guarantees of principal and interest on funds deposited for a specified period.
- 6.11 **BASIS POINT** – Yields on municipal securities are usually quoted in basis points where one basis point is equal to 1/100 of one percent.
- 6.12 **BOND** – Written evidence of the issuer’s obligation to repay a specified principal amount on a date certain (maturity date), together with interest at a stated rate, or according to a formula for determining that rate. Bonds are distinguishable from notes, which mature in a much shorter period of time.
- 6.13 **BOND COUNSEL** – An attorney (or firm of attorneys) retained by the issuer to give a legal opinion on the legality and security of the issue and its tax exemption or taxability. Typically, bond counsel may prepare, or review and advise the issuer regarding, authorizing resolutions or ordinances, trust indentures, official statements, validation proceedings and litigation.
- 6.14 **BONDED DEBT** – The portion of an issuer’s total indebtedness as represented by outstanding bonds.
- 6.15 **BOND INSURANCE** – An insurance policy purchased by an issuer or an underwriter for either an entire issue or specific maturities, which guarantees the payment of principal and interest. This security provides a higher credit rating and thus a lower borrowing cost for an issuer. Bond insurance can be purchased directly by OC San prior to the bond sale (direct purchase) or at the underwriter’s option and expense (bidder’s option).
- 6.16 **BOND RESOLUTION OR ORDINANCE** – The document or documents representing action of the issuer authorizing the issuance and sale of municipal bonds. Issuance of the bonds is usually approved in the authorizing resolution or ordinance and the sale is usually authorized in a separate document known as the “sale” or “award” resolution. All of such

resolutions, read together, constitute the bond resolution, which describes the nature of the obligation and the issuer's duties to the bondholders.

- 6.17 **BROKER** – A person or firm, other than a bank, which acts as an intermediary by purchasing and selling securities for others rather than for its own account.
- 6.18 **CALLABLE BOND** – A bond which permits or requires the issuer to redeem the obligation before the stated maturity date at a specified price, usually at or above par by giving notice of redemption in a manner specified in the bond contract.
- 6.19 **CAPITALIZED INTEREST** – Interest paid on long-term obligations during the period of time required to complete and prepare an asset for its intended use is capitalized as part of the acquisition cost of an asset.
- 6.20 **CERTIFICATES OF PARTICIPATION** – Obligations of a public entity based on a lease or installment sale agreement. These are not considered debt under Article 13 of the California Constitution.
- 6.21 **CERTIFICATE HOLDER** – The owner of a municipal certificate of participation to whom payments of principal and interest are made. Generally, certificates are registered and the owner is the person whose name is noted on the certificate register.
- 6.22 **CERTIFICATE REGISTER** – The listing of names and addresses of the current registered owners of the certificates, as maintained by the trustee or certificate registrar.
- 6.23 **COMPETITIVE SALE** – The sale of bonds through sealed bids.
- 6.24 **COST OF ISSUANCE** – The expenses associated with the sale of a new issue of municipal securities, including such items as underwriter's spread, printing, legal fees and rating costs.
- 6.25 **COVENANTS** – The issuer's enforceable promise to perform or refrain from performing certain actions. With respect to municipal bonds, covenants are generally stated in the bond contract, resolution, or indenture.
- 6.26 **COVERAGE** – The ratio of pledged revenues available annually to pay debt service obligations, as compared to the annual debt service obligation requirement. This ratio is one indication of the margin of safety for debt service obligations.
- 6.27 **CREDIT ENHANCEMENT** – The availability of additional outside support designed to improve an issuer's own credit standing. Examples include bank lines of credit or collateralized funds.

- 6.28 **CURRENT REFUNDING** – A refunding transaction in which the proceeds of the refunding debt are applied immediately (no more than 90 days from issuance) to redeem the debt to be refunded. This situation differs from an advance refunding, where the proceeds of the refunding bonds are placed in escrow pending the call date or maturity of the debt to be refunded.
- 6.29 **CURRENT YIELD** – The ratio of the annual dollar amount of interest to the purchase price of a bond, stated as a percentage.
- 6.30 **CUSIP NUMBERS (COMMITTEE ON UNIFORM SECURITY IDENTIFICATION PROCEDURES)** – Identification numbers assigned each maturity of a bond issue and usually printed on the face of each individual bond in the issue. The CUSIP numbers are intended to facilitate identification and clearance of municipal securities.
- 6.31 **DEBT LIMIT** – The maximum amount of debt which an issuer of municipal securities is permitted to incur under constitutional, statutory, or charter provisions.
- 6.32 **DEBT PER CAPITA** – Bonded debt divided by population.
- 6.33 **DEBT SERVICE OBLIGATION** – The amount of funds necessary to pay principal and interest, and the required contributions to an amortization sinking fund for term certificates on an outstanding obligation. Debt service obligation on certificates may be calculated on a calendar-year or on a fiscal-year basis.
- 6.34 **DEBT SERVICE RESERVE FUND** – A fund usually amounting to principal and interest payments for one year and used only if pledged revenues do not generate sufficient funds to satisfy the debt service requirement. The reserve fund is typically funded in whole or in part from the proceeds of the debt issuance. The size and investment of the reserve fund are usually subject to arbitrage regulations.
- 6.35 **DEBT SERVICE SCHEDULE** – A table listing the annual payments necessary to meet debt service requirements over the period of time the bonds are to be outstanding.
- 6.36 **DEFAULT** – Failure to make timely payment of principal and interest or to comply with other features of the indenture.
- 6.37 **DEFEASANCE** – Eliminating bonded indebtedness off an issuer's books through creation of a portfolio of allowable securities sufficient to make all debt service payments on pre-refunded, outstanding bonds.
- 6.38 **DIRECT DEBT** – The debt that a governmental agency incurs in its own name.

- 6.39 **DISCOUNT** – The amount by which par value exceeds the price paid for a security which generally represents the difference between the nominal interest rate and the actual or effective return to the investor.
- 6.40 **DOUBLE-BARRELED BOND** –Traditionally, a bond secured by a defined source of revenue plus the full faith and credit of the issuer. The term is occasionally, although erroneously, used to refer to bonds secured by any two sources of pledged revenue.
- 6.41 **DOWNGRADE** –The lowering of a bond rating by a rating service. A downgrade would be considered if the issuer encountered major financial difficulties or an economic decline, which may be viewed by the rating service as reducing the credit quality of the bond issue.
- 6.42 **EFFECTIVE INTEREST RATE** –The actual rate of interest earned by the investor on bonds purchased, after allowing for premiums, discounts, or accrued interest over the period of the investment.
- 6.43 **FEASIBILITY STUDY** – A report by an independent expert on the economic need and practicality of a proposed debt program.
- 6.44 **FLOATER** – A security sold with a variable rate that changes at intervals ranging from daily to annually.
- 6.45 **FULL FAITH AND CREDIT** – The pledge of a government’s general taxing power to pay off its debt obligations.
- 6.46 **GENERAL OBLIGATION BONDS** – Bonds which are secured by the full faith and credit of the issuer. General obligation bonds are secured by a pledge of a portion of the ad valorem taxing power. Such bonds constitute debts of the issuer and require approval by election prior to issuance.
- 6.47 **GUARANTEED INVESTMENT CONTRACT (GIC)** – A group annuity contract designed to provide guarantees of principal and interest on funds deposited with an insurance company for a specified period.
- 6.48 **HIGH GRADE BONDS** – Top-rated bonds, usually triple-A.
- 6.49 **INDENTURE** – Legal document describing the terms and conditions of a bond offering, the rights of the bondholder and the obligations of the issuer to the bondholder. The document is alternatively referred to as a bond resolution or deed of trust.
- 6.50 **INTEREST RATE SWAP** – An agreement between two parties to exchange future flows of interest payments. Swap payments may be based on actual bond payments and/or based on various market indices.

- 6.51 **INVERTED YIELD CURVE** – When short-term rates are higher than long-term rates.
- 6.52 **INVESTMENT GRADE** – The broad credit designation given bonds which have a high probability of being paid. Such bonds, have few, if any, speculative features and are rated by the rating agencies in one of their top four categories, ranging from triple-A to BBB and Baa.
- 6.53 **ISSUER** – A state, political subdivision, agency, or authority that borrows money through the sale of bonds or notes.
- 6.54 **JUNIOR LIEN BONDS** – Bond with a subordinate claim against pledged revenues.
- 6.55 **LETTER OF CREDIT** – An agreement, usually with a commercial bank, to guarantee demands for payment upon compliance with conditions established in the agreement. Bank letters of credit are typically used as additional sources of security and liquidity with variable rate obligations.
- 6.56 **LIQUIDITY** – The ability to convert assets, such as investments, readily into cash.
- 6.57 **MATURITY** – The date on which the principal amount of a security is due and payable to the certificate holder.
- 6.58 **MUNICIPAL ADVISOR** – Performs analysis as to the appropriateness of a bond sale and, if the governing body of the agency determines that a bond sale is necessary, they then assist in its planning and preparation.
- 6.59 **NEGOTIATED SALE** – The sale of a new issue of municipal securities by an issuer through an exclusive agreement with a previously selected underwriter or underwriting syndicate. A negotiated sale should be distinguished from a competitive sale, which requires public bidding by the underwriters. Primary points of negotiation for the issuer are the interest rate and purchase price, which reflect the issuer's cost of offering its securities in the market.
- 6.60 **NET INTEREST COST (NIC)** – Traditional method of calculating an issuer's borrowing cost. NIC is derived by adding the total volume of interest payments for the entire offering and dividing by the amount of certificates outstanding times the years they are outstanding.
- 6.61 **NET PRESENT VALUE SAVINGS** – Present value of gross savings discounted at the refunding bond yield to the closing date plus accrued interest less any contribution from a reserve or debt service fund and anticipated loss investment earnings.

- 6.62 **NOTES** – A written, short-term promise of the issuer to repay a specified principal amount on a certain date, together with interest at a stated rate, or according to a formula for determining that rate, payable from a defined source of anticipated revenue. Notes usually mature in less than five years. Notes are used to cover seasonal cash flow needs or interim financings.
- 6.63 **OFFICIAL STATEMENT (OS)** – A document published by the issuer who generally discloses material information on a bond issue, including the purpose of the bond issue, how the bonds will be repaid, and the financial, economic and demographic characteristics of the issuer. Investors may use this information to evaluate the credit quality of the bonds.
- 6.64 **ORIGINAL ISSUE DISCOUNT (OID)** – The discount from par at which a new issue comes to market. For tax-exempt bonds, the capital gain represented by the OID is deemed tax-exempt by the IRS.
- 6.65 **OVERLAPPING DEBT** – The issuer’s share of the debt of other local units.
- 6.66 **PAR VALUE** – The principal amount of a security, which must be paid at maturity. Par value is also referred to as the face amount of a security.
- 6.67 **PARITY BONDS** – Separate bond issues that have the same lien against pledged revenues.
- 6.68 **PAY-AS-YOU GO BASIS** – The financial policy of a municipality that finances all capital outlays from current revenues rather than from borrowing.
- 6.69 **PAYING AGENT** – The entity responsible for the payment of principal and interest on municipal obligations on behalf of the issuer. The paying agent is usually a bank or trust company.
- 6.70 **PLEGGED REVENUES** – Funds obligated for the payment of debt service and other deposits as required by the bond contract.
- 6.71 **PRELIMINARY OFFICIAL STATEMENT (POS)** – A preliminary version of the official statement which is used by the issuer or underwriter to describe the proposed issue of municipal bonds prior to the determination of an interest rate and offering price. The preliminary official statement is a marketing tool used to gauge buyer’s interest in the issue and is relied upon by potential purchasers in making their investment decisions.
- 6.72 **PREMIUM** – The amount by which the price paid for a security exceeds par value, generally representing the difference between the nominal interest rate and the actual or effective return to the investor.

- 6.73 **PRINCIPAL** – The par value or face amount of a bond payable or issue of bonds payable on stated dates of maturity.
- 6.74 **PRIMARY MARKET** – The market for new issues of municipal securities.
- 6.75 **PRIVATE PLACEMENT** – An original issue of municipal securities sold directly to an institutional or private investor by way of a negotiated sale rather than through a public offering.
- 6.76 **RATE CONVENANT** – A bond indenture provision requiring rate changes necessary to meet annual debt service payments.
- 6.77 **RATING AGENCIES** – Credit quality evaluation of an issuer's securities made by independent rating services. The three primary rating agencies with regard to municipal debt are Moody's Investors Services, Standard & Poor's Corporation and Fitch.
- 6.78 **RATINGS** – Evaluations of the credit quality of obligations usually made by independent rating services. Ratings generally measure the probability of the timely repayment of principal and interest on municipal obligations. The higher the credit rating, the more favorable the effect on the marketability of the security.
- 6.79 **REDEMPTION** – A transaction in which the issuer pays an outstanding obligation at a specified price, usually at or above par prior to the specified maturity date. Also known as a call.
- 6.80 **REFUNDING** – Selling a new bond issue for redemption or defeasance of an outstanding bond issue. There are generally two reasons for refunding: to reduce the issuer's interest costs or to remove a burdensome or restrictive covenant imposed by the terms of the bonds being refinanced.
- 6.81 **REGISTRAR** – The person or entity responsible for maintaining records on behalf of the issuer for the purpose of noting the owners of registered obligations. The *paying agent* frequently performs this function.
- 6.82 **REVENUE BONDS** – Bonds payable from a specific source of revenue and which do not pledge the full faith and credit of the issuer.
- 6.83 **SECONDARY MARKET** – Market for bonds previously offered and sold.
- 6.84 **SENIOR LIEN OBLIGATIONS** – Obligations having a prior claim on pledge revenues.
- 6.85 **SERIAL BONDS** – Bonds of an issue in which some bonds mature in each year over a period of years.

- 6.86 **SETTLEMENT** – Delivery of and payment for a new issue of municipal bonds. Settlement usually occurs within 30 days after the bonds are awarded to the underwriters, which allows for the printing of the bonds and the completion of certain legal matters.
- 6.87 **SETTLEMENT DATE** – The date used in price and interest computations, usually the date of delivery.
- 6.88 **SINKING FUND** – A fund established in a bond indenture that contains money available to call bonds prior to maturity.
- 6.89 **STANDBY BOND PURCHASE AGREEMENT** – A legal agreement with a commercial bank or trust company whereby the bank agrees to purchase demand bonds which the remarketing agent was unable to remarket to other parties and chose not to purchase for itself.
- 6.90 **SUBORDINATE (JUNIOR) LIEN OBLIGATIONS** – Obligations having a subordinate claim against pledged revenues.
- 6.91 **TAX-EXEMPT OBLIGATIONS** – Obligations whose interest is exempt from federal income taxation pursuant to Section 103 of the Internal Revenue Code and may or may not be exempt from state income or personal property taxation in the jurisdiction where issued.
- 6.92 **TERM BONDS** – Bonds coming due in a single maturity. The issuer usually agrees to make periodic payments into a sinking fund for mandatory redemption of term bonds before maturity or for payment at maturity.
- 6.93 **TRUE INTEREST COST (TIC)** – The present value borrowing cost of the issuer is reflected by taking into account the costs of issuance and underwriting. TIC is similar to NIC, but also accounts for the time value of money.
- 6.94 **TRUSTEE** – A financial institution with trust powers which acts in a fiduciary capacity for the benefit of bond holders in enforcing the terms of the bond indenture agreement.
- 6.95 **TRUST INDENTURE** – A contract between the issuer of municipal securities and a trustee, serving for the benefit of the security holders.
- 6.96 **UNDERWRITER** – A dealer at a bank or brokerage house who buys an agency's bonds in order for the firm's sales force to resell them to both institutional and retail investors. The underwriter may acquire the bonds either by negotiation with the issuer, or by award on the basis of competitive bidding.

- 6.97 **UNDERWRITERS COUNSEL** – A lawyer involved in the transaction, who represents the securities firm buying an issuer’s bonds.
- 6.98 **VARIABLE RATE OBLIGATIONS** – A security whose interest rate is reset periodically by the remarketing agent according to a preset formula defined in the indenture agreement. The variable interest rate, also known as a “floater”, is determined by the remarketing agent as the level at which all bonds trade at par.
- 6.99 **YIELD CURVE** – Graph displaying the term structure of interest rates by plotting the yields of all bonds of the same quality with maturities ranging from shortest to the longest available.
- 6.100 **YIELD TO MATURITY** – The rate of return to the investor earned from payments of principal and interest, which is compounded semiannually and assumes that interest paid is reinvested at the same rate. Yield to maturity takes into consideration the time value of the investment.
- 6.101 **ZERO-COUPON BONDS** – Bonds sold at a deep discount from par, which pay no interest and appreciate to full value at maturity. Also known as capital appreciation bonds.



FINANCIAL MANAGEMENT POLICY AND PROCEDURE

Subject: Debt Policy	Index: Finance Administration Number: 201-3-1
Effective Date: December 16 ¹⁵ , 202 18 ¹⁹	Prepared by: Financial Management Division
Supersedes: December ^{September} 16 ²⁶ , 202 0 ¹⁸	Approved By: Board of Directors

1.0 **PURPOSE:**

The foundation of any well-managed debt program is a comprehensive debt policy. A debt policy sets forth the parameters for issuing debt and managing outstanding ~~debt, and~~debt and provides guidance to decision makers regarding the timing and purposes for which debt may be issued, types and amounts of permissible debt, methods of sale that may be used and structural features that may be incorporated. The debt policy should recognize a binding commitment to full and timely repayment of all debt as an intrinsic requirement for entry into the capital markets. The goals of ~~a~~ debt policy are to ensure that a government maintains a sound debt position, and that credit quality is protected, and is intended to comply with applicable California Government Code Sections prescribed by the California Debt and Investment Advisory Commission (CDIAC) to ensure all debt issuance is consistent with the Orange County Sanitation District's (~~OC San~~Sanitation District) debt policy and all the required reports are submitted to CDIAC on time.

2.0 **OBJECTIVES:**

Each debt issuance must accomplish the following objectives:

- a. Accelerate the delivery of projects. Debt financing allows the delivery of projects on an accelerated basis;
- b. Spread cost over the useful life of an asset. Debt financing allows OC San~~the Sanitation District~~ to spread the cost of a project over its useful life rather than paying for it at one time;

- c. Smooth out annual cash flow. Debt financing spreads the cost of a project over a period of years, thereby smoothing out ~~OC Santhe Sanitation District's~~ cash flow;
- d. Optimize overall financial resources. To enable existing cash to be invested at a rate higher than the cost of borrowing;
- e. Refundings: It may become desirable for ~~OC Santhe Sanitation District~~ to issue bonds or other securities to refinance outstanding obligations. The reasons for refinancing include:
 - i) To Achieve Debt Service Savings. In general, the net present value savings generated by the refunding bonds shall be at least 3% of the refunded bond amount.
 - ii) For Programmatic Reasons. Such as: restructuring outstanding debt, changing the type of debt instruments originally used, retiring a bond issue, removing covenants/pledges that have become restrictive, or retiring debt prior to maturity.
- f. The debt policy must be viewed as an integral component of its overall financial practices and in the context of ~~OC Santhe Sanitation District's~~ capital-intensive expenditure plans. ~~OC SanThe Sanitation District's~~ issuance of debt must be generally consistent with its planning goals, capital improvement programs and budget. ~~OC SanThe Sanitation District's~~ financial practices, including the issuance of debt, must be designed to assure sufficient resources to fund all of its operating and capital requirements in all foreseeable circumstances.

Advantages of a debt policy are as follows:

- 1.1 enhances the quality of decisions by imposing order and discipline, and promotes consistency and continuity in decision making;
- 1.2 rationalizes the decision-making process;
- 1.3 identifies objectives for staff to implement;
- 1.4 demonstrates a commitment to long-term financial planning objectives;
- 1.5 is viewed positively by the rating agencies in reviewing credit quality;
- 1.6 minimizes debt service and issuance costs;
- 1.7 ensures full and timely repayment of debt;
- 1.8 maintains full and complete financial disclosures and reporting and adequate internal controls;

1.9 ensures use of debt is consistent with ~~OC Santhe Sanitation District~~'s policies and the proceeds will be directed to the intended use;

3.0 **ORGANIZATIONS AFFECTED:**

General Manager's Department, Financial Management Division, General Counsel, bond rating agencies, financial-municipal advisors, bond underwriters, bond counsel and external independent auditors.

4.0 **REFERENCES:**

4.1 ~~November 2019~~ Strategic Plan 2021

4.2 -2017 Facilities Master Plan

4.3 Government Finance Officers Association's Best Practice on Debt Management Policy.

4.4 California Debt and Investment Advisory Commission's "Employing a Debt Management Policy – Practices Among California Local Agencies" (CDIAC No. 14.02)

5.0 **POLICY:**

5.1 Limitations on Indebtedness

5.1.1 ~~OC SanThe Sanitation District~~'s debt capacity shall not exceed legal limitations such as coverage requirements or additional bonds tests imposed by existing bond covenants.

5.1.2 Before any new debt is issued, the impact of debt service payments on total annual fixed costs shall be analyzed. In accordance with existing COP indenture agreements, Net Operating Revenues must be at least a 1.25 coverage ratio to the maximum annual debt service.

5.1.3 ~~The Sanitation District~~OC San shall restrict long-term borrowing to capital improvements that provide long-term benefits to ~~OC Santhe Sanitation District~~.

5.1.4 Proceeds from long-term debt shall not be used for current on-going operations.

5.1.5 The decision to incur new indebtedness shall be integrated with the ~~OC SanSanitation District~~'s biennial Operating Budget and Capital

Improvement Program Budget. The annual debt service payment shall be included in the Operating Budget.

~~5.1.6 OC SanThe Sanitation District shall integrate its debt issuances with the goals of its Capital Improvement Program by timing the issuance of debt to ensure that funds for projects are available when needed.~~
OC San shall integrate its debt issuances with the goals of its Capital Improvement Program by timing the issuance of debt to ensure that funds for projects are available when needed.

5.1.6

5.2 Types of Debt

5.2.1 ~~OC San~~~~The Sanitation District~~ may use short-term debt to cover temporary or emergency cash flow shortages. All short-term borrowing shall be subject to Board of Directors approval by resolution.

5.2.2 **Commercial Paper** – ~~The Sanitation District~~OC San may issue short-term debt in the form of Commercial Paper.

5.2.3 **Revenue Bonds** – ~~The Sanitation District~~OC San may issue as special obligations various types of revenue securities including notes, warrants, interim debentures, bonds and temporary bonds. Securities issued as special obligations do not constitute outstanding indebtedness of OC San~~the Sanitation District~~ nor do they exhaust its legal debt-incurring power. Bonding should be limited to projects with available revenue sources, whether self-generated or dedicated from other sources such as user fees. Adequate financing feasibility studies should be performed for each revenue issue. Sufficiency of revenues should continue throughout the life of the bonds.

5.2.4 **Certificates of Participation** – Certificates of participation are essentially leases which are sold to the public. The lease payments are subject to annual appropriation. Investors purchase certificates representing their participation in the lease. Often, equipment or facilities being acquired serve as collateral. These securities are most useful when other means to finance are not available under state law.

5.2.5 **Refundings** – A refunding is generally the underwriting of a new bond issue whose proceeds are used to redeem an outstanding issue.

5.2.5.1 Prior to beginning a refunding bond issue, OC San~~the Sanitation District~~ shall review and estimate the savings achievable from the refunding. OC San~~The Sanitation District~~ may also review a pro forma schedule estimating

the savings assuming that the refunding is done at various points in the future. Following are the conditions under which ~~OC Santhe Sanitation District~~ shall consider refunding outstanding bonds:

~~5.2.5.1.1 Not present value savings are at least three (3) percent of the par amount of the refunded bonds. Net present value savings of less than three (3) percent of refunded bonds are acceptable when compared to savings that could be achieved by waiting for more favorable interest rates and/or call premiums.~~

~~— Net present value savings are at least three (3) percent of the par amount of the refunded bonds. Net present value savings of less than three (3) percent of refunded bonds are acceptable when compared to savings that could be achieved by waiting for more favorable interest rates and/or call premiums.~~

5.2.5.1.1

5.2.5.1.2 Net present value savings exceed the costs of issuing the bonds.

5.2.5.1.3 The bonds to be refunded have restrictive or outdated covenants.

5.2.5.1.4 Restructuring debt is deemed to be desirable.

5.3 Debt Structure

5.3.1 Debt shall be structured to achieve the lowest possible net overall cost to ~~OC Santhe Sanitation District~~ balanced against potential risks given market conditions, the urgency of the capital program and the nature and type of security to be provided. Structuring options shall also consider available opportunities related to maximizing earnings and minimizing costs while complying with all Arbitrage [federal tax](#) regulations, including the timing of issuance and current market conditions.

5.3.2 The term of ~~OC SanSanitation District~~ debt issues shall not extend beyond the useful life of the project and generally shall not extend beyond 30 years unless there are compelling factors which make it necessary to extend the term further.

5.3.3 For the issuance of new money debt, ~~OC Santhe Sanitation District~~ shall consider the appropriate amount to be sold based on the overall

debt versus revenue funding targets as part of its long-term capital plan and prior to each issuance of new money debt.

5.3.4 New money debt issued by ~~OC Santhe Sanitation District~~ shall be structured to provide for either level principal or level debt service on an individual issuance or aggregate debt service basis. Deferring the repayment of principal shall be avoided except in select instances where it will take a period of time before project revenues are sufficient to pay debt service. Ascending debt service shall generally be avoided.

5.3.4.1 ~~OC SanThe Sanitation District~~ shall consider target financial ratios (including debt service coverage) and future financial flexibility when determining the structure of its new money debt.

5.3.5 **Variable Rate Obligations** – When appropriate, ~~OC Santhe Sanitation District~~ may choose to issue variable rate obligations or securities that pay a rate of interest that varies according to a predetermined formula or results from a periodic remarketing or auction of the securities.

5.3.5.1 The maximum level of net variable rate obligations incurred shall not exceed 150% of the level of available invested reserves. The percentage is intended to reflect the inherent relationship between taxable and tax-exempt interest rates based on the highest marginal federal income tax rate. Such percentage should be adjusted as the highest marginal federal income tax changes.

5.4 Credit Objectives

5.4.1 ~~OC SanThe Sanitation District~~'s goal is to maintain or improve its bond ratings. To that end, prudent financial management policies shall be adhered to in all areas.

5.4.1.1 ~~The Sanitation District~~~~OC San~~ shall monitor its current and projected key financial ratios (e.g., debt service coverage, debt-to-equity, net floating rate exposure, reserve level) in comparison to those of other similar municipal entities. These ratios shall be updated and compared prior to the issuance of new money debt or the restructuring of existing debt. ~~OC SanThe Sanitation District~~ shall consider these ratios in its financial management policies.

5.4.2 Rating Agencies

5.4.2.1 Full disclosure of operations shall be made to the bond rating agencies. ~~OC San~~~~Sanitation District~~ staff, with the assistance of the ~~financial-municipal~~ advisors and bond counsel, shall prepare the necessary materials for and presentation to the rating agencies.

5.4.2.2 ~~OC San~~~~The Sanitation District~~ shall maintain a line of communications with the rating agencies (Fitch, Moody's and/or Standard & Poor's), informing them of major financial events at ~~OC San~~~~the Sanitation District~~ as they occur. The ~~Annual~~ Comprehensive ~~Annual~~ Financial Report (~~CAC~~FR) shall be distributed to the rating agencies after it has been accepted by the Board of Directors.

5.4.2.3 The rating agencies shall be notified when ~~OC San~~~~the Sanitation District~~ begins preparation for a debt issuance. After the initial contact, a formal ratings application shall be prepared and sent along with the draft of the Official Statement relating to the bond sale to the rating agencies. This application and related documentation shall be sent several weeks prior to the bond sale to give the rating agencies sufficient time to perform their review.

5.4.2.4 A meeting with representatives of the rating agencies shall be scheduled at least once every three years or whenever a major project is initiated.

5.4.3 **Credit Enhancements** – Credit enhancements are mechanisms which guarantee principal and interest payments. They include bond insurance and a line or letter of credit. A credit enhancement, while costly, shall sometimes bring a higher rating from the rating agencies and a lower interest rate on debt, thus lowering overall costs. Credit enhancements shall only be used when net debt service is reduced by more than the cost of the enhancement. During the debt issuance planning, the ~~financial-municipal~~ advisor or underwriter shall advise ~~OC San~~~~the Sanitation District~~ which credit enhancements if any, should be purchased.

5.4.4 **Dedicated Revenue Sources** – In order to ensure the most favorable credit ratings, ~~OC San~~~~Sanitation District~~ revenues are dedicated to debt service in the following order:

5.4.4.1 Ad valorem property tax.

5.4.4.2 Sanitary sewer service charges.

5.4.4.3 Other revenues.

5.5 Method of Sale

5.5.1 ~~OC SanThe Sanitation District~~ shall select a method of sale that is the most appropriate in light of financial, market, transaction-specific, and issuer-related conditions and explain the rationale for its decision.

5.5.1.1 **Competitive Sales** – Debt obligations are generally issued through a competitive sale. ~~OC SanThe Sanitation District~~ and its financial-municipal advisor shall set the terms of the sale to encourage as many bidders as possible. ~~By maximizing bidding, OC Santhe Sanitation District~~ seeks to obtain the lowest possible interest rates on its bonds.

5.5.1.2 **Negotiated Sales** – When certain conditions favorable for a competitive sale do not exist and when a negotiated sale will provide significant benefits to ~~OC Santhe Sanitation District~~ that would not be achieved through a competitive sale, ~~OC Santhe Sanitation District~~ may elect to sell its debt obligations through a private or negotiated sale. Such determination may be made on an issue-by-issue basis, for a series of issues, or for part or all of a specific financing program upon approval by the Administration Committee.

5.6 Methods of Selecting Consultants

5.6.1 **Financial-Municipal Advisor** – ~~OC SanThe Sanitation District~~ shall retain an external independent financial-municipal advisor, selected through a competitive process, and renewed at the discretion of the Administration Committee. The financial-municipal advisor contract shall be administered by the ~~OC SanSanitation District's~~ Financial Management Division. The utilization of the financial-municipal advisor for a particular bond sale shall be on a case by case basis upon recommendation by the Director of Finance and Administrative Services and approval by the Administration Committee, pursuant to a financial-municipal advisory service contract.

5.6.2 **Underwriters** – For negotiated sales, underwriters shall be required to demonstrate sufficient capitalization and experience related to the debt issuance. The selection of underwriters may be for an individual or series of financings or a specified time period.

5.6.3 **Bond Counsel** – ~~OC SanThe Sanitation District~~ shall retain external bond counsel for all debt issues. All debt issued by ~~OC Santhe Sanitation District~~ shall include a written opinion by bond counsel

affirming that ~~OC Santhe Sanitation District~~ is authorized to issue the debt, stating that ~~OC Santhe Sanitation District~~ has met all state constitutional and statutory requirements necessary for issuance, and determining the debt's federal income tax status. Bond counsel shall be selected through a competitive process administered by ~~OC Santhe Sanitation District~~'s Financial Management Division. The selection process shall require comprehensive municipal debt experience.

5.6.4 **Disclosure Counsel** – ~~OC SanThe Sanitation District~~ shall retain, when appropriate, Disclosure Counsel for debt issues. Disclosure Counsel shall be responsible for ensuring that the official statement complies with all applicable rules, regulations and guidelines. Disclosure Counsel for a particular transaction may also serve ~~OC Santhe Sanitation District~~ as bond counsel on the same issue. Disclosure counsel shall be selected through a competitive process administered by ~~OC Santhe Sanitation District~~'s Financial Management Division. The selection process shall require comprehensive municipal debt experience.

5.6.5 **Trustee and Paying Agent** – ~~OC SanThe Sanitation District~~ shall retain a trustee and paying agent for all debt issues. The trustee and paying agent shall be responsible for carrying out the administrative functions that are required under the bond documents. These functions include, but are not limited to, establishing the accounts and holding the funds relating to bond issues, maintaining a list of bondholders, and paying ~~principle-principal~~ and interest on the debt. Trustee and paying agent shall be selected through a competitive process administered by ~~OC Santhe Sanitation District~~'s Financial Management Division. –Selection shall be based on the cost of providing such services, along with other qualitative measurements.

5.6.6 Compensation for ~~financial-municipal~~ advisor, underwriters, bond counsel, disclosure counsel, trustee and paying agent, and other financial service providers shall be as low as possible, given desired qualification levels and consistent with industry standards. All costs and fees related issuance of bonds shall be paid out of bond proceeds.

5.7 Disclosure and Arbitrage Compliance

5.7.1 ~~OC SanThe Sanitation District~~ shall follow all State and Federal regulations and requirements regarding bond provisions, issuance, taxation and disclosure.

5.7.2 The Financial Management Division shall be responsible for providing trustees and/or dissemination agents ongoing disclosure

information for filing with the Municipal Standards Rulemaking Board (MSRB) via the Electronic Municipal Market Access (EMMA). OC SanThe Sanitation District may elect to utilize the services of a dissemination agent for continuing disclosure reporting; however, the responsibility for ensuring the reports are filed timely remains with OC Santhe Sanitation District.

5.7.2.1 Copies of the ACFRGAFR and updated tables from the Official Statement shall be provided to EMMA within six months of year end.

5.7.3 OC SanThe Sanitation District shall maintain compliance with disclosure standards promulgated by State and Federal regulatory bodies, such as annual reporting to the California Debt and Investment Commission of the State Treasurer's Office in accordance with SB 1029 for debt issued after January 1, 2017.

5.7.4 Official Statements accompanying debt issues, ACFRGAFRs and continuing disclosure statements shall meet, at a minimum, the standards articulated by the MSRB, the Government Accounting Standards Board (GASB), the National Federation of Municipal Analysts, the Securities and Exchange Commission (SEC) and Accounting Principles Generally Accepted in the United States (US GAAP).

5.7.5 OC SanThe Sanitation District shall monitor compliance with bond covenants, continuing disclosure requirements and adhere to federal arbitrage regulations. Occurrence of any event, specified in Rule 15c2-12 under the Securities and Exchange Act of 1934, which must be filed with EMMA shall be immediately reported to the Administration Committee. Examples of such events are credit rating downgrades, major disasters, major litigation, default on existing debt, bankruptcy, etc.

5.7.6 OC SanThe Sanitation District shall maintain good communications with bond rating agencies about its financial condition and shall follow a policy of full disclosure in every financial report and bond prospectus (Official Statement).

5.8 Administration and Internal Control Procedures

5.8.1 **Expenditure of Proceeds** – Whenever reasonably possible, proceeds of OC Santhe Sanitation District's debt shall be held by a third party trustee which shall release such proceeds upon written requisition signed by the Director of Finance and Administrative Services, or authorized designee. The bank statements for money managed by trustees shall be reconciled on a monthly basis.

5.8.2 **Requisition of Bond Proceeds** – To reimburse ~~OC Santhe Sanitation District~~ for expenditures incurred, bond proceeds requisitions shall be prepared by staff and shall include summary expenditure data listing the projects funded and related dollar amounts, all totaling to the requisition amount.

5.8.3 **Investment of Debt Proceeds** – Proceeds raised in a debt financing shall be invested in a manner that is consistent with the bond indenture and pursuant to ~~OC Santhe Sanitation District's~~ Investment policy for investments not addressed by the indenture.

5.8.4 **Continuing Disclosure** – ~~OC SanThe Sanitation District~~ shall remain in compliance with SEC Rule 15c2-12 by filing its annual financial statements and other financial and operating data for the benefit of its bondholders within the period required by each Continuing Disclosure Agreement.

5.8.5 **Reporting and Filing Requirements** – ~~OC SanThe Sanitation District~~ shall comply with the applicable reporting and filing requirements in California Government Code Section 8855.

5.8.5

5.8.6 **Federal Tax Compliance** – ~~OC SanThe Sanitation District~~ shall comply with any federal tax requirements, including without limitation, private use tracking, ~~arbitrage~~ Arbitrage and Arbitrage rebate Rebate eCompliance.

5.8.7 **Debt Service Payments** – ~~OC SanThe Sanitation District~~ shall make debt service payments electronically, on time and error free.

5.8.7

6.0 **DEFINITIONS:**

6.1 **ACCRUED INTEREST** – In the sale of a new issue of municipal bonds, the dollar amount, based on the stated rate or rates of interest, which has accrued on the bonds from the dated date, or other stated date, up to but not including the date of delivery. When a bond is purchased in the secondary market, the dollar amount, based upon the stated rate of interest, which has accrued on the bond from the most recent interest payment date, up to but not including the date of settlement. Accrued interest is paid to the seller by the purchaser and is usually calculated on a 360-day year basis (assumes each month has 30 days).

6.2 **ADDITIONAL BONDS TEST** – Refers to legal test found in resolution or ordinance securing bonds; governs ability to issue additional bonds having

the same lien on pledged revenues. Usually expressed as a ratio in which historic earnings meet certain levels of future debt service coverage.

- 6.3 **ADDITIONAL OBLIGATIONS TEST** – Refers to legal test found in the resolution which governs an agency’s ability to issue additional obligations having the same lien on pledged revenues. ~~OC San~~The Sanitation District’s additional obligations test is expressed as a ratio in which historic earnings must meet or exceed certain levels of future obligation service coverage.
- 6.4 **AD VALOREM TAX** – -A direct tax based “according to value” of property. Counties and school districts and municipalities usually are, and special tax districts may be, authorized by law to levy ad valorem taxes on property other than intangible personal property. Local government bodies with taxing powers may issue bonds or short-term certificates payable from ad valorem taxation.
- 6.5 **ADVANCE REFUNDING** – -A transaction in which new debt is issued to provide monies to pay interest on old, outstanding debt as it becomes due and to pay the principal on the old debt either as it matures or at an earlier call date. An advance refunding occurs before the maturity or call date (more than 90 days before the maturity or call date) of the old debt and the proceeds of the new debt are invested until the maturity or call date of the old debt. Most advance refundings result in defeasance of debt.
- 6.6 **AMORTIZATION** – -The process of paying the principal amount of an issue of bonds by periodic payments either directly to certificate holders or to a sinking fund for the benefit of certificate holders. Payments are usually calculated to include interest in addition to a partial payment of the original principal amount.
- 6.7 **ARBITRAGE** – Classically, the simultaneous purchase and sale of the same or an equivalent security in order to profit from price discrepancies. The most common occurrence in the public sector involves the investment of the proceeds from the sale of tax-exempt securities in a taxable money market instrument that yields a higher rate, resulting in interest revenue in excess of interest costs.
- 6.8 **ARBITRAGE REBATE REQUIREMENTS** – Arbitrage profits (interest revenue in excess of interest costs) from investment bond proceeds that are invested in taxable instruments must be rebated to the U.S. Treasury Department.
- 6.9 **AVERAGE COUPON** – Weighted average interest cost of an issue.
- 6.10 **BANK INVESTMENT CONTRACT** – A separate account at a financial institution that functions like a guaranteed investment contract, whereby

the contract is designed to provide guarantees of principal and interest on funds deposited for a specified period.

- 6.11 **BASIS POINT** – Yields on municipal securities are usually quoted in basis points where one basis point is equal to 1/100 of one percent.
- 6.12 **BOND** – Written evidence of the issuer’s obligation to repay a specified principal amount on a date certain (maturity date), together with interest at a stated rate, or according to a formula for determining that rate. Bonds are distinguishable from notes, which mature in a much shorter period of time.
- 6.13 **BOND COUNSEL** – An attorney (or firm of attorneys) retained by the issuer to give a legal opinion on the legality and security of the issue and its tax exemption or taxability. Typically, bond counsel may prepare, or review and advise the issuer regarding, authorizing resolutions or ordinances, trust indentures, official statements, validation proceedings and litigation.
- 6.14 **BONDED DEBT** – The portion of an issuer’s total indebtedness as represented by outstanding bonds.
- 6.15 **BOND INSURANCE** – An insurance policy purchased by an issuer or an underwriter for either an entire issue or specific maturities, which guarantees the payment of principal and interest. This security provides a higher credit rating and thus a lower borrowing cost for an issuer. Bond insurance can be purchased directly by OC Santhe Sanitation District prior to the bond sale (direct purchase) or at the underwriter’s option and expense (bidder’s option).
- ~~6.15~~ **BOND RESOLUTION OR ORDINANCE** – The document or documents representing action of the issuer authorizing the issuance and sale of municipal bonds. Issuance of the bonds is usually approved in the authorizing resolution or ordinance and the sale is usually authorized in a separate document known as the “sale” or “award” resolution. All of such resolutions, read together, constitute the bond resolution, which describes the nature of the obligation and the issuer’s duties to the bondholders.
- 6.16
- 6.17 **BROKER** – A person or firm, other than a bank, which acts as an intermediary by purchasing and selling securities for others rather than for its own account.
- 6.18 **CALLABLE BOND** – A bond which permits or requires the issuer to redeem the obligation before the stated maturity date at a specified price, usually at or above par by giving notice of redemption in a manner specified in the bond contract.

- 6.19 **CAPITALIZED INTEREST** – Interest paid on long-term obligations during the period of time required to complete and prepare an asset for its intended use is capitalized as part of the acquisition cost of an asset.
- 6.20 **CERTIFICATES OF PARTICIPATION** – Obligations of a public entity based on a lease or installment sale agreement. These are not considered debt under Article 13 of the California Constitution.
- 6.21 **CERTIFICATE HOLDER** – The owner of a municipal certificate of participation to whom payments of principal and interest are made. Generally, certificates are registered and the owner is the person whose name is noted on the certificate register.
- 6.22 **CERTIFICATE REGISTER** – The listing of names and addresses of the current registered owners of the certificates, as maintained by the trustee or certificate registrar.
- 6.23 **COMPETITIVE SALE** – The sale of bonds through sealed bids.
- 6.24 **COST OF ISSUANCE** – The expenses associated with the sale of a new issue of municipal securities, including such items as underwriter's spread, printing, legal fees and rating costs.
- 6.25 **COVENANTS** – The issuer's enforceable promise to perform or refrain from performing certain actions. With respect to municipal bonds, covenants are generally stated in the bond contract, resolution, or indenture.
- 6.26 **COVERAGE** – The ratio of pledged revenues available annually to pay debt service obligations, as compared to the annual debt service obligation requirement. This ratio is one indication of the margin of safety for debt service obligations.
- ~~6.27~~ **CREDIT ENHANCEMENT** – The availability of additional outside support designed to improve an issuer's own credit standing. Examples include bank lines of credit or collateralized funds.
- 6.27 **CURRENT REFUNDING** – A refunding transaction in which the proceeds of the refunding debt are applied immediately (no more than 90 days from issuance) to redeem the debt to be refunded. This situation differs from an advance refunding, where the proceeds of the refunding bonds are placed in escrow pending the call date or maturity of the debt to be refunded.
- 6.29 **CURRENT YIELD** – The ratio of the annual dollar amount of interest to the purchase price of a bond, stated as a percentage.
- 6.30 **CUSIP NUMBERS (COMMITTEE ON UNIFORM SECURITY IDENTIFICATION PROCEDURES)** – Identification numbers assigned

each maturity of a bond issue and usually printed on the face of each individual bond in the issue. The CUSIP numbers are intended to facilitate identification and clearance of municipal securities.

- 6.31 **DEBT LIMIT** – The maximum amount of debt which an issuer of municipal securities is permitted to incur under constitutional, statutory, or charter provisions.
- 6.32 **DEBT PER CAPITA** – Bonded debt divided by population.
- 6.33 **DEBT SERVICE OBLIGATION** – The amount of funds necessary to pay principal and interest, and the required contributions to an amortization sinking fund for term certificates on an outstanding obligation. Debt service obligation on certificates may be calculated on a calendar-year or on a fiscal-year basis.
- 6.34 **DEBT SERVICE RESERVE FUND** – A fund usually amounting to principal and interest payments for one year and used only if pledged revenues do not generate sufficient funds to satisfy the debt service requirement. The reserve fund is typically funded in whole or in part from the proceeds of the debt issuance. The size and investment of the reserve fund are usually subject to arbitrage regulations.
- 6.35 **DEBT SERVICE SCHEDULE** – A table listing the annual payments necessary to meet debt service requirements over the period of time the bonds are to be outstanding.
- ~~6.36~~ **DEFAULT** – Failure to make timely payment of principal and interest or to comply with other features of the indenture.
- 6.36 **DEFEASANCE** – Eliminating bonded indebtedness off an issuer's books through creation of a portfolio of allowable securities sufficient to make all debt service payments on pre-refunded, outstanding bonds.
- ~~6.38~~ **DIRECT DEBT** – The debt that a governmental agency incurs in its own name.
- ~~6.38~~ **DISCOUNT** – The amount by which par value exceeds the price paid for a security which generally represents the difference between the nominal interest rate and the actual or effective return to the investor.
- 6.39 **DISCOUNT** – The amount by which par value exceeds the price paid for a security which generally represents the difference between the nominal interest rate and the actual or effective return to the investor.
- 6.40 **DOUBLE-BARRELED BOND** – Traditionally, a bond secured by a defined source of revenue plus the full faith and credit of the issuer. The term is occasionally, although erroneously, used to refer to bonds secured by any two sources of pledged revenue.

- 6.41 **DOWNGRADE** –The lowering of a bond rating by a rating service. A downgrade would be considered if the issuer encountered major financial difficulties or an economic decline, which may be viewed by the rating service as reducing the credit quality of the bond issue.
- 6.42 **EFFECTIVE INTEREST RATE** –The actual rate of interest earned by the investor on bonds purchased, after allowing for premiums, discounts, or accrued interest over the period of the investment.
- 6.43 **FEASIBILITY STUDY** – A report by an independent expert on the economic need and practicality of a proposed debt program.
- ~~6.44 **FINANCIAL MUNICIPAL ADVISOR** – Performs analysis as to the appropriateness of a bond sale and, if the governing body of the agency determines that a bond sale is necessary, they then assist in its planning and preparation.~~
- 6.456.44 **FLOATER** – A security sold with a variable rate that changes at intervals ranging from daily to annually.
- 6.466.45 **FULL FAITH AND CREDIT** – The pledge of a government's general taxing power to pay off its debt obligations.
- 6.476.46 **GENERAL OBLIGATION BONDS** – Bonds which are secured by the full faith and credit of the issuer. General obligation bonds are secured by a pledge of a portion of the ad valorem taxing power. Such bonds constitute debts of the issuer and require approval by election prior to issuance.
- 6.486.47 **GUARANTEED INVESTMENT CONTRACT (GIC)** – A group annuity contract designed to provide guarantees of principal and interest on funds deposited with an insurance company for a specified period.
- 6.496.48 **HIGH GRADE BONDS** – Top-rated bonds, usually triple-A.
- 6.506.49 **INDENTURE** – Legal document describing the terms and conditions of a bond offering, the rights of the bondholder and the obligations of the issuer to the bondholder. The document is alternatively referred to as a bond resolution or deed of trust.
- 6.516.50 **INTEREST RATE SWAP** – An agreement between two parties to exchange future flows of interest payments. Swap payments may be based on actual bond payments and/or based on various market indices.
- 6.526.51 **INVERTED YIELD CURVE** – When short-term rates are higher than long-term rates.

- ~~6.536.52~~ **INVESTMENT GRADE** – The broad credit designation given bonds which have a high probability of being paid. Such bonds, have few, if any, speculative features and are rated by the rating agencies in one of their top four categories, ranging from triple-A to BBB and Baa.
- ~~6.546.53~~ **ISSUER** – A state, political subdivision, agency, or authority that borrows money through the sale of bonds or notes.
- ~~6.556.54~~ **JUNIOR LIEN BONDS** – Bond with a subordinate claim against pledged revenues.
- ~~6.56~~ **LETTER OF CREDIT** – An agreement, usually with a commercial bank, to guarantee demands for payment upon compliance with conditions established in the agreement. Bank letters of credit are typically used as additional sources of security and liquidity with variable rate obligations.
- ~~6.55~~
~~6.57~~ **LIQUIDITY** – ~~The ability to convert assets, such as investments, readily into cash.~~
- 6.56 **LIQUIDITY** – The ability to convert assets, such as investments, readily into cash.
- 6.57 **MATURITY** – The date on which the principal amount of a security is due and payable to the certificate holder.
- 6.58 **MUNICIPAL ADVISOR** – Performs analysis as to the appropriateness of a bond sale and, if the governing body of the agency determines that a bond sale is necessary, they then assist in its planning and preparation.
- 6.59 **NEGOTIATED SALE** – The sale of a new issue of municipal securities by an issuer through an exclusive agreement with a previously selected underwriter or underwriting syndicate. A negotiated sale should be distinguished from a competitive sale, which requires public bidding by the underwriters. Primary points of negotiation for the issuer are the interest rate and purchase price, which reflect the issuer's cost of offering its securities in the market.
- 6.60 **NET INTEREST COST (NIC)** – Traditional method of calculating an issuer's borrowing cost. NIC is derived by adding the total volume of interest payments for the entire offering and dividing by the amount of certificates outstanding times the years they are outstanding.
- 6.61 **NET PRESENT VALUE SAVINGS** – Present value of gross savings discounted at the refunding bond yield to the closing date plus accrued interest less any contribution from a reserve or debt service fund and anticipated loss investment earnings.

- 6.62 **NOTES** – A written, short-term promise of the issuer to repay a specified principal amount on a certain date, together with interest at a stated rate, or according to a formula for determining that rate, payable from a defined source of anticipated revenue. Notes usually mature in less than five years. Notes are used to cover seasonal cash flow needs or interim financings.
- 6.63 **OFFICIAL STATEMENT (OS)** – A document published by the issuer who generally discloses material information on a bond issue, including the purpose of the bond issue, how the bonds will be repaid, and the financial, economic and demographic characteristics of the issuer. Investors may use this information to evaluate the credit quality of the bonds.
- 6.64 **ORIGINAL ISSUE DISCOUNT (OID)** – The discount from par at which a new issue comes to market. For tax-exempt bonds, the capital gain represented by the OID is deemed tax-exempt by the IRS.
- 6.65 **OVERLAPPING DEBT** – The issuer's share of the debt of other local units.
- 6.66 **PAR VALUE** – The principal amount of a security, which must be paid at maturity. Par value is also referred to as the face amount of a security.
- 6.67 **PARITY BONDS** – Separate bond issues that have the same lien against pledged revenues.
- 6.68 **PAY-AS-YOU GO BASIS** – The financial policy of a municipality that finances all capital outlays from current revenues rather than from borrowing.
- 6.69 **PAYING AGENT** – The entity responsible for the payment of principal and interest on municipal obligations on behalf of the issuer. The paying agent is usually a bank or trust company.
- 6.70 **PLEGGED REVENUES** – Funds obligated for the payment of debt service and other deposits as required by the bond contract.
- 6.71 **PRELIMINARY OFFICIAL STATEMENT (POS)** – A preliminary version of the official statement which is used by the issuer or underwriter to describe the proposed issue of municipal bonds prior to the determination of an interest rate and offering price. The preliminary official statement is a marketing tool used to gauge buyer's interest in the issue and is relied upon by potential purchasers in making their investment decisions.
- 6.72 **PREMIUM** – The amount by which the price paid for a security exceeds par value, generally representing the difference between the nominal interest rate and the actual or effective return to the investor.

- 6.73 **PRINCIPAL** – The par value or face amount of a bond payable or issue of bonds payable on stated dates of maturity.
- 6.74 **PRIMARY MARKET** – The market for new issues of municipal securities.
- 6.75 **PRIVATE PLACEMENT** – An original issue of municipal securities sold directly to an institutional or private investor by way of a negotiated sale rather than through a public offering.
- 6.76 **RATE CONVENANT** – A bond indenture provision requiring rate changes necessary to meet annual debt service payments.
- 6.77 **RATING AGENCIES** – Credit quality evaluation of an issuer’s securities made by independent rating services. The three primary rating agencies with regard to municipal debt are Moody’s Investors Services, Standard & Poor’s Corporation and Fitch.
- 6.78 **RATINGS** – Evaluations of the credit quality of obligations usually made by independent rating services. Ratings generally measure the probability of the timely repayment of principal and interest on municipal obligations. The higher the credit rating, the more favorable the effect on the marketability of the security.
- 6.79 **REDEMPTION** – A transaction in which the issuer pays an outstanding obligation at a specified price, usually at or above par prior to the specified maturity date. Also known as a call.
- 6.80 **REFUNDING** – Selling a new bond issue for redemption or defeasance of an outstanding bond issue. There are generally two reasons for refunding: to reduce the issuer’s interest costs or to remove a burdensome or restrictive covenant imposed by the terms of the bonds being refinanced.
- 6.81 **REGISTRAR** – The person or entity responsible for maintaining records on behalf of the issuer for the purpose of noting the owners of registered obligations. The *paying agent* frequently performs this function.
- 6.82 **REVENUE BONDS** – Bonds payable from a specific source of revenue and which do not pledge the full faith and credit of the issuer.
- ~~6.83~~ 6.83 **SECONDARY MARKET** – Market for bonds previously offered and sold.
- 6.84 **SENIOR LIEN OBLIGATIONS** – Obligations having a prior claim on pledge revenues.
- 6.85 **SERIAL BONDS** – Bonds of an issue in which some bonds mature in each year over a period of years.

- 6.86 **SETTLEMENT** – Delivery of and payment for a new issue of municipal bonds. Settlement usually occurs within 30 days after the bonds are awarded to the underwriters, which allows for the printing of the bonds and the completion of certain legal matters.
- 6.87 **SETTLEMENT DATE** – The date used in price and interest computations, usually the date of delivery.
- 6.88 **SINKING FUND** – A fund established in a bond indenture that contains money available to call bonds prior to maturity.
- 6.89 **STANDBY BOND PURCHASE AGREEMENT** – A legal agreement with a commercial bank or trust company whereby the bank agrees to purchase demand bonds which the remarketing agent was unable to remarket to other parties and chose not to purchase for itself.
- 6.90 **SUBORDINATE (JUNIOR) LIEN OBLIGATIONS** – Obligations having a subordinate claim against pledged revenues.
- 6.91 **TAX-EXEMPT OBLIGATIONS** – Obligations whose interest is exempt from federal income taxation pursuant to Section 103 of the Internal Revenue Code and may or may not be exempt from state income or personal property taxation in the jurisdiction where issued.
- 6.92 **TERM BONDS** – Bonds coming due in a single maturity. -The issuer usually agrees to make periodic payments into a sinking fund for mandatory redemption of term bonds before maturity or for payment at maturity.
- 6.93 **TRUE INTEREST COST (TIC)** – The present value borrowing cost of the issuer is reflected by taking into account the costs of issuance and underwriting. TIC is similar to NIC, but also accounts for the time value of money.
- 6.94 **TRUSTEE** – A financial institution with trust powers which acts in a fiduciary capacity for the benefit of bond holders in enforcing the terms of the bond indenture agreement.
- 6.95 **TRUST INDENTURE** – A contract between the issuer of municipal securities and a trustee, serving for the benefit of the security holders.
- 6.96 **UNDERWRITER** – A dealer at a bank or brokerage house who buys an agency's bonds in order for the firm's sales force to resell them to both institutional and retail investors. The underwriter may acquire the bonds either by negotiation with the issuer, or by award on the basis of competitive bidding.

- 6.97 **UNDERWRITERS COUNSEL** – A lawyer involved in the transaction, who represents the securities firm buying an issuer’s bonds.
- 6.98 **VARIABLE RATE OBLIGATIONS** – A security whose interest rate is reset periodically by the remarketing agent according to a preset formula defined in the indenture agreement. The variable interest rate, also known as a “floater”, is determined by the remarketing agent as the level at which all bonds trade at par.
- 6.99 **YIELD CURVE** – Graph displaying the term structure of interest rates by plotting the yields of all bonds of the same quality with maturities ranging from shortest to the longest available.
- 6.100 **YIELD TO MATURITY** – The rate of return to the investor earned from payments of principal and interest, which is compounded semiannually and assumes that interest paid is reinvested at the same rate. Yield to maturity takes into consideration the time value of the investment.
- 6.101 **ZERO-COUPON BONDS** – Bonds sold at a deep discount from par, which pay no interest and appreciate to full value at maturity. Also known as capital appreciation bonds.

RESOLUTION NO. OC SAN 21-XX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT ADOPTING THE ORANGE COUNTY SANITATION DISTRICT'S DEBT POLICY AND REPEALING RESOLUTION NO. OCSD 20-12

WHEREAS, on December 16, 2020, the Board of Directors adopted Resolution No. 20-12, adopting a Board of Directors Policy.

NOW, THEREFORE, the Board of Directors of the Orange County Sanitation District, DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1: That the Board of Directors hereby adopts the Orange County Sanitation District's Debt Policy.

Section 2: That any change in the Policies and Procedures set forth in the Orange County Sanitation District's Debt Policy must be approved by the Board of Directors prior to implementation.

Section 3: That this Resolution shall take effect immediately upon its adoption.

Section 4: That Resolution No. OCSD 20-12 is hereby repealed.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Orange County Sanitation District held on December 15, 2021.

John B. Withers
Board Chairman

ATTEST:

Kelly A. Lore, MMC
Clerk of the Board



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-2009

Agenda Date: 12/8/2021

Agenda Item No: 6.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

DEFERRED PAYMENT AGREEMENT REQUEST FOR CHARGES AND FEES OWED BY NOR-CAL BEVERAGE CO., INC. INDUSTRIAL WASTEWATER DISCHARGE PERMITTEE

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

Approve a deferred payment agreement with Nor-Cal Beverage Co., Inc. for charges owed for user fees in the amount of \$496,231.50.

BACKGROUND

Nor-Cal Beverage Co., Inc. (Nor-Cal Beverage) is the holder of an industrial wastewater discharge permit issued by the Orange County Sanitation District (OC San) that requires payment of user fees for the cost of conveying, treating, and disposing of wastewater discharged. Based on the terms of the permit, the permittee is required to pay estimated quarterly sewer service charges that are reconciled annually with actual discharge flows and strength. The permittee has a current balance of \$496,231.50 in total for the 2020-21 Annual Reconciliation Invoice.

Nor-Cal Beverage currently holds two Industrial Wastewater Discharge Permits with OC-San. In fiscal year 2020-21, the discharge volume for one of those permits, 1-021283, increased significantly due to new customers acquired by Nor-Cal Beverage. This increase in discharge volume resulted in a large Annual Reconciliation Invoice amount. Nor-Cal Beverage has not previously been issued a deferred payment agreement and all other invoices have been paid in full and on time, including the 2021-22 First Quarter Invoices.

RELEVANT STANDARDS

- Resolution No. OC SAN 21-05

PROBLEM

Nor-Cal Beverage currently owes \$496,231.50 for their 2020-21 Annual Reconciliation Invoice and has requested a deferred payment plan.

PROPOSED SOLUTION

Resolution No. OC SAN 21-05 allows for a deferred payment agreement to allow a permittee to pay the amounts owed while continuing to conduct their business with a valid industrial wastewater discharge permit.

TIMING CONCERNS

N/A

RAMIFICATIONS OF NOT TAKING ACTION

If no action is taken, Nor-Cal Beverage will begin accruing late penalties and finance charges, increasing the balance due on the account.

PRIOR COMMITTEE/BOARD ACTIONS

N/A

FINANCIAL CONSIDERATIONS

N/A

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Deferred Payment Agreement - Nor-Cal Beverage Co., Inc.
- Resolution No. OC SAN 21-05

DEFERRED PAYMENT AGREEMENT

THIS AGREEMENT, is entered into, to be effective January 1, 2022, by and between Orange County Sanitation District ("OC San"), a county sanitation district duly organized and existing pursuant to Section 4700 et. seq. of the Health & Safety Code of the State of California and Nor-Cal Beverage Co., Inc. ("Permittee").

RECITALS

A. OC San is a wastewater treatment agency which owns and operates wastewater treatment facilities which receive, treat and discharge, through an ocean outfall, wastewater received from dischargers within its jurisdictional boundaries. In the course of its wastewater treatment operations, and pursuant to Ordinance No. OCSD-53 Wastewater Discharge Regulations ("OC San's Ordinance"), OC San issues industrial wastewater discharge permits to certain persons/entities which discharge wastewater into the OC San's sewerage system.

B. As part of the OC San's wastewater treatment operations, OC San imposes user fees on permittees, requiring such permittees to pay their share of the OC San's costs of conveying, treating and disposing of wastewater discharged by such permittees.

C. Permittee is the holder of an industrial wastewater discharge permit issued by OC San and is responsible for paying user fees for the cost of conveying, treating and disposing of wastewater discharged from Permittee's facility located at 1226 N. Olive St, Anaheim, CA 92801.

D. OC San has issued to Permittee Invoice No. 910969 in the amount of \$496,231.50 for user fees then due and owing to the OC San.

E. Permittee has failed to pay the presently owing sum of \$496,231.50 and has requested additional time to pay this outstanding obligation.

F. Pursuant to Resolution No. OC SAN 21-05, OC San is authorized to enter into deferred payment agreements for limited sums and of limited duration, pursuant to approval by the OC San's Board of Directors.

G. The OC San intends to provide additional time for Permittee to pay to OC San the amounts presently due on Invoice No. 910969. in accordance with the requirements of ~~OC San~~ Resolution No. OC SAN 21-05.

NOW, THEREFORE, in consideration of the facts recited above and the conditions, covenants and promises set forth below, OC San and Nor-Cal Beverage Co., Inc. agree as follows:

AGREEMENT

1. Permittee shall make payments (including principal and interest) to the OC San, pursuant to the payment schedule in Appendix A.

2. Permittee shall pay to OC San all other invoices issued by the OC San during the term of this Agreement in accordance with the provisions of OC San's Ordinance.

3. If any payment described in Paragraph 1 herein is not received by the OC San on or before the due date specified, or if any payment described in Paragraph 2 herein is not received by OC San in accordance with the provisions of OC San's Ordinance, the entire balance then owing shall become immediately due and payable and interest at the rate of ten percent (10%) per annum shall accrue on any such unpaid balance from the date of acceleration until the date that the balance due is fully paid to the OC San.

4. Permittee acknowledges that the failure to pay current invoices, or failure to pay any installment in accordance with the schedule set forth in Paragraph 1 herein, may be grounds for suspension of any industrial wastewater discharge permit issued to Permittee by OC San, and shall additionally be deemed a breach of this Agreement, thereby giving rise to all legal remedies available to

OC San. Permittee agrees that by executing this Deferred Payment Agreement, Permittee waives the right to an administrative hearing for non-payment of invoices or any other means to challenge the amount owed, and further agrees that failure to pay OC San in accordance with the terms of this Agreement will result in immediate permit suspension until such time as the all outstanding amounts owed are current.

5. In consideration of the foregoing, OC San agrees to refrain from instituting collection or permit suspension or revocation proceedings, which remedies are presently available to the OC San as a result of Permittee's current failure to pay Invoice No. 910969. This provision to refrain from instituting such proceedings shall be effective with regard only to Invoice No. 910969 for so long as Permittee remains in compliance with the terms of this Agreement.

6. Should any litigation be commenced between the OC San and Permittee regarding enforcement of this Agreement, or the rights and any duties of the parties in relation thereto, the prevailing party in such litigation shall be entitled, in addition to such other relief as may be granted, to a reasonable sum as and for its attorney fees and costs in the litigation which shall be determined by the court in such litigation or in a separate action brought for that purpose.

7. Nothing in this Agreement shall affect Permittee's obligation to pay current and/or future charges for use of OC San's sewerage system or Permittee's obligation to comply with all other conditions and requirements of its industrial wastewater discharge permit and the OC San's Ordinance.

8. Nothing herein shall affect the OC San's right to enforce all requirements and conditions of the OC San's Ordinance.

9. This Agreement is made only for the benefit of the parties hereto. It is not intended that any right under this Agreement shall accrue to any third person.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first written above.

Orange County Sanitation District

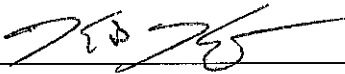
BY:

John Withers
Chair, Board of Directors

Attest:

Nor-Cal Beverage Co., Inc.

BY:



Kevin Koontz
Chief Financial Officer

Kelly A. Lore
Clerk of the Board

APPENDIX A

			Administrative		Due
Payment	Principal	Interest	Charge	Total	Date
1	\$42,352.71	\$0.00	\$25.00	\$42,377.71	1/15/2022
2	\$40,366.99	\$1,985.72	\$25.00	\$42,377.71	2/15/2022
3	\$40,543.60	\$1,809.11	\$25.00	\$42,377.71	3/15/2022
4	\$40,720.97	\$1,631.74	\$25.00	\$42,377.71	4/15/2022
5	\$40,899.13	\$1,453.58	\$25.00	\$42,377.71	5/15/2022
6	\$41,078.06	\$1,274.65	\$25.00	\$42,377.71	6/15/2022
7	\$41,257.78	\$1,094.93	\$25.00	\$42,377.71	7/15/2022
8	\$41,438.28	\$914.43	\$25.00	\$42,377.71	8/15/2022
9	\$41,619.57	\$733.14	\$25.00	\$42,377.71	9/15/2022
10	\$41,801.66	\$551.05	\$25.00	\$42,377.71	10/15/2022
11	\$41,984.54	\$368.17	\$25.00	\$42,377.71	11/15/2022
12	\$42,168.21	\$184.49	\$25.00	\$42,377.70	12/15/2022

RESOLUTION NO. OC SAN 21-05

A RESOLUTION OF THE BOARD OF DIRECTORS OF ORANGE COUNTY SANITATION DISTRICT ADOPTING PROCEDURES FOR SETTLEMENT OF CLAIMS MADE AGAINST THE ORANGE COUNTY SANITATION DISTRICT SETTLEMENT OF CLAIMS MADE BY THE ORANGE COUNTY SANITATION DISTRICT; COLLECTION OF DELINQUENT ACCOUNTS OWING TO THE ORANGE COUNTY SANITATION DISTRICT; SETTLEMENT OF CIVIL OR ADMINISTRATIVE ENFORCEMENT ACTIONS; AND SETTLEMENT OF WORKERS' COMPENSATION ACTIONS, AND REPEALING RESOLUTION NO. OCSD 11-04

WHEREAS claims for damages alleging personal injuries, bodily injuries, including death, and damages to real and personal property, are periodically made against Orange County Sanitation District (OC San); and,

WHEREAS OC San presently has liability insurance in force with a significant self-insured retention, having previously been self-insured; and,

WHEREAS OC San has the need for the retention of claims administration services and legal counsel who shall be vested with certain limited authority to accomplish a favorable disposition of claims made against OC San; and,

WHEREAS claims for workers' compensation damages alleging personal injuries, including death, are periodically made against OC San; and,

WHEREAS OC San presently has major stop loss workers' compensation insurance in force; and,

WHEREAS OC San has retained a claims administration service firm and special legal counsel who shall be vested with certain limited authority to accomplish a favorable disposition of workers' compensation claims made against OC San as provided herein; and

WHEREAS cost efficiency relating to resolution of workers' compensation claims can be greatly improved by the adoption of certain policies relating to the resolution of said claims; and

WHEREAS Government Code Section 935.4 authorizes the Board of Directors to delegate by resolution the authority to an employee to settle pre-litigation claims

against OC San up to \$50,000; and

WHEREAS Government Code section 9352 authorizes the Board of Directors to delegate by resolution the authority to a committee of at least three members to settle pre-litigation claims; and

WHEREAS Government Code Section 949 authorizes the Board of Directors to delegate authority to an employee or its attorney to settle lawsuits; and

WHEREAS OC San has occasion to seek recovery against persons or entities who have caused loss or damage to OC San, who have been assessed fines, charges, or special fees relating to their use of OC San facilities, or who have been the subject of civil or administrative enforcement proceedings for violation of OC San's Wastewater Discharge Regulations Ordinance; and

WHEREAS in the course of conducting the business affairs of OC San, certain accounts receivable or other obligations owing to OC San become delinquent, and in fact, uncollectible; and

WHEREAS cost efficiency relating to collection of delinquent accounts can be greatly improved by the adoption of certain policies relating to the collection of said accounts; and

WHEREAS the Board of Directors desires to update, amend, and reestablish procedures for the administration of claims against and by OC San.

NOW, THEREFORE, the Board of Directors of Orange County Sanitation District, DOES HEREBY DETERMINE, RESOLVE AND ORDER:

ARTICLE I
SETTLEMENT OF LIABILITY CLAIMS MADE
AGAINST THE
ORANGE COUNTY SANITATION DISTRICT

Section 1.1: A liability reserve has been established for the payment of claims made against OC San. Said reserve shall continue to be provided in each annual budget to ensure that sufficient funds are on deposit to provide for payment of those amounts incurred as a liability loss or expense.

Section 1.2: Each annual budget shall provide, in addition to the reserve established by Section 1.1, for the necessary funds to provide a sufficient balance to meet projected expenses for loss and payment of claims during the ensuing fiscal year.

Section 1.3: A claims administration firm is authorized to be retained, and said firm is hereby granted authorization to make payments and settlements of claims made against OC San in an amount not to exceed \$5,000.00 per claimant. Said firm shall be retained in accordance with the terms and conditions set forth in an agreement approved by the General Counsel.

Section 1.4: A Committee comprised of the General Manager or his designee and Director of Finance and Administrative Services are authorized to review and make full settlement of any claims made against OC San for contract or liability damages not otherwise covered by insurance by payment of a sum not to exceed \$50,000.00 per claimant. In the event a claim results in litigation, which is being legally defended by other than OC San's General Counsel, this Committee shall review and provide the approval to OC San's special legal counsel within the same limits.

Section 1.5: All claims for damages resulting in a judgment or a recommended settlement by negotiation in an amount exceeding \$50,000.00 per claimant, shall be submitted to, and approved by the Board of Directors of OC San prior to settlement payments being made.

Section 1.6: The General Counsel, with concurrence of the General Manager, is authorized to retain the services of special legal counsel for purposes of representing OC San in the defense of any claim or matter of litigation, whenever it is determined that specialized expertise or experience is desirable, a conflict of interest exists or could arise with the Office of General Counsel, or that the workload of the Office of General Counsel requires the utilization of special counsel.

ARTICLE II
COLLECTION OF DELINQUENT OBLIGATIONS OWING TO
THE ORANGE COUNTY SANITATION DISTRICT

Section 2.1: The Director of Finance and Administrative Services is authorized to write off as an uncollectible debt any delinquent obligation owing to OC San in excess of 90 days and not exceeding the sum of \$25,000.00.

Section 2.2: The Director of Finance and Administrative Services, in his discretion, is authorized to assign for collection to a person or firm of his choosing, any delinquent obligation owing to OC San in excess of 45 days and not exceeding the sum of \$100,000.00. Ninety (90) days after assigning the obligation for collection, the Director of Finance and Administrative Services is authorized to write off as an uncollectible debt any portion of the obligation which is still outstanding.

Section 2.3: The Director of Finance and Administrative Services shall forward any delinquent obligation in excess of \$100,000.00 to the General Counsel for OC San, who shall submit his recommendation to the Board of Directors as to the method of collection or disposition of said account.

Section 2.4: The Director of Finance and Administrative Services, in his discretion, is authorized to file the necessary proceedings in the small claims court of the appropriate judicial district of the County of Orange, in order to collect any delinquent obligation owing to OC San in excess of 45 days and not exceeding the sum of \$5,000.00. Upon obtaining a judgment in favor of OC San, the Director of Finance and Administrative Services and General Counsel shall take all legal measures necessary to enforce the terms of the judgment. Ninety (90) days after receiving a final judgment in favor of OC San, the Director of Finance and Administrative Services, with the concurrence of the General Counsel, is authorized to write off as an uncollectible debt, any portion of the obligation which is still outstanding.

Section 2.5: Notwithstanding the authority provided in Sections 2.2 and 2.3 above, any obligation owing to OC San, not exceeding the sum of \$100,000.00, may be compromised by acceptance of a sum less than the full amount due or may be written off as uncollectible upon that determination being made, after investigation by a Committee comprised of the General Manager, or his designee, and the Director of Finance and Administrative Services.

Section 2.6: In addition to the above authorization, the Director of Finance and Administrative Services is directed to exercise all available lawful methods to ensure prompt and full recovery of all obligations owing to OC San.

Section 2.7: The Director of Finance and Administrative Services is authorized to offset against any sums held on deposit by OC San on behalf of any person or entity who owes a delinquent obligation to OC San.

Section 2.8: The Director of Finance and Administrative Services is authorized to withhold the approval of any such permits otherwise to be issued by OC San to any person or entity who has an outstanding debt obligation owing to OC San until such time as said debt obligation is paid in full.

Section 2.9: Delinquent obligations, as used in this Resolution, shall include any invoice submitted by OC San for services rendered or for reimbursement of damages caused to OC San property or personnel, which has not been paid within:

- (a) The time prescribed by OC San Ordinance or Resolution;
- (b) Forty-five (45) days from the date of invoice, whichever is later.

ARTICLE III COLLECTION OF FEES AND CHARGES RELATING TO INDUSTRIAL WASTE DISCHARGES

Section 3.1: In the event any fees or charges, up to the amount of \$100,000.00, are owed by an Industrial Waste Permittee and are delinquent or in dispute between the Permittee and OC San, a Committee comprised of the Director of Finance and Administrative Services, and Director of Environmental Services are authorized to negotiate and enter into, on behalf of OC San, a settlement agreement relating to the financial obligation owing to OC San. This Section shall not apply to enforcement actions which are specifically provided for in Article IV below. Said agreement shall be based upon a showing of good cause and a reasonable dispute between OC San and the Permittee and can provide for acceptance of a sum less than the full amount claimed as due by OC San. This agreement may be entered into prior to or during the pendency of any litigation filed by OC San to collect the amount owed.

Section 3.2: Upon written request and establishment of good cause by an Industrial Waste Permittee, the Committee of the General Manager, or his designee, the Director of Finance and Administrative Services, and Director of Environmental Services, may negotiate and enter into a deferred payment agreement with the Permittee in accordance with the guidelines established herein. Said agreement may

be incorporated as part of, or separate and in addition to, any enforcement compliance agreements authorized by the provisions of OC San's Wastewater Discharge Regulations Ordinance.

Section 3.2.1: The installment payment agreement shall be for a maximum term not to exceed 24 months. The agreement shall provide for payment of interest on the principal amount owing at a rate not exceeding the higher of:

- (a) Ten (10%) percent per annum; or
- (b) Five (5%) percent per annum, plus the rate prevailing on the 25th day of the month preceding the earlier of:
 - (i) The date of execution of the contract to make the loan or forbearance; or
 - (ii) The date of making the loan or forbearance. (Established by the Federal Reserve Bank of San Francisco on advances to member banks under Sections 13 and 13(a) of the Federal Reserve Act (commonly referred to as the "discount" rate).

The agreement shall provide for payment of all costs of preparing and administering the payment agreement, including legal and administrative costs.

Section 3.2.2: The agreement shall stipulate the penalties to which the Permittee shall be subjected in the event of nonpayment of any of the payments specified in the agreement, including initiation of legal action or permit suspension or revocation, as recommended by the General Counsel and the Director of Environmental Services.

Section 3.3: If the delinquent obligation is greater than \$100,000.00, any compromise settlement or any deferred payment agreement shall be submitted to and approved by the Board of Directors, who shall prescribe the terms and conditions.

ARTICLE IV
SETTLEMENT OF CIVIL ADMINISTRATIVE
ENFORCEMENT ACTIONS

Section 4.1: In the event OC San initiates or intends to initiate any civil or administrative enforcement actions based upon alleged violations of OC San's Wastewater Discharge Regulations Ordinance, a Committee comprised of the General Manager, or his designee, the Director of Finance and Administrative Services, and Director of Environmental Services are authorized to negotiate and enter into, on behalf of OC San, a settlement agreement, which may include both payment to OC San in an amount up to \$100,000.00, and enforcement compliance orders deemed appropriate to ensure compliance with the Wastewater Discharge Regulations Ordinance. This agreement may be entered into prior to or during the pendency of any administrative proceeding or litigation enforcement action.

Section 4.2: The Committee of the General Manager, Director of Finance and Administrative Services, and Director of Environmental Services may negotiate and enter into a settlement agreement which includes a schedule of payments over a period of time not to exceed 24 months, by the person or entity which is the subject of the enforcement action. The agreement shall provide for payment of interest on the principal amount owing at a rate not exceeding the higher of:

- (a) Ten (10%) percent per annum; or
- (b) Five (5%) percent per annum, plus the rate prevailing on the 25th day of the month preceding the earlier of:
 - (i) The date of execution of the contract to make the loan or forbearance; or
 - (ii) The date of making the loan or forbearance.
(Established by the Federal Reserve Bank of San Francisco on advances to member banks under Sections 13 and 13(a) of the Federal Reserve Act (commonly referred to as the "discount" rate).)

Section 4.3: If the proposed settlement involves the payment of an amount greater than \$100,000.00, the settlement shall be submitted for approval by the Board of Directors of OC San.

ARTICLE V
SETTLEMENT OF WORKERS' COMPENSATION
CLAIMS MADE AGAINST THE
ORANGE COUNTY SANITATION DISTRICT

Section 5.1: A workers' compensation liability reserve has been established for the payment of workers' compensation claims made against OC San. Said reserve shall continue to be provided in each annual budget to ensure that sufficient funds are available to provide for payment of the amounts incurred as a workers' compensation liability loss or expense.

Section 5.2: Each annual budget shall provide, in addition to the reserve established by Section 5.1, for the sufficient funds to provide a sufficient balance to meet projected expenses for payment of claims during the ensuing fiscal year.

Section 5.3: A designated claims administrator is authorized to be retained and said administrator is hereby granted authorization to make payments and settlements of workers' compensation claims made against OC San in an amount not to exceed \$5,000.00 per claim. Said administrator shall be retained in accordance with the terms and conditions set forth in an agreement approved by the General Counsel.

Section 5.4: The Director of Human Resources or designee is authorized to review and make full settlement of any workers' compensation claims made against OC San by payment of an amount not to exceed \$25,000.00 per claim.

Section 5.5: A Committee comprised of the General Manager or designee, Assistant General Manager (Director of Finance & Administrative Services) or designee, and Director of Human Resources or designee are authorized to review and make full settlement of any workers' compensation claim made against OC San resulting in a recommended settlement by negotiation by payment of a sum not to exceed \$50,000.00 per claim, in addition to the medical expenses and associated costs to include but not limited to medical and psychological treatment, review, devices, medication, physical therapy, temporary disability payments, and permanent disability payments per claim. In the event a claim results in litigation, which is being legally defended by specialized counsel other than OC San's General Counsel, this Committee shall review and provide the approval to OC San's special legal counsel within the same limits.

Section 5.6: All workers' compensation claims resulting in a recommended settlement by negotiation in an amount exceeding \$50,000.00, in addition to the medical expenses and associated costs to include but not limited to medical and psychological treatment, review, devices, medication, physical therapy, temporary disability payments, and permanent disability payments per claim, shall be submitted to and approved by the Board of Directors of OC San prior to settlement payments

being made.

Section 5.7: In addition to specialized legal counsel selected by OC San, the General Manager is authorized to retain the services of specialized legal counsel for purposes of representing OC San in the defense of any workers' compensation claim, wherein the General Manager determines that specialized expertise is desirable, and the utilization of outside counsel is required.

Section 6.1: This Resolution supersedes Resolution No. OCSD 11-04, which shall be repealed in its entirety as of the date this Resolution becomes effective. In the event this Resolution does not become effective, Resolution No. OCSD 11-04 shall remain in full force and effect.

Section 6.2: This Resolution is effective immediately upon adoption.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Orange County Sanitation District held March 24, 2021.

David John Shawver

David John Shawver (Mar 25, 2021 11:24 PDT)

David John Shawver
Chairman of the Board of Directors

ATTEST:

Kelly Lore

Kelly Lore (Mar 29, 2021 08:05 PDT)

Kelly A. Lore, MMC
Clerk of the Board

STATE OF CALIFORNIA)
) ss
COUNTY OF ORANGE)

I, Kelly A. Lore, Clerk of the Board of Directors of the Orange County Sanitation District, do hereby certify that the foregoing Resolution No. OC SAN 21-05 was passed and adopted at a regular meeting of said Board on the 24th day of March 2021, by the following vote, to wit:

AYES: Brad Avery, Stacy Berry, Art Brown, Kim Carr, Doug Chaffee, Mark Chirco, Stephen Faessel, Ryan Gallagher, Marshall Goodman, Patrick Harper, Brooke Jones, Steve Jones, Anthony Kuo, Andrew Nguyen, Robert Ooten, Glenn Parker, David Shawver, Jesus Silva, Chad Wanke, John Withers, Chad Zimmerman and Schelly Sustarsic (Alternate).

NOES: None.

ABSTENTIONS: Rose Espinoza

ABSENT: Johnathan Ryan Hernandez and Kim Nichols

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of Orange County Sanitation District this 24th day of March 2021.


Kelly Lore (Mar 29, 2021 08:05 PDT)

Kelly A. Lore, MMC
Clerk of the Board of Directors
Orange County Sanitation District









Resolution OC SAN 21-05

Final Audit Report

2021-03-29

Created:	2021-03-25
By:	Kelly Lore (klore@ocsd.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAoBxP6258IcP2KFuQ2xzmAQKQFPhno9w

"Resolution OC SAN 21-05" History

-  Document created by Kelly Lore (klore@ocsd.com)
2021-03-25 - 2:54:16 PM GMT- IP address: 47.176.92.30
-  Document emailed to David John Shawver (dshawver1@att.net) for signature
2021-03-25 - 2:55:06 PM GMT
-  Email viewed by David John Shawver (dshawver1@att.net)
2021-03-25 - 6:23:53 PM GMT- IP address: 69.147.89.254
-  Document e-signed by David John Shawver (dshawver1@att.net)
Signature Date: 2021-03-25 - 6:24:31 PM GMT - Time Source: server- IP address: 98.149.71.112
-  Document emailed to Kelly Lore (klore@ocsd.com) for signature
2021-03-25 - 6:24:33 PM GMT
-  Email viewed by Kelly Lore (klore@ocsd.com)
2021-03-26 - 2:12:14 AM GMT- IP address: 104.47.65.254
-  Document e-signed by Kelly Lore (klore@ocsd.com)
Signature Date: 2021-03-29 - 3:05:45 PM GMT - Time Source: server- IP address: 47.176.92.30
-  Agreement completed.
2021-03-29 - 3:05:45 PM GMT



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1838

Agenda Date: 12/8/2021

Agenda Item No: 7.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

- A. Adopt Resolution No. OC SAN 21-XX entitled: "A Resolution of the Board of Directors of the Orange County Sanitation District authorizing the execution and delivery by the District of an Installment Purchase Agreement, a Trust Agreement, and a Continuing Disclosure Agreement in connection with the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A, authorizing the execution and delivery of such Revenue Obligations evidencing principal in an aggregate amount of not to exceed \$107,315,000, approving a Notice of Intention to Sell, authorizing the distribution of an Official Notice Inviting Bids and an Official Statement in connection with the offering and sale of such Revenue Obligations and authorizing the execution of necessary documents and related actions"; and
- B. That the Orange County Sanitation District Financing Corporation approve the documents supporting and authorizing the Revenue Obligations in an aggregate amount not to exceed \$107,315,000.

BACKGROUND

Outstanding Wastewater Refunding Revenue Obligations, Series 2012A

In March 2012, the Orange County Sanitation District issued \$100,645,000 of fixed rate Wastewater Refunding Revenue Obligations, Series 2012A (2012A Revenue Obligations) to refund outstanding debt. With current tax-exempt interest rates lower than the coupons on the 2012A Revenue Obligations, a refunding could provide attractive savings to the Orange County Sanitation District. All of the 2012A Revenue Obligations are outstanding and callable starting on February 1, 2022.

Outstanding Wastewater Refunding Revenue Obligations, Series 2012B

In August 2012, the Orange County Sanitation District issued \$66,395,000 of fixed rate Wastewater Refunding Revenue Obligations, Series 2012B (2012B Revenue Obligations) to refund outstanding debt. With current tax-exempt interest rates lower than the coupons on the 2012B Revenue Obligations, a refunding could provide attractive savings to the Orange County Sanitation District.

The current outstanding amount of the 2012B Revenue Obligations is \$8,170,000, of which \$6,670,000 maturing on, and after, February 1, 2023 are callable starting on February 1, 2022.

New Wastewater Refunding Revenue Obligations, Series 2022A

On October 27, 2021, the Board of Directors authorized the General Manager to pursue a fixed rate refunding of the 2012A Revenue Obligations and 2012B Revenue Obligations. Approval of the recommended actions and the associated documents will enable the staff to complete the refundings.

RELEVANT STANDARDS

- Comply with OC San Policy: Orange County Sanitation District Debt Policy - Financial Management Policy and Procedure 201-3-1; Net present value savings are at least three (3) percent of the par amount of the refunded bonds from refunding outstanding bonds
- Easy access to low-cost credit

PROBLEM

2012A Revenue Obligations

The interest rates payable on the 2012A Revenue Obligations are higher than current market yields.

2012B Revenue Obligations

The interest rates payable on the 2012B Revenue Obligations are higher than current market yields.

PROPOSED SOLUTION

The issuance of up to \$107,315,000 of Wastewater Refunding Revenue Obligations, Series 2022A would allow the Orange County Sanitation District to refund up to \$100,645,000 of the 2012A Revenue Obligations and \$6,670,000 of the 2012B Revenue Obligations using a refunding amortization structured with the objective a providing level annual debt service savings and to generate net present value debt service savings of approximately \$22.3 million (equal to 20.8% of refunded principal), based on market conditions as of November 18, 2021.

TIMING CONCERNS

2012A Revenue Obligations

The Orange County Sanitation District can optionally early redeem the 2012A Revenue Obligations starting on February 1, 2022. If the 2012A Revenue Obligations remain outstanding past February 1, 2022, the Orange County Sanitation District would pay interest costs above current market yields.

2012B Revenue Obligations

The Orange County Sanitation District can optionally early redeem a portion of the 2012B Revenue Obligations starting on February 1, 2022. If the 2012B Revenue Obligations remain outstanding past

February 1, 2022, the Orange County Sanitation District would pay interest costs above current market yields.

RAMIFICATIONS OF NOT TAKING ACTION

2012A Revenue Obligations

Not refunding the 2012A Revenue Obligations would result in the Orange County Sanitation District continuing to pay above market interest costs.

2012B Revenue Obligations

Not refunding the 2012B Revenue Obligations would result in the Orange County Sanitation District continuing to pay above market interest costs.

PRIOR COMMITTEE/BOARD ACTIONS

October 2021 - The Board of Directors authorized the General Manager to issue new fixed rate Certificates of Participation, to be referred to as Wastewater Refunding Revenue Obligations, in an amount sufficient to refund (1) up to \$100,645,000 of Wastewater Refunding Revenue Obligations, Series 2012A and (2) up to \$6,670,000 of Wastewater Refunding Revenue Obligations, Series 2012B.

May 2021 - The Board of Directors adopted Resolution No. OC SAN 21-09 authorizing the execution and delivery by the District of an Installment Purchase Agreement, a Trust Agreement, a Continuing Disclosure Agreement and Escrow Agreements in connection with the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2021A, authorizing the execution and delivery of such Revenue Obligations evidencing principal in an aggregate amount of not to exceed \$163,775,000, approving a Notice of Intention to Sell, authorizing the distribution of an Official Notice Inviting Bids and an Official Statement in connection with the offering and sale of such Revenue Obligations and authorizing the execution of necessary documents and related actions.

ADDITIONAL INFORMATION

Since this is a fixed-rate debt issuance, staff is proposing to issue the refunding through a competitive sale because it is the most expeditious way to access the market and it is expected to provide the lowest costs for this given structure. All costs involved with the refunding, including costs for Public Resources Advisory Group (Municipal Advisor) and Norton Rose Fulbright US LLP (Special Counsel and Disclosure Counsel) will be paid from the proceeds of the new refunding issue.

Senate Bill 450 (Chapter 625 of the 2017-2018 Session of the California Legislature) requires that the governing body of a public body obtain prior to authorizing the issuance of bonds with a term of greater than 13 months (which includes the 2022A Revenue Obligations), good faith estimates of the following information in a meeting open to the public: (a) the true interest cost of the bonds, (b) the sum of all fees and charges paid to third parties with respect to the bonds, (c) the amount of proceeds of the bonds expected to be received net of the fees and charges paid to third parties and any reserves or capitalized interest paid or funded with proceeds of the bonds, and (d) the sum total of all debt service payments on the bonds calculated to the final maturity of the bonds plus the fees

and charges paid to third parties not paid with the proceeds of the bonds. For the anticipated issuance of 2022A Revenue Obligations, the Orange County Sanitation District's Municipal Advisor, Public Resources Advisory Group, estimates, based on market conditions as of November 18, 2021 and subject to changing market conditions which may result in the figures being higher or lower, the following:

- a) true interest cost of 1.44%;
- b) sum of all fees and charges paid to third parties of \$566,650;
- c) net proceeds of \$107,321,342; and
- d) total payments of \$121,680,750

Legal Authorization and Approvals

The Board of Directors of the Orange County Sanitation District and the Financing Corporation will each be required to adopt separate Resolutions to complete this refunding. A Financing Corporation is required by the structure of the Revenue Obligations and was formed in April 2000 solely to satisfy this need. The Board of Directors of the Corporation is the same as the Board of Directors of the Orange County Sanitation District and the Corporation meets after an adjournment of the Orange County Sanitation District Board.

The Orange County Sanitation District Resolution authorizes the execution and delivery of certain legal documents and the execution and delivery of Wastewater Refunding Revenue Obligations, Series 2022A, evidencing principal in an aggregate amount of not to exceed \$107,315,000 all as spelled out in the title as follows:

“A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT AUTHORIZING THE EXECUTION AND DELIVERY BY THE DISTRICT OF AN INSTALLMENT PURCHASE AGREEMENT, A TRUST AGREEMENT, AND A CONTINUING DISCLOSURE AGREEMENT IN CONNECTION WITH THE ORANGE COUNTY SANITATION DISTRICT WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A, AUTHORIZING THE EXECUTION AND DELIVERY OF SUCH REVENUE OBLIGATIONS EVIDENCING PRINCIPAL IN AN AGGREGATE AMOUNT OF NOT TO EXCEED \$107,315,000, APPROVING A NOTICE OF INTENTION TO SELL, AUTHORIZING THE DISTRIBUTION OF AN OFFICIAL NOTICE INVITING BIDS AND AN OFFICIAL STATEMENT IN CONNECTION WITH THE OFFERING AND SALE OF SUCH REVENUE OBLIGATIONS AND AUTHORIZING THE EXECUTION OF NECESSARY DOCUMENTS AND RELATED ACTIONS.”

The Resolution of the Corporation is somewhat shorter and simpler. It authorizes three actions that are similarly enumerated in the title as follows:

“A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT FINANCING CORPORATION AUTHORIZING THE EXECUTION AND DELIVERY BY THE CORPORATION OF AN INSTALLMENT PURCHASE AGREEMENT, AND A TRUST AGREEMENT IN CONNECTION WITH THE ORANGE COUNTY SANITATION DISTRICT WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A, AUTHORIZING THE EXECUTION AND DELIVERY OF SUCH REVENUE OBLIGATIONS EVIDENCING PRINCIPAL IN AN AGGREGATE AMOUNT OF NOT TO EXCEED \$107,315,000 AND AUTHORIZING THE EXECUTION OF NECESSARY DOCUMENTS AND RELATED ACTIONS.”

Following is a list of the remaining steps to be completed for the issuance of the Wastewater Refunding Revenue Obligations, Series 2022A debt issuance:

December:

- Board of Directors approval of legal and disclosure documents
- Financing Corporation approval of legal and disclosure documents
- Request ratings from bond rating agencies

January:

- Receive ratings from rating agencies
- Marketing and sale through a competitive sale process

February:

- Closing
- Begin debt administration

CEQA

N/A

FINANCIAL CONSIDERATIONS

N/A

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Proposed Resolution No. OC SAN No. 21-XX
- Proposed Financing Corporation Resolution No. FC-29
- Draft Installment Purchase Agreement
- Draft Trust Agreement
- Draft Notice of Intention to Sell
- Draft Official Notice Inviting Bids
- Draft Preliminary Official Statement
- Draft Continuing Disclosure Agreement

RESOLUTION NO. OC SAN 21-XX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT AUTHORIZING THE EXECUTION AND DELIVERY BY THE DISTRICT OF AN INSTALLMENT PURCHASE AGREEMENT, A TRUST AGREEMENT, AND A CONTINUING DISCLOSURE AGREEMENT IN CONNECTION WITH THE ORANGE COUNTY SANITATION DISTRICT WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A, AUTHORIZING THE EXECUTION AND DELIVERY OF SUCH REVENUE OBLIGATIONS EVIDENCING PRINCIPAL IN AN AGGREGATE AMOUNT OF NOT TO EXCEED \$107,315,000, APPROVING A NOTICE OF INTENTION TO SELL, AUTHORIZING THE DISTRIBUTION OF AN OFFICIAL NOTICE INVITING BIDS AND AN OFFICIAL STATEMENT IN CONNECTION WITH THE OFFERING AND SALE OF SUCH REVENUE OBLIGATIONS AND AUTHORIZING THE EXECUTION OF NECESSARY DOCUMENTS AND RELATED ACTIONS

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the "2012A Prior Project"), the Orange County Sanitation District (the "District") has heretofore purchased the 2012A Prior Project from the Orange County Sanitation District Financing Corporation (the "Corporation"), and the Corporation has heretofore sold the 2012A Prior Project to the District, for the installment payments (the "2012A Prior Installment Payments") made by the District pursuant to the Installment Purchase Agreement, dated as of March 1, 2012 (the "2012A Prior Installment Purchase Agreement"), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012A Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012A (the "2012A Prior Obligations"), evidencing direct, undivided fractional interests in the 2012A Prior Installment Payments;

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the "2012B Prior Project" and, together with the 2012A Prior Project, the "Prior Projects"), the District has heretofore purchased the 2012B Prior Project from the Corporation, and the Corporation has heretofore sold the 2012B Prior Project to the District, for the installment payments (the "2012B Prior

Installment Payments” and, together with the 2012A Prior Installment Payments, the “Prior Installment Payments”) made by the District pursuant to the Installment Purchase Agreement, dated as of August 1, 2012 (the “2012B Prior Installment Purchase Agreement” and, together with the 2012A Prior Installment Purchase Agreement, the “Prior Installment Purchase Agreements”), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012B Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012B (the “2012B Prior Obligations”), evidencing direct, undivided fractional interests in the 2012B Prior Installment Payments;

WHEREAS, the District desires to refinance all or a portion of the Prior Projects by prepaying all or a portion of the remaining Prior Installment Payments, and the interest thereon to the date of prepayment, thereby causing all of the remaining 2012A Prior Obligations and a portion of the remaining 2012B Prior Obligations maturing on February 1, 2023 through 2026, inclusive, to be prepaid;

WHEREAS, to provide the funds necessary to prepay a portion of the remaining Prior Installment Payments, the District and the Corporation desire that the Corporation purchase the Prior Projects from the District and the District sell the Prior Projects to the Corporation, and that the District then purchase the Prior Projects from the Corporation and the Corporation sell the Prior Projects to the District, for the installment payments (the “Installment Payments”) to be made by the District pursuant to an Installment Purchase Agreement by and between the District and the Corporation (such Installment Purchase Agreement, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Installment Purchase Agreement”);

WHEREAS, the Corporation intends to assign without recourse certain of its rights under and pursuant to the Installment Purchase Agreement to U.S. Bank National Association, as trustee (the “Trustee”), pursuant to a Trust Agreement by and among the Trustee, the Corporation and the District (such Trust Agreement, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Trust Agreement”);

WHEREAS, in consideration of such assignment and the execution and delivery of the Trust Agreement, the Trustee intends to execute and deliver the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), evidencing direct, undivided fractional interests in the Installment Payments, and the interest thereon;

WHEREAS, the District desires to provide for the public sale of the Revenue Obligations;

WHEREAS, a form of the Notice of Intention to Sell to be published in connection with the public offering and sale of the Revenue Obligations has been prepared (such Notice of Intention to Sell, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Notice of Intention to Sell”);

WHEREAS, a form of the Official Notice Inviting Bids to be distributed in connection with the public offering and sale of the Revenue Obligations has been prepared (such Official Notice Inviting Bids, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Notice Inviting Bids”);

WHEREAS, a form of the Preliminary Official Statement to be distributed in connection with the public offering of the Revenue Obligations has been prepared (such Preliminary Official Statement in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Preliminary Official Statement”);

WHEREAS, Rule 15c2-12 promulgated by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended (“Rule 15c2-12”), requires that the underwriter thereof must have reasonably determined that the District has undertaken in a written agreement or contract for the benefit of the holders of the Revenue Obligations to provide disclosure of certain financial information and certain material events on an ongoing basis;

WHEREAS, to cause such requirement to be satisfied, the District desires to enter into a Continuing Disclosure Agreement with Digital Assurance Certification, LLC (such Continuing Disclosure Agreement in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Continuing Disclosure Agreement”);

WHEREAS, there have been prepared and submitted to this meeting forms of:

- (a) the Installment Purchase Agreement;
- (b) the Trust Agreement;
- (c) the Notice of Intention to Sell;
- (d) the Notice Inviting Bids;

- (e) the Preliminary Official Statement; and
- (f) the Continuing Disclosure Agreement.

WHEREAS, all acts, conditions and things required by the Constitution and laws of the State of California to exist, to have happened and to have been performed precedent to and in connection with the consummation of the financing authorized hereby do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the District is now duly authorized and empowered, pursuant to each and every requirement of law, to consummate such financing for the purpose, in the manner and upon the terms herein provided;

NOW, THEREFORE, the Board of Directors of the District DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1. All of the recitals herein contained are true and correct and the Board of Directors of the District (the "Board") so finds.

Section 2. The Installment Purchase Agreement, in substantially the form submitted to this meeting and made a part hereof as though set forth herein, be and the same is hereby approved. The Chairperson of the Board, and such other member of the Board as the Chairperson may designate, the General Manager of the District, the Assistant General Manager, Director of Finance and Administrative Services of the District, and such other officers of the District as the Assistant General Manager, Director of Finance and Administrative Services may designate (the "Authorized Officers") are, and each of them is, hereby authorized and directed, for and in the name of the District, to execute and deliver the Installment Purchase Agreement in the form submitted to this meeting, with such changes, insertions and omissions as the Authorized Officer executing the same may require or approve, such requirement or approval to be conclusively evidenced by the execution of the Installment Purchase Agreement by such Authorized Officer; provided, however, that such changes, insertions and omissions shall not result in an aggregate principal amount of Installment Payments in excess of \$107,315,000.00, shall not result in a true interest cost for the Installment Payments in excess of 3.0% and shall not result in a final Installment Payment later than February 1, 2033.

Section 3. The Trust Agreement, in substantially the form submitted to this meeting and made a part hereof as though set forth in full herein, be and the same is hereby approved. The Authorized Officers are, and each of them is, hereby authorized and directed, for and in the name of the District, to execute and deliver the Trust Agreement in the form presented to this meeting, with such changes, insertions and omissions as the Authorized Officer executing the same may require or approve, such

requirement or approval to be conclusively evidenced by the execution of the Trust Agreement by such Authorized Officer.

Section 4. The execution and delivery of Revenue Obligations evidencing principal in an aggregate amount not to exceed \$107,315,000.00, payable in the years and in the amounts, and evidencing principal of and interest on the Installment Payments as specified in the Trust Agreement as finally executed, are hereby authorized and approved.

Section 5. The prepayment of all or a portion of the remaining principal components of the Prior Installment Payments, and the interest components thereof to the dates of prepayment, and (i) the 2012A Prior Obligations and (ii) the 2012B Prior Obligations maturing on February 1, 2023 through 2026, inclusive, evidencing interests therein, as determined by any Authorized Officer, is hereby authorized and approved.

Section 6. The form of Notice of Intention to Sell, in substantially the form submitted to this meeting and made a part hereof as though set forth in full herein, with such changes, insertions and omissions therein as may be approved by an Authorized Officer, is hereby approved, and the use of the Notice of Intention to Sell in connection with the offering and sale of the Revenue Obligations is hereby approved. The Authorized Officers are each hereby authorized and directed, for and in the name and on behalf of the District, to cause the Notice of Intention to Sell to be published once in *The Bond Buyer* (or in such other financial publication generally circulated throughout the State of California or reasonably expected to be disseminated among prospective bidders for the Revenue Obligations as an Authorized Officer shall approve as being in the best interests of the District) at least five days prior to the date set for the opening of bids in the Notice Inviting Bids, with such changes, insertions and omissions therein as an Authorized Officer may require or approve, such requirement or approval to be conclusively evidenced by such publishing of the Notice of Intention to Sell.

Section 7. The Notice Inviting Bids, in substantially the form submitted to this meeting and made a part hereof as though set forth herein, with such changes, insertions and omissions therein as may be approved by an Authorized Officer, be and the same is hereby approved, and the use of the Notice Inviting Bids in connection with the offering and sale of the Revenue Obligations is hereby authorized and approved. The terms and conditions of the offering and sale of the Revenue Obligations shall be as specified in the Notice Inviting Bids. Bids for the purchase of the Revenue Obligations shall be received at the time and place set forth in the Notice Inviting Bids. The Authorized Officers are each hereby authorized and directed, for and in the name and on behalf of the District, to accept the bid for the Revenue Obligations with the

lowest true interest cost, or to reject all bids therefor, in accordance with the terms of the Notice Inviting Bids.

Section 8. The Preliminary Official Statement, in substantially the form presented to this meeting and made a part hereof as though set forth in full herein, with such changes, insertions and omissions therein as may be approved by an Authorized Officer, is hereby approved, and the use of the Preliminary Official Statement in connection with the offering and sale of the Revenue Obligations is hereby authorized and approved. The Authorized Officers are each hereby authorized to certify on behalf of the District that the Preliminary Official Statement is deemed final as of its date, within the meaning of Rule 15c2-12 (except for the omission of certain information permitted by Rule 15c2-12 to be omitted). The Authorized Officers are each hereby authorized and directed to furnish, or cause to be furnished, to prospective bidders for the Revenue Obligations a reasonable number of copies of the Preliminary Official Statement.

Section 9. The preparation and delivery of a final Official Statement (the "Official Statement"), and its use in connection with the offering and sale of the Revenue Obligations, be and the same is hereby authorized and approved. The Official Statement shall be in substantially the form of the Preliminary Official Statement, with such changes, insertions and omissions as may be approved by an Authorized Officer, such approval to be conclusively evidenced by the execution and delivery thereof. The Authorized Officers are, and each of them is, hereby authorized and directed to execute the final Official Statement and any amendment or supplement thereto, for and in the name of the District.

Section 10. The Continuing Disclosure Agreement, in substantially the form submitted to this meeting and made a part hereof as though set forth herein, be and the same is hereby approved. The Authorized Officers are, and each of them is, hereby authorized and directed, for and in the name of the District, to execute and deliver the Continuing Disclosure Agreement in the form submitted to this meeting, with such changes, insertions and omissions as the Authorized Officer executing the same may require or approve, such requirement or approval to be conclusively evidenced by the execution of the Continuing Disclosure Agreement by such Authorized Officer.

Section 11. The Authorized Officers are, and each of them hereby is, authorized and directed to execute and deliver any and all documents and instruments and to do and cause to be done any and all acts and things necessary or proper for carrying out the execution and delivery of the Revenue Obligations and the transactions contemplated by the notices, agreements and documents referenced in this Resolution.

Section 12. All actions heretofore taken by the officers and employees of the District with respect to the execution, delivery and sale of the Revenue Obligations, or in

connection with or related to any of the agreements or documents referenced in this Resolution, are hereby approved, confirmed and ratified.

Section 13. This Resolution shall take effect immediately upon its adoption.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Orange County Sanitation District held on December 15, 2021.

John B. Withers
Board Chairman

ATTEST:

Kelly A. Lore, MMC
Clerk of the Board

APPROVED AS TO FORM:

Bradley R. Hogin
General Counsel

RESOLUTION NO. FC-29

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE ORANGE COUNTY SANITATION DISTRICT FINANCING CORPORATION AUTHORIZING THE EXECUTION AND DELIVERY BY THE CORPORATION OF AN INSTALLMENT PURCHASE AGREEMENT, AND A TRUST AGREEMENT IN CONNECTION WITH THE ORANGE COUNTY SANITATION DISTRICT WASTEWATER REFUNDING REVENUE OBLIGATIONS, SERIES 2022A, AUTHORIZING THE EXECUTION AND DELIVERY OF SUCH REVENUE OBLIGATIONS EVIDENCING PRINCIPAL IN AN AGGREGATE AMOUNT OF NOT TO EXCEED \$107,315,000 AND AUTHORIZING THE EXECUTION OF NECESSARY DOCUMENTS AND RELATED ACTIONS

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the "2012A Prior Project"), the Orange County Sanitation District (the "District") has heretofore purchased the 2012A Prior Project from the Orange County Sanitation District Financing Corporation (the "Corporation"), and the Corporation has heretofore sold the 2012A Prior Project to the District, for the installment payments (the "2012A Prior Installment Payments") made by the District pursuant to the Installment Purchase Agreement, dated as of March 1, 2012 (the "2012A Prior Installment Purchase Agreement"), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012A Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012A (the "2012A Prior Obligations"), evidencing direct, undivided fractional interests in the 2012A Prior Installment Payments;

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the "2012B Prior Project" and, together with the 2012A Prior Project, the "Prior Projects"), the District has heretofore purchased the 2012B Prior Project from the Corporation, and the Corporation has heretofore sold the 2012B Prior Project to the District, for the installment payments (the "2012B Prior Installment Payments" and, together with the 2012A Prior Installment Payments, the "Prior Installment Payments") made by the District pursuant to the Installment Purchase Agreement, dated as of August 1, 2012 (the "2012B Prior Installment Purchase Agreement" and, together with the 2012A Prior Installment Purchase Agreement, the

“Prior Installment Purchase Agreements”), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012B Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012B (the “2012B Prior Obligations”), evidencing direct, undivided fractional interests in the 2012B Prior Installment Payments;

WHEREAS, the District desires to refinance all or a portion of the Prior Projects by prepaying all or a portion of the remaining Prior Installment Payments, and the interest thereon to the date of prepayment, thereby causing all of the remaining 2012A Prior Obligations, and a portion of the remaining 2012B Prior Obligations maturing on February 1, 2023 through 2026, inclusive, to be prepaid;

WHEREAS, to provide the funds necessary to prepay a portion of the remaining Prior Installment Payments, the District and the Corporation desire that the Corporation purchase the Prior Projects from the District and the District sell the Prior Projects to the Corporation, and that the District then purchase the Prior Projects from the Corporation and the Corporation sell the Prior Projects to the District, for the installment payments (the “Installment Payments”) to be made by the District pursuant to an Installment Purchase Agreement by and between the District and the Corporation (such Installment Purchase Agreement, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Installment Purchase Agreement”);

WHEREAS, the Corporation intends to assign without recourse certain of its rights under and pursuant to the Installment Purchase Agreement to U.S. Bank National Association, as trustee (the “Trustee”), pursuant to a Trust Agreement by and among the Trustee, the Corporation and the District (such Trust Agreement, in the form presented to this meeting, with such changes, insertions and omissions as are made pursuant to this Resolution, being referred to herein as the “Trust Agreement”);

WHEREAS, in consideration of such assignment and the execution and delivery of the Trust Agreement, the Trustee intends to execute and deliver the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), evidencing direct, undivided fractional interests in the Installment Payments, and the interest thereon;

WHEREAS, there have been prepared and submitted to this meeting forms of:

- (a) the Installment Purchase Agreement; and
- (b) the Trust Agreement;

WHEREAS, all acts, conditions and things required by the Constitution and laws of the State of California to exist, to have happened and to have been performed precedent to and in connection with the consummation of the actions authorized hereby do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the Corporation is now duly authorized and empowered, pursuant to each and every requirement of law, to consummate such actions for the purpose, in the manner and upon the terms herein provided;

NOW, THEREFORE, the Board of Directors of the Corporation DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1. All of the recitals herein contained are true and correct and the Board of Directors of the Corporation (the "Board") so finds.

Section 2. The Installment Purchase Agreement, in substantially the form submitted to this meeting and made a part hereof as though set forth herein, be and the same is hereby approved. The President of the Corporation, the Vice-President of the Corporation, the Treasurer of the Corporation and the Secretary of the Corporation, and such other officers of the Corporation as the President may designate (the "Authorized Officers") are, and each of them is, hereby authorized and directed, for and in the name of the Corporation, to execute and deliver the Installment Purchase Agreement in the form submitted to this meeting, with such changes, insertions and omissions as the Authorized Officer executing the same may require or approve, such requirement or approval to be conclusively evidenced by the execution of the Installment Purchase Agreement by such Authorized Officer; provided, however, that such changes, insertions and omissions shall not result in an aggregate principal amount of Installment Payments in excess of \$107,315,000.00, shall not result in a true interest cost for the Installment Payments in excess of 3.0% and shall not result in a final Installment Payment later than February 1, 2033.

Section 3. The Trust Agreement, in substantially the form submitted to this meeting and made a part hereof as though set forth in full herein, be and the same is hereby approved. The Authorized Officers are, and each of them is, hereby authorized and directed, for and in the name of the Corporation, to execute and deliver the Trust Agreement in the form presented to this meeting, with such changes, insertions and omissions as the Authorized Officer executing the same may require or approve, such

requirement or approval to be conclusively evidenced by the execution of the Trust Agreement by such Authorized Officer.

Section 4. The execution and delivery of Revenue Obligations evidencing principal in an aggregate amount of not to exceed \$107,315,000, payable in the years and in the amounts, and evidencing direct, undivided fractional interests in the Installment Payments, and the interest thereon, as specified in the Trust Agreement as finally executed, are hereby authorized and approved.

Section 5. The officers and agents of the Corporation are, and each of them hereby is, authorized and directed to execute and deliver any and all documents and instruments and to do and cause to be done any and all acts and things necessary or proper for carrying out the execution and delivery of the Revenue Obligations and the transactions contemplated by the agreements or documents referenced in this Resolution.

Section 6. All actions heretofore taken by the officers and agents of the Corporation with respect to the execution, delivery and sale of the Revenue Obligations, or in connection with or related to any of the agreements or documents referenced in this Resolution, are hereby approved, confirmed and ratified.

Section 7. This Resolution shall take effect immediately upon its adoption.

PASSED AND ADOPTED at a meeting of the Orange County Sanitation District Financing Corporation held on December 15, 2021.

John B. Withers
President, Orange County Sanitation
District Financing Corporation

ATTEST:

Kelly A. Lore, MMC
Secretary, Orange County
Sanitation District Financing Corporation

APPROVED AS TO FORM:

Bradley R. Hogin
General Counsel, Orange County
Sanitation District Financing Corporation

INSTALLMENT PURCHASE AGREEMENT

by and between

ORANGE COUNTY SANITATION DISTRICT

and

ORANGE COUNTY SANITATION DISTRICT
FINANCING CORPORATION

Dated as of February 1, 2022

Relating to

[\$[PAR AMOUNT]]
Orange County Sanitation District
Wastewater Refunding Revenue Obligations
Series 2022A

TABLE OF CONTENTS

	Page
ARTICLE I	DEFINITIONS..... 3
Section 1.01.	Definitions..... 3
Section 1.02.	Definitions in Master Agreement and Trust Agreement..... 4
ARTICLE II	PURCHASE OF PROJECT BY, AND SALE THEREOF TO, THE CORPORATION; PAYMENT OF PURCHASE PRICE 4
Section 2.01.	Acquisition of the Project 4
Section 2.02.	Payment of Purchase Price..... 4
ARTICLE III	PURCHASE OF PROJECT BY, AND SALE THEREOF TO, THE DISTRICT; INSTALLMENT PAYMENTS 5
Section 3.01.	Purchase and Sale of Project..... 5
Section 3.02.	Installment Payments 6
Section 3.03.	Reserved..... 7
Section 3.04.	Obligation Absolute 7
Section 3.05.	Nature of Agreement..... 7
ARTICLE IV	PREPAYMENT OF INSTALLMENT PAYMENTS 7
Section 4.01.	Prepayment of Installment Payments..... 7
Section 4.02.	Notice..... 8
Section 4.03.	Discharge of Obligations 8
ARTICLE V	COVENANTS 8
Section 5.01.	Compliance with Master Agreement 8
Section 5.02.	Compliance with Installment Purchase Agreement..... 8
Section 5.03.	Protection of Security and Rights 8
Section 5.04.	Indemnification of Corporation 9
Section 5.05.	Further Assurances..... 9
ARTICLE VI	EVENTS OF DEFAULT AND REMEDIES OF THE CORPORATION 9
Section 6.01.	Events of Default 9
Section 6.02.	Remedies on Default..... 10
Section 6.03.	Non-Waiver..... 10
Section 6.04.	Remedies Not Exclusive 10
ARTICLE VII	AMENDMENTS 11
Section 7.01.	Amendments 11
ARTICLE VIII	MISCELLANEOUS 12
Section 8.01.	Liability of District Limited..... 12
Section 8.02.	Limitation of Rights..... 12
Section 8.03.	Assignment 12
Section 8.04.	Notices 12

TABLE OF CONTENTS
(continued)

	Page
Section 8.05.	Successor Is Deemed Included in all References to Predecessor 13
Section 8.06.	Waiver of Personal Liability 13
Section 8.07.	Article and Section Headings, Gender and References 13
Section 8.08.	Partial Invalidity..... 13
Section 8.09.	Governing Law 14
Section 8.10.	Execution in Counterparts..... 14
EXHIBIT A	DESCRIPTION OF PROJECT..... A-1

INSTALLMENT PURCHASE AGREEMENT

THIS INSTALLMENT PURCHASE AGREEMENT (this “Installment Purchase Agreement”), dated as of February 1, 2022, is by and between the ORANGE COUNTY SANITATION DISTRICT, a county sanitation district organized and existing under the laws of the State of California (the “District”), and the ORANGE COUNTY SANITATION DISTRICT FINANCING CORPORATION, a nonprofit public benefit corporation organized and existing under the laws of the State of California (the “Corporation”).

WITNESSETH:

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the “2012A Prior Project”), the District has heretofore purchased the 2012A Prior Project from the Corporation, and the Corporation has heretofore sold the 2012A Prior Project to the District, for the installment payments (the “2012A Prior Installment Payments”) made by the District pursuant to the Installment Purchase Agreement, dated as of March 1, 2012, by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012A Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012A, maturing on February 1, 2023 through 2026, inclusive (the “2012A Prior Obligations”), evidencing direct, undivided fractional interests in the 2012A Prior Installment Payments;

WHEREAS, the District has determined to further refinance the 2012A Prior Project by prepaying the principal components of the 2012A Prior Installment Payments (the “2012A Refunded Installment Payments”), and the interest components thereof to the date of prepayment, thereby causing to be prepaid the outstanding 2012A Prior Obligations in the aggregate principal amount of \$100,645,000 (the “2012A Refunded Obligations”);

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the “2012B Prior Project” and, together with the 2012A Prior Project, the “Prior Projects”), the District has heretofore purchased the 2012B Prior Project from the Corporation, and the Corporation has heretofore sold the 2012B Prior Project to the District, for the installment payments (the “2012B Prior Installment Payments” and, together with the 2012A Prior Installment Payments, the “Prior Installment Payments”) made by the District pursuant to the Installment Purchase Agreement, dated as of August 1, 2012, by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012B Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012B (the “2012B Prior Obligations”), evidencing direct, undivided fractional interests in the 2012B Prior Installment Payments;

WHEREAS, the District has determined to further refinance a portion of the 2012B Prior Project by prepaying a portion of the remaining principal components of the 2012B Prior

Installment Payments due on February 1, 2023 through 2026, inclusive (the “2012B Refunded Installment Payments”), and the interest components thereof to the date of prepayment, thereby causing to be prepaid a portion of the outstanding 2012B Prior Obligations maturing on February 1 in the years 2023 through 2026, inclusive, in the aggregate principal amount of \$6,670,000 (the “2012B Refunded Obligations”);

WHEREAS, to provide the funds necessary to prepay a portion of the remaining Prior Installment Payments, the District and the Corporation desire that the Corporation purchase the Project from the District and the District sell the Project to the Corporation, and that the District then purchase the Project from the Corporation and the Corporation sell the Project to the District, for the installment payments (the “Installment Payments”) to be made by the District pursuant to this Installment Purchase Agreement;

WHEREAS, pursuant to the Master Agreement for District Obligations, dated as of August 1, 2000, by and between the District and the Corporation, the District has established and declared the conditions and terms upon which obligations such as this Installment Purchase Agreement, and the Installment Payments, and the interest thereon, are to be incurred and secured;

WHEREAS, the Corporation proposes to assign without recourse certain of its rights under and pursuant to this Installment Purchase Agreement to U.S. Bank National Association, as trustee (the “Trustee”);

WHEREAS, in consideration of such assignment and the execution and delivery of the Trust Agreement, dated as of the date hereof, by and among the Trustee, the Corporation and the District, the Trustee has agreed to execute and deliver the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), evidencing direct, undivided fractional interests in the Installment Payments, and the interest thereon, payable hereunder;

WHEREAS, a portion of the proceeds of the Revenue Obligations will be used to prepay a the Refunded Installment Payments; and

WHEREAS, all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and delivery of this Installment Purchase Agreement do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and enter into this Installment Purchase Agreement;

NOW, THEREFORE, in consideration of the covenants and provisions herein set forth and for other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the parties hereto do hereby agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01. Definitions. Except as provided in Section 1.02 hereof or unless the context otherwise requires, the terms defined in this Section shall for all purposes hereof and of any amendment hereof or supplement hereto and of any report or other document mentioned herein or therein have the meanings defined herein, the following definitions to be equally applicable to both the singular and plural forms of any of the terms defined herein:

“Business Day” means a day other than (a) Saturday or Sunday, (b) a day on which banking institutions in the city in which the Principal Office is located are authorized or required by law to be closed, and (c) a day on which the New York Stock Exchange is authorized or obligated by law or executive order to be closed.

“Closing Date” means February 1, 2022.

“Corporation” means the Orange County Sanitation District Financing Corporation, a nonprofit public benefit corporation organized and existing under the laws of the State, and any successor thereto.

“District” means the Orange County Sanitation District, a county sanitation district organized and existing under and by virtue of the laws of the State, and any successor thereto.

“Event of Default” means an event described in Section 6.01 hereof.

“Installment Payments” means the Installment Payments required to be made by the District pursuant to Section 3.02 hereof.

“Installment Payment Dates” means each February 1, commencing February 1, 20[___].

“Installment Purchase Agreement” means this Installment Purchase Agreement, dated as of February 1, 2022, by and between the District and the Corporation, as originally executed and as it may from time to time be amended or supplemented in accordance with the terms hereof.

“Interest Payment Date” means February 1 and August 1 of each year, commencing August 1, 2022.

“Master Agreement” means the Master Agreement for District Obligations, dated as of August 1, 2000, by and between the District and the Corporation, as originally executed and as it may from time to time be amended or supplemented in accordance with the terms thereof.

“Person” means an individual, corporation, limited liability company, firm, association, partnership, trust, or other legal entity or group of entities, including a governmental entity or any agency or political subdivision thereof.

“Principal Office” means the Trustee’s principal corporate trust office in Los Angeles, California.

“Project” means the improvements to the Wastewater System, as described in Exhibit A hereto.

“Revenue Obligations” means the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A, executed and delivered by the Trustee, which are certificates of participation, evidencing direct, undivided fractional interests in the Installment Payments, and the interest thereon, executed and delivered under and pursuant to the Trust Agreement.

“Trust Agreement” means the Trust Agreement, dated as of February 1, 2022, by and among the Trustee, the Corporation and the District, as originally executed and as it may from time to time be amended or supplemented in accordance with its terms.

“Trustee” means U.S. Bank National Association, a national banking association duly organized and existing under the laws of the United States of America, or any other bank or trust company which may at any time be substituted in its place as provided in the Trust Agreement.

Section 1.02. Definitions in Master Agreement and Trust Agreement. Except as otherwise herein defined and unless the context otherwise requires, the terms defined in the Master Agreement or the Trust Agreement shall for all purposes hereof and of any amendment hereof or supplement hereto and of any report or other document mentioned herein have the meanings defined therein, such definitions to be equally applicable to both the singular and plural forms of any of the terms defined therein. With respect to any defined term which is given a different meaning under this Installment Purchase Agreement than under the Master Agreement or the Trust Agreement, as used herein it shall have the meaning given herein.

ARTICLE II

PURCHASE OF PROJECT BY, AND SALE THEREOF TO, THE CORPORATION; PAYMENT OF PURCHASE PRICE

Section 2.01. Acquisition of the Project. The District represents and warrants that it is the sole and exclusive owner of the Project. The Corporation hereby purchases from the District, and the District hereby sells to the Corporation, a portion of the Project equal to \$[_____] as described in Exhibit A hereto in accordance with the provisions of this Installment Purchase Agreement. All right, title and interest in and to such portion of the Project shall immediately vest in the Corporation on the Closing Date without further action on the part of the Corporation or the District.

Section 2.02. Payment of Purchase Price. On the Closing Date, the Corporation shall pay to the District, as the purchase price of the applicable portion of the Project specified in Section 2.01, the amount of \$[_____] , which amount shall be paid from the proceeds of the Revenue Obligations.

ARTICLE III

PURCHASE OF PROJECT BY, AND SALE THEREOF TO, THE DISTRICT; INSTALLMENT PAYMENTS

Section 3.01. Purchase and Sale of Project. The District hereby purchases from the Corporation, and the Corporation hereby sells to the District, the Project in accordance with the provisions of this Installment Purchase Agreement. All right, title and interest in and to the Project shall immediately vest in the District on the Closing Date without further action on the part of the District or the Corporation.

Section 3.02. Installment Payments. The District shall, subject to any rights of prepayment provided in Article IV hereof, pay to the Corporation, solely from Net Revenues and from no other sources, the purchase price of the Project in Installment Payments, with interest thereon, as provided herein. The Installment Payments and the interest thereon shall be payable on the Business Day immediately preceding each of the Installment Payment Dates in the amounts and at the interest rates per annum set forth in the following schedule:

Payment Date	Installment Payment	Interest on Installment Payment	Total	Interest Rate
	\$	\$	\$	%
<hr/>				
Total	\$	\$	\$	

The Installment Payments shall accrue interest from the Closing Date, at the rates set forth above, payable on the Interest Payment Dates in each year. Such interest shall accrue on the basis of a 360-day year consisting of twelve 30-day months. Each Installment Payment, and each payment of interest thereon, shall be deposited with the Trustee, as assignee of the Corporation, no later than the Business Day next preceding the Installment Payment Date or Interest Payment Date on which such Installment Payment or payment of interest is due, in lawful money of the United States of America, in immediately available funds. If and to the

extent that, on any such date, there are amounts on deposit in the Installment Payment Fund established under the Trust Agreement, or in any of the accounts therein, which amounts are not being held for the payment of specific Revenue Obligations, such amounts shall be credited against the Installment Payment, or payment of interest thereon, as applicable, due on such date.

Section 3.03. Reserved.

Section 3.04. Obligation Absolute. The obligation of the District to make the Installment Payments, and payments of interest thereon, and other payments required to be made by it under this Article, solely from Net Revenues, is absolute and unconditional, and until such time as the Installment Payments, payments of interest thereon, and such other payments shall have been paid in full (or provision for the payment thereof shall have been made pursuant to Article IV), the District shall not discontinue or suspend any Installment Payments, or payments of interest thereon, or other payments required to be made by it hereunder when due, whether or not the Project or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced or curtailed or terminated in whole or in part, and such Installment Payments, payments of interest thereon, and other payments shall not be subject to reduction whether by offset or otherwise and shall not be conditional upon the performance or nonperformance by any party of any agreement for any cause whatsoever.

Section 3.05. Nature of Agreement. This Installment Purchase Agreement constitutes a Senior Obligation and, as such, shall be subject to the provisions of the Master Agreement and shall be afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement.

ARTICLE IV

PREPAYMENT OF INSTALLMENT PAYMENTS

Section 4.01. Prepayment of Installment Payments. (a) The Installment Payments shall be subject to prepayment prior to their respective Installment Payment Dates as provided in Article IV of the Trust Agreement.

(b) The District may prepay, from any source of available funds, all or any portion of the Installment Payments by depositing with the Trustee moneys or securities as provided, and subject to the terms and conditions set forth, in Article X of the Trust Agreement sufficient to pay such Installment Payments, and the interest thereon, when due or to pay such Installment Payments, and the interest thereon, through a specified date on which the District has a right to prepay such Installment Payments pursuant to subsection (a) of this Section, and to prepay such Installment Payments on such prepayment date, at a prepayment price determined in accordance with subsection (a) of this Section.

(c) If less than all of the Installment Payments are prepaid then, as of the date of such prepayment pursuant to subsection (a) of this Section, or the date of a deposit pursuant to subsection (b) of this Section, the schedule of Installment Payments shall be recalculated to take such prepayment into account.

Section 4.02. Notice. The District shall give written notice to the Trustee specifying the date on which the prepayment will be made prior to making any prepayment pursuant to this Article, which date shall be not less than 25 nor more than 60 days from the date such notice is given to the Trustee, unless such time period shall be waived by the Trustee.

Section 4.03. Discharge of Obligations. If all Installment Payments, and the interest thereon, shall be paid as and when due in accordance with the terms hereof, or prepaid in accordance with Section 4.01 hereof, and if all Revenue Obligations shall be fully paid, or provision therefor made in accordance with Article X of the Trust Agreement, and the Trust Agreement shall be discharged by its terms, then all agreements, covenants and other obligations of the District hereunder shall thereupon cease, terminate and become void and be discharged and satisfied.

ARTICLE V

COVENANTS

Section 5.01. Compliance with Master Agreement. The District will faithfully observe and perform all the agreements, conditions, covenants and terms contained in the Master Agreement required to be observed and performed by it and will not cause, suffer or permit any default to occur thereunder.

Section 5.02. Compliance with Installment Purchase Agreement. The District will punctually pay the Installment Payments, and interest thereon, and other payments required to be made by it hereunder in strict conformity with the terms hereof, and will faithfully observe and perform all the agreements, conditions, covenants and terms contained herein required to be observed and performed by it, will not cause, suffer or permit any default to occur hereunder and will not terminate this Installment Purchase Agreement for any cause including, without limiting the generality of the foregoing, any acts or circumstances that may constitute failure of consideration, destruction of or damage to the Project, commercial frustration of purpose, any change in the tax or other laws of the United States of America or of the State or any political subdivision of either or any failure of the Corporation to observe or perform any agreement, condition, covenant or term contained herein required to be observed and performed by it, whether express or implied, or any duty, liability or obligation arising out of or connected herewith or the insolvency, or deemed insolvency, or bankruptcy or liquidation of the Corporation or any *force majeure*, including acts of God, tempest, storm, earthquake, war, rebellion, riot, civil disorder, acts of public enemies, blockade or embargo, strikes, industrial disputes, lock outs, lack of transportation facilities, fire, explosion, or acts or regulations of governmental authorities.

Section 5.03. Protection of Security and Rights. The District will preserve and protect the security hereof and the rights of the Trustee, as assignee of the Corporation, to the Installment Payments, and interest thereon, and other payments required to be made by the District hereunder and will warrant and defend such rights against all claims and demands of all Persons.

Section 5.04. Indemnification of Corporation. To the extent permitted by law, the District hereby agrees to indemnify and hold the Corporation and its members and officers harmless against any and all liabilities which might arise out of or are related to the Project, this Installment Purchase Agreement or the Revenue Obligations, and the District further agrees to defend the Corporation and its members and officers in any action arising out of or related to the Project, this Installment Purchase Agreement or the Revenue Obligations.

Section 5.05. Further Assurances. The District will adopt, deliver, execute and make any and all further assurances, instruments and resolutions as may be reasonably necessary or proper to carry out the intention or to facilitate the performance hereof and for the better assuring and confirming unto the Corporation, or unto the Trustee, as assignee of the Corporation, the rights and benefits provided herein to the Corporation, or to the Trustee, as assignee of the Corporation.

ARTICLE VI

EVENTS OF DEFAULT AND REMEDIES OF THE CORPORATION

Section 6.01. Events of Default. The following shall be Events of Default under this Installment Purchase Agreement, and “Event of Default” shall mean any one or more of the following events:

(a) if default shall be made by the District in the due and punctual payment of or on account of any Senior Obligation as the same shall become due and payable;

(b) if default shall be made by the District in the performance of any of the agreements or covenants required herein, in the Trust Agreement or in the Master Agreement to be performed by it (other than as specified in (a) above), and such default shall have continued for a period of 30 days after the District shall have been given notice in writing of such default by the Corporation or the Trustee; provided, however, that the party or parties giving such notice may agree in writing to a reasonable extension of such period prior to the expiration of such 30 day period and, provided further, that if the District shall proceed to take curative action which, if begun and prosecuted with due diligence, cannot be completed within such a period of 30 days, then such period shall be increased without such written extension to such extent as shall be necessary to enable the District to diligently complete such curative action and such default shall not become an Event of Default for so long as shall be necessary to diligently complete such curative action; or

(c) if the District shall file a petition or answer seeking arrangement or reorganization under the federal bankruptcy laws or any other applicable law of the United States of America or any state therein, or if a court of competent jurisdiction shall approve a petition filed with or without the consent of the District seeking arrangement or reorganization under the federal bankruptcy laws or any other applicable law of the United States of America or any state therein, or if under the provisions of any other law for the relief or aid of debtors any court of competent jurisdiction shall assume custody or control of the District or of the whole or any substantial part of its property.

Section 6.02. Remedies on Default. Upon the occurrence of an Event of Default, the Trustee, as assignee of the Corporation, shall have the right:

(a) by mandamus or other action or proceeding or suit at law or in equity to enforce its rights against the District and to compel the District to perform and carry out its duties under applicable law and the agreements and covenants required to be performed herein;

(b) by suit in equity to enjoin any acts or things which are unlawful or violate the rights of the Trustee, as assignee of the Corporation;

(c) by suit in equity to require the District to account as the trustee of an express trust; and to have a receiver or receivers appointed for the Wastewater System and of the issues, earnings, income, products and profits thereof, pending such proceedings, with such powers as the court making such appointment shall confer.

Section 6.03. Non-Waiver. Nothing in this Article or in any other provision hereof shall affect or impair the obligation of the District, which is absolute and unconditional, to pay the Installment Payments, and the interest thereon, to the Trustee, as assignee of the Corporation, at the respective due dates from the Net Revenues and the other funds herein committed for such payment, or shall affect or impair the right of the Trustee, as assignee of the Corporation, which is also absolute and unconditional, to institute suit to enforce such payment by virtue of the contract embodied herein.

A waiver of any default or breach of duty or contract by the Trustee, as assignee of the Corporation, shall not affect any subsequent default or breach of duty or contract or impair any rights or remedies on any such subsequent default or breach of duty or contract. No delay or omission by the Trustee, as assignee of the Corporation, to exercise any right or remedy accruing upon any default or breach of duty or contract shall impair any such right or remedy or shall be construed to be a waiver of any such default or breach of duty or contract or an acquiescence therein, and every right or remedy conferred upon the Trustee, as assignee of the Corporation, by applicable law or by this Article may be enforced and exercised from time to time and as often as shall be deemed expedient by the Trustee, as assignee of the Corporation.

If any action, proceeding or suit to enforce any right or exercise any remedy is abandoned or determined adversely to the Trustee, as assignee of the Corporation, the District and the Trustee, as assignee of the Corporation, shall be restored to their former positions, rights and remedies as if such action, proceeding or suit had not been brought or taken.

Section 6.04. Remedies Not Exclusive. No remedy herein conferred upon or reserved to the Trustee, as assignee of the Corporation, is intended to be exclusive of any other remedy, and each such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing in law or in equity or by statute or otherwise and may be exercised without exhausting and without regard to any other remedy conferred by law.

ARTICLE VII

AMENDMENTS

Section 7.01. Amendments. (a) This Installment Purchase Agreement and the rights and obligations of the District, the Corporation and the Trustee, as assignee of the Corporation, may be amended or modified from time to time and at any time by a written amendment hereto executed by the District, the Corporation and the Trustee, as assignee of the Corporation, with the written consent of the Owners of a majority of the aggregate principal evidenced by Revenue Obligations then Outstanding. No such amendment shall (i) extend the payment date of any Installment Payment or reduce the amount of any Installment Payment, or the interest rate applicable thereto, without the prior written consent of the Owner of each affected Revenue Obligation, or (ii) reduce the percentage of Owners of the Revenue Obligations whose consent is required to effect any such amendment or modification, without the prior written consent of the Owners of all Revenue Obligations then Outstanding.

(b) This Installment Purchase Agreement and the rights and obligations of the District, the Corporation and the Trustee, as assignee of the Corporation, may be amended or modified from time to time and at any time by a written amendment hereto executed by the District, the Corporation and the Trustee, as assignee of the Corporation, without the written consents of any Owners of the Revenue Obligations, but only to the extent permitted by law and only for any one or more of the following purposes:

(i) to add to the agreements, conditions, covenants and terms required by the District, the Corporation or the Trustee, as assignee of the Corporation, to be observed or performed herein other agreements, conditions, covenants and terms thereafter to be observed or performed by the District, the Corporation or the Trustee, as assignee of the Corporation, or to surrender any right or power reserved herein to or conferred herein on the District, the Corporation or the Trustee, as assignee of the Corporation;

(ii) to make such provisions for the purpose of curing any ambiguity or of correcting, curing or supplementing any defective provision contained herein or in regard to questions arising hereunder which the District, the Corporation or the Trustee, as assignee of the Corporation, may deem desirable or necessary and not inconsistent herewith;

(iii) to make such additions, deletions or modifications as may be necessary or appropriate to assure the exclusion from gross income for federal income tax purposes of interest on the Installment Payment; and

(iv) to make such other changes herein or modifications hereto as the District, the Corporation or the Trustee, as assignee of the Corporation, may deem desirable or necessary, and which shall not materially adversely affect the interests of the Owners of the Revenue Obligations.

ARTICLE VIII

MISCELLANEOUS

Section 8.01. Liability of District Limited. Notwithstanding anything contained herein to the contrary, the District shall not be required to advance any moneys derived from any source of income other than Net Revenues and the other funds provided herein for the payment of the Installment Payments, and the interest thereon, and other payments required to be made by it hereunder, or for the performance of any agreements or covenants required to be performed by it contained herein. The District may, however, but in no event shall be obligated to, advance moneys for any such purpose so long as such moneys are derived from a source legally available for such purpose and may be legally used by the District for such purpose.

The obligation of the District to pay the Installment Payments, and the interest thereon, and other payments required to be made by it hereunder is a special obligation of the District payable, in the manner provided herein, solely from Net Revenues and other funds provided for herein, and does not constitute a debt of the District or of the State, or of any political subdivision thereof, in contravention of any constitutional or statutory debt limitation or restriction. Neither the faith and credit nor the taxing power of the District or the State, or any political subdivision thereof, is pledged to the payment of the Installment Payments, or the interest thereon, or other payments required to be made hereunder.

Section 8.02. Limitation of Rights. Nothing in this Installment Purchase Agreement expressed or implied is intended or shall be construed to give to any Person other than the District, the Corporation and the Trustee, as assignee of the Corporation, any legal or equitable right, remedy or claim under or in respect of this Installment Purchase Agreement or any covenant, condition or provision therein or herein contained, and all such covenants, conditions and provisions are and shall be held to be for the sole and exclusive benefit of the District, the Corporation and the Trustee, as assignee of the Corporation.

Section 8.03. Assignment. The District and the Corporation hereby acknowledge the transfer, conveyance and assignment by the Corporation to the Trustee of all of the Corporation's rights, title and interest in and to this Installment Purchase Agreement (excepting its rights to indemnification hereunder), including the right to receive Installment Payments, and the interest thereon, from the District, pursuant to the Trust Agreement.

Section 8.04. Notices. Any written notice, statement, demand, consent, approval, authorization, offer, designation, request or other communication to be given hereunder shall be given to the party entitled thereto at its address set forth below, or at such other address as such party may provide to the other parties in writing from time to time, namely:

If to the District: Orange County Sanitation District
 10844 Ellis Avenue
 Fountain Valley, California 92708
 Attention: Assistant General Manager, Director of Finance and
 Administrative Services

If to the Corporation: Orange County Sanitation District Financing Corporation
c/o Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, California 92708
Attention: Treasurer

If to the Trustee: U.S. Bank Corporate Trust Services
633 West Fifth Street, 24th Floor
Los Angeles, California 90071
Attention: Global Corporate Trust Services

Each such notice, statement, demand, consent, approval, authorization, offer, designation, request or other communication hereunder shall be deemed delivered to the party to whom it is addressed (a) if personally served or delivered, upon delivery, (b) if given by electronic communication, whether by facsimile or telecopier, upon the sender's receipt of an appropriate answerback or other written acknowledgment, (c) if given by registered or certified mail, return receipt requested, deposited with the United States mail postage prepaid, 72 hours after such notice is deposited with the United States mail, (d) if given by overnight courier, with courier charges prepaid, 24 hours after delivery to said overnight courier, or (e) if given by any other means, upon delivery at the address specified in this Section.

Section 8.05. Successor Is Deemed Included in all References to Predecessor.

Whenever the District or the Corporation is named or referred to herein, such reference shall be deemed to include the successor to the powers, duties and functions that are presently vested in the District or the Corporation, and all agreements and covenants required hereby to be performed by or on behalf of the District or the Corporation shall bind and inure to the benefit of the respective successors thereof whether so expressed or not.

Section 8.06. Waiver of Personal Liability. No official, officer or employee of the District shall be individually or personally liable for the payment of the Installment Payments, or the interest thereon, or other payments required to be made by the District hereunder, but nothing contained herein shall relieve any official, officer or employee of the District from the performance of any official duty provided by any applicable provisions of law or hereby.

Section 8.07. Article and Section Headings, Gender and References. The headings or titles of the several Articles and Sections hereof and the table of contents appended hereto shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof, and words of any gender shall be deemed and construed to include all genders. All references herein to "Articles," "Sections" and other subsections or clauses are to the corresponding articles, sections, subsections or clauses hereof; and the words "hereby," "herein," "hereof," "hereto," "herewith" and other words of similar import refer to this Installment Purchase Agreement as a whole and not to any particular Article, Section, subdivision or clause hereof.

Section 8.08. Partial Invalidity. If any one or more of the agreements or covenants or portions thereof required hereby to be performed by or on the part of the District or the Corporation shall be contrary to law, then such agreement or agreements, such covenant or

covenants or such portions thereof shall be null and void and shall be deemed separable from the remaining agreements and covenants and portions thereof and shall in no way affect the validity hereof.

Section 8.09. Governing Law. This Installment Purchase Agreement shall be construed and governed and construed in accordance with the laws of the State.

Section 8.10. Execution in Counterparts. This Installment Purchase Agreement may be executed in several counterparts, each of which shall be deemed an original, and all of which shall constitute but one and the same instrument.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the parties hereto have executed this Installment Purchase Agreement by their officers thereunto duly authorized as of the day and year first written above.

ORANGE COUNTY SANITATION DISTRICT

By: _____
Chairperson of the Board of Directors

(S E A L)

Attest:

By: _____
Clerk of the Board of Directors

**ORANGE COUNTY SANITATION
DISTRICT FINANCING CORPORATION**

By: _____
Treasurer

EXHIBIT A

DESCRIPTION OF PROJECT

A portion of the Project in the amount of \$[] shall be sold and purchased as described in Article II of this Installment Purchase Agreement.

The Project includes:

Improvements to the Wastewater System including the District's two wastewater treatment plants, the Ocean Outfall and Back Bay Sewer, and the acquisition, construction, installation, rehabilitation or repair of the Orange Western Subtrunk Relief Sewer, the Bushard Trunk Sewer, Headworks Improvements at Plant 2; Rehab Trickling Filters at Plant 1; Solids Storage and Truck Loading Facility; Effluent Pump Station Annex; Standby Power and Reliability Modifications; Groundwater Replenishment System; Bacteria Reduction Facilities; Rehabilitate Digesters at Plant 2; Ocean Outfall Rehabilitation; Replace Back Bay Sewer; Chemical Facility Modifications at Plant 1; Replace Outfall Flow Meter; Odor Scrubber Monitoring and Control; and Replace HVAC Equipment at Plants 1 and 2, originally financed with the proceeds of the Orange County Sanitation District Certificates of Participation, Series 2003.

In addition, the Project includes:

[See attached.]

Additional Project

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99

1998-99 BUDGET REVIEW
MISCELLANEOUS SMALL IMPROVEMENT PROJECTS
PLANT NO. 1
12 MONTHS ENDED 6/30/99

SCHEDULE C

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/99
3 Central Power Generation Waste Heat Recovery Vent Piping	6196049	173
6 Alleviate Skum Layer in Grit Chambers	6196039	6,166
7 Process Area Door Reel Program	6196046	44,747
8 Vent Piping Retrofit at Gas Compressor Bldg	6196064	350
11 Bldg 6 UPS Upgrade	6196076	3,944
13 Chamber Channel Modfin	6196003	13,773
14 Influent Sampling System Improvements	6196005	23,969
15 M & D Structure Electrical Room Modfin	6196008	87,984
16 WSSPS Additional Pumps	6196011	24,157
17 Ferric Chloride Dosing Pump Upgrade	6196013	1,502
18 3 & 4 Ptm Sed Clarifiers Pump Rm Equip Upgrade	6196016	81,884
20 Prim Basin #3 Sweep Arm Drive Mechaniam	6196020	49,527
21 New Radio Room Project @ Ctl Ctr. Div. 530	6196025	15,125
23 Admin HVAC Bldg Automation System Repl	9196031	14
24 Control Center Power Feed Upgrade	6196032	4,901
Purchase & Install Plant Air Compressor	6196035	19,312
Emulsion Polymer Equipment Upgrade	6196039	9,540
Chopper Pump for Digester Cleaning	6196040	38,661
32 Install Cable Tray from Trickling Filter Signal Box to the Blower Bldg	6196041	7,270
33 MSP Seal Improvement	6196049	40,805
34 Re-Locate Gate Arm	6196053	18,285
36 Digesters 11-16 Piping Restraints No. 2	6196056	21,785
37 Dewatering Bldg "M" Repl of Existing Roof	6196060	1,423
38 Demolition of Bifiltration Test Fac	6196062	3,504
39 Dynamometer Project Electrical Conduit Instl at Fleet Services	6196064	2,514
40 Fiber Optic Cable & Access Ramp @ Construction Trailers	6196066	14,325
42 HR Bldg Cubicle Modfin	6196071	3,575
44 Preliminary Time Spent on Small Projects (Pft 1 = 40%)	6496036	18,978
		556,211

1998-99 BUDGET REVIEW
MISCELLANEOUS SMALL IMPROVEMENT PROJECTS
PLANT NO. 2
12 MONTHS ENDED 6/30/99

SCHEDULE D

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/99
1 Landscape & Irrigation at City Water P/S, P2-46-1	2004601	15,637
6 Gas Compressor Cooling water	6296002	3,643
7 Modify Gata Between "B" and "C" Hwks	6296025	11
8 Digester Ferric Chloride Sys Improvement	6296042	1,086
10 PVC Overhead Line Improvement	6296052	26,497
11 Area 23 TRK Level & LSL Upgrade	6296060	22,187
22 F & G Primary Sedimentation Clarifiers Equip Upgrade	6296085	49,360
24 H & I Scrubber Fan Seal Improvement	6296087	23,419
29 Photovoltaic Power System for Existing 14-inch Magnetic Flow Meter	6296026	14,382
30 Boiler Water Treatment System Modifns	6296046	4,534
Fire Sprinkler Piping Re-Paint @ Maint. Bldg	6296051	11,700
Pft 2 Office & Library Improvement	6296058	188
Preliminary Time Spent on Small Projects (Pft 2 = 40%)	6496036	18,978
		191,650

**CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99**

**1998-99 BUDGET REVIEW
MISCELLANEOUS SMALL IMPROVEMENT PROJECTS
INTERPLANT & JOINT FACILITIES
12 MONTHS ENDED 6/30/99
SCHEDULE E**

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/99	
1	Bushard Trunk Sewer, I-2-4	4000204	43,799
2	Chemical Flow Pacing for Primary Influent, J-53	4005300	34,658
3	Improvements to Existing Mechanical Systems, J-62	4006200	211,386
4	Santa Ana River Watershed Group	5100100	120,500
6	Misc Lighting Projects	6098015	91,169
8	Admin. Bldg. Lobby Acoustical Impr., P1-54	6495055	15,704
10	Retrofit HVAC at P11 Lab	6495067	15,034
13	P11 Front Entrance Traffic Study & Main Entrance Landscaping Proj.	6498029	11,168
14	Bldg A New Dust Collection System	6498034	976
16	Preliminary Time Spent on Small Projects (Jt Fac = 20%)	6498036	9,489
21	Design & Inst of Screening Compactors	6499004	16,337
22	Lunch/Training Rm Addn to Fleet Services & Rebuild Shop	6499022	3,831
24	Drainage & Landscaping Improvmts at Interplant Pipeline	6499027	55,906
25	BOOMHZ Communication Tower Addn	6499028	2,918
26	Improvements to Landscaping & Drainage at Plants 1 & 2	6499030	112,851
27	Corrosion Assessment Study Phase II	6499042	36,837
28	Wheeler Ridge Compost Site	6499045	54,811
29	Inflow & Infiltration Study, Phase 2	6499055	28,310
30	Demolition of Warehouse and Area Improvements	6499065	1,485
31	P11 Natural Gas Line Rehab(Do Not Use S/B Jt Oper Project)	6499067	44,470
TOTAL		908,437	

**CAPITAL OUTLAY REVOLVING FUND
CONSTRUCTION IN PROGRESS COMPLETED @ 6/30/98
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99
SCHEDULE F**

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/99
12KV Distribution System for Support Facilities, P1-47	1004700	934
Fire @ Plant 2 Construction, P2-70	2007000	39,394
J-25-2	4002502/582116-A	1,990
J-25-2-1	4002521	785
J-25-2-2B	4002523	54,208
Gas Mixing Systems Improvements, J-25-3-1	4002531	2,817
OBS's Control System, J-31-2	4003102/522115-B	227
MSP No. 3 at Headworks 2, J-33-2	4003302	6,426
Edison Erect Lighting Retrofit, J-45	4004500/5700800	5,157
Rehabilitation of Old Lab to Offices, J-11-1A,2	4001102/6900101-2/53083-B	330
Misc. Modis. Priority Elements P1-38-2	6900111/1003802/52108-G	488
Misc. Modifications to Plant 1, P1-38-4	1003804/6900114/52108-H	10,589
Expansion of Existing Computers & Cd Systems @ P1s 1 & 2, J-31	4003100/522115-0	3,399
SCADA Retrofit Hardware Platform at Plants 1 & 2, J-31-1	4003101/522115-A	904
Secondary Treatment Expansion, P2-42-2	104202/6900212 & 215/53718	48,694
Strategic Information Plan (S.I.P.)	6900245/68258-0	67
FIS/Oracle Gateway	5401100	4,716
Desktop Computer Standard	5401800	427
Plant 2 TWAS PLC Program/SCADA Upgrade	5402000	7,815
Plant 2 DAFT PLC Program/SCADA Upgrade	5402100	37,323
Entronics Upgrade at Plant 1	5402800	60,558
Anoxic Gas Floation Process Demonstration	5800500	8,392
Komax Steam Static Mixer Test	5801900/5810900	45,620
Rehab N & D Clarifier Sweep Arms	5802900	37
P11 2 Water Pump/Check Valve Rehab	5803000	95,343
"C" Hwks Barscreen & Misc Alarms	6298013	6,829
TOTAL		441,449
GRAND TOTAL		2,099,747

**CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99**

**CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98**

**1997-98 BUDGET REVIEW
MISCELLANEOUS SMALL IMPROVEMENT PROJECTS
PLANT NO. 1
12 MONTHS ENDED 6/30/98**

SCHEDULE C

PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
Mechanical Retrieval System for Permit-Confined Spaces, J-54 (50%)	6095005 34,606
Tunnel Structural Integrity Study, J-55 (50%)	6095049 5,219
Central Power Generation Waste Heat Recovery Vent Piping	6196049 102
Alleviate Skum Layer in Grit Chambers	6198039 581
Preliminary Time Spent on Small Projects (Plt 1 = 40%)	6498036 8,750
	49,258

**1997-98 BUDGET REVIEW
MISCELLANEOUS SMALL IMPROVEMENT PROJECTS
PLANT NO. 2
12 MONTHS ENDED 6/30/98**

SCHEDULE D

PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
Mechanical Retrieval System for Permit-Confined Spaces, J-54 (50%)	6095005 34,607
Tunnel Structural Integrity Study, J-55 (50%)	6095049 5,219
Modify Gate Between "B" and "C" Hwks	6298025 1,816
Preliminary Time Spent on Small Projects (Plt 2 = 40%)	6498036 8,750
	50,392

SCHEDULE E

PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
Improvements to Existing Mechanical Systems, J-62	4006200 6,278
Misc Lighting Projects	6098015 30,412
Retrofit HVAC at Plt 1 Lab	6495067 6,239
Plt 1 Front Entrance Traffic Study & Main Entrance Landscaping Proj.	6498025 3,484
Preliminary Time Spent on Small Projects (Plt Fac = 20%)	6498036 4,375
	50,788

**CAPITAL OUTLAY REVOLVING FUND
CONSTRUCTION IN PROGRESS COMPLETED @ 6/30/97
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98**

SCHEDULE F

PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
Misc. Modifications, P2-43-3	2004303/52108-E 1,520
Misc. Mods. Priority Elements P1-38-2	1003802/52108-G 9,041
Misc. Modifications to Plant 1, P1-38-4	1003804/52108-H 35,708
SCADA Retrofit Hardware Platform at Plants 1 & 2	4003101/52215-A 695
Replace Security Access System (IT)	52425-0/5402500 4,954
Primary Clarifiers Nos. 6-15, P1-33	1003300/ 53709-0 151
Secondary Treatment Expansion, P2-42-2	2004202/53718-0-B 151
Admin Support Fac. @ Plant 1, J-38-1	4003801/58244-0 8,040
Microfiltration Demonstration Project	5802300/58248-0 86
	60,344

TOTAL	60,344
GRAND TOTAL	210,782

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
A. Reclamation Plant 1 New and Ongoing Projects:		
1. Headworks		
b. M&D Structure Concrete Rep., P1-56	6196052	97
2. Primary Treatment		
a. Primary Treatment 72 MGD Expansion, P1-37	1003700	38,226
3. Secondary Treatment		
d. Drain Modifications at Activated Sludge Plant, P1-59	1005900	4,205
7. Miscellaneous Projects		
b. Drainage Improv. At Plant 1, P1-40-3	1004003	12,783
c. Chemical Facility Modifns, P1-46-2	1004602	35,058
d. Admin. Bldg. Lobby Acoustical Impr., P1-54	6495055	10,840
e. Allowance for Planned Small Projects (See Schedule C)		
SUB-TOTAL - RECLAMATION PLANT 1		101,209
B. Plant 2 New and Ongoing Major Projects:		
1. Headworks		
a. Plant 2 influent Diversion, P2-66	2006600	15,191
2. Primary Treatment		
a. Primary Treatment 24 MGD Expansion, P2-41	53714-0	
Transfer to Projects Below		
L & M Prim Sed Clarifiers Pump Room Equip Upgrade	6298012	1,501
N & O Prim Sed Clarifiers Pump Room Equip Upgrade	6298022	62,352
4. Solids Processing		
a. Rehab 7 Digesters, P2-39	2003900	73,788
5. Electrical Power Systems		
b. Electl Fac Modifns & Safety Upgrades , P2-47-1	2004701	261,363
7. Miscellaneous Projects		
a. Air Compressors for Plant Air System, P2-61	2006100	1,935
d. Allowance for Planned Small Projects (See Schedule D)		
8. Support Facilities and Site Improvements		
a. Warehouse Building, P2-65	2006500	108,106
SUB-TOTAL - TREATMENT PLANT 2		524,236

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
C. Interplant and Joint Facilities		
3. Information Management Systems		
a. Computerized Fac. Records and Dwg. Sys. J-25-1	4002501	94,648
4. Plants 1&2 Monitor/Control Sys		
b. Plant 1 Headworks System, J-31-3	4003103	600,874
c. Secondary Control System Upgrade, Plant 2, J-31-4	4003104	129,156
d. Plant Reinvention/Automation Project, J-42	4004200	256,211
Transfer to Projects Below		
"C" Hwks Barscreen & Misc Alarms	6298013	22,796
Automation of Solids Storage Fac, P1-60	1006000	4,316
Solids Storage Fac at Plant 2, P2-60	2006000	16,935
e. Solids Storage Rehab and Automation, J-46	4004600	167,595
5. Electrical Power Systems		
a. Gas Mixing Systems Improvements, J-25-3-1	4002531	997
Transfer to Project Below		
Gas Mixing Systems Improvements, J-68	4006800	442
b. Electl. Power Systems Rehab. Studies J-25-2,3,4	4002502,3,21-23,30,40	407,761
c. Standby Power Reliability Modifns, J-33-1	4003301	167,479
f. Power & Distribution Bldgs Ventilation, J-50	4005000	92
h. Improvements to Central Generation		
Transfer to Projects Below		
Steam System Modifn	52350-0	
Battery Sys Addn at Central Generation	52376-0	
Entronics Hardware & Software Upgrade (Revision 1)	6095070	41,105
Pft 2 Cen Gen Fiber Optic Addition	6498005	17,683
i. Cable Tray Improvements, J-47	58259-0/4004700	83,633
7. Miscellaneous Safety Projects		
c. Evaluation of Tunnels for Structural Integrity, J-55	4005500	262
d. Transfer from A,5,a & E,3,f		
Transfer to Project Below		
Fire Alarm & Security System Upgrade, J-57	4005700	156,861
8. Miscellaneous Projects		
c. Chemical Flow Pacing for Primary Influent, J-53	4005300	283
d. Allowance for Planned Small Projects (See Schedule E)		
9. Water Reclamation		
Transfer to Line H Below		
Transfer to Projects Below		
Reclamation Plant No. 1 Water Quality Management Study	58231-0	
OCSD/OCWD Regional Water Reclamation Pft Study, J-36	52133-E/4003600	333,648
10. Water Conservation		
SUB-TOTAL - INTERPLANT & JOINT		2,502,777
SUB-TOTAL - MAJOR PROJECTS		3,128,222

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/98
1. Master Planning		
a. Investigation and Rehab of Ocean Outfall, J-39	4003900	276,506
b. Management of Peak Hydraulic Discharge, J-40-1	4004001	946,357
c. Determ. Of Fin Charges and Fee Sched., J-40-2	4004002	314,235
d. Treatment, Reuse and Disposal Plan, J-40-3	4004003	1,202,028
e. CEQA, Public Participation, J-40-4	4004004	126,035
2. Miscellaneous Projects		
a. Area Classifications Studies, Plants 1 & 2, J-35-1	4003501	53,810
b. Revision of Standard Specifications, J-44	4004400/58234-0	18,420
SUB-TOTAL - ENGINEERING SPECIAL PROJECTS		2,937,391
F. GENERAL SERVICES ADMINISTRATION		
3. Programing & Database Sys. (IT)		
a. Document Management	5400100	37,434
b. Data Integration	5400200	265,262
Transfer to Projects Below		
Network Integration Consulting	52356-0	
Network Interface Upgrade	52377-0	
Fuel Mgmt System	5402700	249
Network System Integration	6498018	12,613
c. Strategic Information Architecture (SIA)	5400300	189,621
d. CMMS Programming	5400400	104,166
e. Intranet	5400500	35,816
f. Security System Improvements	5400600	130,592
Transfer to C,7,d		
g. Voice/Data Building Rewiring	5400700	239,034
h. Network Backbone Upgrade Continuation	5400800	238,716
i. Internet E-Mail/Browsing	5400900	39,351
j. Year 2000 Data Change	5401000	35,709
l. FIS/Oracle Gateway	5401100	117,408
m. Financial Information System (IT)	5401200	812,923
n. Source Control Programming	5401300	147,745
p. Upgrade Phone System	5401400	62,920
4. Plant Automation (IT)		
a. Desktop Computer Standard	5401600	129,916
b. Plant 2 Plant Water Programming Upgrade	5401700	63,738
g. Plant 2 TWAS PLC Program/SCADA Upgrade	5402000	70,869
h. Plant 2 DAFT PLC Program/SCADA Upgrade	5402100	30,251
i. Plant 1 & 2 Heat Loop PLC Replacement	5402200	8,548
Transfer to Project Below		
Entronics Upgrade at Plant 1	5402800	134,640
6. Plant Facilities (GSA)		
c. Training/Meeting Room Fleet Service Facility, Plant 1	5402300	2,292
d. Training/Meeting Room Fabrication Shop Facility, Plant 1	5402400	3,532
SUB-TOTAL - GSA		2,913,345

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1997-98
12 MONTHS ENDED 6/30/98

	PROJECT NO.	CURRENT FY
		OUTLAY TO 6/30/98
1. Phase II L.I.M.S. Implementation	5600100	183,931
2. NPDES Permit Support	5600200	117,127
SUB-TOTAL - TECHNICAL SERVICES		301,058
G. OPERATIONS & MAINTENANCE		
1. Operations Department Projects		
a. Upgrade to System for Emission Modeling Testing	52445-0/5802600	27,622
b. Air Quality Database Development	5800100	35,069
c. Sulfur Monitoring for Combustion	5800200	30,609
d. Central Generation Parametric Monitor Sys	5800300	39,071
f. Scrubber Chemical Feed System Mod.	52442-0/5800400	53,809
g. Anoxic Gas Flootation Process Demonstration	5800500	145
h. Hydrolysis-thickening-flootation Demonstration		
Transfer to Project Below		
Rehab N & O Clarifier Sweep Arms	5802900	8,842
i. Large Scale Microfiltration Demonstration	5800700	46,725
j. Primary Effluent Filtration	5800800	195,301
k. Processes to Achieve Class A Biosolids	5800900	314
p. Misc Optimization Studies & Improvements	5801200	44,222
Transfer to Projects Below		
HTF Process Laboratory Tests	5800600	26,496
q. Miscellaneous Reliability & Redund. Projects	5801300	18,960
Transfer to Projects Below		
Energy Deregulation Study	58255-0	
Pft 2 Anionic Polymer Automation	5802700	77,692
r. Water Use Efficiency Program	5803100	78,400
2. Maintenance Department Projects		
f. Rebuild Serpintix Conveyor at P2 Solids Station		
Transfer to Project Below		
A-Belt Rehab @ Plant 2 Solids Loading Storage Fac	6298023	79,852
j. Weir Extensions at Termination Channel	5801800	37,167
SUB-TOTAL - OPERATIONS & MAINTENANCE		800,296
H. Equipment Items		1,802,145
Transfer to Project Below		
Rehab of Bolsa Chica State Beach Sewerage System, J-43		
Transfer from Lines A,3,a & C,9 & E	52400-0/4004300	613
SUB-TOTAL - JOINT WORKS CAPITAL REQUIREMENTS		11,883,070
CONSTRUCTION IN PROGRESS COMPLETED AT 6/30/97	SCHEDULE F	
TOTAL JOINT WORKS CAPITAL REQUIREMENTS		11,883,070

CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99

	PROJECT NO.	CURRENT FY OUTLAY TO 6/30/99
Reclamation Plant No. 1		
1. Preliminary Treatment		
a. Headworks No. 2 Control System Upgrade, J-31-3	4003103	603,405
c. Sunflower P.S. Drive Replacement, P1-62	1006200	18,654
2. Primary Treatment		
a. Primary Effluent Pumping Automation	5404000	11,528
b. Primary Treatment 72 MGD Expansion, P1-37	1003700	764,462
3. Secondary Treatment		
c. Drain Modifications at Activated Sludge Plant, P1-59	1005900	2,729
4. Solids Handling & Dewatering		
b. Automation of Solids Storage Fac. P1-80	1006000	70,738
5. Utility Systems		
b. Electr. Facility Modifns & Safety Upgrades ,P1-40-1	1004001	30,339
Transfer to Project Below		
Alarm Beacons for Venting of Gas Holder	6188038	2,573
d. Drainage Improv. At Plant 1, P1-40-3	1004003	209,626
f. Chemical Facility Modifns, P1-46-2	1004802	168,866
6. Safety Improvements		
c. Seismic Retrofit of Four Structures, P1-44-4	1004404	457,936
7. Miscellaneous & Support Projects		
a. Landscaping Project for Undeveloped Area	5403001	15,624
e. Waste Side Stream Automation	5403800	1,020
f. Allowance for Planned Small Projects (See Schedule C)		
Sub-Total - Reclamation Plant 1		2,357,500
Treatment Plant No. 2		
1. Preliminary Treatment		
a. Headworks Improvements @ Plant 2, P2-66	2006600	27,601
3. Secondary Treatment		
b. Rehab of Secondary Facilities, P2-74	2007400	2
4. Solids Handling & Dewatering		
a. Conveyor Belt Repl. - Solids Storage Loading	5804000	10,938
b. Dewatering Belt Press Rebuild	5803700	55,970
d. Rehab of Digesters at Plant 2, P2-39	2003900	351,072
f. Solids Storage Facility at Plant 2, P2-60	2006000/52410-0	676,428
5. Utility Systems		
e. Electr Fac Modifns & Safety Upgrades , P2-47-1	2004701	198,559
g. Air Compressors for Plant Air System, P2-61	2006100	59,907
h. Gas Compressor Redundancy, P2-79	2007900	60
7. Miscellaneous & Support Projects		
b. Warehouse Building, P2-65	2006500	804,306
e. Replace Air Conditioning @ Oper Center	5403500	2,525
h. Plant 2 Facilities Engineering (See Schedule D)		
Sub-Total - Treatment Plant 2		2,187,368
Interplant and Joint Facilities		
1. Plant Automation & Computerization		
a. Computerized Fac. Records and Dwg. Sys. J-25-1	4002501	168,739
c. Power Monitoring and Control Systems, J-33-3	4003303	692
d. Plant Reinvention/Automation Project, J-42	4004200	1,895,787
e. Conv. Of Modbus + Data Hwys to Ring Config	5402900	47,339
f. Fiber Optic Upgrades	5403200	241,120
h. Stdz Plant 1&2 Field Fiber Optic Term. Jct Fa	5403100	82,030
2. Safety & Security Improvements		
a. Area Classifications Studies, Plants 1 & 2, J-35-1	4003501	540,388
b. Confined Space Personnel Retrieval System, J-49	4005400	23,994
c. Fire Alarm & Security System Upgrade, J-57	4005700	455,203
3. Support Facilities		
a. Enclose Open Bay at warehouse Storage, J-20-1	6495063	11,999
b. Collection Facilities Depot, J-60-1	4006001	9,346
Transfer to Project Below		
Chlorine Bldg Mech Equip Demolition, J-60	4006000	27,241
c. Information Technologies Trailer Addition, J-61	4006100	27,417
4. Utility Systems Improvements		
a. Electrical Power System Studies, J-25-4	4002540	821,165
c. Standby Power Reliability Modifns, J-33-1	4003301	836,137
d. Cable Tray Improvements, J-47	58259-0/4004700	313,537
e. Imprvr. To Central Generation Starting Air System, J-63	4006300	7,223
f. Mitigation of Cen. Gen. Waste Heat Boiler, J-64	4006400	5,879
g. Gas Mixing Systems Improvements, J-68	4006800	25,257
5. Flow Management & Reliability		
c. Outfall Flow Meter Replacement, J-66	4006600	7,639
d. Peak Flow Management Projects, J-67	4006700	3,995
6. Miscellaneous Projects		
a. Revision of Standard Specifications, J-44	4004400/58234-0	215,304
b. Evaluation of Tunnels for Structural Integrity, J-55	4005500/6095049	30,415
c. New Grit Augers, J-52	4005200	42,097
f. Mechanical Seals on High Rate Digester Mix	5403002	130,128
h. Joint Facilities Engineering (See Schedule E)		
Sub-Total - Interplant & Joint		5,970,071
Sub-Total - Major Projects		10,514,938

**CAPITAL OUTLAY REVOLVING FUND
SUMMARY OF JOINT WORKS CONSTRUCTION REQUIREMENTS
FISCAL YEAR 1998-99
12 MONTHS ENDED 6/30/99**

	PROJECT NO.	CURRENT FY OUTLAY
Special Projects		
1. Strategic & Master Planning		
a. Investigation and Rehab of Ocean Outfall, J-39	4003900	153,263
c. Determ. Of Fin Charges and Fee Sched., J-40-2	4004002	7,705
d. Treatment, Reuse and Disposal Plan, J-40-3	4004003/5700400	605,627
e. CEQA, Public Participation, J-40-4	4004004	379,047
f. Permit Renewal & Maintenance	5600200/6900222/58209-F	27,590
2. Information Management & Computerization		
a. Air Quality Information Mgmt. Sys.	5800100/5802500/5803500	94,099
b. Automation Report Publishing	5403600	58,579
c. CMMS Programming	5400400	167,264
d. Data Integration	5400200	1,386,585
e. Document Management	5400100	258,845
f. Financial Information System (FI)	5401200	661,115
g. Geographic Information System	5401500	49,857
h. Internet Application Development	5400900	57,227
i. Intranet Application Development	5400500	38,506
j. L.I.M.S. Implementation Phase II	5600100/6900163	31,579
k. Network Backbone Upgrade Continuation	5400800/6900184	174,618
l. Network Test Facility	5403000	81,458
m. Source Control Programming	5401300	156,633
n. Strategic Information Architecture (SIA)	5400300	32,186
o. Voice/Data Building Rewiring	5400700/6900192	194,312
p. Warehouse Bar Code Evaluation	5200100	16,139
q. Year 2000 Data Change	5401000	1,874,179
3. Research & Development		
a. Activated Carbon Full Scale Evaluation		
Transfer to Project Below		
Membrane/UASB Pilot Test	5804800	3,303
b. Biotrickling Filter Development & Demonstration	5803300	355
c. Large Scale Microfiltration Demonstration	5800700	105,858
f. Processes to Achieve Class A Biosolids	5800900	9,252
4. Utility Systems		
a. Can Gen Engine Air Emission Monitoring Sys	5800300/6900232	123,596
b. Can Gen Engine NOX & VOC Emission Eval	5804500	763
f. Upgrade Phone System	5401400/6900191	5,272
5. Process-Related Special Projects		
a. H2O2 Dosing Feed Sensor for Influent Trunks		
Transfer to Project Below		
H2O2 Continuous Monitor/Pretreatment Automation Study	5802800	12,729
b. Prelim Corrosion Assmt Study for Collection	5804300	41,242
c. Headworks Main Sewer Pump Rehab	5803200	93,908
e. Digesters Expansion Joint Replacement	5803800	32,900
f. KADY Process for Digester Performance Imprv.	5804200	12,129
l. Belt Press Automation	5804100	8,502
l. P - 2 Skudge Line Expansion Joint Repl/Rehab	5803900	58,585
m. Scrubber Chemical Feed System Mod.	5802400/5800400/52442-0	55,125
n. Sulfur Monitoring for Combustion	5800200	106,755
o. Upgrade Emission Modeling Testing System	5802800/52445-0	1,380
6. Miscellaneous		
b. Miscellaneous Reliability & Redund. Projects	5801300	
Transfer to Projects Below		
Energy Deregulation Study	6900243/58255-0	
Plt 2 Anionic Polymer Automation	5802700	557
c. Small Capital Equipment Replacement Project	5803400	99,728
d. Security System Improvements	5400600	238,075
Sub-Total - Special Projects		7,516,527
Water Management Projects		
a. Groundwater Replenishment System, J-36	4003600/52133-E	256,650
b. Water Conservation Co-op Projects-Toilet Retrofit Program, J-72	5700100	252,102
Sub-Total - Water Management Projects		508,752
Equipment Items		
Sub-Total - Joint Works Capital Requirements		1,924,072
Construction in Progress Completed at 6/30/98	Schedule F	
Projects To Be Identified in Strategic Plan		
Total Treatment and Disposal Projects		20,464,290

Series A Project

Part I. Subject to Part II hereof, the following capital projects and improvements shall constitute the Project, to the extent such capital projects and improvements are acquired, constructed or paid for by or on behalf of the Districts during the period commencing July 1, 1989 and ending on June 30, 1991 (or such later date as the Districts shall determine.)

Category A. Digesters- Construction of six new 110-foot diameter digesters to provide the necessary digestion capacity to serve the increased primary and secondary treatment plant facilities. Includes the rehabilitation of two digesters, adding new sludge mixing systems and insulating the domes.

Category B. Seismic Upgrade- Study of older treatment plant buildings and process facilities. The report and possible future construction projects will provide a means to upgrade and strengthen these facilities.

Category C. Inter-Plant Pipeline- Construction of inter-plant utilities, including a 10-foot diameter line which will deliver treated effluent from the Fountain Valley plant to the Ocean Outfall Booster Station, as well as a digester gas line, a reclaimed water line and a new communications cable.

Category D. Flares- In the event that digester gas cannot be used for intermittent periods, the Districts must dispose of it through flares.

Category E. Control Building- Construction of a new operations/control center to house the computer monitoring and control systems for the two treatment plants and 35 outlying pumping stations.

Category F. Instrumentation/Computer- Acquisition of computer monitoring and control equipment.

Category G. Personnel Building- Construction of building to house the Districts' personnel activities, including training and interview rooms.

Category H. Digester Rehabilitation- Series of digester rehabilitation projects at the Huntington Beach plant.

Category I. Electrification- Replace older engine drives and pumps with new electric drives and pumps.

Category J. Influent Facility- Installation of new meters to measure the incoming sewage at both treatment plants.

Category K. Utility Atlas- Installation of a computer-aided drafting system and the preparation facility atlas (utility maps) and power studies.

Category L. Central Generation- Construction of an in-plant power generation facility, principally using digester gas as fuel.

Category M. Trunk Sewer Improvement- Construction of trunk sewer lines.

Part II. Notwithstanding Part I hereof, with respect to each District, the Project Share consists of such District's Share under the Joint Agreement of Categories A through L above, except that: (a) the Project with respect to District No. 5 shall also include category M in its entirety; and (b) the Project with respect to District No. 14 shall exclude Category L and any portion of Categories A through K acquired, constructed or paid for prior to July 1, 1990.

Series B Project

Part I. The following capital projects and improvements shall constitute the Project, to the extent such capital projects and improvements are acquired, constructed or paid for by or on behalf of the Districts during the period commencing June 30, 1991 and ending on June 30, 1992 (or such later date as the Districts shall determine.)

Digesters - Construction of six new large-capacity sludge digesters plus the rehabilitation of two older digesters, adding new sludge mixing systems and insulating the domes.

Inter-Plant Pipeline - Construction of a new line to deliver water treated at the Fountain Valley plant to the Ocean Outfall Booster Station in Huntington Beach. In addition, the project includes construction of an interplant digester gas line, a reclaimed water line and a communications cable.

Central Generation - Construction of an in-plant power generation facility, principally using digester gas as fuel.

Plant Monitoring Computers - Acquisition of new computer monitoring system and control equipment to be housed in the control center at each plant.

Electrification - Replacement of internal combustion drives with electric motors.

Operations Center - Enlargement of the existing Operations Center at Treatment Plant No. 2.

Collection System Projects - Construction of sewer trunks and pump stations owned by individual Districts.

Series C Project

Part I. The following capital projects and improvements shall constitute the Project, to the extent such capital projects and improvements are acquired, constructed or paid for by or on behalf of the Districts during the period commencing June 10, 1992 and ending on June 30, 1993 (or such later date as the Districts shall determine.)

Category A. Digesters- Construction of six new 110-foot diameter digesters to provide the necessary digestion capacity to serve the increased primary and secondary treatment plant facilities. Includes the rehabilitation of two digesters, adding new sludge mixing systems and insulating the domes.

Category B. Seismic Upgrade- Possible future construction projects will provide a means to upgrade and strengthen older facilities.

Category C. Inter-Plant Pipeline- Construction of inter-plant utilities, including a 10-foot diameter line which will deliver treated effluent from the Fountain Valley plant to the Ocean Outfall Booster Station, as well as a digester gas line, a reclaimed water line and a new communications cable.

Category D. Flares- Flares for disposal of digester gas that cannot be used.

Category E. Control Building- Construction of a new operations/control center to house the computer monitoring and control systems for the two treatment plants and 35 outlying pumping stations.

Category F. Instrumentation/Computer- Acquisition of computer monitoring and control equipment.

Category G. Personnel Building- Construction of building to house the Districts' personnel activities.

Category H. Digester Rehabilitation- Series of digester rehabilitation projects at the Huntington Beach plant.

Category I. Electrification- Replace older engine drives and pumps with new electric drives and pumps.

Category J. Influent Facility- Installation of new meters to measure the incoming sewage at both treatment plants.

Category K. Central Generation- Construction of an in-plant power generation facility, principally using digester gas as fuel.

Category L. Secondary Projects- Additional secondary projects.

Category M. Trunk Sewer Improvement- Construction of trunk sewer lines.

TRUST AGREEMENT

by and among

U.S. BANK NATIONAL ASSOCIATION,
as Trustee,

ORANGE COUNTY SANITATION DISTRICT
FINANCING CORPORATION

and

ORANGE COUNTY SANITATION DISTRICT

Dated as of February 1, 2022

Relating to

[\$[PAR AMOUNT]]
Orange County Sanitation District
Wastewater Refunding Revenue Obligations
Series 2022A

TABLE OF CONTENTS

Page

ARTICLE I DEFINITIONS; EQUAL SECURITY

Section 1.01.	Definitions.....	2
Section 1.02.	Definitions in Installment Purchase Agreement	9
Section 1.03.	Equal Security.....	9

ARTICLE II TERMS AND CONDITIONS OF REVENUE OBLIGATIONS

Section 2.01.	Preparation and Delivery of Revenue Obligations	10
Section 2.02.	Denomination, Medium and Dating of Revenue Obligations	10
Section 2.03.	Payment Dates of Revenue Obligations; Interest Computation	10
Section 2.04.	Form of Revenue Obligations.....	11
Section 2.05.	Execution of Revenue Obligations and Replacement Revenue Obligations.....	11
Section 2.06.	Transfer and Payment, Exchange or Cancellation of Revenue Obligations.....	11
Section 2.07.	Revenue Obligation Registration Books.....	12
Section 2.08.	Temporary Revenue Obligations	12
Section 2.09.	Revenue Obligations Mutilated, Lost, Destroyed or Stolen	12
Section 2.10.	Book-Entry System.....	13

ARTICLE III PROCEEDS OF REVENUE OBLIGATIONS

Section 3.01.	Delivery of Revenue Obligations.....	15
Section 3.02.	Deposit of Proceeds of Revenue Obligations	15
Section 3.03.	Costs of Issuance Fund	16

ARTICLE IV PREPAYMENT OF REVENUE OBLIGATIONS

Section 4.01.	Optional Prepayment	16
Section 4.02.	Reserved.....	16
Section 4.03.	Selection of Revenue Obligations for Optional Prepayment.....	16
Section 4.04.	Notice of Prepayment	17
Section 4.05.	Partial Prepayment of Revenue Obligations.....	18
Section 4.06.	Effect of Prepayment	18

ARTICLE V ASSIGNMENT AND PLEDGE; FUNDS AND ACCOUNTS

Section 5.01.	Assignment and Pledge.....	18
Section 5.02.	Installment Payment Fund	18
Section 5.03.	Reserved.....	19
Section 5.04.	Investment of Moneys.....	19
Section 5.05.	Brokerage Confirmations.....	20

TABLE OF CONTENTS
(continued)

Page

ARTICLE VI
COVENANTS

Section 6.01.	Compliance with Trust Agreement.....	20
Section 6.02.	Compliance with Installment Purchase Agreement.....	21
Section 6.03.	Compliance with Master Agreement	21
Section 6.04.	Observance of Laws and Regulations.....	21
Section 6.05.	Other Liens.....	21
Section 6.06.	Prosecution and Defense of Suits	21
Section 6.07.	Accounting Records and Statements	21
Section 6.08.	Tax Covenants	22
Section 6.09.	Continuing Disclosure	25
Section 6.10.	Further Assurances.....	25

ARTICLE VII
DEFAULT AND LIMITATIONS OF LIABILITY

Section 7.01.	Action upon Event of Default.....	25
Section 7.02.	Other Remedies of the Trustee	26
Section 7.03.	Non-Waiver.....	26
Section 7.04.	Remedies Not Exclusive.....	26
Section 7.05.	Application of Amounts After Default	27
Section 7.06.	Trustee May Enforce Claims Without Possession of Revenue Obligations.....	27
Section 7.07.	Limitation on Suits.....	28
Section 7.08.	No Liability by the Corporation to the Owners	28
Section 7.09.	No Liability by the District to the Owners.....	28
Section 7.10.	No Liability of the Trustee to the Owners	28

ARTICLE VIII
THE TRUSTEE

Section 8.01.	Employment of the Trustee; Duties	29
Section 8.02.	Removal and Resignation of the Trustee	29
Section 8.03.	Compensation and Indemnification of the Trustee.....	30
Section 8.04.	Protection of the Trustee.....	31

ARTICLE IX
AMENDMENT OF OR SUPPLEMENT TO TRUST AGREEMENT

Section 9.01.	Amendment or Supplement	32
Section 9.02.	Disqualified Revenue Obligations	33
Section 9.03.	Endorsement or Replacement of Revenue Obligations After Amendment or Supplement	33
Section 9.04.	Amendment by Mutual Consent.....	34

TABLE OF CONTENTS
(continued)

Page

ARTICLE X
DEFEASANCE

Section 10.01.	Discharge of Revenue Obligations and Trust Agreement	34
Section 10.02.	Unclaimed Moneys	35

ARTICLE XI
MISCELLANEOUS

Section 11.01.	Benefits of Trust Agreement.....	36
Section 11.02.	Successor Deemed Included in all References to Predecessor	36
Section 11.03.	Execution of Documents by Owners	36
Section 11.04.	Waiver of Personal Liability	36
Section 11.05.	Acquisition of Revenue Obligations by District.....	37
Section 11.06.	Content of Certificates	37
Section 11.07.	Funds and Accounts.....	37
Section 11.08.	Article and Section Headings, Gender and References	37
Section 11.09.	Partial Invalidity.....	38
Section 11.10.	California Law	38
Section 11.11.	Notices	38
Section 11.12.	Effective Date	39
Section 11.13.	Execution in Counterparts.....	39

EXHIBIT A – FORM OF REVENUE OBLIGATION

TRUST AGREEMENT

THIS TRUST AGREEMENT (this “Trust Agreement”), dated as of February 1, 2022, is made by and among U.S. BANK NATIONAL ASSOCIATION, a national banking association organized and existing under the laws of the United States of America, as trustee (the “Trustee”), the ORANGE COUNTY SANITATION DISTRICT FINANCING CORPORATION, a nonprofit public benefit corporation organized and existing under the laws of the State of California (the “Corporation”), and the ORANGE COUNTY SANITATION DISTRICT, a county sanitation district organized and existing under the laws of the State of California (the “District”).

WITNESSETH:

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the “2012A Prior Project”), the District has heretofore purchased the 2012A Prior Project from the Corporation, and the Corporation has heretofore sold the 2012A Prior Project to the District, for the installment payments (the “2012A Prior Installment Payments”) made by the District pursuant to the Installment Purchase Agreement, dated as of March 1, 2012 (the “2012A Prior Installment Purchase Agreement”), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012A Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012A (the “2012A Prior Obligations”), evidencing direct, undivided fractional interests in the 2012A Prior Installment Payments;

WHEREAS, the District has determined to further refinance the 2012A Prior Project by prepaying the remaining principal components of the 2012A Prior Installment Payments (the “2012A Refunded Installment Payments”), and the interest components thereof to the date of prepayment, thereby causing to be prepaid all of the outstanding 2012A Prior Obligations in the aggregate principal amount of \$100,645,000 (the “2012A Refunded Obligations”);

WHEREAS, to refinance the acquisition, construction and installation of certain improvements to its wastewater system (the “2012B Prior Project” and, together with the 2012A Prior Project, the “Prior Projects”), the District has heretofore purchased the 2012B Prior Project from the Corporation, and the Corporation has heretofore sold the 2012B Prior Project to the District, for the installment payments (the “2012B Prior Installment Payments” and, together with the 2012A Prior Installment Payments, the “Prior Installment Payments”) made by the District pursuant to the Installment Purchase Agreement, dated as of August 1, 2012 (the “2012B Prior Installment Purchase Agreement” and, together with the 2012A Prior Installment Purchase Agreement, the “Prior Installment Purchase Agreements”), by and between the District and the Corporation;

WHEREAS, to provide the funds necessary to refinance the 2012B Prior Project, the District caused the execution and delivery of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2012B (the “2012B Prior Obligations”), evidencing direct, undivided fractional interests in the 2012B Prior Installment Payments;

WHEREAS, the District has determined to further refinance a portion of the 2012B Prior Project by prepaying a portion of the remaining principal components of the 2012B Prior Installment Payments (the “2012B Refunded Installment Payments”), and the interest components thereof to the date of prepayment, thereby causing to be prepaid a portion of the outstanding 2012B Prior Obligations maturing on February 1 in the years 2023 through 2026, inclusive, in the aggregate principal amount of \$6,670,000 (the “2012B Refunded Obligations”);

WHEREAS, to provide the funds necessary to prepay a portion of the Refunded Installment Payments, the District and the Corporation desire that the Corporation purchase the Project (as defined herein) from the District and the District sell the Project to the Corporation, and that the District then purchase the Project from the Corporation and the Corporation sell the Projects to the District, for the installment payments (the “Installment Payments”) to be made by the District pursuant to the Installment Purchase Agreement, dated the date hereof (the “Installment Purchase Agreement”);

WHEREAS, the Corporation proposes to assign without recourse certain of its rights under and pursuant to the Installment Purchase Agreement to the Trustee;

WHEREAS, in consideration of such assignment and the execution and delivery of this Trust Agreement, the Trustee has agreed to execute and deliver Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), which are certificates of participation, evidencing direct, undivided fractional interests in the Installment Purchase Agreement and the related Installment Payments, and the interest thereon;

WHEREAS, a portion of the proceeds of the Revenue Obligations will be used to prepay a portion of the Refunded Installment Payments; and

WHEREAS, all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and delivery of this Trust Agreement do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and deliver this Trust Agreement;

NOW, THEREFORE, in consideration of the promises and of the mutual agreements and covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto do hereby agree as follows:

ARTICLE I

DEFINITIONS; EQUAL SECURITY

Section 1.01. Definitions. Except as provided in Section 1.02 hereof or unless the context otherwise requires, the terms defined in this Section shall for all purposes hereof and of any amendment hereof or supplement hereto and of the Revenue Obligations and of any certificate, opinion, request or other document mentioned herein or therein have the meanings defined herein, the following definitions to be equally applicable to both the singular and plural forms of any of the terms defined herein:

“2012A Prior Trust Agreement” means the Trust Agreement, dated as of October 1, 2012A, by and among the U.S. Bank National Association, as successor trustee, the Corporation and the District, as amended and supplemented, pursuant to which the 2012A Prior Obligations were executed and delivered.

“2012A Refunded Obligations” has the meaning ascribed thereto in the recitals hereto.

“2012A Prior Trustee” means U.S. Bank National Association, as successor trustee under the 2012A Prior Trust Agreement.

“2012B Prior Trust Agreement” means the Trust Agreement, dated as of October 1, 2012B, by and among the U.S. Bank National Association, as successor trustee, the Corporation and the District, as amended and supplemented, pursuant to which the 2012B Prior Obligations were executed and delivered.

“2012B Refunded Obligations” has the meaning ascribed thereto in the recitals hereto.

“2012B Prior Trustee” means U.S. Bank National Association, as trustee under the 2012B Prior Trust Agreement.

“Authorized Corporation Representative” means the President, the Vice President, the Treasurer and the Secretary of the Corporation, and any other Person authorized by the President of the Corporation to act on behalf of the Corporation under or with respect to this Trust Agreement.

“Authorized Denominations” means \$5,000 and integral multiples thereof.

“Authorized District Representative” means the General Manager of the District, the Assistant General Manager, Director of Finance and Administrative Services of the District, the Controller of the District and any other Person authorized by the Assistant General Manager, Director of Finance and Administrative Services of the District to act on behalf of the District under or with respect to this Trust Agreement.

“Beneficial Owners” means those individuals, partnerships, corporations or other entities for which the Participants have caused the Depository to hold Book-Entry Certificates.

“Book-Entry Certificates” means the Revenue Obligations registered in the name of the nominee of DTC, or any successor securities depository for the Revenue Obligations, as the Owner thereof pursuant to the terms and provisions of Section 2.10 hereof.

“Business Day” means a day other than (a) Saturday or Sunday, (b) a day on which banking institutions in the city in which the Principal Office is located are authorized or required by law to be closed, and (c) a day on which the New York Stock Exchange is authorized or obligated by law or executive order to be closed.

“Cede & Co.” means Cede & Co., the nominee of DTC, and any successor nominee of DTC with respect to the Revenue Obligations.

“Certificate Year” means each twelve-month period beginning on February 2 in each year and extending to the next succeeding February 1, both dates inclusive.

“Closing Date” means February 1, 2022.

“Code” means the Internal Revenue Code of 1986.

“Continuing Disclosure Agreement” means the Continuing Disclosure Agreement, dated as of the Closing Date, by and between the District and Digital Assurance Certification L.L.C., as originally executed and as it may from time to time be amended in accordance with the terms thereof.

“Corporation” means the Orange County Sanitation District Financing Corporation, a nonprofit public benefit corporation organized and existing under the laws of the State, and any successor thereto.

“Costs of Issuance” means all the costs of executing and delivering the Revenue Obligations, including, but not limited to, all printing and document preparation expenses in connection with this Trust Agreement, the Installment Purchase Agreement, the Revenue Obligations and any preliminary official statement and final official statement pertaining to the Revenue Obligations, fees of a municipal advisor, rating agency fees, market study fees, legal fees and expenses of counsel with respect to the execution and delivery of the Revenue Obligations, the initial fees and expenses of the Trustee and its counsel and other fees and expenses incurred in connection with the execution and delivery of the Revenue Obligations, to the extent such fees and expenses are approved by the District.

“Costs of Issuance Fund” means the fund by that name established in accordance with Section 3.03 hereof.

“Depository” means the securities depository acting as Depository pursuant to Section 2.10 hereof.

“District” means the Orange County Sanitation District, a county sanitation district organized and existing under the laws of the State, and any successor thereto.

“DTC” means The Depository Trust Company, New York, New York and its successors.

“Event of Default” shall have the meaning set forth in Section 6.01 of the Installment Purchase Agreement.

“Fitch” means Fitch Ratings, its successors and assigns, except that if such corporation shall no longer perform the function of a securities rating agency for any reason, the term “Fitch” shall be deemed to refer to any other nationally recognized securities rating agency selected by the District.

“Government Obligations” means any of the following which are noncallable by the issuer thereof except to the extent not permitted by the laws of the State as an investment for the moneys to be invested therein at the time of investment:

(i) (a) direct general obligations of the United States of America, (b) obligations the payment of the principal of and interest on which are unconditionally guaranteed as to the full and timely payment by the United States of America, or (c) any fund or other pooling arrangement whose assets consist exclusively of the obligations listed in clause (a) or (b) of this clause (i) and which is rated at least “P-1” by Moody’s; provided that, such obligations shall not include unit investment trusts or mutual fund obligations;

(ii) advance refunded tax-exempt obligations that (a) are rated by Moody’s and S&P, (b) are secured by obligations specified in clause (i), (c) are tax-exempt because they are secured by obligations specified in clause (i), and (d) have the same ratings as the obligations specified in clause (i);

(iii) bonds, debentures or notes issued by any of the following federal agencies: Federal Farm Credit Bank, Federal Home Loan Mortgage Corporation or Fannie Mae; provided, that such bonds, debentures or notes shall be the senior obligations of such agencies (including participation certificates) and have the same ratings by Moody’s and S&P as the obligations specified in clause (i); and

(iv) bonds, debentures or notes issued by any Federal agency hereafter created by an act of Congress, the payment of the principal of and interest on which are unconditionally guaranteed by the United States of America as to the full and timely payment; provided, that, such obligations shall not include unit investment trusts or mutual fund obligations.

“Installment Payment Fund” means the fund by that name established in accordance with Section 5.02 hereof.

“Installment Payments” means the Installment Payments required to be made by the District pursuant to Section 3.02 of the Installment Purchase Agreement.

“Installment Purchase Agreement” means the Installment Purchase Agreement, dated as of the date hereof, by and between the District and the Corporation, as originally executed and as it may from time to time be amended in accordance with the provisions thereof.

“Interest Account” means the account by that name within the Installment Payment Fund established in accordance with Section 5.02 hereof.

“Interest Payment Date” means February 1 and August 1 of each year, commencing August 1, 2022.

“Letter of Representations” means the letter of the District delivered to and accepted by the Depository on or prior to the delivery of the Revenue Obligations as Book-Entry Certificates setting forth the basis on which the Depository serves as depository for such Book-Entry Certificates, as originally executed or as it may be supplemented or revised or replaced by a letter to a substitute Depository.

“Master Agreement” means the Master Agreement for District Obligations, dated as of August 1, 2000, by and between the District and the Corporation, as originally executed and as it may from time to time be amended or supplemented in accordance with the terms thereof.

“Moody’s” means Moody’s Investors Service, its successors and assigns, except that if such corporation shall no longer perform the function of a securities rating agency for any reason, the term “Moody’s” shall be deemed to refer to any other nationally recognized securities rating agency selected by the District.

“Nominee” means the nominee of the Depository, which may be the Depository, as determined from time to time pursuant to Section 2.10 hereof.

“Opinion of Counsel” means a written opinion of Norton Rose Fulbright US LLP or any other counsel of recognized national standing in the field of law relating to municipal bonds, appointed and paid by the District.

“Outstanding,” when used as of any particular time with reference to Revenue Obligations, means (subject to the provisions of Section 9.02 hereof) all Revenue Obligations except (a) Revenue Obligations previously canceled by the Trustee or delivered to the Trustee for cancellation, (b) Revenue Obligations paid or deemed to have been paid within the meaning of Section 10.01 hereof, and (c) Revenue Obligations in lieu of or in substitution for which other Revenue Obligations shall have been executed and delivered by the Trustee pursuant to Section 2.09 hereof.

“Owner” means any Person who shall be the registered owner of any Outstanding Revenue Obligation as indicated in the registration books of the Trustee required to be maintained pursuant to Section 2.07 hereof.

“Participants” means those broker-dealers, banks and other financial institutions from time to time for which the Depository holds Book-Entry Certificates as securities depository.

“Participating Underwriter” has the meaning ascribed thereto in the Continuing Disclosure Agreement.

“Permitted Investments” means any of the following, except to the extent not permitted by the laws of the State as an investment for the moneys to be invested therein at the time of investment:

- (1) Government Obligations;
- (2) Bonds, debentures, notes, participation certificates or other evidences of indebtedness issued, or the principal of and interest on which are unconditionally guaranteed, by the Federal Intermediate Credit Bank, the Federal Home Loan Bank System, the Government National Mortgage Association or any other agency or instrumentality of or corporation wholly owned by the United States of America when such obligations are backed by the full faith and credit of the United States for the full and timely payment of principal and interest;

(3) Obligations of any state of the United States or any political subdivision thereof, which at the time of investment are rated “Aa3” or higher by Moody’s or “AA-” or higher by S&P or Fitch; or which are rated “VMIG 1” or better by Moody’s, “A-1” or better by S&P, or “F1” or better by Fitch with respect to commercial paper, or “VMIG 1,” “SP-1,” or “F1,” respectively, with respect to municipal notes;

(4) Unsecured certificates of deposit, time deposits and bankers' acceptance (having maturities of not more than 365 days) of any bank the short-term obligations of which are rated on the date of purchase “A-1+” or better by S&P, “F1” or better by Fitch and “P-1” by Moody’s and/or certificates of deposit (including those of the Trustee, its parent and its affiliates) secured at all times by collateral that may be used by a national bank for purposes of satisfying its obligations to collateralize pursuant to federal law which are issued by commercial banks, savings and loan associations or mutual savings bank whose short-term obligations are rated on the date of purchase “A-1” or better by S&P, “F1” or better by Fitch or “P-1” by Moody’s and investment in any interest bearing deposits/interest bearing money market deposit account, time deposit account, including such accounts with the Trustee;

(5) Repurchase agreements with any bank, trust company or national banking association insured by the Federal Deposit Insurance Corporation (including the Trustee), with subsidiaries (of a parent company), provided the obligations of the subsidiary under the agreement are unconditionally guaranteed by the parent, or with any government bond dealer recognized as a primary dealer by the Federal Reserve Bank of New York, which agreements are fully and continuously secured by a valid and perfected first priority security interest in obligations described in paragraph (1) or (2) of this definition, provided that either such bank, trust company or national banking association which (or senior debt or claims paying ability of the financial entity’s guarantor) is rated, at the time of investment, at least “A1” or “A+” by any two Rating Agencies;

(6) Repurchase agreements with maturities of not more than one year entered into with financial institutions such as banks or trust companies organized under state law or national banks or banking associations (including the Trustee), insurance companies or government bond dealers reporting to, trading with, and recognized as a primary dealer by, the Federal Reserve Bank of New York and a member of the Securities Investor Protection Corporation or with a dealer or parent holding company that is rated, at the time of investment, or whose long-term debt obligations (or senior debt or claims paying ability of the financial entity’s guarantor) are rated, at the time of investment, at least “A1” or “A+” by any two Rating Agencies; provided, that such repurchase agreements are in writing, secured by obligations described in paragraphs (1) and (2) of this definition having a fair market value, exclusive of accrued interest, at least equal to the amount invested in the repurchase agreements and in which the Trustee has a perfected first lien in, and retains possession of, such obligations free from all third party claims;

(7) Investment agreements, forward purchase agreements and reserve fund put agreements with any corporation, including banking or financial institutions, or agreements entered into with subsidiaries (of a parent company), provided the obligations of the subsidiary under the agreement are unconditionally guaranteed by the parent, the

corporate debt of which (or senior debt or claims paying ability of the financial entity's guarantor) is rated, at the time of investment, at least "A1" or "A+" by any two Rating Agencies;

(8) Guaranteed investment contracts or similar funding agreements issued by insurance companies, provided that either the long term corporate debt of such insurance company, at the time of investment, is rated, at the time of investment, at least "A1" or "A+" by any two Rating Agencies or which agreements are fully and continuously secured by a valid and perfected first priority security interest in obligations described in paragraph (1) or (2) of this definition, or that the following conditions are met: (a) the market value of the collateral is maintained at levels acceptable to Moody's and S&P or Fitch, (b) the Trustee or a third party acting solely as agent for the Trustee has possession of the collateral, (c) the Trustee has a perfected first priority security interest in the collateral, (d) the collateral is free and clear of third-party liens, and (e) failure to maintain the requisite collateral level will require the Trustee to liquidate collateral;

(9) Corporate commercial paper which are rated at least "P-1," "A-1" or "F1" by any two Rating Agencies at the time of investment;

(10) Taxable government money market portfolios which are rated at least "AAM" or "AAM-G" or "Aaa-mf" or "AAMmf" by any two Rating Agencies (including funds for which the Trustee or an affiliate provides investment advice or similar services); and

(11) Deposits with the Local Agency Investment Fund of the State, as may otherwise be permitted by law.

"Person" means an individual, corporation, limited liability company, firm, association, partnership, trust, or other legal entity or group of entities, including a governmental entity or any agency or political subdivision thereof.

"Prepayment Account" means the account by that name within the Installment Payment Fund established in accordance with Section 5.02 hereof.

"Principal Account" means the account by that name within the Installment Payment Fund established in accordance with Section 5.02 hereof.

"Principal Office" means the Trustee's principal corporate trust office in Los Angeles, California.

"Principal Payment Date" means a date on which an Installment Payment evidenced by the Revenue Obligations becomes due and payable.

"Prior Obligations" has the meaning ascribed thereto in the recitals hereto.

"Project" has the meaning ascribed thereto in the Installment Purchase Agreement.

"Rating Agency" means Fitch, Moody's or S&P.

“Record Date” means, with respect to the interest payable on any Interest Payment Date, the 15th day of the calendar month immediately preceding such Interest Payment Date, whether or not such day is a Business Day.

“Revenue Obligations” means the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A, executed and delivered by the Trustee pursuant hereto, which are certificates of participation, evidencing direct, undivided fractional interests in the Installment Purchase Agreement and the related Installment Payments, and the interest thereon.

“S&P” means S&P Global Ratings, a Standard & Poor’s Financial Services LLC business, its successors and assigns, except that if such entity shall no longer perform the functions of a securities rating agency for any reason, the term “S&P” shall be deemed to refer to any other nationally recognized securities rating agency selected by the District.

“State” means the State of California.

“Trust Agreement” means this Trust Agreement, dated as of February 1, 2022, by and among the Trustee, the Corporation and the District, as originally executed and delivered and as it may from time to time be amended or supplemented in accordance with the provisions hereof.

“Trustee” means U.S. Bank National Association, a national banking association duly organized and existing under the laws of the United States of America, or any other bank or trust company which may at any time be substituted in its place as provided in Section 8.02 hereof.

“Written Certificate” and **“Written Request”** mean (a) with respect to the Corporation, a written certificate or written request, respectively, signed in the name of the Corporation by an Authorized Corporation Representative, and (b) with respect to the District, a written certificate or written request, respectively, signed in the name of the District by an Authorized District Representative. Any such certificate or request may, but need not, be combined in a single instrument with any other instrument, opinion or representation, and the two or more so combined shall be read and construed as a single instrument.

Section 1.02. Definitions in Installment Purchase Agreement. Except as otherwise herein defined and unless the context otherwise requires, the terms defined in the Installment Purchase Agreement shall for all purposes hereof and of any amendment hereof or supplement hereto and of any report or other document mentioned herein have the meanings defined therein, such definitions to be equally applicable to both the singular and plural forms of any of the terms defined therein. With respect to any defined term which is given a different meaning under this Trust Agreement than under the Installment Purchase Agreement, as used herein it shall have the meaning given herein.

Section 1.03. Equal Security. In consideration of the acceptance of the Revenue Obligations by the Owners, this Trust Agreement shall be deemed to be and shall constitute a contract between the Trustee and the Owners to secure the full and final payment of the interest and principal evidenced by the Revenue Obligations which may be executed and delivered hereunder, subject to each of the agreements, conditions, covenants and terms contained herein; and all agreements, conditions, covenants and terms contained herein required to be observed or

performed by or on behalf of the Trustee shall be for the equal and proportionate benefit, protection and security of all Owners without distinction, preference or priority as to security or otherwise of any Revenue Obligations over any other Revenue Obligations by reason of the number or date thereof or the time of execution or delivery thereof or for any cause whatsoever, except as expressly provided herein or therein.

ARTICLE II

TERMS AND CONDITIONS OF REVENUE OBLIGATIONS

Section 2.01. Preparation and Delivery of Revenue Obligations. The Trustee is hereby authorized, upon the Written Request of the District, to execute and deliver the Revenue Obligations in the aggregate principal amount of \$[PAR AMOUNT] evidencing the aggregate principal amount of the Installment Payments and each evidencing a direct, fractional undivided interest in the Installment Payments, and the interest thereon. The Installment Payments evidenced by each Revenue Obligation shall constitute the principal evidenced thereby and the interest on such Installment Payments shall constitute the interest evidenced thereby. The Revenue Obligations shall be numbered, with or without prefixes, as directed by the Trustee.

Section 2.02. Denomination, Medium and Dating of Revenue Obligations. The Revenue Obligations shall be designated “Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A” and shall be prepared in the form of fully registered Revenue Obligations, without coupons, in Authorized Denominations and shall be payable in lawful money of the United States of America.

The Revenue Obligations shall be dated as of the Closing Date. Each Revenue Obligation shall evidence interest from the Interest Payment Date next preceding its date of execution to which interest has been paid in full, unless such date of execution shall be after a Record Date and on or prior to the following Interest Payment Date, in which case such Revenue Obligation shall evidence interest from such Interest Payment Date, or unless such date of execution shall be on or prior to January 15, 2022, in which case such Revenue Obligation shall represent interest from the Closing Date. Notwithstanding, the foregoing, if, as shown by the records of the Trustee, interest evidenced by the Revenue Obligations shall be in default, each Revenue Obligation shall evidence interest from the last Interest Payment Date to which such interest has been paid in full or duly provided for.

Section 2.03. Payment Dates of Revenue Obligations; Interest Computation.
 (a) *Method and Place of Payment.* The principal evidenced by the Revenue Obligations shall become due and payable, subject to prior prepayment, on February 1 of the years, in the amounts, and shall evidence interest accruing at the rates per annum set forth below:

Principal Payment Date (February 1)	Principal Component	Interest Rate
	\$	%

Except as otherwise provided in the Letter of Representations, payments of interest evidenced by the Revenue Obligations shall be made to the Owners thereof (as determined at the close of business on the Record Date next preceding the related Interest Payment Date) by check or draft of the Trustee mailed to the address of each such Owner as it appears on the registration books maintained by the Trustee pursuant to Section 2.07 hereof, or to such other address as may be furnished in writing to the Trustee by each such Owner. Except as otherwise provided in the Letter of Representations, payment of principal and prepayment premium, if any, evidenced by the Revenue Obligations, on their stated Principal Payment Dates or on prepayment in whole or in part prior thereto, shall be made only upon presentation and surrender of the Revenue Obligations at the Principal Office.

(b) *Computation of Interest.* The interest evidenced by the Revenue Obligations shall be payable on each Interest Payment Date to and including their respective Principal Payment Dates or prepayment prior thereto, and shall represent the sum of the interest on the Installment Payments coming due on the Interest Payment Dates in each year. The principal evidenced by the Revenue Obligations shall be payable on their respective Principal Payment Dates in each year and shall represent the Installment Payments coming due on the Principal Payment Dates in each year. Interest evidenced by the Revenue Obligations shall be computed on the basis of a 360-day year consisting of twelve 30-day months.

Section 2.04. Form of Revenue Obligations. The Revenue Obligations shall be in substantially the form of Exhibit A hereto, with necessary or appropriate insertions, omissions and variations as permitted or required hereby.

Section 2.05. Execution of Revenue Obligations and Replacement Revenue Obligations. The Revenue Obligations shall be executed by the Trustee by the manual signature of an authorized signatory of the Trustee. The Trustee shall deliver replacement Revenue Obligations in the manner and as contemplated by this Article. Such replacement Revenue Obligations shall be executed as herein provided and shall be in Authorized Denominations.

Section 2.06. Transfer and Payment, Exchange or Cancellation of Revenue Obligations. Each Revenue Obligation is transferable by the Owner thereof, in person or by his attorney duly authorized in writing, at the Principal Office, on the registration books maintained

by the Trustee pursuant to the provisions of Section 2.07 hereof, upon surrender of such Revenue Obligation for cancellation accompanied by delivery of a duly executed written instrument of transfer in a form acceptable to the Trustee. The Trustee may treat the Owner of any Revenue Obligation as the absolute owner of such Revenue Obligation for all purposes, whether or not the principal or interest evidenced by such Revenue Obligation shall be overdue, and the Trustee shall not be affected by any knowledge or notice to the contrary; and payment of the interest and principal evidenced by such Revenue Obligation shall be made only to such Owner, which payments shall be valid and effectual to satisfy and discharge the liability evidenced by such Revenue Obligation to the extent of the sum or sums so paid. Whenever any Revenue Obligation shall be surrendered for transfer, the Trustee shall execute and deliver a new Revenue Obligation or Revenue Obligations evidencing principal in the same aggregate amount and having the same stated Principal Payment Date. The Trustee shall require the payment by any Owner requesting such transfer of any tax or other governmental charge required to be paid with respect to such transfer. Each Revenue Obligation may be exchanged at the Principal Office for Revenue Obligations evidencing principal in a like aggregate principal amount having the same stated Principal Payment Date in such Authorized Denominations as the Owner thereof may request. The Trustee shall require the payment by the Owner requesting such exchange of any tax or other governmental charge required to be paid with respect to such exchange. Whenever in this Trust Agreement provision is made for the cancellation by the Trustee of any Bonds, the Trustee shall destroy such Bonds and deliver a certificate of such destruction to the District.

Section 2.07. Revenue Obligation Registration Books. The Trustee shall keep at its Principal Office sufficient books for the registration and transfer of the Revenue Obligations, which books shall be available for inspection and copying by the District at reasonable hours and under reasonable conditions; and upon presentation for such purpose the Trustee shall, under such reasonable regulations as it may prescribe, register or transfer the Revenue Obligations on such books as hereinabove provided.

Section 2.08. Temporary Revenue Obligations. The Revenue Obligations may be initially delivered in temporary form exchangeable for definitive Revenue Obligations when ready for delivery, which temporary Revenue Obligations shall be printed, lithographed or typewritten, shall be of such denominations as may be determined by the Trustee, shall be in fully registered form and shall contain such reference to any of the provisions hereof as may be appropriate. Every temporary Revenue Obligation shall be executed and delivered by the Trustee upon the same conditions and terms and in substantially the same manner as definitive Revenue Obligations. If the Trustee executes and delivers temporary Revenue Obligations, it shall prepare and execute definitive Revenue Obligations without delay, and thereupon the temporary Revenue Obligations may be surrendered at the Principal Office in exchange for such definitive Revenue Obligations, and until so exchanged such temporary Revenue Obligations shall be entitled to the same benefits hereunder as definitive Revenue Obligations executed and delivered hereunder.

Section 2.09. Revenue Obligations Mutilated, Lost, Destroyed or Stolen. If any Revenue Obligation shall become mutilated, the Trustee, at the expense of the Owner thereof, shall execute and deliver a new Revenue Obligation evidencing a like principal amount and having the same stated Principal Payment Date and number in exchange and substitution for the Revenue Obligation so mutilated, but only upon surrender to the Trustee of the Revenue Obligation so mutilated. Every mutilated Revenue Obligation so surrendered to the Trustee shall

be canceled by it. If any Revenue Obligation shall be lost, destroyed or stolen, evidence of such loss, destruction or theft may be submitted to the Trustee, and if such evidence is satisfactory to the Trustee and indemnity satisfactory to the Trustee shall be given, the Trustee, at the expense of the Owner thereof, shall execute and deliver a new Revenue Obligation evidencing a like principal amount and having the same stated Principal Payment Date, numbered as the Trustee shall determine, in lieu of and in substitution for the Revenue Obligation so lost, destroyed or stolen. The Trustee may require payment of a sum not exceeding the actual cost of preparing each new Revenue Obligation executed and delivered by it under this Section and of the expenses which may be incurred by it under this Section. Any Revenue Obligation executed and delivered under the provisions of this Section in lieu of any Revenue Obligation alleged to be lost, destroyed or stolen shall be equally and proportionately entitled to the benefits hereof with all other Revenue Obligations executed and delivered hereunder, and the Trustee shall not be required to treat both the original Revenue Obligation and any replacement Revenue Obligation as being Outstanding for the purpose of determining the amount of Revenue Obligations which may be executed and delivered hereunder or for the purpose of determining any percentage of Revenue Obligations Outstanding hereunder, but both the original and replacement Revenue Obligation shall be treated as one and the same. Notwithstanding any other provision of this Section, in lieu of executing and delivering a new Revenue Obligation for a Revenue Obligation which has been lost, destroyed or stolen and which evidences principal that is then payable, the Trustee may make payment of such Revenue Obligation to the Owner thereof if so instructed by the District.

Section 2.10. Book-Entry System. (a) The Revenue Obligations shall be initially executed and delivered as Book-Entry Certificates, and the Revenue Obligations for each stated Principal Payment Date shall be in the form of a separate single fully registered Revenue Obligation (which may be typewritten). Upon initial execution and delivery, the ownership of each Revenue Obligation shall be registered in the registration books maintained by the Trustee in the name of the Nominee, as nominee of the Depository. Payment of principal or interest evidenced by any Book-Entry Certificate registered in the name of the Nominee shall be made on the applicable Interest Payment Date by wire transfer of New York clearing house or equivalent next day funds or by wire transfer of same day funds to the account of the Nominee. Such payments shall be made to the Nominee at the address which is, on the Record Date, shown for the Nominee in the registration books maintained by the Trustee.

(b) With respect to Book-Entry Certificates, the District, the Corporation and the Trustee shall have no responsibility or obligation to any Participant or to any Person on behalf of which such a Participant holds an interest in such Book-Entry Certificates. Without limiting the immediately preceding sentence, the District, the Corporation and the Trustee shall have no responsibility or obligation with respect to (i) the accuracy of the records of the Depository, the Nominee or any Participant with respect to any ownership interest in Book-Entry Certificates, (ii) the delivery to any Participant or any other Person, other than an Owner as shown in the registration books maintained by the Trustee, of any notice with respect to Book-Entry Certificates, including any notice of prepayment, (iii) the selection by the Depository and its Participants of the beneficial interests in Book-Entry Certificates to be prepaid in the event Revenue Obligations are prepaid in part, (iv) the payment to any Participant or any other Person, other than an Owner as shown in the registration books maintained by the Trustee, of any

amount with respect to principal, premium, if any, or interest evidenced by Book-Entry Certificates, or (v) any consent given or other action taken by the Depository as Owner.

(c) The District, the Corporation and the Trustee may treat and consider the Person in whose name each Book-Entry Certificate is registered in the registration books maintained by the Trustee as the absolute Owner of such Book-Entry Certificate for the purpose of payment of principal, prepayment premium, if any, and interest evidenced by such Revenue Obligation, for the purpose of selecting any Revenue Obligations, or portions thereof, to be prepaid, for the purpose of giving notices of prepayment and other matters with respect to such Revenue Obligation, for the purpose of registering transfers with respect to such Revenue Obligation, for the purpose of obtaining any consent or other action to be taken by Owners and for all other purposes whatsoever, and the District, the Corporation and the Trustee shall not be affected by any notice to the contrary.

(d) Reserved.

(e) The Trustee shall pay all principal, premium, if any, and interest evidenced by the Revenue Obligations to the respective Owner, as shown in the registration books maintained by the Trustee, or his respective attorney duly authorized in writing, and all such payments shall be valid and effective to fully satisfy and discharge the obligations with respect to payment of principal, premium, if any, and interest evidenced by the Revenue Obligations to the extent of the sum or sums so paid. No Person other than an Owner, as shown in the registration books maintained by the Trustee, shall receive a Revenue Obligation evidencing principal, premium, if any, and interest evidenced by the Revenue Obligations. Upon delivery by the Depository to the Owners, the Trustee and the District of written notice to the effect that the Depository has determined to substitute a new nominee in place of the Nominee, and subject to the provisions herein with respect to Record Dates, the word Nominee in this Trust Agreement shall refer to such nominee of the Depository.

(f) To qualify the Book-Entry Certificates for the Depository's book-entry system, the District shall execute and deliver to the Depository a Letter of Representations. The execution and delivery of a Letter of Representations shall not in any way impose upon the Corporation, the District or the Trustee any obligation whatsoever with respect to Persons having interests in such Book-Entry Certificates other than the Owners, as shown on the registration books maintained by the Trustee. Such Letter of Representations may provide the time, form, content and manner of transmission, of notices to the Depository. In addition to the execution and delivery of a Letter of Representations by the District, the District, the Corporation and the Trustee shall take such other actions, not inconsistent with this Trust Agreement, as are reasonably necessary to qualify Book-Entry Certificates for the Depository's book-entry program.

(g) If the District determines that it is in the best interests of the Beneficial Owners that they be able to obtain certificated Revenue Obligations and that such Revenue Obligations should therefore be made available and notifies the Depository and the Trustee of such determination, the Depository will notify the Participants of the availability through the Depository of certificated Revenue Obligations. In such event, the Trustee shall transfer and exchange certificated Revenue Obligations as requested by the Depository and any other Owners

in appropriate amounts. In the event (i) the Depository determines not to continue to act as securities depository for Book-Entry Certificates, or (ii) the Depository shall no longer so act and gives notice to the Trustee of such determination, then the District shall discontinue the Book-Entry system with the Depository. If the District determines to replace the Depository with another qualified securities depository, the District shall prepare or direct the preparation of a new single, separate, fully registered Revenue Obligation for each stated Principal Payment Date of such Book-Entry Certificates, registered in the name of such successor or substitute qualified securities depository or its nominee. If the District fails to identify another qualified securities depository to replace the Depository, then the Revenue Obligations shall no longer be restricted to being registered in the registration books maintained by the Trustee in the name of the Nominee, but shall be registered in whatever name or names the Owners transferring or exchanging such Revenue Obligations shall designate, in accordance with the provisions of Sections 2.06 and 2.09 hereof. Whenever the Depository requests the District to do so, the District will cooperate with the Depository in taking appropriate action after reasonable notice (i) to make available one or more separate certificates evidencing the Book-Entry Certificates to any Participant having Book-Entry Certificates credited to its account with the Depository, and (ii) to arrange for another securities depository to maintain custody of certificates evidencing the Book-Entry Certificates.

(h) Notwithstanding any other provision of this Trust Agreement to the contrary, if DTC is the sole Owner of the Revenue Obligations, so long as any Book-Entry Certificate is registered in the name of the Nominee, all payments of principal, premium, if any, and interest evidenced by such Revenue Obligation and all notices with respect to such Revenue Obligation shall be made and given, respectively, as provided in the Letter of Representations or as otherwise instructed by the Depository.

(i) In connection with any notice or other communication to be provided to Owners pursuant to the Trust Agreement by the District, the Corporation or the Trustee, with respect to any consent or other action to be taken by Owners, the Trustee shall establish a record date for such consent or other action and give the Depository notice of such record date not less than 15 calendar days in advance of such record date to the extent possible. Notice to the Depository shall be given only when DTC is the sole Owner of the Revenue Obligations.

ARTICLE III

PROCEEDS OF REVENUE OBLIGATIONS

Section 3.01. Delivery of Revenue Obligations. The Trustee is hereby authorized to execute the Revenue Obligations and deliver the Revenue Obligations to the original purchaser thereof upon receipt of a Written Request of the District and upon receipt of the net proceeds of sale thereof.

Section 3.02. Deposit of Proceeds of Revenue Obligations. The net proceeds received by the Trustee from the sale of the Revenue Obligations in the amount of \$[] (which amount includes the security deposit for the Revenue Obligations in the amount of \$[] on deposit with the Trustee) shall be deposited or transferred by the Trustee as follows:

(a) the Trustee shall deposit in the Costs of Issuance Fund the amount of \$[_____];
and

(b) the Trustee shall transfer to the 2012A Prior Trustee the amount of \$[_____]
from the proceeds of the Revenue Obligations, to be applied, together with other available
monies released from the 2012A Prior Trust Agreement, to the payment and prepayment of all of
the remaining installment payments related to the 2012A Refunded Obligations; and

(c) the Trustee shall transfer to the 2012B Prior Trustee the amount of \$[_____]
from the proceeds of the Revenue Obligations, to be applied, together with other available
monies released from the 2012B Prior Trust Agreement, to the payment and prepayment of all of
the remaining installment payments related to the 2012B Refunded Obligations.

The Trustee may establish a temporary fund or funds to facilitate the foregoing transfers.

Section 3.03. Costs of Issuance Fund. The Trustee shall establish and maintain a
separate special fund to be held by the Trustee known as the Costs of Issuance Fund. There shall
be deposited in the Costs of Issuance Fund on the Closing Date the amount required to be
deposited therein pursuant to Section 3.02 hereof. The Trustee shall disburse moneys from the
Costs of Issuance Fund on such dates and in such amounts as are necessary to pay Costs of
Issuance, in each case upon the Written Request of the District stating the Person to whom
payment is to be made, the amount to be paid, the purpose for which the obligation was incurred
and that such payment is a proper charge against the Costs of Issuance Fund. On the date that is
six months after the Closing Date, the Trustee shall transfer any amounts then remaining in the
Costs of Issuance Fund to the Installment Payment Fund. Upon such transfer, the Costs of
Issuance Fund shall be closed.

ARTICLE IV

PREPAYMENT OF REVENUE OBLIGATIONS

Section 4.01. Optional Prepayment. The Revenue Obligations maturing on or after
February 1, 2032 are subject to optional prepayment prior to their stated Principal Payment
Dates, on any date on or after February 1, 2031, in whole or in part, in Authorized
Denominations, from and to the extent of prepaid Installment Payments paid pursuant to the
Installment Purchase Agreement or from any other source of available funds, any such
prepayment to be at a price equal to the principal evidenced by the Revenue Obligations to be
prepaid, plus accrued interest evidenced thereby to the date fixed for prepayment, without
premium.

Section 4.02. Reserved.

Section 4.03. Selection of Revenue Obligations for Optional Prepayment. Whenever
less than all the Outstanding Revenue Obligations are to be prepaid on any one date pursuant to
Section 4.01 hereof, with respect to optional prepayment of Revenue Obligations, the Trustee
shall select the Revenue Obligations to be prepaid among Revenue Obligations with different
Principal Payment Dates as directed in a Written Request of the District. Whenever less than all
the Outstanding Revenue Obligations with the same stated Principal Payment Date are to be

prepaid on any one date pursuant to Section 4.01 hereof, the Trustee shall select the Revenue Obligations with such Principal Payment Date to be prepaid as directed in a Written Request of the District, or at the discretion of the District by lot in any manner that the Trustee deems fair and appropriate, which decision shall be final and binding upon the District and the Owners. The Trustee shall promptly notify the District in writing of the numbers of the Revenue Obligations so selected for prepayment on such date. For purposes of such selection, any Revenue Obligation may be prepaid in part in Authorized Denominations.

Section 4.04. Notice of Prepayment. When prepayment of Revenue Obligations is authorized pursuant to Section 4.01, the Trustee shall give notice, at the expense of the District, of the prepayment of the Revenue Obligations. The notice of prepayment shall specify (a) the Revenue Obligations or designated portions thereof (in the case of prepayment of the Revenue Obligations in part but not in whole) which are to be prepaid, (b) the date of prepayment, (c) the place or places where the prepayment will be made, including the name and address of any paying agent, (d) the prepayment price, (e) the CUSIP numbers assigned to the Revenue Obligations to be prepaid, (f) the numbers of the Revenue Obligations to be prepaid in whole or in part and, in the case of any Revenue Obligation to be prepaid in part only, the principal evidenced by such Revenue Obligation to be prepaid, and (g) the interest rate and stated Principal Payment Date of each Revenue Obligation to be prepaid in whole or in part. Such notice of prepayment shall further state that on the specified date there shall become due and payable upon each Revenue Obligation or portion thereof being prepaid the prepayment price and that from and after such date interest evidenced thereby shall cease to accrue and be payable. With respect to any notice of prepayment of Revenue Obligations pursuant to Section 4.01 hereof, unless at the time such notice is given the Revenue Obligations to be prepaid shall be deemed to have been paid within the meaning of Section 10.01 hereof, such notice shall state that such prepayment is conditional upon receipt by the Trustee, on or prior to the date fixed for such prepayment, of moneys sufficient to pay for the prepayment price of the Revenue Obligations to be prepaid, and that if such moneys shall not have been so received said notice shall be of no force and effect and the District shall not be required to prepay such Revenue Obligations. If a notice of prepayment of Revenue Obligations contains such a condition and such moneys are not so received, the prepayment of Revenue Obligations as described in the conditional notice of prepayment shall not be made and the Trustee shall, within a reasonable time after the date on which such prepayment was to occur, give notice to the persons and in the manner in which the notice of prepayment was given, that such moneys were not so received and that there shall be no prepayment of Revenue Obligations pursuant to such notice of prepayment.

The Trustee shall, at least 20 but not more than 60 days prior to any prepayment date, give notice of prepayment to the respective Owners of Revenue Obligations designated for prepayment by first-class mail, postage prepaid, at their addresses appearing on the registration books maintained by the Trustee as of the close of business on the day before such notice of prepayment is given.

The actual receipt by the Owner of any notice of such prepayment shall not be a condition precedent to prepayment, and neither failure to receive such notice nor any defect therein shall affect the validity of the proceedings for the prepayment of such Revenue Obligations or the cessation of interest evidenced thereby on the date fixed for prepayment.

A certificate by the Trustee that notice of prepayment has been given to Owners as herein provided shall be conclusive as against all parties, and no Owner whose Revenue Obligation is called for prepayment may object thereto or object to the cessation of interest evidenced thereby on the fixed prepayment date by any claim or showing that said Owner failed to actually receive such notice of prepayment.

Section 4.05. Partial Prepayment of Revenue Obligations. Upon surrender of any Revenue Obligation prepaid in part only, the Trustee shall execute and deliver to the Owner thereof a new Revenue Obligation or Revenue Obligations evidencing the unprepaid principal with respect to the Revenue Obligation surrendered.

Section 4.06. Effect of Prepayment. If notice of prepayment has been duly given as aforesaid and moneys for the payment of the prepayment price of the Revenue Obligations to be prepaid are held by the Trustee, then on the prepayment date designated in such notice, the Revenue Obligations so called for prepayment shall become payable at the prepayment price specified in such notice; and from and after the date so designated, interest evidenced by the Revenue Obligations so called for prepayment shall cease to accrue, such Revenue Obligations shall cease to be entitled to any benefit or security hereunder and the Owners of such Revenue Obligations shall have no rights in respect thereof except to receive payment of the prepayment price thereof. The Trustee shall, upon surrender for payment of any of the Revenue Obligations to be prepaid, pay such Revenue Obligations at the prepayment price thereof, and such moneys shall be pledged to such payment. All Revenue Obligations prepaid pursuant to the provisions of this Article shall be canceled by the Trustee and shall not be redelivered.

ARTICLE V

ASSIGNMENT AND PLEDGE; FUNDS AND ACCOUNTS

Section 5.01. Assignment and Pledge. The Corporation hereby transfers, conveys and assigns to the Trustee, for the benefit of the Owners, all of the Corporation's rights, title and interest in and to the Installment Purchase Agreement (excepting its rights to indemnification thereunder), including the right to receive Installment Payments, and the interest thereon, from the District and the right to exercise any remedies provided therein in the event of a default by the District thereunder. The Trustee hereby accepts said transfer, conveyance and assignment, solely in its capacity as Trustee, for the benefit of the Owners, subject to the provisions of this Trust Agreement. All Installment Payments, and the interest thereon, shall be paid directly by the District to the Trustee, and if received by the Corporation at any time shall be deposited by the Corporation with the Trustee immediately upon the receipt thereof.

To secure the respective rights of the Owners to the payments required to be made thereto as provided herein, the Corporation and the District hereby irrevocably pledge to the Trustee, for the benefit of the Owners, all of their right, title and interest, if any, in and to all amounts on deposit from time to time in the funds and accounts established hereunder. This pledge shall constitute a first lien on the amounts on deposit in such funds and accounts.

Section 5.02. Installment Payment Fund. (a) The Trustee shall establish and maintain the Installment Payment Fund until all required Installment Payments, and the interest thereon,

are paid in full pursuant to the Installment Purchase Agreement and until the first date upon which the Revenue Obligations are no longer Outstanding. The Trustee shall deposit in the Installment Payment Fund all Installment Payments, and the interest thereon, paid by the District and received by the Trustee. The moneys in the Installment Payment Fund shall be held in trust by the Trustee for the benefit of the Owners and shall be used and disbursed only for the purposes and uses herein authorized.

(b) The Trustee shall transfer the amounts on deposit in the Installment Payment Fund, at the times and in the manner hereinafter provided, to the following respective accounts within the Installment Payment Fund, each of which the Trustee hereby agrees to establish and maintain (provided the Prepayment Account need not be established in the records of the Trustee until deposit is required to be made to the Prepayment Account) until all required Installment Payments, and the interest thereon, are paid in full pursuant to the Installment Purchase Agreement and until the first date upon which the Revenue Obligations are no longer Outstanding. The moneys in each of such accounts shall be held in trust by the Trustee for the benefit of the Owners and shall be used and disbursed only for the purposes and uses herein authorized.

(i) *Interest Account.* The Trustee, on each Interest Payment Date, shall deposit in the Interest Account that amount of moneys representing the interest on the Installment Payments coming due on such Interest Payment Date. Moneys in the Interest Account shall be used by the Trustee for the purpose of paying the interest evidenced by the Revenue Obligations when due and payable.

(ii) *Principal Account.* The Trustee, on each Principal Payment Date, shall deposit in the Principal Account that amount of moneys representing the Installment Payments coming due on such Principal Payment Date. Moneys in the Principal Account shall be used by the Trustee for the purpose of paying the principal evidenced by the Revenue Obligations when due and payable.

(iii) *Prepayment Account.* The Trustee, on the prepayment date specified in the Written Request of the District filed with the Trustee at the time that any prepaid Installment Payment is paid to the Trustee pursuant to the Installment Purchase Agreement, shall deposit in the Prepayment Account that amount of moneys representing such prepaid Installment Payment, the accrued interest thereon to the prepayment date and any premium payable with respect thereto. The Trustee shall deposit in the Prepayment Account any other amounts made available by the District that the District, pursuant to a Written Request of the District, instructs the Trustee to apply to the prepayment of Revenue Obligations pursuant to Section 4.01 hereof. Moneys in the Prepayment Account shall be used by the Trustee for the purpose of paying the interest, premium, if any, and principal evidenced by the Revenue Obligations to be prepaid pursuant to Section 4.01 hereof.

Section 5.03. Reserved.

Section 5.04. Investment of Moneys. Except as otherwise provided herein, all moneys in any of the funds or accounts established pursuant to this Trust Agreement shall be invested by

the Trustee solely in Permitted Investments, as directed by the District pursuant to a Written Request of the District at least two (2) Business Days prior to the making of such investment. Moneys in all funds and accounts held by the Trustee shall be invested in Permitted Investments maturing not later than the date on which it is estimated that such moneys will be required for the purposes specified in this Trust Agreement. Absent timely written direction from the District, the Trustee shall invest any funds held by it in Permitted Investments described in clause (10) of the definition thereof. Permitted Investments that are registerable securities shall be registered in the name of the Trustee. All interest, profits and other income received from the investment of moneys in any fund or account established pursuant to this Trust Agreement shall be retained therein.

Permitted Investments acquired as an investment of moneys in any fund or account established under this Trust Agreement shall be credited to such fund or account. For the purpose of determining the amount in any fund, all Permitted Investments credited to such fund shall be valued by the Trustee at the market value thereof, such valuation to be performed not less frequently than semiannually on or before each January 15 and July 15. The Trustee may use securities pricing services available to it in making such valuations, including those within the accounting system used by the Trustee, and conclusively rely on thereon.

The Trustee or an affiliate may act as principal or agent in the making or disposing of any investment. The Trustee shall sell or present for redemption any Permitted Investment whenever it shall be necessary to provide moneys to meet any required payment, transfer, withdrawal or disbursement from the fund or account to which such Permitted Investment is credited, and the Trustee shall not be liable or responsible for any loss resulting from any investment made or sold pursuant to this Section. For purposes of investment, the Trustee may commingle moneys in any of the funds and accounts established hereunder.

The Trustee is hereby authorized, in making or disposing of any investment permitted by this Section, to deal with itself (in its individual capacity) or with any one or more of its affiliates, whether or not such affiliate is acting as an agent of the Trustee or for any third Person or dealing as principal for its own account.

Section 5.05. Brokerage Confirmations. The Trustee shall furnish the District periodic cash transaction statements which shall include detail for all investment transactions effected by the Trustee or brokers selected by the District. Upon the District's election and request, the Trustee shall provide the District online access to such statements. The District waives the right to receive brokerage confirmations of securities transactions effected by the Trustee as they occur, to the extent permitted by law. The District further understands that trade confirmations for securities transactions effected by the Trustee will be available upon request and at no additional cost and other trade confirmations may be obtained from the applicable broker

ARTICLE VI

COVENANTS

Section 6.01. Compliance with Trust Agreement. The Trustee will not execute or deliver any Revenue Obligations in any manner other than in accordance with the provisions

hereof, and the Corporation and the District will not suffer or permit any default by them to occur hereunder, but will faithfully comply with, keep, observe and perform all the agreements, conditions, covenants and terms hereof required to be complied with, kept, observed and performed by them.

Section 6.02. Compliance with Installment Purchase Agreement. The Corporation and the District will faithfully comply with, keep, observe and perform all the agreements, conditions, covenants and terms contained in the Installment Purchase Agreement required to be complied with, kept, observed and performed by them and, together with the Trustee, will enforce the Installment Purchase Agreement against the other party thereto in accordance with its terms.

Section 6.03. Compliance with Master Agreement. The Corporation and the District will faithfully comply with, keep, observe and perform all the agreements, conditions, covenants and terms contained in the Master Agreement required to be complied with, kept, observed and performed by them and, together with the Trustee, will enforce the Master Agreement against the other party thereto in accordance with its terms.

Section 6.04. Observance of Laws and Regulations. The Corporation and the District will faithfully comply with, keep, observe and perform all valid and lawful obligations or regulations now or hereafter imposed on them by contract, or prescribed by any law of the United States of America or of the State, or by any officer, board or commission having jurisdiction or control, as a condition of the continued enjoyment of each and every franchise, right or privilege now owned or hereafter acquired by them, including their right to exist and carry on their respective businesses, to the end that such franchises, rights and privileges shall be maintained and preserved and shall not become abandoned, forfeited or in any manner impaired.

Section 6.05. Other Liens. None of the Trustee, the Corporation or the District shall create or suffer to be created any pledge of or lien on the amounts on deposit in any of the funds or accounts created hereunder, other than the pledge and lien hereof.

Section 6.06. Prosecution and Defense of Suits. The District will defend against every action, suit or other proceeding at any time brought against the Trustee or any Owner upon any claim arising out of the receipt, deposit or disbursement of any of the Installment Payments, or the interest thereon, or involving the rights of the Trustee or any Owner hereunder; provided, however, that the Trustee or any Owner at its or his election may appear in and defend any such action, suit or other proceeding.

Section 6.07. Accounting Records and Statements. The Trustee will keep proper accounting records in which complete and correct entries shall be made of all transactions made by the Trustee relating to the receipt, deposit and disbursement of the Installment Payments, and the interest thereon, and such accounting records shall be available for inspection by the Corporation and the District at reasonable hours and under reasonable conditions. The Trustee shall not be obligated to provide an accounting for any fund or account that (a) has a balance of \$0.00 and (b) has not had any activity since the last reporting date. The Trustee will, upon written request, make copies of the foregoing available to any Owner (at the expense of such Owner).

Section 6.08. Tax Covenants.

(a) Special Definitions. When used in this Section, the following terms shall have the following meanings:

“*Computation Date*” has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

“*Computation Period*” means, initially, that period commencing on the date of the execution and delivery of the Revenue Obligations and concluding on the initial Computation Date and, thereafter, each period commencing on the day next following a Computation Date and concluding on the immediately succeeding Computation Date.

“*Gross Proceeds*” of any issue of governmental obligations means any proceeds as defined in section 1.148-1(b) of the Tax Regulations (referring to sales, investment and transferred proceeds) of that issue, and any replacement proceeds as defined in section 1.148-1(c) of the Tax Regulations, of that issue.

“*Investment*” has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

“*Nonpurpose Investment*” means any investment property, as defined in section 148(b) of the Code, in which Gross Proceeds of an issue are invested and that is not acquired to carry out the governmental purposes of that issue.

“*Opinion of Special Counsel*” means a written opinion of Norton Rose Fulbright US LLP or any other counsel of recognized national standing in the field of law relating to municipal bonds, appointed and paid by the District.

“*Prior Issue*” shall refer, collectively, to the Prior Obligations (but in the case of any of the foregoing executed and delivered for multiple purposes, only to the portion thereof allocable pursuant to section 1.148-9(h)(4) of the Tax Regulations to other than refunding purposes).

“*Proceeds*,” with respect to an issue of governmental obligations, has the meaning set forth in has the meaning set forth in section 1.148-1(b) of the Tax Regulations (referring to sales, investment and transferred proceeds, but not replacement proceeds).

“*Rebate Amount*” has the meaning set forth in section 1.148-1(b) of the Tax Regulations.

“*Special Counsel*” means Norton Rose Fulbright US LLP or any other counsel of recognized national standing in the field of law relating to municipal bonds, appointed and paid by the District.

“*Tax Regulations*” means the United States Treasury Regulations promulgated pursuant to sections 103 and 141 through 150 of the Code.

“*Yield*” of (i) any Investment has the meaning set forth in section 1.148-5 of the Tax Regulations and (ii) in respect of the Revenue Obligations has the meaning set forth in section 1.148-4 of the Tax Regulations.

(a) Exclusion of Interest from Gross Income. The District will take all actions necessary to establish and maintain the exclusion pursuant to section 103(a) of the Code of interest on the Revenue Obligations from the gross income of the owners thereof for federal income tax purposes, and will not use, permit the use of, or omit to use Gross Proceeds of the Revenue Obligations or any other amounts (or any property the acquisition, construction or improvement of which is to be refinanced directly or indirectly with Gross Proceeds) in a manner that if made or omitted, respectively, would cause the interest on any Revenue Obligation to fail to be excluded pursuant to section 103(a) of the Code from the gross income of the owners thereof for federal income tax purposes. Without limiting the generality of the foregoing, unless and until the Trustee receives an Opinion of Special Counsel to the effect that failure to comply with such covenant will not adversely affect the exclusion pursuant to section 103(a) of the Code of interest on any Revenue Obligation from the gross income of the owner thereof, the District shall comply with this covenant and each of the specific covenants in this Section.

(b) No Private Use or Private Payments. Except as would not cause any Revenue Obligation to become a “private activity bond” within the meaning of section 141 of the Code and the Tax Regulations and rulings thereunder, the District shall at all times prior to the payment and cancellation of the last of the Revenue Obligations to be retired:

(i) exclusively own, operate and possess all property the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with Gross Proceeds of the Revenue Obligations and not use or permit the use of such Gross Proceeds (including all contractual arrangements with terms different than those applicable to the general public) or any property acquired, constructed or improved with such Gross Proceeds or the Gross Proceeds of the Prior Issue in any activity carried on by any person or entity (including the United States or any agency, department and instrumentality thereof) other than a state or local government, unless such use is solely as a member of the general public; and

(ii) does not directly or indirectly impose or accept any charge or other payment by any person or entity who is treated as using Gross Proceeds of the Revenue Obligations or of the Prior Issue, or any property the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with such Gross Proceeds, other than taxes of general application within the jurisdiction of the District or interest earned on investments acquired with such Gross Proceeds pending application for their intended purposes.

(c) No Private Loan. Except as would not cause any Revenue Obligation to become a “private activity bond” within the meaning of section 141 of the Code and the Tax Regulations and rulings thereunder, the District shall not use of Gross Proceeds of the Revenue Obligations to make or finance loans to any person or entity other than a state or local government. For purposes of the foregoing covenant, such Gross Proceeds are considered to be “loaned” to a person or entity if: (i) property acquired, constructed or improved with such Gross Proceeds is sold or leased to such person or entity in a transaction that creates a debt for federal income tax purposes; (ii) capacity in or service from such property is committed to such person or entity under a take-or-pay, output or similar contract or arrangement; or (iii) indirect benefits of such Gross Proceeds, or burdens and benefits of ownership of any property acquired, constructed or

improved with such Gross Proceeds, are otherwise transferred in a transaction that is the economic equivalent of a loan. For purposes of this covenant, the District will treat any transaction constituting a loan of Gross Proceeds of the Prior Issue as resulting in a loan of Gross Proceeds of the Revenue Obligations.

(d) Not to Invest at Higher Yield. Except as would not cause any Revenue Obligation to become an “arbitrage bond” within the meaning of section 148 of the Code and the Tax Regulations and rulings thereunder, the District will not, at any time prior to the final cancellation of the last Revenue Obligation to be retired, directly or indirectly invest Gross Proceeds of the Revenue Obligations in any Investment, if as a result of that investment the yield of any Investment acquired with Gross Proceeds of the Revenue Obligations, whether then held or previously disposed of, would materially exceed the yield of the Revenue Obligations within the meaning of said section 148.

(e) Not Federally Guaranteed. Except to the extent such action or failure to act would not pursuant to section 149(b) of the Code and the Tax Regulations and rulings thereunder, adversely affect the exclusion pursuant to section 103(a) of interest on the Revenue Obligations from the gross income of the owners thereof for federal income tax purposes, the District will not take or omit to take any action that would cause any Revenue Obligation to be “federally guaranteed” within the meaning of section 149(b) of the Code and the Tax Regulations and rulings thereunder.

(f) Information Report. The District will timely file any information necessary to the exclusion pursuant to section 103(a) of the Code of interest on the Revenue Obligations required by section 149(e) of the Code with the Secretary of the Treasury on Form 8038-G or such other form and in such place as the Secretary of the Treasury may prescribe.

(g) Not to Divert Arbitrage Profits. Except to the extent permitted by section 148 of the Code and the Tax Regulations and rulings thereunder, the District will not at any time prior to the final cancellation of the last of the Revenue Obligations to be retired, enter into any transaction that reduces the amount required to be paid to the United States pursuant to section 148(f) of the Code because such transaction results in a smaller profit or a larger loss than would have resulted if the transaction had been at arm’s length and had the yield on the Revenue Obligations not been relevant to either party.

(h) Revenue Obligations Satisfy Section 149(g). The District represents that neither the Prior Issue nor the Revenue Obligations are or will become “hedge bonds” within the meaning of section 149(g) of the Code. Without limitation of the foregoing, with respect to the Prior Issue, (i)(A) on the date of execution and delivery of that issue the District reasonably expected (based upon its own knowledge and upon representations made by other governmental persons upon the issuance of those obligations) that within the three-year period commencing on such date no less than 85% of the spendable proceeds of that issue would be expended for the governmental purposes thereof and (B) the District believes and represents that at no time has more than 50% of the proceeds of that issue been invested in Nonpurpose Investments having a substantially guaranteed yield for a period of four years or more, and with respect to the application of Proceeds of the Revenue Obligations other than for refunding purposes, (ii)(A) the District will not deliver the Revenue Obligations unless on the date of the issuance of the

Revenue Obligations it reasonably expects that within the three-year period commencing on such date of issuance at least 85% of such spendable proceeds of the Revenue Obligations will be expended for the governmental purpose of the Revenue Obligations and (B) at no time will more than 50% of such spendable proceeds of the Revenue Obligations be invested in Nonpurpose Investments having a substantially guaranteed yield for a period of four years or more.

(i) Elections. The District hereby directs and authorizes any Authorized Representative to make elections permitted or required pursuant to the provisions of the Code or the Tax Regulations, as such Authorized Representative (after consultation with Special Counsel) deems necessary or appropriate in connection with the Revenue Obligations, in the Tax Certificate (as defined below) or similar or other appropriate certificate, form or document.

(j) Tax Certificate. The District agrees to execute and deliver in connection with the execution and delivery of the Revenue Obligations a *Tax Certificate as to Arbitrage and the Provisions of Sections 141-150 of the Internal Revenue Code of 1986*, or similar document containing additional representations and covenants pertaining to the exclusion of interest with respect to the Revenue Obligations from the gross income of the owners thereof for federal income tax purposes (the "Tax Certificate"), which representations and covenants are incorporated as though expressly set forth herein.

Section 6.09. Continuing Disclosure. The District will comply with and carry out all of the provisions of the Continuing Disclosure Agreement applicable to it. Notwithstanding any other provision of this Trust Agreement, failure of the District to comply with the Continuing Disclosure Agreement shall not be considered an Event of Default; provided, however, the Trustee at the request of any Participating Underwriter or the Owners of at least 25% aggregate principal amount of Outstanding Revenue Obligations and upon being indemnified to its reasonable satisfaction, shall, or any Owner or Beneficial Owner of Revenue Obligations may take such actions as may be necessary and appropriate to compel performance, including seeking mandate or specific performance by court order. The Trustee is authorized and directed to execute the acceptance and acknowledgement of the Continuing Disclosure Agreement.

Section 6.10. Further Assurances. The District will promptly execute and deliver or cause to be executed and delivered all such other and further assurances, documents or instruments and promptly do or cause to be done all such other and further things as may be necessary or reasonably required in order to carry out the purposes and intentions of this Trust Agreement and for preserving and protecting the rights and interests of the Owners.

ARTICLE VII

DEFAULT AND LIMITATIONS OF LIABILITY

Section 7.01. Action upon Event of Default. An Event of Default under the Installment Purchase Agreement shall constitute an Event of Default hereunder and an Event of Default under the Master Agreement shall constitute an Event of Default hereunder. The Trustee may give notice, as assignee of the Corporation, of an Event of Default under the Installment Purchase Agreement to the District, and shall do so if directed to do so by the Owners of not less than 5% of the aggregate principal evidenced by Revenue Obligations then Outstanding. In each

and every case during the continuance of an Event of Default, the Trustee may and, at the direction of the Owners of not less than a majority of the aggregate principal evidenced by Revenue Obligations then Outstanding, shall, upon notice in writing to the District and the Corporation (a) exercise any of the remedies granted to the Corporation under the Installment Purchase Agreement, (b) exercise any of the remedies granted to the Trustee under the Master Agreement, and (c) take whatever action at law or in equity may appear necessary or desirable to enforce its rights pursuant to this Trust Agreement, the Installment Purchase Agreement or the Master Agreement or to protect and enforce any of the rights vested in the Trustee or the Owners by this Trust Agreement, the Revenue Obligations, the Installment Purchase Agreement or the Master Agreement, either at law or in equity or in bankruptcy or otherwise, whether for the specific enforcement of any covenant or agreement or for the enforcement of any other legal or equitable right, including any one or more of the remedies set forth in Section 7.02 hereof.

Section 7.02. Other Remedies of the Trustee. Subject to the provisions of Section 7.01 hereof, the Trustee shall have the right:

(a) by mandamus or other action or proceeding or suit at law or in equity to enforce its rights against the Corporation or the District or any member, director, officer or employee thereof, and to compel the Corporation or the District or any such member, director, officer or employee to perform or carry out its or his or her duties under law and the agreements and covenants required to be performed by it or him or her contained herein;

(b) by suit in equity to enjoin any acts or things which are unlawful or violate the rights of the Trustee; or

(c) by suit in equity upon the happening of any Event of Default hereunder to require the Corporation and the District to account as the trustee of an express trust.

Section 7.03. Non-Waiver. A waiver of any default or breach of duty or contract by the Trustee or the Owners shall not affect any subsequent default or breach of duty or contract or impair any rights or remedies on any such subsequent default or breach of duty or contract. No delay or omission by the Trustee or the Owners to exercise any right or remedy accruing upon any default or breach of duty or contract shall impair any such right or remedy or shall be construed to be a waiver of any such default or breach of duty or contract or an acquiescence therein, and every right or remedy conferred upon the Trustee or the Owners by law or by this Article may be enforced and exercised from time to time and as often as the Trustee shall deem expedient.

If any action, proceeding or suit to enforce any right or to exercise any remedy is abandoned or determined adversely to the Trustee or any Owner, then subject to any adverse determination, the Trustee, such Owner, the Corporation and the District shall be restored to their former positions, rights and remedies as if such action, proceeding or suit had not been brought or taken.

Section 7.04. Remedies Not Exclusive. Subject to the provisions of Section 7.01 hereof, no remedy herein conferred upon or reserved to the Trustee is intended to be exclusive of any other remedy, and each such remedy shall be cumulative and shall be in addition to every

other remedy given hereunder or now or hereafter existing in law or in equity or by statute or otherwise and may be exercised without exhausting and without regard to any other remedy conferred by any law. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent or subsequent assertion or employment of any other appropriate right or remedy.

Section 7.05. Application of Amounts After Default. All damages or other payments received by the Trustee for the enforcement of any rights and powers of the Trustee under this Article shall be deposited into the Installment Payment Fund and as soon as practicable and thereafter applied:

- (a) to the payment of all amounts due the Trustee under Section 8.03 hereof;
- (b) unless the unpaid Installment Payments, and the interest thereon, shall have become, and shall remain, immediately due and payable pursuant to the Master Agreement:
 - (i) to the payment of all amounts then due for interest evidenced by the Revenue Obligations, in respect of which, or for the benefit of which, money has been collected (other than Revenue Obligations which have become payable prior to such Event of Default and money for the payment of which is held by the Trustee), ratably without preference or priority of any kind, according to the amounts of interest evidenced by such Revenue Obligations due and payable; and
 - (ii) to the payment of all amounts then due for principal evidenced by the Revenue Obligations, in respect of which, or for the benefit of which, money has been collected (other than Revenue Obligations which have become payable prior to such Event of Default and money for the payment of which is held by the Trustee), ratably without preference or priority of any kind, according to the amounts of principal evidenced by such Revenue Obligations due and payable.
- (c) if the unpaid Installment Payments, and the interest thereon, shall have become, and shall remain, immediately due and payable pursuant to the Master Agreement, to the payment of all amounts then due for principal and interest evidenced by the Revenue Obligations and, if the amount available therefor shall not be sufficient to pay in full the whole amount so due and unpaid, then to the payment thereof ratably, without preference or priority of principal over interest, or of interest over principal, or of any installment of interest over any other installment of interest, or of any Revenue Obligation over any other Revenue Obligation, to the persons entitled thereto without any discrimination or preference.

Section 7.06. Trustee May Enforce Claims Without Possession of Revenue Obligations. All rights of action and claims under this Trust Agreement or the Revenue Obligations may be prosecuted and enforced by the Trustee without the possession of any of the Revenue Obligations or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be

for the ratable benefit of the Owners of the Revenue Obligations in respect of which such judgment has been recovered.

Section 7.07. Limitation on Suits. No Owner shall have any right to institute any proceeding, judicial or otherwise, with respect to this Trust Agreement, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless (a) such Owner shall have previously given written notice to the Trustee of a continuing Event of Default hereunder, (b) the Owners of not less than a majority of the aggregate principal evidenced by Revenue Obligations then Outstanding shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder, (c) such Owner or Owners shall have afforded to the Trustee indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request, (d) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity shall have failed to institute any such proceedings, and (e) no direction inconsistent with such written request shall have been given to the Trustee during such 60-day period by the Owners of a majority of the aggregate principal evidenced by Revenue Obligations then Outstanding; it being understood and intended that no one or more Owners of Revenue Obligations shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Trust Agreement to affect, disturb or prejudice the rights of any other Owner of Revenue Obligations, or to obtain or seek to obtain priority or preference over any other Owner or to enforce any right under this Trust Agreement, except in the manner herein provided and for the equal and ratable benefit of all the Owners of Revenue Obligations.

Section 7.08. No Liability by the Corporation to the Owners. Except as expressly provided herein, the Corporation shall not have any obligation or liability to the Owners with respect to the payment when due of the Installment Payments, and the interest thereon, by the District, or with respect to the performance by the District of the other agreements and covenants required to be performed by it contained in the Installment Purchase Agreement, the Master Agreement or herein, or with respect to the performance by the Trustee of any right or obligation required to be performed by it contained herein.

Section 7.09. No Liability by the District to the Owners. Except for the payment when due of the Installment Payments, and the interest thereon, and the performance of the other agreements and covenants required to be performed by it contained in the Installment Purchase Agreement, the Master Agreement or herein, the District shall not have any obligation or liability to the Owners with respect to this Trust Agreement or the preparation, execution, delivery or transfer of the Revenue Obligations or the disbursement of the Installment Payments, and the interest thereon, by the Trustee to the Owners, or with respect to the performance by the Trustee of any right or obligation required to be performed by it contained herein.

Section 7.10. No Liability of the Trustee to the Owners. Except as expressly provided herein, the Trustee shall not have any obligation or liability to the Owners with respect to the payment when due of the Installment Payments, and the interest thereon, by the District, or with respect to the performance by the Corporation or the District of the other agreements and covenants required to be performed by them, respectively contained in the Installment Purchase Agreement or herein.

ARTICLE VIII

THE TRUSTEE

Section 8.01. Employment of the Trustee; Duties. The Corporation and the District hereby appoint and employ the Trustee to receive, deposit and disburse the Installment Payments, and the interest thereon, to register, execute, deliver and transfer the Revenue Obligations and to perform the other functions contained herein, all in the manner provided herein and subject to the conditions and terms hereof. By executing and delivering this Trust Agreement, the Trustee accepts the appointment and employment hereinabove referred to and accepts the rights and obligations of the Trustee provided herein, subject to the conditions and terms hereof. Other than when an Event of Default hereunder has occurred and is continuing, the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Trust Agreement, and no implied covenants or obligations shall be read into this Trust Agreement against the Trustee. In case an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Trust Agreement, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

Section 8.02. Removal and Resignation of the Trustee. The Corporation and the District may, by an instrument in writing, remove the Trustee initially a party hereto and any successor thereto unless an Event of Default shall have occurred and then be continuing, and shall remove the Trustee initially a party hereto and any successor thereto if at any time (a) requested to do so by an instrument or concurrent instruments in writing signed by the Owners of a majority of the aggregate principal evidenced by the Revenue Obligations at the time Outstanding (or their attorneys duly authorized in writing), or (b) the Trustee shall cease to be eligible in accordance with the following sentence, and shall appoint a successor Trustee. The Trustee shall be a bank having trust powers or a trust company in good standing in or incorporated under the laws of the United States or any state thereof, having (or if such bank or trust company is a member of a bank holding company system, its parent bank holding company shall have) a combined capital and surplus of at least \$75,000,000, and be subject to supervision or examination by federal or state banking authorities. If such bank or trust company publishes a report of condition at least annually, pursuant to law or to the requirements of any supervising or examining authority above referred to, then for the purposes of this Section the combined capital and surplus of such bank or trust company shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published.

The Trustee may at any time resign by giving written notice of such resignation to the Corporation and the District and by giving notice, by first class mail, postage prepaid, of such resignation to the Owners at their addresses appearing on the registration books maintained by the Trustee. Upon receiving such notice of resignation, the Corporation and the District shall promptly appoint a successor Trustee by an instrument in writing; provided, however, that in the event the District and the Corporation do not appoint a successor Trustee within 30 days following receipt of such notice of resignation, the resigning Trustee may, at the expense of the District, petition the appropriate court having jurisdiction to appoint a successor Trustee. Any resignation or removal of a Trustee and appointment of a successor Trustee shall become effective only upon acceptance of appointment by the successor Trustee. Any successor Trustee

appointed under this Trust Agreement shall signify its acceptance of such appointment by executing and delivering to the District and the Corporation and to its predecessor Trustee a written acceptance thereof, and thereupon such successor Trustee, without any further act, deed or conveyance, shall become vested with all the moneys, estates, properties, rights, powers, trusts, duties and obligations of such predecessor Trustee, with like effect as if originally named Trustee herein; but, nevertheless, at the written request of the District or of the successor Trustee, such predecessor Trustee shall execute and deliver any and all instruments of conveyance or further assurance and do such other things as may reasonably be required for more fully and certainly vesting in and confirming to such successor Trustee all the right, title and interest of such predecessor Trustee in and to any property held by it under this Trust Agreement and shall pay over, transfer, assign and deliver to the successor Trustee any money or other property subject to the trusts and conditions herein set forth.

Any corporation, association or agency into which the Trustee may be converted or merged, or with which it may be consolidated, or to which it may sell or transfer its corporate trust business and assets as a whole or substantially as a whole, or any corporation or association resulting from any such conversion, sale, merger, consolidation or transfer to which it is a party, provided that such entity meets the combined capital and surplus requirements of this Section, *ipso facto*, shall be and become successor trustee under this Trust Agreement and vested with all the trusts, powers, discretions, immunities, privileges and all other matters as was its predecessor, without the execution or filing of any instrument or any further act, deed or conveyance on the part of any of the parties hereto, anything herein to the contrary notwithstanding.

Section 8.03. Compensation and Indemnification of the Trustee. The District shall from time to time, subject to any written agreement then in effect with the Trustee, pay the Trustee reasonable compensation for all its services rendered hereunder and reimburse the Trustee for all its reasonable advances and expenditures (which shall not include “overhead expenses” except as such expenses are included as a component of the Trustee’s stated annual fees or disclosed transaction fees) hereunder, including but not limited to advances to and reasonable fees and reasonable expenses of accountants, agents, appraisers, consultants or other experts, and counsel not directly employed by the Trustee but an attorney or firm of attorneys retained by the Trustee, employed by it in the exercise and performance of its rights and obligations hereunder; provided, however, that the Trustee shall not have any lien for such compensation or reimbursement against any moneys held by it in any of the funds or accounts established hereunder. The Trustee may take whatever legal actions are lawfully available to it directly against the Corporation or the District.

Except as otherwise expressly provided herein, no provision of this Trust Agreement shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of any of its rights or powers hereunder.

The District, to the extent permitted by law, agrees to indemnify and save the Trustee, its directors, officers, employees and agents harmless from and against any costs, expenses, claims and liabilities which it may incur in the exercise and performance of its powers and duties hereunder or any other document related to this Trust Agreement, including but not limited to

costs and expenses incurred in defending against any claim or liability, which are not due to its negligence or willful misconduct. The obligations of the District under this Section shall survive the resignation or removal of the Trustee and the termination of this Trust Agreement.

Section 8.04. Protection of the Trustee. The Trustee shall be protected and shall incur no liability in acting or proceeding in good faith upon any affidavit, bond, certificate, consent, notice, request, requisition, resolution, statement, waiver or other paper or document which it shall in good faith believe to be genuine and to have been adopted, executed or delivered by the proper party or pursuant to any of the provisions hereof, and the Trustee shall be under no duty to make any investigation or inquiry as to any statements contained or matters referred to in any such instrument, but may accept and rely upon the same as conclusive evidence of the truth and accuracy of such statements. The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Trust Agreement at the request or direction of any of the Owners of the Revenue Obligations pursuant to this Trust Agreement, unless such Owners shall have offered to the Trustee security or indemnity, reasonably satisfactory to the Trustee, against the reasonable costs, expenses and liabilities which might be incurred by it in compliance with such request or direction. The Trustee may consult with counsel, who may be counsel to the Corporation or the District, with regard to legal questions, and the opinion of such counsel shall be full and complete authorization and protection in respect to any action taken or suffered by it hereunder in good faith in accordance therewith.

The Trustee shall not be responsible for the sufficiency of the Revenue Obligations or the Installment Purchase Agreement, or of the assignment made to it hereunder, or for statements made in the preliminary or final official statement relating to the Revenue Obligations.

The Trustee shall not be required to take notice or be deemed to have notice of any default or Event of Default hereunder, except failure of any of the payments to be made to the Trustee required to be made hereunder or under the Installment Purchase Agreement, unless the Trustee shall be specifically notified in writing of such default or Event of Default by the District, the Corporation or the Owners of not less than 5% of the aggregate principal evidenced by the Revenue Obligations then Outstanding.

Whenever in the administration of its rights and obligations hereunder the Trustee shall deem it necessary or desirable that a matter be proved or established prior to taking or suffering any action hereunder, such matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a Written Certificate of the District or a Written Certificate of the Corporation, and such Written Certificate shall be full warrant to the Trustee for any action taken or suffered under the provisions hereof upon the faith thereof, but in its discretion the Trustee may, in lieu thereof, accept other evidence of such matter or may require such additional evidence as it deems reasonable.

The Trustee may buy, sell, own, hold and deal in any of the Revenue Obligations and may join in any action which any Owner may be entitled to take with like effect as if the Trustee were not a party hereto. The Trustee, either as principal or agent, may also engage in or be interested in any financial or other transaction with the Corporation or the District, and may act as agent, depository or trustee for any committee or body of Owners or of owners of obligations of the Corporation or the District as freely as if it were not the Trustee hereunder.

The Trustee may, to the extent reasonably necessary, execute any of the trusts or powers hereof and perform any rights and obligations required of it hereunder by or through agents, attorneys or receivers, and shall be entitled to advice of counsel concerning all matters of trust and its rights and obligations hereunder, and the Trustee shall not be answerable for the negligence or misconduct of any such agent, attorney or receiver selected by it with reasonable care; provided, however, that in the event of any negligence or misconduct of any such attorney, agent or receiver, the Trustee shall diligently pursue all remedies of the Trustee against such agent, attorney or receiver. The Trustee shall not be liable for any error of judgment made by it in good faith unless it shall be proved that the Trustee was negligent in ascertaining the pertinent facts.

The Trustee shall not be answerable for the exercise of any trusts or powers hereunder or for anything whatsoever in connection with the funds established hereunder, except only for its own willful misconduct, negligence or breach of an obligation hereunder.

The Trustee may, on behalf of the Owners, intervene in any judicial proceeding to which the Corporation or the District is a party and which, in the opinion of the Trustee and its counsel, affects the Revenue Obligations or the security therefor, and shall do so if requested in writing by the Owners of at least 5% of the aggregate principal evidenced by Revenue Obligations then Outstanding, provided the Trustee shall have no duty to take such action unless it has been indemnified to its reasonable satisfaction against all risk or liability arising from such action.

The Trustee will not be considered in breach of or in default in its obligations hereunder or progress in respect thereto in the event of delay in the performance of such obligations due to unforeseeable causes beyond its control and without its fault or negligence, including, but not limited to, acts of God or of the public enemy or terrorists, acts of a government, acts of the other parties, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, earthquakes, explosion, mob violence, riot, inability to procure or general sabotage or rationing of labor, equipment, facilities, sources of energy, material or supplies in the open market, litigation or arbitration involving a party or others relating to zoning or other governmental action or inaction pertaining to any project refinanced with the proceeds of the Revenue Obligations, malicious mischief, condemnation, and unusually severe weather or any similar event and/or occurrences beyond the control of the Trustee.

ARTICLE IX

AMENDMENT OF OR SUPPLEMENT TO TRUST AGREEMENT

Section 9.01. Amendment or Supplement. This Trust Agreement and the rights and obligations of the Corporation, the District, the Owners and the Trustee hereunder may be amended or supplemented at any time by an amendment hereof or supplement hereto which shall become binding when the prior written consents of the Owners of a majority of the aggregate principal evidenced by the Revenue Obligations then Outstanding, exclusive of Revenue Obligations disqualified as provided in Section 9.02 hereof, are filed with the Trustee. No such amendment or supplement shall (i) extend the stated Principal Payment Date of any Revenue Obligation or reduce the rate of interest evidenced thereby or extend the time of payment of such interest or reduce the amount of principal evidenced thereby or change the prepayment terms and

provisions or the provisions regarding delivery of notice of prepayment without the prior written consent of the Owner of each Revenue Obligation so affected, (ii) reduce the percentage of Owners whose consent is required for the execution of any amendment hereof or supplement hereto without the prior written consent of the Owners of all Revenue Obligations then Outstanding, (iii) modify any of the rights or obligations of the Trustee without the prior written consent of the Trustee, or (iv) amend this Section without the prior written consent of the Owners of all Revenue Obligations then Outstanding.

(a) This Trust Agreement and the rights and obligations of the Corporation, the District, the Owners and the Trustee hereunder may also be amended or supplemented at any time by an amendment hereof or supplement hereto which shall become binding upon execution, without the written consents of any Owners, but only to the extent permitted by law and only for any one or more of the following purposes:

(i) to add to the agreements, conditions, covenants and terms required by the Corporation or the District to be observed or performed herein other agreements, conditions, covenants and terms thereafter to be observed or performed by the Corporation or the District, or to surrender any right or power reserved herein to or conferred herein on the Corporation or the District;

(ii) to make such provisions for the purpose of curing any ambiguity or of correcting, curing or supplementing any defective provision contained herein or in regard to questions arising hereunder which the Corporation or the District may deem desirable or necessary and not inconsistent herewith;

(iii) to make such additions, deletions or modifications as may be necessary or appropriate to assure the exclusion from gross income for federal income tax purposes of interest evidenced by the Revenue Obligations; or

(iv) for any other reason, provided such amendment or supplement does not adversely affect the rights or interests of the Owners.

Section 9.02. Disqualified Revenue Obligations. Revenue Obligations owned or held by or for the account of the District (but excluding Revenue Obligations held in any pension or retirement fund of the District) shall not be deemed Outstanding for the purpose of any consent or other action or any calculation of Outstanding Revenue Obligations provided in this Article, and shall not be entitled to consent to or take any other action provided in this Article, and the Trustee may adopt appropriate regulations to require each Owner, before his consent provided for herein shall be deemed effective, to reveal if the Revenue Obligations as to which such consent is given are disqualified as provided in this Section.

Section 9.03. Endorsement or Replacement of Revenue Obligations After Amendment or Supplement. After the effective date of any action taken as hereinabove provided in this Article, the Trustee may determine that the Revenue Obligations may bear a notation by endorsement in form approved by the Trustee as to such action, and in that case upon demand of the Owner of any Outstanding Revenue Obligation and presentation of such Revenue Obligation for such purpose at the Principal Office a suitable notation as to such action shall be

made on such Revenue Obligation. If the Trustee shall receive an Opinion of Counsel advising that new Revenue Obligations modified to conform to such action are necessary, modified Revenue Obligations shall be prepared, and in that case upon demand of the Owner of any Outstanding Revenue Obligations such new Revenue Obligations shall be exchanged at the Principal Office without cost to each Owner for Revenue Obligations then Outstanding upon surrender of such Outstanding Revenue Obligations.

Section 9.04. Amendment by Mutual Consent. The provisions of this Article shall not prevent any Owner from accepting any amendment as to the particular Revenue Obligations owned by such Owner, provided that due notation thereof is made on such Revenue Obligations.

ARTICLE X

DEFEASANCE

Section 10.01. Discharge of Revenue Obligations and Trust Agreement. (a) If the Trustee shall pay or cause to be paid or there shall otherwise be paid (i) to the Owners of all Outstanding Revenue Obligations the interest and principal evidenced thereby at the times and in the manner stipulated herein and therein, and (ii) all other amounts due hereunder and under the Installment Purchase Agreement, then such Owners shall cease to be entitled to the pledge of and lien on the amounts on deposit in the funds and accounts established hereunder, as provided herein, and all agreements and covenants of the Corporation, the District, and the Trustee to such Owners hereunder shall thereupon cease, terminate and become void and shall be discharged and satisfied.

(b) Any Outstanding Revenue Obligation shall be deemed to have been paid within the meaning and with the effect expressed in this Section when the whole amount of the principal, premium, if any, and interest evidenced by such Revenue Obligation shall have been paid or when (i) in case said Revenue Obligation or portion thereof has been selected for prepayment in accordance with Section 4.03 hereof prior to its stated Principal Payment Date, the District shall have given to the Trustee irrevocable instructions to give, in accordance with the provisions of Section 4.03 hereof, notice of prepayment of such Revenue Obligation, or portion thereof, (ii) there shall be on deposit with the Trustee, moneys, or Government Obligations, or any combination thereof, the principal of and the interest on which when due, and without any reinvestment thereof, will provide moneys which shall be sufficient to pay when due the principal, premium, if any, and interest evidenced by such Revenue Obligation and due and to become due on or prior to the prepayment date or its stated Principal Payment Date, as the case may be, and (iii) in the event the stated Principal Payment Date of such Revenue Obligation will not occur, and said Revenue Obligation is not to be prepaid, within the next succeeding 60 days, the District shall have given the Trustee irrevocable instructions to give notice, as soon as practicable in the same manner as a notice of prepayment given pursuant to Section 4.03 hereof, to the Owner of such Revenue Obligation, or portion thereof, stating that the deposit of moneys or Government Obligations required by clause (ii) of this subsection has been made with the Trustee and that said Revenue Obligation, or portion thereof, is deemed to have been paid in accordance with this Section and stating such Principal Payment Date or prepayment date upon which moneys are to be available for the payment of the principal, premium, if any, and interest evidenced by said Revenue Obligation, or portion thereof.

Neither the moneys nor the Government Obligations deposited with the Trustee pursuant to this Section nor principal or interest payments on any such Government Obligations shall be withdrawn or used for any purpose other than, and shall be held in trust for and pledged to, the payment of the principal, premium, if any, and interest evidenced by said Revenue Obligation, or portions thereof. If payment of less than all of the Revenue Obligations is to be provided for in the manner and with the effect expressed in this Section, the Trustee or the District, as applicable, shall select such Revenue Obligations, or portions thereof, in the manner specified in Section 4.03 hereof for selection for prepayment of less than all of the Revenue Obligations, in the principal amounts designated to the Trustee by the District.

(c) After the payment of all the interest, prepayment premium, if any, and principal evidenced by all Outstanding Revenue Obligations and all other amounts due hereunder and under the Installment Purchase Agreement as provided in this Section, the Trustee shall execute and deliver to the Corporation and the District all such instruments as may be necessary or desirable to evidence the discharge and satisfaction of this Trust Agreement, the Trustee shall pay over or deliver to the District all moneys or securities held by it pursuant hereto which are not required for the payment of the interest, prepayment premium, if any, and principal evidenced by such Revenue Obligations and all other amounts due hereunder and under the Installment Purchase Agreement.

(d) Prior to any defeasance becoming effective under this Article, the District shall cause to be delivered (i) an executed copy of a report, addressed to the Trustee and the District, in form and in substance acceptable to the District, of a nationally recognized certified public accountant, or firm of such accountants, verifying that the Government Obligations and cash, if any, satisfy the requirements of clause (ii) of subsection (b) of this Section (a "Verification"), (ii) if such moneys to be deposited with the Trustee will be invested, a copy of the escrow deposit agreement entered into in connection with such defeasance, which escrow deposit agreement shall provide that no substitution of Government Obligations shall be permitted except with other Government Obligations and upon delivery of a new Verification and no reinvestment of Government Obligations shall be permitted except as contemplated by the original Verification or upon delivery of a new Verification, and (iii) a copy of an Opinion of Counsel, dated the date of such defeasance and addressed to the Trustee and the District, in form and in substance acceptable to the District, to the effect that such Revenue Obligations have been paid within the meaning and with the effect expressed in this Trust Agreement, and all agreements and covenants of the Corporation, the District and the Trustee to the Owners of such Revenue Obligations under this Trust Agreement have ceased, terminated and become void and have been discharged and satisfied.

Section 10.02. Unclaimed Moneys. Any moneys held by the Trustee in trust for the payment and discharge of the interest or principal evidenced by any of the Revenue Obligations which remain unclaimed for two years after the date when such interest or principal evidenced by such Revenue Obligations have become payable, if such moneys were held by the Trustee at such date, or for two years after the date of deposit of such moneys if deposited with the Trustee after the date when the interest and principal evidenced by such Revenue Obligations have become payable, shall be repaid by the Trustee to the District as its absolute property free from trust, and the Trustee shall thereupon be released and discharged with respect thereto and the

Owners shall look only to the District for the payment of the interest and principal evidenced by such Revenue Obligations.

ARTICLE XI

MISCELLANEOUS

Section 11.01. Benefits of Trust Agreement. Nothing contained herein, expressed or implied, is intended to give to any Person other than the Corporation, the District, the Trustee and the Owners any claim, remedy or right under or pursuant hereto, and any agreement, condition, covenant or term required herein to be observed or performed by or on behalf of the Corporation or the District shall be for the sole and exclusive benefit of the Trustee and the Owners.

Section 11.02. Successor Deemed Included in all References to Predecessor. Whenever the Corporation, the District or the Trustee, or any officer thereof, is named or referred to herein, such reference shall be deemed to include the successor to the powers, duties and functions that are presently vested in the Corporation, the District or the Trustee, or such officer, and all agreements, conditions, covenants and terms required hereby to be observed or performed by or on behalf of the Corporation, the District or the Trustee, or any officer thereof, shall bind and inure to the benefit of the respective successors thereof whether so expressed or not.

Section 11.03. Execution of Documents by Owners. Any declaration, request or other instrument which is permitted or required herein to be executed by Owners may be in one or more instruments of similar tenor and may be executed by Owners in person or by their attorneys appointed in writing. The fact and date of the execution by any Owner or his attorney of any declaration, request or other instrument or of any writing appointing such attorney may be proved by the certificate of any notary public or other officer authorized to take acknowledgments of deeds to be recorded in the state or territory in which he purports to act that the Person signing such declaration, request or other instrument or writing acknowledged to him the execution thereof, or by an affidavit of a witness of such execution duly sworn to before such notary public or other officer, or by such other proof as the Trustee may accept which it may deem sufficient. The ownership of any Revenue Obligations and the amount, payment date, number and date of owning the same may be proved by the registration books maintained by the Trustee pursuant to the provisions of Section 2.07 hereof. Any declaration, request or other instrument in writing of the Owner of any Revenue Obligation shall bind all future Owners of such Revenue Obligation with respect to anything done or suffered to be done by the Corporation, the District or the Trustee in good faith and in accordance therewith.

Section 11.04. Waiver of Personal Liability. Notwithstanding anything contained herein to the contrary, no member, officer or employee of the District or the Corporation shall be individually or personally liable for the payment of any moneys, including without limitation, the interest or principal evidenced by the Revenue Obligations, but nothing contained herein shall relieve any member, officer or employee of the District or the Corporation from the performance of any official duty provided by any applicable provisions of law, by the Installment Purchase Agreement or hereby.

Section 11.05. Acquisition of Revenue Obligations by District. All Revenue Obligations acquired by the District, whether by purchase or gift or otherwise, shall be surrendered to the Trustee for cancellation.

Section 11.06. Content of Certificates. Every Written Certificate of the District and every Written Certificate of the Corporation with respect to compliance with any agreement, condition, covenant or term contained herein shall include (a) a statement that the Person making or giving such certificate has read such agreement, condition, covenant or term and the definitions herein relating thereto, (b) a brief statement as to the nature and scope of the examination or investigation upon which the statements contained in such certificate are based, (c) a statement that, in the opinion of the signer, the signer has made or caused to be made such examination or investigation as is necessary to enable the signer to express an informed opinion as to whether or not such agreement, condition, covenant or term has been complied with, and (d) a statement as to whether, in the opinion of the signer, such agreement, condition, covenant or term has been complied with.

Any Written Certificate of the District and any Written Certificate of the Corporation may be based, insofar as it relates to legal matters, upon an Opinion of Counsel, unless the Person making or giving such certificate knows that the Opinion of Counsel with respect to the matters upon which each Person's certificate may be based, as aforesaid, is erroneous, or in the exercise of reasonable care should have known that the same was erroneous. Any Opinion of Counsel may be based, insofar as it relates to factual matters, upon information which is in the possession of the District or the Corporation upon a representation by an officer or officers of the District or the Corporation, as the case may be, unless the counsel executing such Opinion of Counsel knows that the representation with respect to the matters upon which such counsel's opinion may be based, as aforesaid, is erroneous, or in the exercise of reasonable care should have known that the same was erroneous.

Section 11.07. Funds and Accounts. Any fund or account required to be established and maintained herein by the Trustee may be established and maintained in the accounting records of the Trustee either as an account or a fund, and may, for the purposes of such accounting records, any audits thereof and any reports or statements with respect thereto, be treated either as an account or a fund, but all such records with respect to all such funds and accounts shall at all times be maintained in accordance with sound accounting practice and with due regard for the protection of the security of the Revenue Obligations and the rights of the Owners. The Trustee may establish such funds and accounts as it deems necessary to perform its obligations hereunder.

Trustee may commingle any of the moneys held by it hereunder for investment purposes only; provided, however, that the Trustee shall account separately for the moneys in each fund or account established pursuant to this Trust Agreement.

Section 11.08. Article and Section Headings, Gender and References. The singular form of any word used herein, including the terms defined in Section 1.01 hereof, shall include the plural, and vice versa, unless the context otherwise requires. The use herein of a pronoun of any gender shall include correlative words of the other genders. The headings or titles of the several Articles and Sections hereof and the table of contents appended hereto shall be solely for

convenience of reference and shall not affect the meaning, construction or effect hereof. All references herein to “Articles,” “Sections,” subsections or clauses are to the corresponding Articles, Sections, subsections or clauses hereof, and the words “hereby,” “herein,” “hereof,” “hereto,” “herewith,” “hereunder” and other words of similar import refer to this Trust Agreement as a whole and not to any particular Article, Section, subsection or clause thereof.

Section 11.09. Partial Invalidity. If any one or more of the agreements, conditions, covenants or terms required herein to be observed or performed by or on the part of the Corporation, the District or the Trustee shall be contrary to law, then such agreement or agreements, such condition or conditions, such covenant or covenants or such term or terms shall be null and void to the extent contrary to law and shall be deemed separable from the remaining agreements, conditions, covenants and terms hereof and shall in no way affect the validity hereof or of the Revenue Obligations, and the Owners shall retain all the benefit, protection and security afforded to them under any applicable provisions of law. The Corporation, the District and the Trustee hereby declare that they would have executed this Trust Agreement, and each and every Article, Section, paragraph, subsection, sentence, clause and phrase hereof and would have authorized the execution and delivery of the Revenue Obligations pursuant hereto irrespective of the fact that any one or more Articles, Sections, paragraphs, subsections, sentences, clauses or phrases hereof or the application thereof to any Person or circumstance may be held to be unconstitutional, unenforceable or invalid.

Section 11.10. California Law. This Trust Agreement shall be governed by and construed in accordance with the laws of the State.

Section 11.11. Notices. Any written notice, statement, demand, consent, approval, authorization, offer, designation, request or other communication to be given hereunder shall be given to the party entitled thereto at its address set forth below, or at such other address as such party may provide to the other parties in writing from time to time, namely:

If to the District: Orange County Sanitation District
 10844 Ellis Avenue
 Fountain Valley, California 92708
 Attention: Assistant General Manager, Director of Finance and
 Administrative Services

If to the Corporation: Orange County Sanitation District Financing Corporation
 c/o Orange County Sanitation District
 10844 Ellis Avenue
 Fountain Valley, California 92708
 Attention: Treasurer

If to the Trustee: U.S. Bank National Association
 633 West Fifth Street, 24th Floor

Los Angeles, California 90071
Attention: Global Corporate Trust Services

Each such notice, statement, demand, consent, approval, authorization, offer, designation, request or other communication hereunder shall be deemed delivered to the party to whom it is addressed (a) if personally served or delivered, upon delivery, (b) if given by electronic communication, e.g. facsimile or telecopier or e-mail (with a PDF attachment, if applicable), upon the sender's receipt of an appropriate written acknowledgment, (c) if given by registered or certified mail, return receipt requested, deposited with the United States mail postage prepaid, 72 hours after such notice is deposited with the United States mail, (d) if given by overnight courier, with courier charges prepaid, 24 hours after delivery to said overnight courier, or (e) if given by any other means, upon delivery at the address specified in this Section.

Section 11.12. Effective Date. This Trust Agreement shall become effective upon its execution and delivery.

Section 11.13. Execution in Counterparts. This Trust Agreement may be simultaneously executed in several counterparts, each of which shall be deemed an original, and all of which shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have caused this Trust Agreement to be executed by their respective officers thereunto duly authorized, all as of the day and year first written above.

**ORANGE COUNTY SANITATION DISTRICT
FINANCING CORPORATION**

By: _____
Treasurer

ORANGE COUNTY SANITATION DISTRICT

By: _____
Chairperson of the Board of Directors

(S E A L)

Attest:

By: _____
Clerk of the Board of Directors

**U.S. BANK NATIONAL ASSOCIATION,
as Trustee**

By: _____
Authorized Officer

EXHIBIT A

FORM OF REVENUE OBLIGATION

No. R-__

§

Unless this Revenue Obligation is presented by an authorized representative of The Depository Trust Company to the Trustee for registration of transfer, exchange or payment, and any Revenue Obligation executed and delivered is registered in the name of Cede & Co. or such other name as requested by an authorized representative of The Depository Trust Company and any payment is made to Cede & Co., ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL inasmuch as the Registered Owner hereof, Cede & Co., has an interest herein.

**ORANGE COUNTY SANITATION DISTRICT
WASTEWATER REFUNDING REVENUE OBLIGATION
SERIES 2022A**

Such revenue obligations are certificates of participation evidencing direct, undivided fractional interests in the Installment Purchase Agreement, dated as of February 1, 2022, by and between the Orange County Sanitation District and the Orange County Sanitation District Financing Corporation and the related Installment Payments, and the interest thereon.

PRINCIPAL PAYMENT DATE	INTEREST RATE	DATED DATE	CUSIP
February 1, 20__	%	____, 2022	

REGISTERED OWNER: Cede & Co.

PRINCIPAL AMOUNT: _____ DOLLARS

THIS IS TO CERTIFY that the Registered Owner of this Revenue Obligation (this “Revenue Obligation”), as identified above, is the owner of a direct, fractional undivided interest in certain installment payments (“Installment Payments”), and the interest thereon, payable under and pursuant to the Installment Purchase Agreement, dated as of February 1, 2022 (the “Installment Purchase Agreement”), by and between the Orange County Sanitation District (the “District”), a county sanitation district organized and existing under the laws of the State of California, and the Orange County Sanitation District Financing Corporation (the “Corporation”), a nonprofit public benefit corporation organized and existing under the laws of the State of California. Certain of the rights of the Corporation under the Installment Purchase Agreement, including the right to receive the Installment Payments, and the interest thereon, have been assigned without recourse by the Corporation to U.S. Bank National Association, a national banking association duly organized and existing under the laws of the United States of America, as trustee (the “Trustee”) under the Trust Agreement, dated as of February 1, 2022 (the “Trust Agreement”), by and among the Trustee, the District and the Corporation. Capitalized undefined terms used herein shall have the meanings ascribed thereto in the Trust Agreement.

The District has executed and delivered the Master Agreement for District Obligations, dated as of August 1, 2000 (the “Master Agreement”), by and between the District and the Corporation, pursuant to which the District establishes and declares the conditions and terms upon which obligations such as the Installment Purchase Agreement, and the Installment Payments and the interest thereon, will be incurred and secured.

This Revenue Obligation is one of the duly authorized Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”) evidencing principal in the aggregate amount of \$[PAR AMOUNT], executed pursuant to the terms of the Trust Agreement. The Revenue Obligations evidence direct, fractional undivided interests in the Installment Payments, and the interest thereon, payable under the Installment Purchase Agreement. The Revenue Obligations are executed and delivered to refinance certain improvements to the wastewater collection, treatment and disposal facilities of the District (the “Wastewater System”) and to pay the costs of issuance incurred in connection therewith and to pay certain other related costs.

The Installment Payments, and the interest thereon, are to be paid by the District pursuant to the Installment Purchase Agreement in consideration for the purchase of certain improvements to the Wastewater System and for the other agreements and obligations undertaken by the Corporation under the Installment Purchase Agreement and the Trust Agreement.

The income and revenue received by the District from the operation of the Wastewater System remaining after the payment of maintenance and operation or ownership costs of the Wastewater System (as more fully described in the Installment Purchase Agreement, the “Net Revenues”) are, pursuant to the Master Agreement, pledged to the payment of the Senior Obligations and Reimbursement Obligations with respect to Senior Obligations (as such terms are defined in the Master Agreement).

The Installment Purchase Agreement constitutes a Senior Obligation and, as such, shall be subject to the provisions of the Master Agreement, and shall be afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement. The Installment Purchase Agreement is payable on a parity with the other existing Senior Obligations. The District may at any time incur Senior Obligations in addition to existing Senior Obligations and the Installment Purchase Agreement payable from Net Revenues as provided in the Master Agreement on a parity with all other Senior Obligations theretofore incurred, but only subject to the conditions and upon compliance with the procedures set forth in the Master Agreement.

The District is not required to advance any moneys derived from any source of income other than Net Revenues and the other funds provided in the Installment Purchase Agreement for the payment of the Installment Payments, and the interest thereon, and other payments required to be made by it under the Installment Purchase Agreement, or for the performance of any agreements or covenants required to be performed by it contained therein. The obligation of the District to pay the Installment Payments, and the interest thereon, and other payments required to be made by it under the Installment Purchase Agreement is a special obligation of the District payable, in the manner provided in the Installment Purchase Agreement, solely from such Net Revenues and other funds provided for therein, and does not constitute a debt of the District or of

the State of California, or of any political subdivision thereof, in contravention of any constitutional or statutory debt limitation or restriction.

Reference is hereby made to the Master Agreement, the Installment Purchase Agreement and to the Trust Agreement and any and all amendments thereof and supplements thereto for a description of the terms under which the District's obligation to pay the Installment Payments, and the interest thereon, is incurred, the Revenue Obligations are executed and delivered, the provisions with regard to the nature and extent of the Net Revenues, and the rights of the Owners of the Revenue Obligations. All of the terms of the Master Agreement, the Installment Purchase Agreement and the Trust Agreement are hereby incorporated herein. The Trust Agreement constitutes a contract among the District, the Corporation and the Trustee for the benefit of the Owners of the Revenue Obligations, to all the provisions of which the Owner of this Revenue Obligation, by acceptance hereof, agrees and consents.

The Registered Owner of this Revenue Obligation is entitled to receive, subject to the terms of the Trust Agreement and any right of prepayment as provided herein or therein, on the Principal Payment Date set forth above, upon presentation and surrender of this Revenue Obligation at the principal corporate trust office of the Trustee in St. Paul, Minnesota (the "Principal Office"), the Principal Amount specified above, evidencing the Owner's interest in the Installment Payments coming due on the Principal Payment Date, and to receive on February 1 and August 1 of each year, commencing on August 1, 2022 (each an "Interest Payment Date"), interest accrued thereon at the Interest Rate specified above, computed on the basis of a 360-day year consisting of twelve 30-day months, until said Principal Amount is paid in full, evidencing the Registered Owner's interest in the interest evidenced by the Installment Payments coming due on each of said dates.

This Revenue Obligation shall evidence interest from the Interest Payment Date next preceding its date of execution to which interest has been paid in full, unless such date of execution shall be after the 15th day of the month next preceding an Interest Payment Date, whether or not such day is a business day (each such date, a "Record Date"), and on or prior to the following Interest Payment Date, in which case this Revenue Obligation shall evidence interest from such Interest Payment Date, or unless such date of execution shall be on or prior to the first Record Date, in which case this Revenue Obligation shall evidence interest from the Dated Date specified above. Notwithstanding the foregoing, if, as shown by the records of the Trustee, interest evidenced by the Revenue Obligations shall be in default, this Revenue Obligation shall evidence interest from the last Interest Payment Date to which interest has been paid in full or duly provided for.

Payments of interest evidenced by the Revenue Obligations shall be made to the Owners thereof (as determined at the close of business on the Record Date next preceding the related Interest Payment Date) by check or draft of the Trustee mailed to the address of each such Owner as it appears on the registration books maintained by the Trustee pursuant to the Trust Agreement, or to such other address as may be furnished in writing to the Trustee by such Owner. Payment of principal and prepayment premium, if any, evidenced by the Revenue Obligations, on their stated principal payment dates or on prepayment in whole or in part prior thereto, shall be made only upon presentation and surrender of the Revenue Obligations at the Principal Office. All such amounts are payable in lawful money of the United States of America.

The Revenue Obligations are authorized to be executed and delivered in the form of fully registered certificates in denominations of \$5,000 or any integral multiple thereof (“Authorized Denominations”).

This Revenue Obligation may be transferred or exchanged by the Registered Owner hereof, in person or by his attorney duly authorized in writing, at the Principal Office, but only in the manner, subject to the limitations and upon payment of the charges provided in the Trust Agreement.

The Trustee shall not be required to transfer or exchange any Revenue Obligation during the period commencing on the date five days before the date of selection of Revenue Obligations for prepayment and ending on the date of mailing of notice of such prepayment, nor shall the Trustee be required to transfer or exchange any Revenue Obligation or portion thereof selected for prepayment from and after the date of mailing the notice of prepayment thereof.

The Trustee may treat the Registered Owner hereof as the absolute owner hereof for all purposes, whether or not the principal or interest evidenced by this Revenue Obligation shall be overdue, and the Trustee shall not be affected by any knowledge or notice to the contrary; and payment of the principal and interest evidenced by this Revenue Obligation shall be made only to such Registered Owner, which payments shall be valid and effectual to satisfy and discharge the liability evidenced by this Revenue Obligation to the extent of the sum or sums so paid.

The Revenue Obligations are subject to prepayment prior to their stated Principal Payment Dates in accordance with the Trust Agreement.

To the extent and in the manner permitted by the terms of the Trust Agreement, the Trust Agreement and the rights and obligations of the Corporation, the District, the Owners and the Trustee under the Trust Agreement may be amended or supplemented at any time by an amendment or supplement thereto which shall become binding when the prior written consents of the Owners of a majority of the aggregate principal evidenced by the Revenue Obligations then outstanding, exclusive of Revenue Obligations disqualified as provided under the Trust Agreement, are filed with the Trustee. No such supplement or amendment shall (a) extend the stated Principal Payment Date of any Revenue Obligation or reduce the rate of interest evidenced thereby or extend the time of payment of such interest or reduce the amount of principal evidenced thereby or change the prepayment terms and provisions or the provisions regarding delivery of notice of prepayment without the prior written consent of the Owner of each Revenue Obligation so affected, (b) reduce the percentage of Owners whose consent is required for the execution of any amendment or supplement to the Trust Agreement without the prior written consent of the Owners of all Revenue Obligations then outstanding, (c) modify any of the rights or obligations of the Trustee without the prior written consent of the Trustee, or (d) amend the amendment provisions of the Trust Agreement without the prior written consent of the Owners of all Revenue Obligations then outstanding.

To the extent and in the manner permitted by the terms of the Trust Agreement, the Trust Agreement and the rights and obligations of the Corporation, the District, the Owners and the Trustee under the Trust Agreement may also be amended or supplemented at any time by an amendment or supplement thereto which shall become binding upon execution, without the

written consents of any Owners, but only to the extent permitted by law and only (a) to add to the agreements, conditions, covenants and terms required by the Corporation or the District to be observed or performed under the Trust Agreement other agreements, conditions, covenants and terms thereafter to be observed or performed by the Corporation or the District, or to surrender any right or power reserved therein to or conferred therein on the Corporation or the District, and which in either case shall not adversely affect the rights or interests of the Owners, (b) to make such provisions for the purpose of curing any ambiguity or of correcting, curing or supplementing any defective provision contained in the Trust Agreement or in regard to questions arising thereunder which the Corporation or the District may deem desirable or necessary and not inconsistent therewith or (c) for any other reason, provided such amendment or supplement does not adversely affect the rights or interests of the Owners.

THE DISTRICT HAS CERTIFIED that all acts, conditions and things required by the statutes of the State of California and by the Trust Agreement to exist, to have happened and to have been performed precedent to and in connection with the execution and delivery of this Revenue Obligation do exist, have happened and have been performed in regular and due time, form and manner as required by law, and that the Trustee is duly authorized to execute and deliver this Revenue Obligation.

IN WITNESS WHEREOF, this Revenue Obligation has been executed by the manual signature of an authorized signatory of the Trustee as of the date set forth below.

Date: _____, 20__

U.S. BANK NATIONAL ASSOCIATION,
as Trustee

By: _____
Authorized Officer

ASSIGNMENT

For value received, the undersigned do(es) hereby sell, assign and transfer unto _____ the within-mentioned Revenue Obligation and hereby irrevocably constitute(s) and _____ appoint(s) _____ attorney, to transfer the same on the books of the Trustee with full power of substitution in the premises.

Dated: _____

Note: The signature(s) on this Assignment must correspond with the name(s) as written on the face of the within registered Revenue Obligation in every particular, without alteration or enlargement or any change whatsoever.

Tax I.D. #: _____

Signature Guaranteed: _____

Note: Signature(s) must be guaranteed by an eligible guarantor.

Note: The signature(s) on this Assignment must correspond with the name(s) as written on the face of the within Revenue Obligation in every particular without alteration or enlargement or any change whatsoever.

NOTICE OF INTENTION TO SELL

**§[PAR AMOUNT]*
Orange County Sanitation District
Wastewater Refunding Revenue Obligations
Series 2022A**

NOTICE IS HEREBY GIVEN that the Orange County Sanitation District (the “District”) intends to receive electronic bids until [_____] A.M., New York time, on

[_____] , 2022,

through the use of an electronic bidding service offered by Ipreo, at www.newissuehome.i-deal.com and the Parity electronic bid submission system, for the purchase of all of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), dated as of the date of initial delivery, and maturing on such dates as described in the related Official Notice Inviting Bids (the “Notice”). No bids will be accepted by facsimile. Bids for less than all of the Revenue Obligations will not be accepted. The District reserves the right to postpone the date established for the receipt of bids as more fully described under the paragraph “Cancellation or Postponement” in the Notice.

NOTICE IS HEREBY FURTHER GIVEN that electronic copies of the Notice and the Preliminary Official Statement issued in connection with the sale of the Revenue Obligations may be obtained from the District’s municipal advisor, Public Resources Advisory Group, 11500 West Olympic Boulevard, Suite 400, Los Angeles, California 90064, 310-477-7098, via e-mail: lchoi@pragadvisors.com.

Orange County Sanitation District

Dated: [_____] , 2022

* Preliminary, subject to change.

OFFICIAL NOTICE INVITING BIDS

[\$[PAR AMOUNT]]*
ORANGE COUNTY SANITATION DISTRICT
WASTEWATER REFUNDING REVENUE OBLIGATIONS
SERIES 2022A

(Book-Entry-Only)

NOTICE IS HEREBY GIVEN that bids will be received by the Orange County Sanitation District (the “District”) for the purchase of \$[PAR AMOUNT]* original principal amount of Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A, Evidencing Direct, Fractional Undivided Interests of the Owners Thereof in Installment Payments to be Made by the Orange County Sanitation District to the Orange County Sanitation District Financing Corporation (the “Revenue Obligations”). Bids for less than all of the Revenue Obligations will not be accepted. The bids will be received in the form, in the manner and up to the time specified below (unless postponed as described herein):

Date: January [], 2022
[] A.M., New York Time

Electronic Bids: Electronic proposals may be submitted to Ipreo, at www.newissuehome.i-deal.com and the Parity electronic bid submission system (the “Electronic Service”). The Electronic Service will act as agent of the bidder and not of the District in connection with the submission of bids and the District assumes no responsibility or liability for bids submitted through the Electronic Service. See “Information Regarding Electronic Proposals” herein.

No facsimile, hand delivery or sealed bids will be accepted.

Terms of the Revenue Obligations

The Preliminary Official Statement for the Revenue Obligations, dated January [], 2022, including the cover page and all appendices thereto (the “Preliminary Official Statement”), provides certain information concerning the sale and delivery of \$[PAR AMOUNT]* aggregate principal amount of the Revenue Obligations, which are certificates of participation evidencing direct, undivided fractional interests in the Installment Payments (the “Installment Payments”), and the interest thereon, payable by the District pursuant to the Installment Purchase Agreement, dated as of February 1, 2022 (the “Installment Purchase Agreement”), by and between the District and the Orange County Sanitation District Financing Corporation (the “Corporation”). Each bidder must have obtained and reviewed the Preliminary Official Statement prior to bidding for the Revenue Obligations. This Official Notice Inviting Bids, including all exhibits and attachments, contains certain information for quick reference only, is not a summary of the issue and governs only the terms of the sale of, bidding for and closing procedures with respect to the Revenue Obligations. Bidders must read the entire Preliminary Official Statement to obtain information essential to making an informed investment decision.

* Preliminary, subject to change.

Pursuant to the Master Agreement for District Obligations, dated as of August 1, 2000 (the “Master Agreement”), by and between the District and the Corporation, the District has established and declared the conditions and terms upon which obligations such as the Installment Purchase Agreement, and the Installment Payments and the interest thereon, will be incurred and secured. Installment Payments under the Installment Purchase Agreement are payable solely from Net Revenues, as provided in the Master Agreement and the Installment Purchase Agreement, consisting primarily of all income and revenue received by the District from the operation or ownership of the Wastewater System of the District (the “Wastewater System”) remaining after payment of Maintenance and Operation Costs.

The Issue

The proceeds from the sale of the Revenue Obligations, together with other funds of the District, will be used to (i) prepay the District’s Wastewater Refunding Revenue Obligations, Series 2012A, currently outstanding in the aggregate principal amount of \$100,645,000 (the “Refunded 2012A Prior Obligations”), (ii) prepay the District’s Wastewater Refunding Revenue Obligations, Series 2012B, maturing on February 1, 2023 through 2026, inclusive, currently outstanding in the aggregate principal amount of \$6,670,000 (the “Refunded 2012B Prior Obligations”), and (iii) pay the costs incurred in connection with the execution and delivery of the Revenue Obligations. The Revenue Obligations are to be executed and delivered pursuant to a Trust Agreement, dated as of February 1, 2022 (the “Trust Agreement”), by and among the District, the Corporation and U.S. Bank National Association, as trustee (the “Trustee”). Capitalized terms not defined herein shall have the same definitions as used in the Trust Agreement or the Master Agreement.

Authorization

On [____], 2021, the District and the Corporation authorized the execution and delivery of the Installment Purchase Agreement, the Trust Agreement and the Revenue Obligations.

Outstanding Senior Obligations

The District has outstanding Senior Obligations payable on a parity with the Installment Payments under the Installment Purchase Agreement. The term “Existing Senior Obligations” as used in the Preliminary Official Statement refers to the 2010A Installment Purchase Agreement, the 2010C Installment Purchase Agreement, the 2011A Installment Purchase Agreement, the 2012A Installment Purchase Agreement, the 2012B Installment Purchase Agreement, the 2014A Installment Purchase Agreement, the 2015A Installment Purchase Agreement, the 2016A Installment Purchase Agreement, the 2017A Installment Purchase Agreement and 2021A Installment Purchase Agreement.

Security and Source of Payments

The Revenue Obligations are certificates of participation which evidence direct, undivided fractional interests in the Installment Payments, and the interest thereon, paid by the District pursuant to the Installment Purchase Agreement. The obligation of the District to pay the Installment Payments and the interest thereon and other payments required to be made by it under the Installment Purchase Agreement is a special obligation of the District payable, in the manner provided under the Installment Purchase Agreement, solely from Net Revenues and other funds as provided in the Installment Purchase Agreement. Net Revenues generally consist of all income and revenue received by the District from the operation or ownership of the Wastewater System remaining after payment of Maintenance and Operation Costs, all as further provided in the Master Agreement.

The District's obligation to make Installment Payments from Net Revenues is on a parity with the District's obligation to make payments with respect to its other outstanding obligations described as Senior Obligations and all Reimbursement Obligations, if any, with respect to Senior Obligations, as provided in the Master Agreement. The Installment Purchase Agreement constitutes a Senior Obligation and is subject to the provisions of the Master Agreement and is afforded all of the advantages, benefits, interests and security for Senior Obligations pursuant to the Master Agreement. Pursuant to the Master Agreement, the District pledges all Net Revenues to the payment of the Senior Obligations and Reimbursement Obligations with respect to Senior Obligations, and the Net Revenues will not be used for any other purpose while any of the Senior Obligations or Reimbursement Obligations with respect to Senior Obligations remain unpaid; provided, however, that out of the Net Revenues there may be apportioned such sums for such purposes as are expressly permitted by the Master Agreement. This pledge constitutes a first lien on the Net Revenues for the payment of the Senior Obligations and Reimbursement Obligations with respect to Senior Obligations. The term Senior Obligations, generally means all revenue bonds or notes (including bond anticipation notes and commercial paper) of the District authorized, executed, issued and delivered under and pursuant to applicable law, the Installment Purchase Agreement and all other contracts (including financial contracts) or leases of the District authorized and executed by the District under and pursuant to applicable law, the installment, lease or other payments which are, in accordance with the provisions of the Master Agreement, payable from Net Revenues on a parity with the payments under the Master Agreement.

The District may at any time incur Subordinate Obligations; provided, however, that prior to incurring such Subordinate Obligations, the District will have determined that the incurrence thereof will not materially adversely affect the District's ability to comply with the requirements of the Master Agreement. The District may at any time incur Reimbursement Obligations with respect to Subordinate Obligations. Currently, there are no Subordinate Obligations outstanding. For a description of the District's outstanding Senior Obligations, see "FINANCIAL OBLIGATIONS — Existing Indebtedness" in the Preliminary Official Statement.

The District may, in connection with the incurrence of Subordinate Obligations, pledge Net Revenues to the payment of Subordinate Obligations and Reimbursement Obligations with respect to Subordinate Obligations; provided, however, that such pledge, and any lien created thereby, shall be junior and subordinate to the pledge of, and lien on, Net Revenues for the payment of Senior Obligations and Reimbursement Obligations with respect to Senior Obligations.

Pursuant to the Master Agreement, the District is required, to the extent permitted by law, to fix, prescribe and collect fees and charges for the services and facilities of the Wastewater System which will be at least sufficient to yield during each Fiscal Year (a) Net Revenues equal to 125% of Debt Service on Senior Obligations for such Fiscal Year and (b) Net Operating Revenues equal to 100% of Debt Service on all Obligations for such Fiscal Year. The District may make adjustments from time to time in such fees and charges and may make such classification thereof as it deems necessary, but shall not reduce the fees and charges then in effect unless the Revenues and Net Revenues from such reduced fees and charges will at all times be sufficient to meet the requirements of the Master Agreement. See "SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS — Rate Covenant" in the Preliminary Official Statement.

Additional Obligations

In addition to the Existing Senior Obligations, the District may at any time incur Obligations payable on a parity or on a subordinate basis to the payment by the District of the Installment Payments upon satisfaction of conditions provided in the Master Agreement. No Obligations payable on such a subordinate basis are currently outstanding. See "SECURITY AND SOURCES OF PAYMENT FOR

THE REVENUE OBLIGATIONS — Limitations on Issuance of Additional Obligations” in the Preliminary Official Statement.

Book-Entry-Only

The Revenue Obligations will be executed and delivered in the form of fully registered certificates payable in lawful money of the United States of America. The Revenue Obligations will be initially delivered only in book-entry form and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository for the Revenue Obligations. Individual purchases of the Revenue Obligations will be made in book-entry form only. Purchasers of Revenue Obligations will not receive physical certificates representing their ownership interests in the Revenue Obligations purchased. The Revenue Obligations will be delivered in Authorized Denominations of \$5,000 and any integral multiple thereof. Payments of principal and interest evidenced by the Revenue Obligations are payable directly to DTC by the Trustee. Upon receipt of payments of such principal and interest, DTC will in turn distribute such payments to the beneficial owners of the Revenue Obligations. So long as the Revenue Obligations are in the DTC book-entry system, the interest, principal and prepayment premiums, if any, due with respect to the Revenue Obligations will be payable by the Trustee, or its agent, to DTC or its nominee.

Principal and Interest Payments

The Revenue Obligations will be dated as of the date of initial delivery and will evidence interest from that date (computed on the basis of a 360-day year of twelve 30-day months). Interest evidenced by the Revenue Obligations is payable semiannually on February 1 and August 1 of each year, commencing on August 1, 2022. Payment of principal and prepayment premium, if any, evidenced by the Revenue Obligations will be paid in lawful money of the United States of America upon presentation and surrender thereof at the Principal Office of the Trustee.

Principal Amortization

The Revenue Obligations will be executed and delivered in the original principal amount of \$[PAR AMOUNT]* and will be subject to principal amortization on February 1 in the years 20[]* through 20[]* in the amounts set forth in the Official Bid Form.

Optional Prepayment

The Revenue Obligations with stated Principal Payment Dates on or after February 1, 2032* are subject to optional prepayment prior to their stated Principal Payment Dates, on any date on or after February 1, 2031*, in whole or in part, in Authorized Denominations, from and to the extent of prepaid Installment Payments paid pursuant to the Installment Purchase Agreement or from any other source of available funds, any such prepayment to be at a price equal to the principal evidenced by the Revenue Obligations to be prepaid, plus accrued interest evidenced thereby to the date fixed for prepayment, without premium.

* Preliminary; subject to change.

Selection of Revenue Obligations for Prepayment

Whenever less than all the Outstanding Revenue Obligations are to be prepaid on any one date pursuant to provisions of the Trust Agreement with respect to optional prepayment of Revenue Obligations, the Trustee shall select the Revenue Obligations to be prepaid among Revenue Obligations with different Principal Payment Dates as directed in a Written Request of the District. Whenever less than all the Outstanding Revenue Obligations with the same stated Principal Payment Date are to be prepaid on any one date pursuant to the Trust Agreement, the Trustee shall select the Revenue Obligations with such Principal Payment Date to be prepaid as directed in a Written Request of the District, or at the discretion of the District by lot in any manner that the Trustee deems fair and appropriate, which decision shall be final and binding upon the District and the Owners. The Trustee shall promptly notify the District in writing of the numbers of the Revenue Obligations so selected for prepayment on such date.

Notice of Prepayment

The Trustee shall, at least 20 but not more than 60 days prior to any prepayment date, give notice of prepayment to the respective Owners of Revenue Obligations designated for prepayment by first-class mail, postage prepaid, at their addresses appearing on the registration books maintained by the Trustee as of the close of business on the day before such notice of prepayment is given. The actual receipt by the Owner of any notice of such prepayment shall not be a condition precedent to prepayment, and neither failure to receive such notice nor any defect therein shall affect the validity of the proceedings for the prepayment of such Revenue Obligations or the cessation of interest evidenced thereby on the date fixed for prepayment.

Interest Rates, Reoffering Prices, Premium or Discount Bids and Certificate of Initial Purchaser

Bidders must bid to purchase all and not part of the Revenue Obligations and must submit their bids on the Official Bid Form. Bidders must specify a rate of interest for each maturity of the Revenue Obligations. The rates of interest must be expressed in multiples of either one-eighth (1/8) or one-twentieth (1/20) of one percent (1%), no interest rate on the Revenue Obligations may be specified at zero percent (0%), and no Revenue Obligations maturing between February 1, 20[] and February 1, 20[], inclusive, may be specified at less than [five percent (5.0%)] per annum. All Revenue Obligations of the same maturity must evidence interest at the same rate.

The successful bidder will, within 30 minutes after being notified of the award of the Revenue Obligations, advise the District of the initial bona fide public reoffering prices of each maturity of the Revenue Obligations on the date of award. The successful bidder will also be required to furnish to the District a certificate ("Certificate of Initial Purchaser") in the applicable form of the Certificate of Initial Purchaser attached hereto (with such modifications as may be acceptable to Special Counsel). At any time before or after delivery of the Revenue Obligations to the successful bidder, that successful bidder also may be required by the District or Special Counsel to clarify any discrepancies between the Certificate of Initial Purchaser and publicly available information relating to trades of the Revenue Obligations that might suggest that the initial sale of a substantial portion of any maturity of the Revenue Obligations to the public was at a materially higher price than the price stated for that maturity in the Certificate of Initial Purchaser.

Bidders may bid to purchase the Revenue Obligations from the District at a discount or with a premium; however, no bid will be considered if the bid is to purchase Revenue Obligations at an aggregate price less than []% or more than []% of the aggregate principal amount of the Revenue Obligations.

No bid will be accepted that contemplates the waiver of any interest or other concession by the bidder as substitute for payment in full of the purchase price. Bids that do not conform to the terms of this section may be rejected. See “Right to Reject Bids, Waive Irregularities” below.

Adjustment of Principal Amounts After Receipt of Bids

The principal amounts of the Revenue Obligations set forth in the Official Bid Form reflect estimates of the District as to the likely interest rates of the winning bid and the premium or discount contained in the winning bid. After selecting the winning bid, the amortization schedule for the Revenue Obligations will be adjusted in \$5,000 increments, to reflect the actual interest rates and any discount or premium in the winning bid to properly fund the purchase price of the Refunded 2012A Prior Obligations and the Refunded 2012B Prior Obligations and to accommodate certain other requirements or preferences of the District. Such adjustments will not change any Revenue Obligation in any year by more than [10% of the principal amount for such year]. The dollar amount bid for the Revenue Obligations by the winning bidder will be adjusted to reflect such adjustment in the applicable amortization schedule. Any such adjustment will change the total (but not the per Revenue Obligation) dollar amount of purchaser’s discount and original issue discount or premium, if any, provided in such bid. Any such adjustment will be communicated to the winning bidder within 24 hours after receipt of such bid by the District. Changes in the amortization schedule made as described in this paragraph will not affect the determination of the winning bidder or give the winning bidder any right to reject the Revenue Obligations.

No Insurance

THE SUCCESSFUL BIDDER SHALL NOT PURCHASE MUNICIPAL BOND INSURANCE IN CONNECTION WITH THE REVENUE OBLIGATIONS.

Form of Bid

BIDS FOR LESS THAN ALL OF THE REVENUE OBLIGATIONS WILL NOT BE ACCEPTED. Each bid must be on the Official Bid Form, submitted through the Electronic Service as specified herein. All electronic proposals shall be deemed to incorporate the provisions of the Official Bid Form and must be unconditional and irrevocable. In addition, each bidder is requested to supply an estimate of the true interest cost resulting from its bid, computed as prescribed below under the caption “Award, Delivery and Payment,” which shall be considered as informative only and not binding on either the bidder or the District. Each bid must be in accordance with the terms and conditions set forth in this Official Notice Inviting Bids.

The District will make its best efforts to accommodate electronic bids; however, the District, the Municipal Advisor (Public Resources Advisory Group) and Special Counsel assume no responsibility for any error contained in any electronic bid, or for the failure of any electronic bid to be transmitted or received at the official time for receipt of such bids. The official time for receipt of bids will be determined by the District at the place of the bid opening, and the District shall not be required to accept the time kept by Electronic Service as the official time. The District assumes no responsibility for informing any bidder prior to the deadline that its bid is incomplete, or not received.

If multiple timely bids are received from a single bidder the District shall accept the best of such bids and each bidder agrees, by submitting any bid, to be bound by its best bid.

Information Regarding Electronic Proposals

All proposals must be submitted through the Electronic Service. If any provision of this Official Notice Inviting Bids conflicts with information provided by the Electronic Service, this Official Notice Inviting Bids shall control. The District is not responsible for the proper operation of, and shall have no liability for any delays or interruptions of or any damages caused by the Electronic Service. The District is using the Electronic Service as a communication mechanism and not as the District's agent to conduct electronic bidding for the Revenue Obligations. The District is not bound by any advice of or determination by the Electronic Service to the effect that any particular bid complies with the terms of this Official Notice Inviting Bids. All costs and expenses incurred by prospective bidders in connection with their submission of bids through the Electronic Service are the sole responsibility of such bidders and the District is not responsible for any such costs or expenses. Further information about the Electronic Service, including any fee charged, may be obtained from Ipreo (877-588-5030). The District assumes no responsibility or liability for bids submitted through the Electronic Service. The District shall be entitled to assume that any bid submitted through the Electronic Service has been made by a duly authorized agent of the bidder.

Bid Security Deposit

[Each bidder must provide with its bid a wire transfer of immediately available federal funds in the amount of \$[_____] (the "Bid Security Deposit").

Bid Security Deposit wire transfers must be received in federal funds prior to the deadline for examination of the bids. Contact the District's Municipal Advisor, Public Resources Advisory Group, 310-477-7098 or by e-mail at lchoi@pragadvisors.com, for wire instructions.

The wire transfers of unsuccessful bidders will be returned promptly on the bid date after the examination of bids.] The wire transfer of the successful bidder will be retained by the District and applied to the purchase price at the time of delivery of the Revenue Obligations. The District disclaims any liability for funds sent by wire transfer, except for any willful misconduct or reckless disregard for its duties.

If after the award of the Revenue Obligations, the successful bidder fails to complete the purchase on the terms stated in its bid, unless such failure of performance shall be caused by any act or omission of the District, the Bid Security Deposit shall be retained by the District as stipulated liquidated damages. No interest will be paid upon any Bid Security Deposit.

Official Statement

The District has approved a Preliminary Official Statement for the Revenue Obligations, dated January [___], 2022, which the District has "deemed final" for purposes of Rule 15c2-12 promulgated by the Securities and Exchange Commission (the "Rule"), although subject to revision, amendment and completion in conformity with the Rule. No later than seven business days after the day the Revenue Obligations are awarded, the District will provide the successful bidder with an electronic version of the final Official Statement. The successful bidder shall file the final Official Statement with a nationally recognized municipal securities information repository on a timely basis. The successful bidder shall, by accepting the award, agree at all times to comply with the provisions of the Rule and with all applicable rules of the Municipal Securities Rulemaking Board.

Award, Delivery and Payment

If satisfactory bids are received, the Revenue Obligations will be awarded to the highest responsible bidder not later than two hours after the time established for the receipt of bids. The highest bidder shall be the bidder submitting the best price for the Revenue Obligations, which best price shall be that resulting in the lowest true interest cost with respect to the Revenue Obligations. The true interest cost shall be computed by doubling the semi-annual interest rate (compounded semi-annually) necessary to discount the debt service payments from their respective payment dates to the date of the Revenue Obligations and to the price bid. If two or more bidders have bid the same true interest cost, the award shall be made at the sole discretion of the District.

Delivery of the Revenue Obligations is expected to occur on or about February 1, 2022. The Revenue Obligations will be delivered through the facilities of DTC, New York, New York. The successful bidder shall pay for the Revenue Obligations on the date of delivery in Los Angeles, California in immediately available federal funds. Any expenses of providing federal funds shall be borne by the purchaser. Payment on the delivery date shall be made in an amount equal to the price bid for the Revenue Obligations less the amount of the bid security deposit.

Right to Reject Bids, Waive Irregularities

The District reserves the right to reject any and all bids, and to the extent permitted by law, to waive any irregularity or informality in any bid.

CUSIP Numbers

It is anticipated that CUSIP numbers will be printed on the Revenue Obligations, but the District will assume no obligation for the assignment or printing of such numbers on the Revenue Obligations or for the correctness of such numbers, and neither the failure to print such numbers on any Revenue Obligation nor any error with respect thereto shall constitute cause for a failure or refusal by the purchasers thereof to accept delivery of and make payment for the Revenue Obligations. The Municipal Advisor will apply for CUSIP numbers for the Revenue Obligations and will submit the CUSIP numbers to Parity to be provided to all bidders. The cost for the assignment of CUSIP numbers to the Revenue Obligations will be the responsibility of the successful bidder.

California Debt and Investment Advisory Commission

The successful bidder will be required to pay all fees due to the California Debt and Investment Advisory Commission (“CDIAC”) under California law. CDIAC will invoice the successful bidder after the delivery of the Revenue Obligations.

Reoffering Prices, Establishment of Issue Price and Issue Price Certificate

- (a) The winning bidder for the Revenue Obligations shall assist the District in establishing the issue price of the Revenue Obligations, and shall execute and deliver to the District at or before the time of issuance and delivery of the Revenue Obligations an “issue price” or similar certificate setting forth the reasonably expected initial offering price to the public of each maturity of the Revenue Obligations, together with the supporting pricing wires or equivalent communications, substantially in the form attached hereto as Exhibits A and B, as applicable, with such modifications as may be appropriate or necessary, in the reasonable judgment of the winning bidder, the District and Special Counsel.

- (b) The District intends that Sections 1.148-1(f)(2)(iii) and 1.148-1(f)(3)(i) (providing a special rule establishing the issue price of competitively sold bonds and defining the term “competitive sale”) will apply to the initial sale of the Revenue Obligations (the “Competitive Sale Requirements”) because:
- (1) the District shall disseminate this Official Notice Inviting Bids to potential underwriters in a manner that is reasonably designed to reach potential underwriters;
 - (2) all bidders shall have an equal opportunity to bid on the Revenue Obligations;
 - (3) the District may receive bids for the Revenue Obligations from at least three underwriters of municipal bonds who have established industry reputations for underwriting new issuances of municipal bonds; and
 - (4) the District anticipates awarding the sale of the Revenue Obligations to the bidder that submits a firm offer to purchase the Revenue Obligations at the highest price (or lowest interest cost), as set forth in this Official Notice Inviting Bids.

Any bid submitted pursuant to this Official Notice Inviting Bids shall be considered a firm offer for the purchase of the Revenue Obligations as specified in the bid.

- (c) If the Competitive Sale Requirements set forth in subsection (b)(3) of this Section are not satisfied, the District shall so advise the winning bidder. In such event, the District intends to treat the initial offering price to the public as of the sale date of each maturity as the issue price of that maturity (the “hold-the-offering- price rule”). The District shall promptly advise the winning bidder, at or before the time of award, if the Competitive Sale Requirements set forth in subsection (b)(3) of this Section were not satisfied, in which case the hold-the-offering-price rule shall apply to the Revenue Obligations. Bids will not be subject to cancellation in the event the Competitive Sale Requirements are not satisfied, and the hold-the-offering-price rule thus apply to any maturity of the Revenue Obligations as to which less than 10% of the maturity was sold by the winning bidder to the public at a single price.
- (d) By submitting a bid to purchase the Revenue Obligations, the winning bidder (i) confirms that the underwriters have offered or will offer the Revenue Obligations to the public on or before the date of award at the offering price or prices (“**initial offering price**”), or at the corresponding yield or yields, set forth in the bid submitted by the winning bidder (ii) certifies that the bidder is an underwriter of municipal obligations who has an established industry reputation for underwriting new issuances of municipal obligations, and (iii) agrees, on behalf of the underwriters participating in the purchase of the Revenue Obligations, that the underwriters will neither offer nor sell unsold Revenue Obligations of any maturity to which the hold-the-offering-price rule applies to any person at a price that is higher than the initial offering price to the public during the period starting on the sale date and ending on the earlier of the following:
- (1) the close of the fifth (5th) business day after the sale date; or
 - (2) the date on which the underwriters have sold at least 10% of that maturity of to the public at a price that is no higher than the initial offering price to the public.

The winning bidder shall promptly advise the District when the underwriters have sold 10% of that maturity to the public at a price that is no higher than such maturity's initial offering price to the public, if that occurs prior to the close of the fifth (5th) business day after the sale date.

- (e) The District acknowledges that, in making the representation set forth above, the winning bidder will rely on (i) the agreement of each underwriter to comply with the hold-the-offering-price rule, as set forth in an agreement among underwriters and the related pricing wires, (ii) in the event a selling group has been created in connection with the initial sale of the Revenue Obligations to the public, the agreement of each dealer who is a member of the selling group to comply with the hold-the-offering-price rule, as set forth in a selling group agreement and the related pricing wires, and (iii) in the event that an underwriter is a party to a retail or other third-party distribution agreement that was employed in connection with the initial sale of the Revenue Obligations to the public, the agreement of each broker-dealer that is a party to such agreement to comply with the hold-the-offering-price rule, as set forth in the retail or other third-party distribution agreement and the related pricing wires. The District further acknowledges that each underwriter shall be solely liable for its failure to comply with its agreement regarding the hold-the-offering-price rule, and that no underwriter shall be liable for the failure of any other underwriter, or of any dealer who is a member of a selling group, or of any broker-dealer that is a party to a retail or other third-party distribution agreement to comply with its corresponding agreement regarding the hold-the-offering-price rule as applicable to one or more maturities of the Revenue Obligations.
- (f) By submitting a bid to purchase the Revenue Obligations, the bidder confirms that: (i) any agreement among underwriters, any selling group agreement and each retail or other third-party distribution agreement (to which the bidder is a party) relating to the initial sale of the Revenue Obligations to the public, together with the related pricing wires, contains or will contain language obligating each underwriter, each dealer who is a member of the selling group, and each broker-dealer that is a party to such retail or other third-party distribution agreement, as applicable, to (A) report the prices at which it sells to the public the unsold Revenue Obligations of each maturity allotted to it and subject to the hold-the-offering-price rule until it is notified by the winning bidder that the hold-the-offering-price rule no longer applies to such maturity, and (B) comply with the hold-the-offering-price rule, if applicable, in each case if and for so long as directed by the winning bidder and as set forth in the related pricing wires, and (ii) any agreement among underwriters relating to the initial sale of the Revenue Obligations to the public, together with the related pricing wires, contains or will contain language obligating each underwriter that is a party to a retail or other third-party distribution agreement to be employed in connection with the initial sale of the Revenue Obligations to the public to require each broker-dealer that is a party to such retail or other third-party distribution agreement to (A) report the prices at which it sells to the public the unsold Revenue Obligations of each maturity allotted to it and subject to the hold-the-offering-price rule until it is notified by the winning bidder or such underwriter that the hold-the-offering-price rule no longer applies to such maturity, and (B) comply with the hold-the-offering-price rule, if applicable, in each case if and for so long as directed by the winning bidder or such underwriter and as set forth in the related pricing wires.
- (g) Sales of the Revenue Obligations to any person that is a related party to an underwriter of the Revenue Obligations shall not constitute sales to the public for purposes of this Official Notice inviting Bids. Further, for purposes of this Official Notice Inviting Bids:

- (1) “public” means any person other than an underwriter or a related party,
- (2) “underwriter” means (A) any person that agrees pursuant to a written contract with the District (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Revenue Obligations to the public, and (B) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (A) to participate in the initial sale of the Revenue Obligations to the public (including a member of a selling group or a party to a retail or other third-party distribution agreement participating in the initial sale of the Revenue Obligations to the public),
- (3) a purchaser of the Revenue Obligations is a “related party” to an underwriter if the underwriter and the purchaser are subject, directly or indirectly, to (i) more than 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (ii) more than 50% common ownership of their capital interests or profits interests, if both entities are partnerships (including direct ownership by one partnership of another), or (iii) more than 50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership (including direct ownership of the applicable stock or interests by one entity of the other), and
- (4) “sale date” means the date on which the Revenue Obligations are awarded by the District to the winning bidder.

Legal Opinions

The District will furnish to the successful bidder at the closing of the Revenue Obligations the legal opinion of Special Counsel to the effect that, in the opinion of Special Counsel, under existing statutes, regulations, rulings and judicial decisions, and assuming compliance with certain covenants in the documents pertaining to the Revenue Obligations and requirements of the Internal Revenue Code of 1986, the portion of each Installment Payment representing interest and distributed in respect of any Revenue Obligation is excluded from the gross income of the owners thereof for federal income tax purposes and is not an item of tax preference for purposes of the federal alternative minimum tax and is exempt from personal income taxes of the State of California. Special Counsel will express no opinion as to any federal or state tax consequence of the ownership or disposition of the Revenue Obligations.

Closing Documents

The District will furnish to the successful bidder at the time of delivery of the Revenue Obligations: (1) a certificate certifying (i) that as of and at the time of delivery of the Revenue Obligations, there is no action, suit, proceeding or investigation, pending or, to the best knowledge of the District, threatened against or affecting the District, (A) which affects or seeks to prohibit, restrain or enjoin the execution and delivery of the Revenue Obligations or the Trust Agreement, (B) in any way contesting the validity of the Revenue Obligations, the Installation Purchase Agreement or the Trust Agreement or the powers of the District to enter into or perform its obligations under such documents to which it is a party or the existence of the District, or (C) wherein an unfavorable decision, ruling or finding would materially and adversely affect the District, or the validity or enforceability of the Revenue Obligations, the Installation Purchase Agreement or the Trust Agreement or the ability of the District to perform its obligations under such documents to which it is a party, (ii) that the Preliminary Official

Statement did not on the date of sale of the Revenue Obligations and the Official Statement does not on the date of delivery contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements contained therein, in the light of the circumstances under which they were made, not misleading, and (2) a receipt of the District showing that the purchase price of the Revenue Obligations has been received by the District.

Continuing Disclosure

To assist the successful bidder in complying with the Rule, the District will undertake, pursuant to the Continuing Disclosure Agreement, to provide certain annual financial information, and notices of the occurrence of certain enumerated events. A description of the Continuing Disclosure Agreement is set forth in the Preliminary Official Statement and will be set forth in the final Official Statement.

Additional Information

Electronic copies of the Trust Agreement, the Installment Purchase Agreement, the Master Agreement, this Official Notice Inviting Bids, the Official Bid Form, and the Preliminary Official Statement will be furnished to any potential bidder upon request made to the District's Municipal Advisor at: Public Resources Advisory Group, 11500 West Olympic Boulevard, Suite 400, Los Angeles, CA 90064, 310-477-7098, via e-mail at lchoi@pragadvisors.com.

Right to Modify or Amend

The District reserves the right to modify or amend this Official Notice Inviting Bids, including but not limited to the right to adjust and change the principal amount of the Revenue Obligations being offered; provided, however, that such notifications or amendments shall be made not later than the business day prior to the date fixed for the receipt of bids, by 4:00 p.m., New York Time and communicated through MuniOS (available at <http://www.munios.com>) ("MuniOS") or Refinitive Municipal Market Monitor ("TM3") (available at <http://www.tm3.com>) and by facsimile transmission to any qualified bidder timely requesting such notice. Bidders are required to bid for the Revenue Obligations as so modified.

Cancellation or Postponement

The District reserves the right to cancel or postpone, from time to time, the date established for the receipt of bids for any reason at any time. Any such postponement will be announced by MuniOS or TM3. If any date fixed for the receipt of bids and the sale of the Revenue Obligations is postponed, any alternative sale date will be announced via MuniOS or TM3 at least 24 hours prior to such alternative sale date and will be provided by facsimile transmission to any qualified bidder timely requesting such notice. On any such alternative sale date, any bidder may submit a sealed bid for the purchase of the Revenue Obligations in conformity in all respects with the provisions of this Official Notice Inviting Bids except for the date of sale and except for the changes announced by MuniOS or TM3 at the time the sale date and time are announced.

Dated: January [__], 2022

EXHIBIT A

FORM OF CERTIFICATE OF INITIAL PURCHASER

[IF 3 OR MORE BIDS FROM COMPETITIVE PROVIDERS ARE RECEIVED]

Orange County Sanitation District
Fountain Valley, California

Norton Rose Fulbright US LLP
Los Angeles, California

This certificate is being delivered by [Purchaser], the purchaser (“Purchaser”) in connection with the issuance by the Issuer of its Wastewater Refunding Revenue Obligations, Series 2022A, Evidencing Direct, Fractional Undivided Interests of the Owners Thereof in Installment Payments to be Made by the Orange County Sanitation District to the Orange County Sanitation District Financing Corporation (the “Revenue Obligations”).

The Purchaser hereby certifies and represents that:

1. Reasonably Expected Initial Offering Price.

- (a) As of the Sale Date, the reasonably expected initial offering prices of the Revenue Obligations to the Public by the Purchaser are the prices listed in Schedule A (“Expected Offering Prices”). The Expected Offering Prices are the prices for the Maturities of the Revenue Obligations used by the Purchaser in formulating its bid to purchase the Revenue Obligations. Attached as Schedule B is a true and correct copy of the bid provided by the Purchaser to purchase the Revenue Obligations.
- (b) The Purchaser was not given the opportunity to review other bids prior to submitting its bid.
- (c) The bid submitted by the Purchaser constituted a firm offer to purchase the Revenue Obligations.

2. Defined Terms.

- (a) *Issuer* means the Orange County Sanitation District.
- (b) *Maturity* means Revenue Obligations with the same credit and payment terms. Revenue Obligations with different maturity dates, or Revenue Obligations with the same maturity date but different stated interest rates, are treated as separate Maturities.
- (c) *Public* means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter.
- (d) *Related Party* means any entity if an Underwriter and the entity are subject, directly or indirectly, to (i) more than 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (ii) more than 50% common ownership of their capital interests

or profit interests, if both entities are partnerships (including direct ownership by one partnership of another), or (iii) more than 50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership (including direct ownership of the applicable stock or interests by one entity of the other).

- (e) *Sale Date* means the date of execution of a binding contract in writing for the sale of a Maturity of the Revenue Obligations. The Sale Date of the Revenue Obligations is January [], 2022.
- (f) *Underwriter* means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Revenue Obligations to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to participate in the initial sale of the Revenue Obligations to the Public (including a member of a selling group or a party to a third-party distribution agreement participating in the initial sale of the Revenue Obligations to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents the Purchaser's interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986 and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in a tax certificate with respect to compliance with the federal income tax rules affecting the Revenue Obligations, and by Norton Rose Fulbright US LLP, Special Counsel, in connection with rendering their opinion that the interest on the Revenue Obligations is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that it may give to the Issuer from time to time relating to the Revenue Obligations.

Dated: [ISSUE DATE]

[INITIAL PURCHASER],
as Underwriter

By: _____
Title: _____

Schedule A

Expected Offering Prices

(See attached)

Schedule B
Copy of Purchaser Bid
(See attached)

[IF FEWER THAN 3 BIDS FROM COMPETITIVE PROVIDERS ARE RECEIVED]

Orange County Sanitation District
Fountain Valley, California

Norton Rose Fulbright US LLP
Los Angeles, California

This certificate is being delivered by [Purchaser], the purchaser (“Purchaser”) in connection with the issuance by the Issuer of its Wastewater Refunding Revenue Obligations, Series 2022A, Evidencing Direct, Fractional Undivided Interests of the Owners Thereof in Installment Payments to be Made by the Orange County Sanitation District to the Orange County Sanitation District Financing Corporation (the “Revenue Obligations”).

1. Sale of the General Rule Maturities.

As of the date of this certificate, for each Maturity of the General Rule Maturities, the first price at which at least 10% of such Maturity was sold to the Public is the respective price listed in Schedule A.

2. Initial Offering Price of the Hold-the-Offering-Price Maturities.

- (a) The Purchaser offered the Hold-the-Offering-Price Maturities to the Public for purchase at the respective initial offering prices listed in Schedule A (“Initial Offering Prices”) on or before the Sale Date. A copy of the pricing wire or equivalent communication for the Revenue Obligations is attached to this Certificate as Schedule B.
- (b) As set forth in the Official Notice Inviting Bids, the Purchaser agreed in writing on or prior to the Sale Date that, should the “competitive sale” requirements with respect to the Revenue Obligations not be satisfied, (i) for each Maturity of the Hold-the-Offering-Price Maturities, it would neither offer nor sell any of the Revenue Obligations of such Maturity to any person at a price that is higher than the Initial Offering Price for such Maturity during the Holding Period for such Maturity (“hold-the-offering-price rule”), and (ii) any selling group agreement shall contain the agreement of each dealer that is a member of the selling group, and any retail or other third-party distribution agreement shall contain the agreement of each broker-dealer that is a party to the retail or other third-party distribution agreement, to comply with the hold-the-offering-price rule. Pursuant to such agreement, no Underwriter (as defined below) has offered or sold any Maturity of the Hold-the-Offering-Price Maturities at a price that is higher than the respective Initial Offering Price for that Maturity of the Revenue Obligations during the Holding Period.

3. Defined Terms.

- (a) *Issuer* means the Orange County Sanitation District.
- (b) *General Rule Maturities* means those Maturities of the Revenue Obligations listed in Schedule A hereto as the “General Rule Maturities.”
- (c) *Hold-the-Offering-Price Maturities* means those Maturities of the Revenue Obligations listed in Schedule A hereto as the “Hold-the-Offering-Price Maturities.”

- (d) *Holding Period* means, with respect to a Hold-the-Offering-Price Maturity, the period starting on the Sale Date and ending on the earlier of (i) the close of the fifth business day after the Sale Date, or (ii) the date on which the Purchaser sold at least 10% of such Hold-the-Offering-Price Maturity to the Public at prices that are no higher than the Initial Offering Price for such Hold-the-Offering-Price Maturity.
- (e) *Maturity* means Revenue Obligations with the same credit and payment terms. Revenue Obligations with different maturity dates, or Revenue Obligations with the same maturity date but different stated interest rates, are treated as separate maturities.
- (f) *Public* means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter.
- (g) *Related Party* means any entity if an Underwriter and the entity are subject, directly or indirectly, to (i) more than 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (ii) more than 50% common ownership of their capital interests or profit interests, if both entities are partnerships (including direct ownership by one partnership of another), or (iii) more than 50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership (including direct ownership of the applicable stock or interests by one entity of the other).
- (h) *Sale Date* means the first day on which there is a binding contract in writing for the sale of a Maturity of the Revenue Obligations. The Sale Date of the Revenue Obligations is January [], 2022.
- (i) *Underwriter* means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Revenue Obligations to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to participate in the initial sale of the Revenue Obligations to the Public (including a member of a selling group or a party to a retail or other third-party distribution agreement participating in the initial sale of the Revenue Obligations to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents the Purchaser's interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986 and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in the tax certificate with respect to the Revenue Obligations and with respect to compliance with the federal income tax rules affecting the Revenue Obligations, and by Norton Rose Fulbright US LLP, Special Counsel, in connection with rendering their opinion that the interest on the Revenue Obligations is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that they may give to the Issuer from time to time relating to the Revenue Obligations.

Dated: [ISSUE DATE]

[INITIAL PURCHASER],
as Underwriter

By: _____
Title: _____

Schedule A
Initial Offering Prices

(See attached)

Schedule B
Copy of Pricing Wire
(See attached)

OFFICIAL BID FORM

**\$(PAR AMOUNT)*
ORANGE COUNTY SANITATION DISTRICT
WASTEWATER REFUNDING REVENUE OBLIGATIONS
SERIES 2022A**

January [], 2022

Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708-7018
Attn: Lorenzo Tyner

Ladies and Gentlemen:

We hereby offer to purchase all of the \$(PAR AMOUNT)* aggregate principal amount of the Orange County Sanitation District (the "District") Wastewater Refunding Revenue Obligations, Series 2022A (the "Revenue Obligations"), more particularly described in the Official Notice Inviting Bids, dated January [], 2022 (the "Official Notice Inviting Bids"), which is incorporated herein by reference, and made a part thereof, at a purchase price of \$_____. This offer is for Revenue Obligations evidencing interest at the rates and in the form of serial maturities as set forth in the table on the following page.

The bid is subject to acceptance not later than two hours after the expiration of the time established for the final receipt of bids.

Our calculation of the true interest cost, computed in accordance with the instructions in the Official Notice Inviting Bids, and which is considered to be informative only and not a part of the bid, is ___%.

With this bid we are providing the District a wire transfer in immediately available federal funds in the amount of \$_____ to an account specified by the District or its representative, in accordance with the Official Notice Inviting Bids.

We have noted that payment of the purchase price is to be made in immediately available Federal Funds at the time of delivery of the Revenue Obligations. If we are the successful bidder, we will (1) within 30 minutes after being notified of the verbal award of the Revenue Obligations, advise the District of the initial public offering prices of the Revenue Obligations; and (2) prior to delivery of the Revenue Obligations furnish a certificate, acceptable to Special Counsel, Norton Rose Fulbright US LLP, as to the "issue price" of the Revenue Obligations in the form specified in the Official Notice Inviting Bids.

* Preliminary, subject to change.

PRELIMINARY OFFICIAL STATEMENT DATED JANUARY __, 2022**NEW ISSUE—BOOK-ENTRY-ONLY****RATINGS:**

S&P: “[]”

Fitch: “[]”

Moody’s “[]”

(See “RATINGS” herein.)

In the opinion of Norton Rose Fulbright US LLP, Los Angeles, California, Special Counsel, under existing statutes, regulations, rulings and judicial decisions, and assuming compliance with certain covenants in the documents pertaining to the Revenue Obligations and requirements of the Internal Revenue Code of 1986, as described herein, the portion of each Installment Payment representing interest and distributed in respect of any Revenue Obligation is excluded from the gross income of the owners thereof for federal income tax purposes. In the further opinion of Special Counsel, the portion of each Installment Payment representing interest and distributed in respect of any Revenue Obligation is not an item of tax preference for purposes of the federal alternative minimum tax. Special Counsel is also of the opinion that, under existing law, the portion of each Installment Payment representing interest and distributed in respect of any Revenue Obligation is exempt from personal income taxes of the State of California. See “TAX MATTERS” herein.

[District Logo]

[\$[PAR AMOUNT]*

[DAC Logo]

**ORANGE COUNTY SANITATION DISTRICT
WASTEWATER REFUNDING REVENUE OBLIGATIONS
SERIES 2022A**

Dated: Date of Delivery**Due: as shown on the inside cover**

The \$[PAR AMOUNT]* Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”) are **certificates of participation that evidence direct, fractional undivided interests of the Owners thereof in certain installment payments** (the “Installment Payments”), and the interest thereon, to be made by the Orange County Sanitation District (the “District”) pursuant to the Installment Purchase Agreement, dated as of February 1, 2022 (the “Installment Purchase Agreement”), by and between the District and the Orange County Sanitation District Financing Corporation (the “Corporation”). Pursuant to the Master Agreement for District Obligations, dated as of August 1, 2000 (the “Master Agreement”), by and between the District and the Corporation, the District has established conditions and terms upon which obligations such as the Installment Payments, and the interest thereon, will be incurred and secured. Installment Payments under the Installment Purchase Agreement are payable solely from Net Revenues (as more fully described in the Master Agreement, the “Net Revenues”) as provided in the Installment Purchase Agreement, consisting primarily of all income and revenue received by the District from the operation or ownership of the Wastewater System of the District (the “Wastewater System”) remaining after payment of Maintenance and Operation Costs, as further described in “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS” herein. The Installment Purchase Agreement provides that the obligation of the District to pay the Installment Payments, and payments of interest thereon, and certain other payments required to be made in accordance with the Installment Purchase Agreement, solely from Net Revenues, is absolute and unconditional. See “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS” herein.

The proceeds of the Revenue Obligations, together with other funds of the District, will be used to (i) prepay all of the District’s Wastewater Refunding Revenue Obligations, Series 2012A, outstanding in the aggregate principal amount of \$100,645,000 (the “Refunded 2012A Obligations”), (ii) prepay the District’s Wastewater Refunding Revenue Obligations, Series 2012B, maturing on February 1, 2023 through 2026, inclusive, outstanding in the aggregate principal amount of \$6,670,000 (the “Refunded 2012B Obligations”), and (iii) pay the costs incurred in connection with the execution and delivery of the Revenue Obligations. See “REFUNDING PLAN” herein.

Interest evidenced by the Revenue Obligations will be payable semiannually on February 1 and August 1 of each year, commencing on August 1, 2022. See “THE REVENUE OBLIGATIONS” herein. The Revenue Obligations initially will be delivered only in book-entry form and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository

* Preliminary, subject to change.

for the Revenue Obligations. Individual purchases of the Revenue Obligations will be made in book-entry form only. Purchasers of Revenue Obligations will not receive physical certificates representing their ownership interests in the Revenue Obligations purchased. The Revenue Obligations will be delivered in denominations of \$5,000 and any integral multiple thereof. Payments of principal and interest evidenced by the Revenue Obligations are payable directly to DTC by U.S. Bank National Association, as trustee (the "Trustee"). Upon receipt of payments of such principal and interest, DTC will in turn distribute such payments to the beneficial owners of the Revenue Obligations. See APPENDIX E — "BOOK-ENTRY SYSTEM" herein.

THE OBLIGATION OF THE DISTRICT TO PAY THE INSTALLMENT PAYMENTS, AND THE INTEREST THEREON, AND OTHER PAYMENTS REQUIRED TO BE MADE BY IT UNDER THE INSTALLMENT PURCHASE AGREEMENT IS A SPECIAL OBLIGATION OF THE DISTRICT PAYABLE, IN THE MANNER PROVIDED IN THE INSTALLMENT PURCHASE AGREEMENT, SOLELY FROM NET REVENUES AND OTHER FUNDS PROVIDED FOR IN THE INSTALLMENT PURCHASE AGREEMENT, AND DOES NOT CONSTITUTE A DEBT OF THE DISTRICT OR OF THE STATE OF CALIFORNIA, OR OF ANY POLITICAL SUBDIVISION THEREOF, IN CONTRAVENTION OF ANY CONSTITUTIONAL OR STATUTORY DEBT LIMITATION OR RESTRICTION. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF CALIFORNIA, OR ANY POLITICAL SUBDIVISION THEREOF, IS PLEDGED TO THE PAYMENT OF THE INSTALLMENT PAYMENTS, OR THE INTEREST THEREON, OR OTHER PAYMENTS REQUIRED TO BE MADE UNDER THE INSTALLMENT PURCHASE AGREEMENT. SEE "SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS" HEREIN.

This cover page contains information intended for quick reference only. It is not a summary of this issue. Investors must read the entire Official Statement to obtain information essential to making an informed investment decision.

BIDS FOR THE PURCHASE OF THE REVENUE OBLIGATIONS WILL BE RECEIVED BY THE DISTRICT UNTIL __:__ A.M. NEW YORK TIME ON JANUARY __, 2022 UNLESS POSTPONED OR CANCELLED AS SET FORTH IN THE OFFICIAL NOTICE INVITING BIDS.

The Revenue Obligations are offered when, as and if executed and delivered and received by _____, Initial Purchaser, subject to the approval of Norton Rose Fulbright US LLP, Los Angeles, California, Special Counsel and Disclosure Counsel to the District, and certain other conditions. Certain legal matters will be passed upon for the District and the Corporation by Woodruff, Spradlin & Smart, a Professional Corporation, Costa Mesa, California. Public Resources Advisory Group, Los Angeles, California, has served as municipal advisor to the District in connection with the execution and delivery of the Revenue Obligations. It is anticipated that the Revenue Obligations in definitive form will be available for delivery through the book-entry facilities of DTC on or about February 1, 2021.

Dated: January __, 2022

MATURITY SCHEDULE

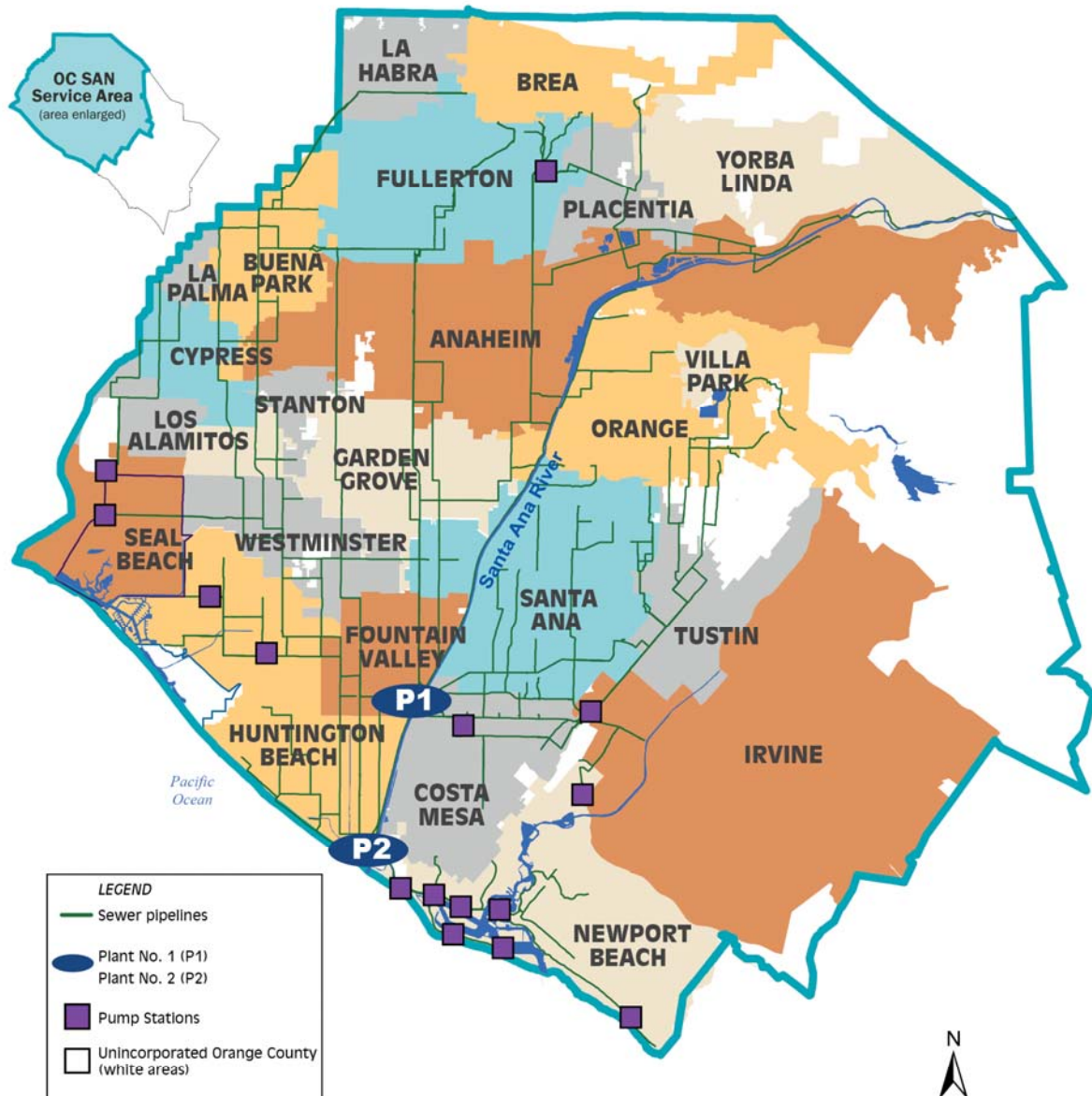
<u>Maturity Date</u> <u>(February 1)</u>	<u>Principal</u> <u>Amount</u>	<u>Interest</u> <u>Rate</u>	<u>Yield</u>	<u>Price</u>	<u>CUSIP[†]</u> <u>(Base No. _____)</u>
	\$	%	%		

[†] CUSIP is a registered trademark of the American Bankers Association. CUSIP Global Services (CGS) is managed on behalf of the American Bankers Association by S&P Global Market Intelligence. Copyright © 2021 CUSIP Global Services. All rights reserved. The CUSIP numbers are not intended to create a database and do not serve in any way as a substitute for CUSIP service. CUSIP numbers have been assigned by an independent company not affiliated with the District and are included solely for the convenience of the registered owners of the Revenue Obligations. None of the District, the Initial Purchaser or the Municipal Advisor are responsible for the selection or uses of these CUSIP numbers, and no representation is made as to their correctness on the applicable Revenue Obligations or as included herein. The CUSIP number for a specific maturity is subject to being changed after the issuance of the Revenue Obligations as a result of various subsequent actions including, but not limited to, a refunding in whole or in part or as a result of the procurement of secondary market portfolio insurance and other similar enhancement by investors that is applicable to all or a portion of certain maturities of the Revenue Obligations.

Orange County Sanitation District

Service Area and Treatment Plant Locations

in Orange County, California



DISCLAIMER: Map prepared by the Orange County Sanitation District. This map is intended for graphical representation only. No level of accuracy is claimed. Portions of this derived product contain geographical information copyrighted by Rand McNally 2013. All Rights Reserved. REVISED: 2018

ORANGE COUNTY SANITATION DISTRICT

Board of Directors

John Withers — (Chairperson) — *Irvine Ranch Water District*
Chad Wanke — (Vice Chairperson) — *Placentia*

Stephen Faessel — <i>Anaheim</i>	Brad Avery — <i>Newport Beach</i>
Glenn Parker — <i>Brea</i>	Kim Nichols — <i>Orange</i>
Art Brown — <i>Buena Park</i>	Johnathan Ryan Hernandez — <i>Santa Ana</i>
Paulo Morales — <i>Cypress</i>	Sandra Massa-Lavitt — <i>Seal Beach</i>
Patrick Harper — <i>Fountain Valley</i>	David Shawver — <i>Stanton</i>
Jesus J. Silva — <i>Fullerton</i>	Ryan Gallagher — <i>Tustin</i>
Steve Jones — <i>Garden Grove</i>	Chad Zimmerman — <i>Villa Park</i>
Kim Carr — <i>Huntington Beach</i>	Robert Ooten — <i>Costa Mesa Sanitary District</i>
Anthony Kuo — <i>Irvine</i>	Andrew Nguyen — <i>Midway City Sanitary District</i>
Rose Espinoza — <i>La Habra</i>	Brooke Jones — <i>Yorba Linda Water District</i>
Marshall Goodman — <i>La Palma</i>	Doug Chaffee — <i>Member of the Orange County Board of Supervisors</i>
Mark Chirco — <i>Los Alamitos</i>	

Executive Management of the District

James Herberg, *General Manager*
Robert Thompson, *Assistant General Manager, Director of Operations & Maintenance*
Lorenzo Tyner, *Assistant General Manager, Director of Finance and Administrative Services*
Kathleen T. Millea, *Director of Engineering*
Celia Chandler, *Director of Human Resources*
Lan Wiborg, *Director of Environmental Services*

Special Services

Special Counsel and Disclosure Counsel

Norton Rose Fulbright US LLP
Los Angeles, California

District General Counsel

Bradley R. Hogin
Woodruff, Spradlin & Smart, a Professional Corporation
Costa Mesa, California

Municipal Advisor

Public Resources Advisory Group
Los Angeles, California

Trustee

U.S. Bank National Association
Los Angeles, California

This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the Revenue Obligations by any person in any jurisdiction in which it is unlawful for such person to make such an offer, solicitation or sale. The information set forth herein has been provided by the Orange County Sanitation District (the "District") and other sources that are believed by the District to be reliable. No dealer, broker, salesperson or other person has been authorized to give any information or to make any representations other than those contained in this Official Statement. If given or made, such other information or representations must not be relied upon as having been authorized by the District, the Corporation or the Initial Purchaser in connection with any reoffering.

This Official Statement is not to be construed as a contract with the purchasers of the Revenue Obligations. Statements contained in this Official Statement which involve estimates, projections, forecasts or matters of opinion, whether or not expressly so described herein, are intended solely as such and are not to be construed as representations of facts.

The information and expressions of opinion herein are subject to change without notice and neither delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the District or the Corporation since the date hereof. This Official Statement is submitted with respect to the sale of the Revenue Obligations referred to herein and may not be reproduced or used, in whole or in part, for any other purpose, unless authorized in writing by the District. All summaries of the documents and laws are made subject to the provisions thereof and do not purport to be complete statements of any or all such provisions. Preparation of this Official Statement and its distribution have been duly authorized and approved by the District and the Corporation.

In connection with the offering of the Revenue Obligations, the Initial Purchaser in connection with any reoffering may over-allot or effect transactions which stabilize or maintain the market price of the Revenue Obligations at a level above that which might otherwise prevail in the open market. Such stabilizing, if commenced, may be discontinued at any time. The Initial Purchaser in connection with any reoffering may offer and sell the Revenue Obligations to certain dealers, institutional investors and others at prices lower than the public offering prices stated on the inside cover page hereof and such public offering prices may be changed from time to time by the Initial Purchaser.

Certain statements included or incorporated by reference in this Official Statement constitute forward-looking statements. Such statements are generally identifiable by the terminology used such as "plan," "expect," "estimate," "budget" or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
General.....	1
The District	2
Security and Sources of Payment for the Revenue Obligations	2
COVID-19 Pandemic.....	3
Continuing Disclosure	4
Miscellaneous	4
REFUNDING PLAN.....	5
ESTIMATED SOURCES AND USES OF FUNDS	6
THE REVENUE OBLIGATIONS	7
General.....	7
Prepayment Provisions.....	7
SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS	9
Installment Payments.....	9
Available Funds of the District.....	10
Net Revenues	10
Rate Stabilization Account	11
Allocation of Revenues.....	12
Rate Covenant.....	12
Limitations on Issuance of Additional Obligations	13
Insurance.....	15
Allocation of Installment Payments.....	15
THE DISTRICT.....	16
Background.....	16
Organization and Administration.....	17
Services.....	18
Service Area.....	19
Employees.....	20
Retirement Plan.....	21
Other Post-Employment Benefits	23
Risk Management	23
Existing Facilities	24
Permits, Licenses and Other Regulations	26
District Planning	27
Capital Improvement Program.....	28
Groundwater Replenishment System.....	29
Biosolids Management.....	29
Urban Runoff	31
Integrated Emergency Response Program	31
Strategic Planning	33
Climate Issues.....	34
DISTRICT REVENUES.....	35

TABLE OF CONTENTS
(continued)

	<u>Page</u>
Sewer Service Charges	35
Additional Revenues.....	38
Wastewater Treatment History	40
Customers	40
Assessed Valuation.....	42
Tax Levies and Delinquencies	43
Budgetary Process.....	44
Reserves	45
Summary of Operating Data	46
Forecasted Operating Data.....	48
Management’s Discussion and Analysis of Operating Data.....	50
Investment of District Funds.....	51
FINANCIAL OBLIGATIONS	52
Existing Indebtedness	52
Anticipated Financings	52
THE CORPORATION	53
LIMITATIONS ON TAXES AND REVENUES.....	53
Article XIII A of the California Constitution.....	53
Legislation Implementing Article XIII A	54
Article XIII B of the California Constitution.....	54
Proposition 1A and Proposition 22	55
Article XIII C and Article XIII D of the California Constitution	56
Other Initiative Measures.....	58
LEGAL MATTERS.....	58
MUNICIPAL ADVISOR.....	58
ABSENCE OF LITIGATION	58
FINANCIAL STATEMENTS	59
TAX MATTERS.....	59
Federal Tax Exemption.....	59
Tax Accounting Treatment of Bond Premium and Original Issue Discount	60
Information Reporting and Backup Withholding	61
State Tax Exemption.....	61
Future Developments.....	61
CONTINUING DISCLOSURE.....	61
RATINGS	62
PURCHASE AND REOFFERING	62
MISCELLANEOUS	62

TABLE OF CONTENTS
(continued)

	<u>Page</u>
APPENDIX A – ANNUAL COMPREHENSIVE FINANCIAL REPORT OF THE ORANGE COUNTY SANITATION DISTRICT FOR THE YEAR ENDED JUNE 30, 2021.....	A-1
APPENDIX B – THE COUNTY OF ORANGE – ECONOMIC AND DEMOGRAPHIC INFORMATION	B-1
APPENDIX C – SUMMARY OF PRINCIPAL LEGAL DOCUMENTS	C-1
APPENDIX D – FORM OF CONTINUING DISCLOSURE AGREEMENT.....	D-1
APPENDIX E – BOOK-ENTRY SYSTEM.....	E-1
APPENDIX F – FORM OF APPROVING OPINION OF SPECIAL COUNSEL	F-1

OFFICIAL STATEMENT

[\$[PAR AMOUNT]]* **ORANGE COUNTY SANITATION DISTRICT** **WASTEWATER REFUNDING REVENUE OBLIGATIONS** **SERIES 2022A**

INTRODUCTION

This introduction contains only a brief summary of certain of the terms of the Revenue Obligations being offered and a brief description of the Official Statement. All statements contained in this introduction are qualified in their entirety by reference to the entire Official Statement. References to, and summaries of, provisions of the Constitution and laws of the State of California (the “State”) and any documents referred to herein do not purport to be complete and such references are qualified in their entirety by reference to the complete provisions. All capitalized terms used in this Official Statement and not otherwise defined herein have the meanings set forth in the Trust Agreement, the Installment Purchase Agreement and the Master Agreement (each, as hereinafter defined). See APPENDIX C – “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS – Definitions” herein.

General

This Official Statement, including the cover page and all appendices hereto, provides certain information concerning the sale and delivery of $[\text{PAR AMOUNT}]^*$ aggregate principal amount of the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), which are **certificates of participation evidencing direct, fractional undivided interests in certain installment payments** (the “Installment Payments”) and the interest thereon, to be made by the Orange County Sanitation District (the “District”) pursuant to the Installment Purchase Agreement, dated as of February 1, 2022 (the “Installment Purchase Agreement”), by and between the District and the Orange County Sanitation District Financing Corporation (the “Corporation”). Unless the context clearly indicates to the contrary, a reference herein to either of the Installment Purchase Agreement or the Revenue Obligations is intended to refer to the corresponding interest in the Installment Purchase Agreement. Pursuant to the Master Agreement for District Obligations, dated as of August 1, 2000 (the “Master Agreement”), by and between the District and the Corporation, the District has established and declared the conditions and terms upon which obligations such as the Installment Purchase Agreement, and the Installment Payments and the interest thereon, will be incurred and secured. Installment Payments under the Installment Purchase Agreement are payable solely from Net Revenues (as defined hereinafter) as provided in the Installment Purchase Agreement, consisting primarily of all income and revenue received by the District from the operation or ownership of the Wastewater System of the District (the “Wastewater System”) remaining after payment of Maintenance and Operation Costs, as further described in “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS” herein.

The Revenue Obligations are to be executed and delivered pursuant to a Trust Agreement, dated as of February 1, 2022 (the “Trust Agreement”), by and among the District, the Corporation and U.S. Bank National Association, as trustee (the “Trustee”). Proceeds from the sale of the Revenue Obligations, together with other funds of the District, will be used to (i) prepay all of the District’s Wastewater Refunding Revenue Obligations, Series 2012A, outstanding in the aggregate principal amount of \$100,645,000 (the “Refunded 2012A Obligations”), (ii) prepay the District’s Wastewater Refunding Revenue Obligations, Series 2012B, maturing on February 1, 2023 through 2026, inclusive, outstanding

* Preliminary, subject to change.

in the aggregate principal amount of \$6,670,000 (the “Refunded 2012B Obligations”), and (iii) pay the costs incurred in connection with the execution and delivery of the Revenue Obligations. See “REFUNDING PLAN” herein.

The Revenue Obligations will be executed and delivered in the form of fully registered certificates of participation, dated as of the date of initial delivery thereof and will mature on February 1 in each such year as set forth on the inside cover page hereof. Interest evidenced by the Revenue Obligations will be payable semiannually on February 1 and August 1 of each year, commencing on August 1, 2022. See “THE REVENUE OBLIGATIONS” herein. The Revenue Obligations initially will be delivered only in book-entry form and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository for the Revenue Obligations. The Revenue Obligations will be delivered in denominations of \$5,000 and any integral multiple thereof. So long as the Revenue Obligations are in the DTC book-entry system, the interest, principal, purchase price and prepayment premiums, if any, due with respect to the Revenue Obligations will be payable by the Trustee, or its agent, to DTC or its nominee. DTC, in turn, will make payments pursuant to its procedures as described under APPENDIX E – “BOOK-ENTRY SYSTEM” herein.

The District

The District is a public agency responsible for regional wastewater collection, treatment and disposal. The District is the sixth largest wastewater discharger in the United States. The District provides service to an area with a population of approximately 2.6 million people in the northern and central portion of the County of Orange (the “County”), in a service area of approximately 479 square miles, treating an average of 182 million gallons per day (“mgd”) of wastewater in Fiscal Year 2020-21. See “THE DISTRICT,” “DISTRICT REVENUES” and “FINANCIAL OBLIGATIONS” herein.

Security and Sources of Payment for the Revenue Obligations

The Revenue Obligations, which are certificates of participation, evidence direct, fractional undivided interests in the Installment Payments, and the interest thereon, paid by the District pursuant to the Installment Purchase Agreement. The obligation of the District to pay the Installment Payments and the interest thereon and other payments required to be made by it under the Installment Purchase Agreement is a special obligation of the District payable, in the manner provided under the Installment Purchase Agreement, solely from Net Revenues, and other funds as provided in the Installment Purchase Agreement. Net Revenues generally consist of all income and revenue received by the District from the operation or ownership of the Wastewater System remaining after payment of Maintenance and Operation Costs, all as further provided in the Master Agreement. The Installment Purchase Agreement constitutes a Senior Obligation and, as such, is subject to the provisions of the Master Agreement and is afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement.

The District currently has Outstanding Senior Obligations payable from Net Revenues on a parity with the Installment Payments under the Installment Purchase Agreement. See “ESTIMATED SOURCES AND USES OF FUNDS,” “FINANCIAL OBLIGATIONS – Existing Indebtedness” and “THE DISTRICT” herein and APPENDIX C – “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS – Master Agreement” attached hereto. The District has no Subordinate Obligations currently outstanding.

Pursuant to the Master Agreement, the District will, to the extent permitted by law, fix, prescribe and collect fees and charges for the services and facilities of the Wastewater System which will be at least sufficient to yield during each Fiscal Year (a) Net Revenues equal to 125% of Debt Service on Senior

Obligations for such Fiscal Year and (b) Net Operating Revenues equal to 100% of Debt Service on all Obligations for such Fiscal Year. The District may make adjustments from time to time in such fees and charges and may make such classification thereof as it deems necessary, but shall not reduce the fees and charges then in effect unless the Revenues and Net Revenues from such reduced fees and charges will at all times be sufficient to meet the requirements of the Master Agreement. See “SECURITY AND SOURCE OF PAYMENT FOR THE REVENUE OBLIGATIONS – Rate Covenant” herein.

The obligation of the District to pay the Installment Payments and the interest thereon, and other payments required to be made by it under the Installment Purchase Agreement is a special obligation of the District payable, in the manner provided in the Installment Purchase Agreement, solely from Net Revenues and other funds provided for in the Installment Purchase Agreement, and does not constitute a debt of the District or of the State, or of any political subdivision thereof, in contravention of any constitutional or statutory debt limitation or restriction. Neither the faith and credit nor the taxing power of the District or the State or any political subdivision thereof, is pledged to the payment of the Installment Payments, or the interest thereon, or other payments required to be made under the Installment Purchase Agreement. The Installment Purchase Agreement constitutes a Senior Obligation and, as such, is subject to the provisions of the Master Agreement and is afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement. See “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS” herein.

COVID-19 Pandemic

The ongoing spread of the COVID-19 coronavirus pandemic, and responses intended to slow its spread, may result in material adverse impacts to the Wastewater System and its finances. There can be no assurances that the spread of the virus and related public health orders and requirements imposed by the State of California, or other State or local mandates and/or other responses intended to slow its spread will not materially adversely impact the revenues received by the Wastewater System, particularly amounts tied to economic activity in the District’s service area.

The District is monitoring the COVID-19 pandemic but is not yet able to fully predict the effect it will have on the financial performance or operations of the Wastewater System. The COVID-19 pandemic and the governmental actions to respond to it resulted in a significant contraction of the national, state and local economies, including a dramatic increase in unemployment rates, and these economies have not fully recovered. In addition, stock markets in the U.S. and globally experienced sharp declines in market value following the onset of the outbreak that were attributed to COVID-19 concerns and, although rebounds in the market have since occurred, increased volatility in the financial markets continues. It is widely expected that global, national and local economies will continue to be negatively affected by the COVID-19 pandemic, at least for some period of time.

To date, the District and its Wastewater System have not experienced any material adverse impact from COVID-19. In light of the pandemic’s negative impacts on its service area, the District deferred a scheduled 1.2% rate increase for fiscal year 2020-21 but implemented the 1.2% increase scheduled in fiscal year 2021-22 and expects to implement the 1.2% increase scheduled in fiscal year 2022-23 as approved.

The District cannot predict (i) the duration or ultimate extent of the COVID-19 pandemic; (ii) to what extent the COVID-19 pandemic may affect the operations and revenues of the Wastewater System in the future; (iii) to what extent the COVID-19 pandemic may ultimately disrupt the local, State, national or global economy, manufacturing or supply chain, or whether any such disruption will adversely impact Wastewater System the cost, sources of funds, schedule or implementation of any capital improvements,

or other Wastewater System operations; (iv) to what extent the District may desire to, or need to, provide customer assistance measures or deferrals, forbearances, adjustments or other changes to its customers or its billing and collection procedures; (v) if and to what extent the COVID-19 pandemic may negatively impact the market value of assets held to fund the District's pension plans, requiring future unanticipated increases in required plan contributions or (vi) whether any of the foregoing may have a material adverse effect on the finances and operations of Wastewater System. Prospective investors should consider that the restrictions and limitations instituted related to COVID-19 may increase (even after they are decreased), and the upheaval to the national and global economies may continue and/or be exacerbated, at least over the near term, and the recovery may be prolonged, and therefore, COVID-19 may adversely impact Wastewater System revenues.

Future ad valorem tax revenues available to pay Installment Payments could be negatively impacted by COVID-19, including because upcoming property tax installments could be deferred, or some taxpayers may be unable to make their property tax payments. Negative impacts on ad valorem tax revenue could be offset because the County operates under the Teeter Plan, which shields the District's ad valorem tax revenues from delinquencies; however, the County is under no legal obligation to maintain the Teeter Plan in the future.

Continuing Disclosure

The District has covenanted for the benefit of holders and beneficial owners of the Revenue Obligations (a) to provide certain financial information and operating data (the "Annual Report") relating to the District and the property in the District not later than eight months after the end of the District's Fiscal Year (which currently would be March 1), commencing with the report for the 2021-22 Fiscal Year, and (b) to provide notices of the occurrence of certain enumerated events. The specific nature of the information to be contained in the Annual Report or the notices of enumerated events is set forth in the Continuing Disclosure Agreement. See "CONTINUING DISCLOSURE" herein and APPENDIX D – "FORM OF CONTINUING DISCLOSURE AGREEMENT."

Miscellaneous

The descriptions herein of the Trust Agreement, the Master Agreement, the Installment Purchase Agreement, the Continuing Disclosure Agreement and any other agreements relating to the Revenue Obligations are qualified in their entirety by reference to such documents. Copies of the Trust Agreement, the Master Agreement and the Installment Purchase Agreement are on file and available for inspection at the corporate trust office of U.S. Bank National Association, Los Angeles, California Attention: Corporate Trust.

[Remainder of page intentionally left blank.]

REFUNDING PLAN

A portion of the net proceeds from the sale of the Revenue Obligations, together with other funds of the District, will be used to prepay on February 1, 2022 (the “Prepayment Date”) all of the installment payments to be made by the District in connection with the Refunded 2012A Obligations and the Refunded 2012B Obligations. The Refunded 2012A Obligations and the Refunded 2012B Obligations are further described in the respective tables below.

Under the terms of the Trust Agreement, dated as of March 1, 2012 (the “2012A Trust Agreement”), by and between the District and U.S. Bank National Association, as successor trustee (the “2012A Trustee”), pursuant to which the Refunded 2012A Obligations were executed and delivered, the prepayment of the installment payments related to the Refunded 2012A Obligations will be effected by depositing a portion of the proceeds of the Revenue Obligations, together with other available moneys, into the Installment Payment Fund established under the 2012A Trust Agreement (the “2012A Installment Payment Fund”).

The amounts held in the 2012A Installment Payment Fund will be sufficient to prepay on the Prepayment Date the unpaid installment payments, without premium, related to the Refunded 2012A Obligations, and through distribution of such prepayment to prepay the Refunded 2012A Obligations, all in accordance with the terms of the 2012A Trust Agreement and the Refunded 2012A Obligations. The amounts deposited in the 2012A Installment Payment Fund will be held in trust solely for the Refunded 2012A Obligations and will not be available to pay the principal and interest evidenced by the Revenue Obligations or any obligations other than the Refunded 2012A Obligations.

Under the terms of the Trust Agreement, dated as of August 1, 2012 (the “2012B Trust Agreement”), by and between the District and U.S. Bank National Association, as trustee (the “2012B Trustee”), pursuant to which the Refunded 2012B Obligations were executed and delivered, the prepayment of the installment payments related to the Refunded 2012B Obligations will be effected by depositing a portion of the proceeds of the Revenue Obligations, together with other available moneys, into the Installment Payment Fund established under the 2012B Trust Agreement (the “2012B Installment Payment Fund”).

The amounts held in the 2012B Installment Payment Fund will be sufficient to prepay on the Prepayment Date the unpaid installment payments, without premium, related to the Refunded 2012B Obligations, and through distribution of such prepayment to prepay the Refunded 2012B Obligations, all in accordance with the terms of the 2012B Trust Agreement and the Refunded 2012B Obligations. The amounts deposited in the 2012B Installment Payment Fund will be held in trust solely for the Refunded 2012B Obligations and will not be available to pay the principal and interest evidenced by the Revenue Obligations or any obligations other than the Refunded 2012B Obligations.

[Remainder of page intentionally left blank.]

Refunded 2012A Obligations
Prepayment Price: 100%
Prepayment Date: February 1, 2022

Maturity Date (February 1)	Principal Amount Outstanding	CUSIP Number (68428T)
2031	\$28,990,000	AR8
2032	29,055,000	AS6
2033	42,600,000	AT4

Refunded 2012B Obligations
Prepayment Price: 100%
Prepayment Date: February 1, 2022

Maturity Date (February 1)	Principal Amount Outstanding	CUSIP Number (68428T)
2023	\$1,605,000	AY3
2024	1,630,000	AZ0
2025	1,715,000	BA4
2026	1,720,000	BB2

ESTIMATED SOURCES AND USES OF FUNDS

The estimated sources and uses of funds in connection with the execution and delivery of the Revenue Obligations are presented below.

Sources

Principal Amount of Revenue Obligations	\$
Premium	
District Equity Contribution (2012A)	
District Equity Contribution (2012B)	
Total Sources	\$

Uses

Deposit to 2012A Installment Payment Fund	\$
Deposit to 2012B Installment Payment Fund	
Costs of Issuance ⁽¹⁾	
Total Uses	\$

⁽¹⁾ Costs of Issuance include, among other things, the Initial Purchaser's discount, fees and expenses of rating agencies, Special Counsel and Disclosure Counsel, Municipal Advisor and the initial fees of the Trustee.

THE REVENUE OBLIGATIONS

General

The Revenue Obligations will be prepared in the form of fully registered certificates of participation in denominations of \$5,000 and any integral multiple thereof. The Revenue Obligations will be dated as of the date of initial delivery thereof and will mature on February 1 in such years as set forth on the inside cover page hereof. Interest evidenced by the Revenue Obligations will be payable semiannually on February 1 and August 1 of each year, commencing on August 1, 2022. The Revenue Obligations initially will be delivered only in book-entry form and will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), which will act as securities depository for the Revenue Obligations. Individual purchases of the Revenue Obligations will be made in book-entry form only. Purchasers of Revenue Obligations will not receive physical certificates representing their ownership interests in the Revenue Obligations purchased.

The interest evidenced by the Revenue Obligations shall be payable on each Interest Payment Date to and including their respective Principal Payment Dates or prepayment prior thereto, and shall represent the sum of the interest on the Installment Payments coming due on the Interest Payment Dates in each year. The principal evidenced by the Revenue Obligations shall be payable on their respective Principal Payment Dates in each year and shall represent the Installment Payments coming due on the Principal Payment Dates in each year. Each Revenue Obligation shall evidence interest from the Interest Payment Date next preceding its date of execution to which interest has been paid in full, unless such date of execution shall be after a Record Date and on or prior to the following Interest Payment Date, in which case such Revenue Obligation shall evidence interest from such Interest Payment Date, or unless such date of execution shall be on or prior to July 15, 2022, in which case such Revenue Obligation shall represent interest from its date of initial delivery. Notwithstanding, the foregoing, if, as shown by the records of the Trustee, interest evidenced by the Revenue Obligations shall be in default, each Revenue Obligation shall evidence interest from the last Interest Payment Date to which such interest has been paid in full or duly provided for. Interest evidenced by the Revenue Obligations shall be computed on the basis of a 360-day year consisting of twelve 30-day months. See APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Trust Agreement.”

Payments of principal and interest evidenced by the Revenue Obligations are payable directly to DTC by U.S. Bank National Association, as trustee. Upon receipt of payments of such principal and interest, DTC will in turn distribute such payments to the beneficial owners of the Revenue Obligations. So long as the Revenue Obligations are held in the DTC book-entry system, the interest, principal, purchase price and prepayment premiums, if any, due with respect to the Revenue Obligations will be payable by the Trustee, or its agent, to DTC or its nominee. DTC, in turn, will make payments pursuant to its procedures as described under APPENDIX E – “BOOK-ENTRY SYSTEM” herein.

Prepayment Provisions

Optional Prepayment. The Revenue Obligations maturing on or after February 1, 2032 are subject to optional prepayment prior to their stated Principal Payment Dates, on any date on or after February 1, 2031, in whole or in part, in Authorized Denominations, from and to the extent of prepaid Installment Payments paid pursuant to the Installment Purchase Agreement or from any other source of available funds, any such prepayment to be at a price equal to the principal evidenced by the Revenue Obligations to be prepaid, plus accrued interest evidenced thereby to the date fixed for prepayment, without premium.

Selection of Revenue Obligations for Prepayment. Whenever less than all the Outstanding Revenue Obligations are to be prepaid on any one date pursuant to provisions of the Trust Agreement with respect to optional prepayment of Revenue Obligations, the Trustee shall select the Revenue Obligations to be prepaid among Revenue Obligations with different Principal Payment Dates as directed in a Written Request of the District. Whenever less than all the Outstanding Revenue Obligations with the same stated Principal Payment Date are to be prepaid on any one date in accordance with the Trust Agreement, the Trustee shall select the Revenue Obligations with such Principal Payment Date to be prepaid as directed in a Written Request of the District, or at the discretion of the District by lot in any manner that the Trustee deems fair and appropriate, which decision shall be final and binding upon the District and the Owners. The Trustee shall promptly notify the District in writing of the numbers of the Revenue Obligations so selected for prepayment on such date. For purposes of such selection, any Revenue Obligation may be prepaid in part in Authorized Denominations.

Notice of Prepayment. When prepayment of Revenue Obligations is authorized pursuant to the Trust Agreement, the Trustee shall give notice, at the expense of the District, of the prepayment of the Revenue Obligations. The notice of prepayment shall specify (a) the Revenue Obligations or designated portions thereof (in the case of prepayment of the Revenue Obligations in part but not in whole) which are to be prepaid, (b) the date of prepayment, (c) the place or places where the prepayment will be made, including the name and address of any paying agent, (d) the prepayment price, (e) the CUSIP numbers assigned to the Revenue Obligations to be prepaid, (f) the numbers of the Revenue Obligations to be prepaid in whole or in part and, in the case of any Revenue Obligation to be prepaid in part only, the principal evidenced by such Revenue Obligation to be prepaid, and (g) the interest rate and stated Principal Payment Date of each Revenue Obligation to be prepaid in whole or in part. Such notice of prepayment shall further state that on the specified date there shall become due and payable upon each Revenue Obligation or portion thereof being prepaid the prepayment price and that from and after such date interest evidenced thereby shall cease to accrue and be payable. With respect to any notice of optional prepayment of Revenue Obligations, unless at the time such notice is given the Revenue Obligations to be prepaid shall be deemed to have been paid within the meaning of the Trust Agreement, such notice shall state that such prepayment is conditional upon receipt by the Trustee, on or prior to the date fixed for such prepayment, of moneys sufficient to pay for the prepayment price of the Revenue Obligations to be prepaid, and that if such moneys shall not have been so received said notice shall be of no force and effect and the District shall not be required to prepay such Revenue Obligations. In the event a notice of prepayment of Revenue Obligations contains such a condition and such moneys are not so received, the prepayment of Revenue Obligations as described in the conditional notice of prepayment shall not be made and the Trustee shall, within a reasonable time after the date on which such prepayment was to occur, give notice to the persons and in the manner in which the notice of prepayment was given, that such moneys were not so received and that there shall be no prepayment of Revenue Obligations pursuant to such notice of prepayment.

The Trustee shall, at least 20 but not more than 60 days prior to any prepayment date, give notice of prepayment to the respective Owners of Revenue Obligations designated for prepayment by first-class mail, postage prepaid, at their addresses appearing on the registration books maintained by the Trustee as of the close of business on the day before such notice of prepayment is given.

The actual receipt by the Owner of any notice of such prepayment shall not be a condition precedent to prepayment, and neither failure to receive such notice nor any defect therein shall affect the validity of the proceedings for the prepayment of such Revenue Obligations or the cessation of interest evidenced thereby on the date fixed for prepayment.

Effect of Prepayment. If notice of prepayment has been duly given as aforesaid and moneys for the payment of the prepayment price of the Revenue Obligations to be prepaid are held by the Trustee,

then on the prepayment date designated in such notice, the Revenue Obligations so called for prepayment shall become payable at the prepayment price specified in such notice; and from and after the date so designated, interest evidenced by the Revenue Obligations so called for prepayment shall cease to accrue, such Revenue Obligations shall cease to be entitled to any benefit or security hereunder and the Owners of such Revenue Obligations shall have no rights in respect thereof except to receive payment of the prepayment price thereof. The Trustee shall, upon surrender for payment of any of the Revenue Obligations to be prepaid, pay such Revenue Obligations at the prepayment price thereof, and such moneys shall be pledged to such payment. See “ – Notice of Prepayment” above regarding cancellation of prepayment where notice of prepayment is given but moneys for the payment of the prepayment price of the Revenue Obligations to be prepaid are not held by the Trustee on the prepayment date designated in such notice.

SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS

Installment Payments

Pursuant to the Installment Purchase Agreement, the Project will be reacquired by the District from the Corporation. The District has covenanted to, subject to any rights of prepayment under the Installment Purchase Agreement, pay to the Corporation, solely from Net Revenues and from no other sources, the Purchase Price in Installment Payments, with interest thereon, as provided in the Installment Purchase Agreement. Pursuant to the Master Agreement, the District has established and declared the conditions and terms upon which obligations such as the Installment Purchase Agreement, and the Installment Payments and the interest thereon payable under the Installment Purchase Agreement, will be incurred and secured. The obligation of the District to make the Installment Payments, and payments of interest thereon, and other payments required to be made by it under the Installment Purchase Agreement, solely from Net Revenues, is absolute and unconditional, and until such time as the Installment Payments, payments of interest thereon, and such other payments shall have been paid in full (or provision for the payment thereof shall have been made pursuant to the Installment Purchase Agreement), the District has covenanted that it will not discontinue or suspend any Installment Payments when due, whether or not the Project or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced or curtailed or terminated in whole or in part, and such Installment Payments, payments of interest thereon, and other payments shall not be subject to reduction whether offset or otherwise and shall not be conditional upon the performance or nonperformance by any party of any agreement or any cause whatsoever. The District’s obligation to make Installment Payments from Net Revenues is on a parity with the District’s obligation to make payments with respect to its Outstanding Senior Obligations. See “Net Revenues” below. Pursuant to the Trust Agreement, the Corporation has assigned to the Trustee for the benefit of the Owners of the Revenue Obligations substantially all of its rights, title and interest in and to the Installment Purchase Agreement, including its right to receive Installment Payments and the interest thereon.

The District has certain Existing Senior Obligations Outstanding payable from Net Revenues on a parity with the Installment Payments under the Installment Purchase Agreement. The term “Existing Senior Obligations” as used in this Official Statement refers to the Installment Purchase Agreements relating to the District’s currently Outstanding Senior Obligations, as set forth on Table 16 under the caption “FINANCIAL OBLIGATIONS – Existing Indebtedness” herein. The term “Senior Obligations” as used in this Official Statement refers to the Existing Senior Obligations and to any additional Senior Obligations, such as the Installment Purchase Agreement, that may be made payable on a parity basis to the Installment Payments as provided in the Master Agreement. Senior Obligations, together with any Subordinate Obligations payable on a subordinate basis to the Installment Payments incurred as provided in the Master Agreement, are referred to collectively as the “Obligations.” The District has no Subordinate Obligations currently outstanding. See “FINANCIAL OBLIGATIONS — Existing

Indebtedness” herein and APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement” attached hereto.

The obligation of the District to pay the Installment Payments, and the interest thereon, and other payments required to be made by it under the Installment Purchase Agreement and Master Agreement, is a special obligation of the District payable, in the manner provided in the Installment Purchase Agreement, solely from Net Revenues and other funds provided for in the Installment Purchase Agreement, and does not constitute a debt of the District, the State or any political subdivision thereof, in contravention of any constitutional or statutory debt limitation or restriction. Neither the faith and credit nor the taxing power of the District, the State or any political subdivision thereof, is pledged to the payment of the Installment Payments, or the interest thereon, or other payments required to be made under the Installment Purchase Agreement. The Installment Purchase Agreement constitutes a Senior Obligation and, as such, is subject to the provisions of the Master Agreement and is afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement. See “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS” herein.

Available Funds of the District

As Senior Obligations under the Master Agreement, the Installment Payments are payable from and secured by a pledge of Net Revenues. Should Net Revenues prove insufficient, the Installment Purchase Agreement further provides that the Installment Payments are payable from any other lawfully available funds of the District. The primary lawfully available funds of the District are its reserve funds, other than trustee-held amounts required to be in any Obligation Reserve Fund securing certain of the District’s Senior Obligations, as described in the Master Agreement. At June 30, 2021, the District’s Debt Service Required Reserves totaled \$94 million, of which \$0 were trustee-held amounts in Obligation Reserve Funds under the Master Agreement. See APPENDIX C – “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS – Master Agreement” attached hereto. District reserve funds are maintained in accordance with the District’s reserve policy. See “DISTRICT REVENUES – Reserves.” Available reserves at June 30, 2021 were approximately \$961 million. See “DISTRICT REVENUES — Reserves,” “— Summary of Operating Data” and “— Projected Operating Data.”

Net Revenues

The District is obligated to make Installment Payments from, among other things, Net Revenues as provided in the Master Agreement, which consist of Revenues remaining after payment of costs paid by the District for maintaining and operating the Wastewater System (“Maintenance and Operation Costs”). Revenues are defined in the Master Agreement to mean, for any period, all income and revenue received by the District during such period from the operation or ownership of the Wastewater System, determined in accordance with generally accepted accounting principles, including all fees and charges received during such period for the services of the Wastewater System, investment income received during such period (but only to the extent that such investment income is generally available to pay costs with respect to the Wastewater System, including Maintenance and Operation Costs), Net Proceeds of business interruption insurance received during such period, *ad valorem* taxes received during such period, payments under the Agreement Acquiring Ownership Interests, Assigning Rights and Establishing Obligations, entered into on February 13, 1986, and amendment No. 1 thereto dated December 10, 1986 (the “IRWD Agreement”), by and between predecessor County Sanitation District No. 14 of Orange County and the Irvine Ranch Water District (the “IRWD”) received during such period and all other money received during such period howsoever derived by the District from the operation or ownership of the Wastewater System or arising from the Wastewater System (including any standby or availability charges), but excluding (a) Capital Facilities Capacity Charges, (b) payments received under Financial

Contracts, and (c) refundable deposits made to establish credit and advances or contributions in aid of construction (which, for purposes of the Master Agreement, shall not include payments under the IRWD Agreement); provided, however, that (i) Revenues shall be increased by the amounts, if any, transferred during such period from the Rate Stabilization Account to the Revenue Account and shall be decreased by the amounts, if any, transferred during such period from the Revenue Account to the Rate Stabilization Account, and (ii) Revenues shall include Capital Facilities Capacity Charges collected during such period to the extent that such Capital Facilities Capacity Charges could be properly expended on a Capital Facilities Capacity Charge Eligible Project for which the proceeds of Senior Obligations were used or are available to be used. Any Federal Subsidy payments received by the District will constitute Revenues as defined in the Master Agreement. See “DISTRICT REVENUES — Additional Revenues” herein.

The District’s obligation to make the Installment Payments from its Net Revenues is on a parity with the District’s obligation to make payments with respect to its other outstanding obligations described as Senior Obligations and all Reimbursement Obligations with respect to Senior Obligations, as provided in the Master Agreement. The Installment Purchase Agreement constitutes a Senior Obligation and, as such, is subject to the provisions of the Master Agreement and is afforded all of the advantages, benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement. Pursuant to the Master Agreement, the District pledges all Net Revenues to the payment of the Senior Obligations and Reimbursement Obligations with respect to Senior Obligations, and the Net Revenues will not be used for any other purpose while any of the Senior Obligations or Reimbursement Obligations with respect to Senior Obligations remain unpaid; provided, however, that out of the Net Revenues there may be apportioned such sums for such purposes as are expressly permitted by the Master Agreement. This pledge constitutes a first lien on the Net Revenues for the payment of the Senior Obligations and Reimbursement Obligations with respect to Senior Obligations. The term “Senior Obligations” generally means all revenue bonds or notes (including bond anticipation notes and commercial paper) of the District authorized, issued, executed and delivered under and pursuant to applicable law, the Installment Purchase Agreement, and all other contracts (including financial contracts) or leases of the District authorized and executed by the District under and pursuant to applicable law, including, without limitation, installment, lease or other payments which are, in accordance with the provisions of the Master Agreement, payable from Net Revenues on a parity with the payments under the Master Agreement.

The District may at any time incur Subordinate Obligations payable on a subordinate basis to the Installment Payments as provided in the Master Agreement; provided, however, that prior to incurring such Subordinate Obligations, the District shall have determined that the incurrence thereof will not materially adversely affect the District’s ability to comply with the requirements of the Master Agreement. The District may at any time incur Reimbursement Obligations with respect to Subordinate Obligations. For a description of the District’s Outstanding Senior Obligations and Subordinate Obligations, see “FINANCIAL OBLIGATIONS — Existing Indebtedness” herein. There are currently no Subordinate Obligations or Reimbursement Obligations with respect to Subordinate Obligations outstanding.

The District may, in connection with the incurrence of Subordinate Obligations, pledge Net Revenues to the payment of Subordinate Obligations and Reimbursement Obligations with respect to Subordinate Obligations; provided, however, that such pledge, and any lien created thereby, shall be junior and subordinate to the pledge of, and lien on, Net Revenues for the payment of Senior Obligations and Reimbursement Obligations with respect to Senior Obligations.

Rate Stabilization Account

To avoid fluctuations in its fees and charges of the Wastewater System, from time to time the District may deposit in the Rate Stabilization Account from Net Revenues such amounts as the District

deems necessary or appropriate. From time to time, the District may also transfer moneys from the Rate Stabilization Account to the Revenue Account to be used by the District, first to pay all Maintenance and Operations Costs as and when the same shall be due and payable. In addition, any such amount transferred from the Rate Stabilization Account to the Revenue Account by the District is included as Revenues for any period, but such transferred amount is excluded from determining Operating Revenues for any period. Revenues will be decreased by the amounts, if any, transferred from the Revenue Account to the Rate Stabilization Account. There are presently no funds in the Rate Stabilization Account.

Allocation of Revenues

To carry out and effectuate the pledge of Net Revenues under the Master Agreement as described above, the District agrees and covenants that all Operating Revenues received by the District will be deposited when and as received in the Revenue Account. Additionally, amounts may, from time to time as the District deems necessary or appropriate, be transferred from the Rate Stabilization Account and deposited in the Revenue Account, as described above under “— Rate Stabilization Account” above. The District will pay from the Revenue Account all Maintenance and Operations Costs (including amounts reasonably required to be set aside in contingency reserves for Maintenance and Operations Costs, the payment of which is not immediately required) as and when the same shall be due and payable.

After having paid, or having made provisions for the payment of, Maintenance and Operations Costs, the District shall set aside and deposit or transfer, as the case may be, from the Revenue Account such amounts at such times as provided in the Master Agreement in the following order of priority:

- (1) Senior Obligation Payment Account;
- (2) Senior Obligation Reserve Funds (the Revenue Obligations are not secured by any Reserve Fund);
- (3) Subordinate Obligation Payment Account;
- (4) Subordinate Obligation Reserve Funds; and
- (5) Rate Stabilization Account.

Amounts required or permitted to be deposited or transferred as described in items 2, 3, 4 and 5 above, shall not be so deposited or transferred unless the District shall have determined that there will be sufficient Net Revenues available to make the required deposits or transfers on the dates on which such deposits or transfers are required to be made as described above. So long as the District has determined that Net Revenues will be sufficient to make all of the deposits or transfers required to be made pursuant to items 1, 2, 3, 4 and 5 above, on the dates on which such deposits or transfers are required to be made, Net Revenues on deposit in the Revenue Account may from time to time be used for any purpose for which the District funds may be legally applied. For additional information, see APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement.”

Rate Covenant

Pursuant to the Master Agreement, the District will, to the extent permitted by law, fix, prescribe and collect fees and charges for the services of the Wastewater System which will be at least sufficient to yield during each Fiscal Year (a) Net Revenues equal to 125% of Debt Service on Senior Obligations for such Fiscal Year and (b) Net Operating Revenues equal to 100% of Debt Service on all Obligations for such Fiscal Year. The District may make adjustments from time to time in such fees and charges and may

make such classification thereof as it deems necessary, but will not reduce the fees and charges then in effect unless the Revenues and Net Revenues from such reduced fees and charges will at all times be sufficient to meet the requirements of the Master Agreement.

In addition, the District has covenanted in the Master Agreement to prepare and adopt an annual budget for the Wastewater System for each Fiscal Year. Such budget will set forth in reasonable detail the Revenues anticipated to be derived in such Fiscal Year and the expenditures anticipated to be paid or provided for therefrom in such Fiscal Year, including, without limitation, the amounts required to pay or provide for the payment of the Obligations during such Fiscal Year, the amounts required to pay or provide for the payment of Maintenance and Operations Costs during such Fiscal Year and the amounts required to pay or provide for the payment of all other claims or obligations required to be paid from Revenues in such Fiscal Year, and will show that Revenues and Net Revenues will be at least sufficient to satisfy the requirements of the Master Agreement. On or before September 1 of each Fiscal Year, the District will file with the Trustee a copy of the adopted budget for such Fiscal Year. See APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement” for additional information.

The District has an established reserve policy with seven distinct reserve criterion which together comprise the District’s reserve fund target. Over a ten fiscal year period, these criterion requirements collectively result in a year-ending reserve total for each fiscal year projected not to fall below \$540 million as indicated in the District’s ten-year cash flow forecast for fiscal years 2021-22 through 2030-31. At its election, the District may use unrestricted reserves to help satisfy the rate covenant described above. See “DISTRICT REVENUES — Reserves” herein.

Limitations on Issuance of Additional Obligations

Senior Obligations. The District may at any time incur Senior Obligations in addition to the Existing Senior Obligations payable from Net Revenues as provided in the Master Agreement on a parity with all other Senior Obligations theretofore incurred but only subject to the following conditions under the Master Agreement:

- (1) Upon the incurrence of such Senior Obligations, no Event of Default will be continuing under the Master Agreement; and
- (2) Subject to the provisions of the Master Agreement, the District will have received either one of the following:
 - (i) A Written Certificate of the District certifying that, for a 12 consecutive calendar month period during the 24 consecutive calendar month period ending in the calendar month prior to the incurrence of such Senior Obligations (which 12 consecutive calendar month period will be specified in such certificate or certificates):
 - (A) Net Revenues, as shown by the books of the District, will have amounted to at least 125% of Maximum Annual Debt Service on all Senior Obligations to be outstanding immediately after the incurrence of such Senior Obligations, and
 - (B) Net Operating Revenues, as shown by the books of the District, will have amounted to at least 100% of Maximum Annual Debt Service on all

Obligations to be outstanding immediately after the incurrence of such Senior Obligations.

For purposes of demonstrating compliance with the foregoing, Net Revenues and Net Operating Revenues may be adjusted for (x) any changes in fees and charges for the services of the Wastewater System which have been adopted and are in effect on the date such Senior Obligations are incurred, but which, during all or any part of such 12 consecutive calendar month period, were not in effect, (y) customers added to the Wastewater System subsequent to such 12 consecutive calendar month period but prior to the date such Senior Obligations are incurred, and (z) the estimated change in available Net Revenues and Net Operating Revenues which will result from the connection of existing residences or businesses to the Wastewater System within one year following completion of any project to be funded or any system to be acquired from the proceeds of such Senior Obligations; or

- (ii) A certificate or certificates from one or more Consultants which, when taken together, project that, for each of the two Fiscal Years next succeeding the incurrence of such Senior Obligations:
 - (A) Net Revenues will amount to at least 125% of Maximum Annual Debt Service on all Senior Obligations to be outstanding immediately after the incurrence of such Senior Obligations, and
 - (B) Net Operating Revenues will amount to at least 100% of Maximum Annual Debt Service on all Obligations to be outstanding immediately after the incurrence of such Senior Obligations.

For purposes of demonstrating compliance with the foregoing, Net Revenues and Net Operating Revenues may be adjusted for (x) any changes in fees and charges for the services of the Wastewater System which have been adopted and are in effect on the date such Senior Obligations are incurred or will go into effect prior to the end of such two Fiscal Year period, (y) customers expected to be added to the Wastewater System prior to the end of such two Fiscal Year period, and (z) the estimated change in available Net Revenues and Net Operating Revenues which will result from the connection of existing residences or businesses to the Wastewater System within one year following completion of any project to be funded or any system to be acquired from the proceeds of such Senior Obligations. For purposes of preparing the certificate or certificates described above, the Consultant may rely upon financial statements prepared by the District that have not been subject to audit by an independent certified public accountant if audited financial statements for the period are not available.

See also “FINANCIAL OBLIGATIONS – Existing Indebtedness” herein. The District is not required to comply with the provisions described above in paragraph (2) if the Senior Obligations being incurred are Short-Term Obligations excluded from the calculation of Assumed Debt Service pursuant to clause (H) of the definition thereof. See APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Definitions” herein.

The determination of Net Revenues for use in the calculation described above is more fully described in APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master

Agreement — *Senior Obligations*” attached hereto. The District is not required to comply with the provisions described in paragraph (2) above for such portion of Senior Obligations incurred for the purpose of providing funds to refund or refinance Senior Obligations if (i) upon such refunding or refinancing, debt service on such refunded or refinanced Obligations, or debt service on bonds, notes or other obligations of an entity other than the District, the debt service on which is payable from Obligation Payments for such Obligations (the “Related Bonds”), will no longer be included in the calculation of Assumed Debt Service either because such Obligations, or the Related Bonds of such Obligations, will have been paid in full or because such debt service is disregarded pursuant to clause (L) of the definition of Assumed Debt Service, and (ii) Assumed Debt Service in each Fiscal Year for the portion of such Senior Obligations incurred for the purpose of providing funds to refund or refinance such Obligations is less than or equal to 105% of Assumed Debt Service in such Fiscal Year for such Obligations being refunded or refinanced (assuming for such purposes that debt service on such refunded or refinanced Obligations, or debt service on the Related Bonds of such Obligations, is not disregarded pursuant to clause (L) of the definition of Assumed Debt Service). See APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement” attached hereto for additional information. The District may at any time incur Reimbursement Obligations with respect to Senior Obligations.

Subordinate Obligations. The District may at any time incur Subordinate Obligations upon satisfaction of the conditions provided in the Master Agreement. See APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement” herein for a description of such conditions. There are currently no Subordinate Obligations outstanding.

Insurance

The District will procure and maintain or cause to be procured and maintained casualty insurance on the Wastewater System with responsible insurers, or provide self- insurance (which may be provided in the form of risk-sharing pools), in such amounts and against such risks (including accident to or destruction of the Wastewater System) as are usually covered in connection with facilities similar to the Wastewater System. The District will procure and maintain such other insurance which it will deem advisable or necessary to protect its interests and the interests of the Corporation. See “THE DISTRICT — Risk Management” and APPENDIX C — “SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Master Agreement” herein.

Allocation of Installment Payments

Set forth in Table 1 are the principal and interest payments on the Revenue Obligations. Also set forth are the payments due on Existing Senior Obligations, excluding the Refunded 2012A Obligations and the Refunded 2012B Obligations.

[Remainder of page intentionally left blank.]

Table 1
Payments Relating to the Revenue Obligations
and Existing Senior Obligations of the District
As of January 1, 2022

Fiscal Year Ending June 30	Installment Payments Relating to Revenue Obligations		Other Senior Obligations⁽¹⁾		Total
	Principal	Interest	Principal	Interest	
2022	\$	\$	\$ 33,875,000	\$ 20,494,482	\$
2023			30,035,000	39,236,041	
2024			31,580,000	37,734,291	
2025			33,120,000	36,155,291	
2026			34,830,000	34,499,291	
2027			36,445,000	32,757,791	
2028			42,420,000	30,935,541	
2029			44,540,000	28,814,541	
2030			46,765,000	26,587,541	
2031			25,110,000	24,249,291	
2032			30,910,000	22,916,368	
2033			32,405,000	21,140,086	
2034			51,130,000	19,269,306	
2035			53,620,000	16,531,282	
2036			56,235,000	13,661,310	
2037			51,485,000	10,652,664	
2038			32,995,000	7,972,605	
2039			34,455,000	6,212,648	
2040			24,575,000	4,375,150	
2041			20,805,000	2,912,640	
2042			12,430,000	1,581,120	
2043			9,795,000	785,600	
2044			2,480,000	158,720	
Total	\$	\$	\$772,040,000	\$439,633,600	\$

⁽¹⁾ Excludes payments with respect to the Refunded 2012A Obligations and the Refunded 2012B Obligations, all of which are to be refunded with the proceeds of the Revenue Obligations. See “REFUNDING PLAN” herein.

THE DISTRICT

Background

The District is managed by the Board of Directors, whose members are appointed by 25 member cities and agencies which are serviced by the District. The District is a public agency responsible for construction and maintenance of a major portion of the wastewater collection, treatment and disposal facilities within its boundaries and is the sixth largest wastewater collection, treatment and recycling agency in the United States of America. The District provides service to an area with a population of approximately 2.6 million people in the northern and central portion of the County by treating an average of 182 mgd of wastewater in Fiscal Year 2020-21. The District serves approximately 81% of the County population in approximately 479 square miles, or approximately 60% of the County’s area. Local sanitary districts, water districts and cities are responsible for local sewers in the District’s service area. The District reuses more than 68% of the total wastewater flow that it receives.

The service area which comprises the District was originally formed in 1954 pursuant to the County Sanitation District Act, as amended, Section 4700 *et seq.* of the Health and Safety Code of the State. The District's service area originally consisted of seven independent special districts in the County which were each responsible for matters relating to their individual districts. These special districts were jointly responsible for the treatment and disposal facilities which they each used. The seven independent districts were successors to the Joint Outfall Sewer Organization, which was formed in 1923 among the Cities of Anaheim, Santa Ana, Fullerton, and Orange, and the sanitary districts of Placentia, Buena Park, La Habra, and Garden Grove. The Joint Outfall Sewer Organization constructed a treatment plant and outfall in the early 1920s to serve its members. It was reorganized in 1947 and 1948 into seven county sanitation districts – District Nos. 1, 2, 3, 5, 6, 7 and 11. These prior districts were formed based on engineers' analyses of the gravity flows in the service area. District No. 13 was formed in 1985 and District No. 14 was added in 1986. These districts were co-participants in a Joint Agreement which provided for the joint construction, ownership, and operation of the prior districts' joint facilities.

In April 1998, at the request of the Board of Directors of the District (the "Board of Directors"), the Board of Supervisors of the County of Orange (the "County Board") passed Resolution No. 98-140 approving the consolidation of the then existing nine special districts into a new, single sanitation district, to be known as the Orange County Sanitation District. This action was designed to simplify governance structures, reduce the size of the Board of Directors, ease administrative processes, streamline decision-making and consolidate accounting and auditing processes. The consolidation was effective on July 1, 1998.

Pursuant to Resolution No. 98-140 and Government Code Section 57500, the prior districts transferred and assigned all of their powers, rights, duties, obligations, functions and properties to the District, and the District assumed all obligations of the prior districts which were several and not joint including, without limitation, their obligations to repay the then outstanding certificates of participation. The boundaries of the nine predecessor special districts were initially used by the District to delineate separate revenue areas (the "Revenue Areas") for budgeting and accounting purposes and in order to facilitate the imposition of fees and charges imposed by the District. See "DISTRICT REVENUES – Sewer Service Charges" herein.

Organization and Administration

The District is independent of and overlaps other political jurisdictions. There are many governmental entities, including the County, that operate within the District's jurisdiction. These entities are exclusively responsible for the administration of their own fiscal affairs, and the District is not entitled to operating surpluses of, or responsible for operating deficits of, any of the other entities.

The 25-member Board of Directors is composed of representatives from 20 cities, four special districts and a member representing the County. Several board committees, made up of members of the Board of Directors, consider topics for action by the Board of Directors and make recommendations to the Board of Directors. The Chairperson and the Vice Chairperson of the Board of Directors are elected every year by a majority of the Board of Directors and serve at the pleasure of a majority of the Board of Directors.

The District has a general manager, outside general counsel, and administrative and operating staff, with offices located at Reclamation Plant No. 1 in Fountain Valley, California. The District currently employs an administrative and operating staff of approximately 600 under the direction of its General Manager, James Herberg.

James Herberg, P.E., is the General Manager of the District and has served in this capacity since April 2013. During his more than 29 years with the District, he has held the positions of Assistant General Manager, Director of Engineering, and Director of Operations and Maintenance. Mr. Herberg has more than 35 years of experience in the water and wastewater industries, including six years at the Orange County Water District with whom the District has partnered on the Groundwater Replenishment System project.

Robert Thompson, P.E., is an Assistant General Manager and the Director of Operations and Maintenance. He has worked for the District since 1995. Mr. Thompson has served as manager in several departments with the District, including Information Technology, Operations and Maintenance, and Engineering. He has had a lead role in creating and maintaining engineering, programming, tagging and asset standards for the District.

Lorenzo Tyner is an Assistant General Manager and the Director of Finance and Administrative Services. Mr. Tyner joined the District in 2005 after serving as Los Angeles Unified School District Budget Director and Deputy Chief Financial Officer. Mr. Tyner has more than 28 years of public finance and budgeting experience, working in large government organizations including the City of Los Angeles and the Los Angeles County Metropolitan Transportation Authority and private sector experience with IBM Global Services and TRW Space and Defense.

Kathleen T. Millea, P.E., is the District's Director of Engineering. Ms. Millea has worked for the District since 1995. She has served in several engineering roles during her tenure there, including Operations and Maintenance Process Engineer, Design Engineer, Resident Construction Engineer, Project Manager, Project Management Office Supervisor, and Planning Manager. Ms. Millea manages the District's \$3 Billion Capital Improvement Program. Ms. Millea previously worked for the City of Los Angeles, Bureau of Sanitation.

Celia Chandler is the District's Director of Human Resources. Ms. Chandler joined the District in 2015. Ms. Chandler has more than 30 years of experience in all aspects of Human Resources in both public and private sector organizations, most recently serving as the Director of Academic Labor Relations for the California State University system. Ms. Chandler previously worked in large government organizations including the City of Corona, the City of Murrieta and the County of Riverside, and with private sector company Stone & Webster Engineering Services Company.

Lan Wiborg is the District's Director of Environmental Services. Ms. Wiborg joined the District in 2019. Ms. Wiborg has more than 20 years of water and wastewater utility experience and most recently served as the City of San Diego's Deputy Public Utilities Director of Long-Range Planning and Water Resources, where she oversaw water resource development and planning, watershed protection, water conservation, climate change adaptation, and grid-scale pumped hydropower energy storage programs.

Services

The District owns and operates regional wastewater collection, treatment, and disposal facilities for the metropolitan area in the northern and central portion of the County. The District receives wastewater from the collection systems of the cities, sanitary districts and unincorporated areas of the County located within the District. See "THE DISTRICT – Service Area" herein.

Generally, local agency systems collect wastewater from residential and industrial customers and convey the wastewater to District trunk sewer pipelines for conveyance to the District's wastewater treatment plants.

The District's staff is responsible for operating and maintaining the District's infrastructure, although some work is performed by external contractors.

Currently, the District has established supply contracts for all chemicals necessary to the operation and maintenance of the facilities of the District. The District has sufficient standby systems in the event of equipment failures or system outages.

Service Area

The map on the inside cover of this Official Statement shows the District's boundaries and selected cities located within the District. District boundaries were originally established in 1947 and 1948 based on drainage basins. As the existing cities have grown and new areas have incorporated, city limits have come to overlap District boundaries. The District currently serves an approximately 479 square-mile area including 23 of the County's 34 cities and various unincorporated areas of the County. The District serves a population of approximately 2.6 million residents.

[Remainder of page intentionally left blank.]

Set forth in Table 2 below is a list of the cities and unincorporated areas currently served by the District and their estimated populations as of January 1, 2021.

Table 2
Estimated Populations of Cities and Unincorporated Areas
Served by the Orange County Sanitation District
As of January 1, 2021

<u>City</u>	<u>Population</u>
Anaheim	353,468
Brea	45,137
Buena Park	81,626
Costa Mesa	112,780
Cypress	48,531
Fountain Valley	54,953
Fullerton	139,431
Garden Grove	172,476
Huntington Beach	196,874
Irvine	271,564
La Habra	62,808
La Palma	15,442
Los Alamitos	11,538
Newport Beach	85,865
Orange	137,366
Placentia	51,173
Santa Ana	331,369
Seal Beach	24,443
Stanton	39,573
Tustin	80,009
Villa Park	5,759
Westminster	91,466
Yorba Linda	67,846
Cities Subtotal ⁽¹⁾	2,481,497
Unincorporated Areas (estimated) ⁽²⁾	69,266
Total	<u>2,550,763</u>

⁽¹⁾ Demographic Research Unit, State of California Department of Finance.

⁽²⁾ Center for Demographic Research, California State University, Fullerton.

Employees

As of October 26, 2021, the District had a total of approximately 609 employees. The majority of the District employees are represented by recognized employee organizations, which include the following: the Orange County Employees Association (“OCEA”), representing administrative/clerical, technical services and engineering employees since 1979, the International Union of Operating Engineers – Local 501 (“Local 501”), representing operations and maintenance employees since October 1985, and the Supervisory and Professional Management Group (“SPMT/AFSCME”), representing employees within the Supervisor Group and Professional Group since 1991. The total number of represented employees as of October 26, 2021 was 573, and is broken down as follows: 97 employees represented by OCEA, 201 employees represented by Local 501, and 275 employees represented by SPMT/AFSCME. In

August 2019, the District reached final agreement with all bargaining units on the current set of labor contracts that will expire on June 30, 2022. Historically, the District has experienced positive and collaborative working relationships with each organization and has not endured any work stoppages since its formation in 1998.

Retirement Plan

The District participates in the Orange County Employees Retirement System (“OCERS”), a cost-sharing multiple-employer defined benefit pension plan, which is governed and administered by a nine-member Board of Retirement. OCERS was established in 1945 under the provisions of the County Employees Retirement Law of 1937, and provides members with retirement, death, disability, and cost-of-living benefits.

All full-time and part-time District employees participate in OCERS. Contributions are based on an OCERS actuarial-determined rate structure and age at time of employment; contributions are deducted on a pre-tax basis. Most employees do not pay into Social Security with the exception of 1.45% of gross income, which is paid into the Medicare portion of Social Security. The amount of the retirement allowance is based upon the member’s age at retirement, the member’s “final compensation” as defined in Section 31462 of the Retirement Law of 1937, the total years of service under OCERS, and the employee’s classification as a Plan B, H or U member. Plan U applies to all full-time and part-time employees hired on or after January 1, 2013. Plan B applies to supervisor and professional employees hired on or after October 1, 2010, Local 501 employees hired on or after July 1, 2011 and OCEA employees hired on or after August 1, 2011. Plan H applies to employees hired on or after September 21, 1979 and prior to the eligibility dates for Plan B or Plan U. Plan H provides 2.5% of final compensation per year of service at age 55. Plan B provides 1.667% of final compensation per year of service at age 57.5, and Plan U provides 2.5% at 67. “Final compensation” is the highest consecutive 36 months of compensation divided by three for Plan B, H, and U members. Benefits fully vest under the OCERS retirement plan upon reaching five years of service. Employees who retire at or after age 50 with ten or more years of service are eligible to receive an annual retirement allowance, but at a reduced benefit for those employees retiring prior to age 67 for Plan U members, 57.5 for Plan B members, or prior to age 55 for Plan H members. OCERS also provides death and disability benefits.

As a condition of participation under the provisions of the County Employees Retirement Law of 1937, members are required to contribute a percentage of their annual compensation to OCERS. The District contributes a portion of the employee’s contribution to OCERS for members of Plan H based on a percentage of the covered employee’s base salary. Members of Plans U and B do not receive any contributions toward employee contribution to OCERS. As of the December 31, 2020 valuation, OCERS had an aggregate Unfunded Actuarial Accrued Liability (“UAAL”) of approximately \$5.4 billion, and a funded ratio of 76.51%.

Set forth in Table 3 below is a current comparison of the District’s required contributions to OCERS for Fiscal Years 2016-17 through 2020-21 and projected required contributions for Fiscal Year 2021-22.

[Remainder of page intentionally left blank.]

Table 3
Orange County Sanitation District
District Required Contributions to OCERS for Fiscal Years 2016-17 through 2020-21 and
Projected Required Contributions for Fiscal Year 2021-22

<u>Fiscal Year</u>	<u>Rate</u> ⁽¹⁾	<u>District Required Contributions</u>
2016-17	12.38	\$7,709,734
2017-18	11.51	7,525,655
2018-19	11.24	7,769,431
2019-20	12.54	8,739,661
2020-21	11.75	8,479,429
2021-22 ⁽²⁾	11.62	8,361,304

⁽¹⁾ Required contribution as a percent of covered payroll. Rate includes both (1) the portion attributable to the normal contribution and (2) the portion attributable to amortization of UAAL (the “UAAL Rate”), if any. Combined rate for all Plans. Actuarial valuation as of December 31, 2020 assumed an investment return of 7.00%, net of administrative and investment expenses.

⁽²⁾ Estimated actual.

Source: Orange County Sanitation District.

As of September 4, 2019, the District’s total UAAL (excluding the normal contribution) was \$8,116,226. On September 9, 2019, the District contributed \$8,116,226 to OCERS in full satisfaction of its UAAL and accrued interest on the UAAL through the payment date that is due and payable by District to OCERS as part of its total contribution for the period July 1, 2020 through and including June 30, 2021.

As of December 31, 2018, an additional UAAL attributable to District on the books of OCERS totaled \$30,232,235 (“Deferred UAAL”), representing the District’s allocated share of OCERS’ net deferred investment losses. The Deferred UAAL is projected to be due and payable by the District in amortizing installments commencing July 2021. The amortizing installments of District’s Deferred UAAL in any future year may be more or less than the total unfunded actuarial accrued liability attributable to the District in such future year (“Actual Future UAAL”).

On November 1, 2019, the District contributed \$29,883,774 toward its Deferred UAAL, and OCERS established a UAAL deferred account on its books and records for the purpose of recording and accounting. The UAAL deferred account can be used to offset the District’s losses, if any, as they arise in later years, to continue decreasing its UAAL Rate in later-year valuations. The UAAL deferred account will not be used for the District’s normal contribution.

As of the December 31, 2019 actuarial valuation completed by OCERS, the District’s past UAAL was \$0. The balance in the District’s UAAL deferred account as of December 31, 2019 before any transfers out was about \$30.7 million. On December 31, 2019, a transfer of \$18.6 million was made from this account to pay off the District’s Actual Future UAAL (fully offsetting the actuarial losses during 2019). The balance in the District’s UAAL deferred account as of December 31, 2019 after the transfer out was about \$12.1 million.

As of December 31, 2020, the date of the most recent actuarial valuation completed by OCERS, the District's past UAAL was \$0. The balance in the District's UAAL deferred account as of December 31, 2020 had increased to about \$13.4 million. As of December 31, 2020, there was no transfer required from this account to pay off the District's UAAL. The balance in the District's UAAL deferred account may be applied to the District's Actual Future UAAL (but not normal contributions) in later periods.

The District has satisfied its past normal contributions from other funds, and currently intends to continue that practice.

For the Fiscal Year ended June 30, 2021, total payroll costs of District employees covered by OCERS was \$73,290,519.

The District's retirement program includes Additional Retiree Benefit Account ("ARBA") benefits. ARBA benefits provide a monthly payment to retirees towards the premium costs of health insurance for the retiree and eligible dependents. The retiree is not required to use this amount for health insurance premium or to remain on the OCERS medical plan. Benefits vest upon retirement. The District pays 100% of the cost for the ARBA plan and utilizes a pay-as-you-go method for funding the plan. The District paid \$967,970 in ARBA benefits during Fiscal Year 2020-21.

For more information regarding OCERS and the District's retirement plan as of June 30, 2021, see Note 5 to the Annual Comprehensive Financial Report of the Orange County Sanitation District for the Year Ended June 30, 2021 set forth in Appendix A. The Annual Comprehensive Financial Reports of the Orange County Employees Retirement System are available on the OCERS website at <http://www.ocers.org>. The information on such website is not incorporated herein by such reference or otherwise. The District cannot predict whether the OCERS investment portfolio will experience additional losses in the future; however, any future losses could result in material increases in the District's required contributions.

Other Post-Employment Benefits

In June 2015, Governmental Accounting Standards Board ("GASB") issued Statement No. 75, which requires state and local governmental employers to recognize a liability as the employees earn benefits by providing services for its post-employment benefits other than pension benefits (known as other post-employment benefits or "OPEB") and to recognize total OPEB liability if the OPEB is not administered through a trust that meets the specified criteria. Changes to OPEB liability are recognized immediately as OPEB expenses or deferred outflows/inflows of resources. The statement replaces the requirements of Statement No. 45. The District adopted Statement No. 75 for the fiscal year beginning July 1, 2017, as required of GASB. According to the District's actuary, Demsey, Filliger & Associates (the "Actuary"), the unfunded OPEB liability as of July 1, 2021 was approximately \$1.3 million. The District does not believe that its OPEB liability will have a material impact on its operational results.

Risk Management

As of the date hereof, the District has in force basic all risk property and casualty insurance, including theft, fire, flood, terrorism and boiler and machinery losses at its plants and pump stations. The District is self-insured for portions of workers' compensation, property damage and general liability. The self-insurance portion of workers' compensation is \$1,000,000 per person per occurrence with outside excess insurance coverage to the statutory limit. The self-insured portion for property damage covering fire and other disasters is \$500,000 per occurrence (for most perils) with outside excess insurance coverage to \$800,000,000. The self-insured portion for property damage covering flood is \$1,000,000 per

occurrence with outside excess insurance coverage to \$25,000,000. That coverage amount was reduced from the prior year coverage amount of \$100,000,000 based on a cost/benefit analysis. The District also maintains outside comprehensive boiler and machinery insurance with \$100,000,000 limits and a \$25,000 self-insured retention and business interruption insurance with \$100,000,000 limits and a \$500,000 self-insured retention.

The District is self-insured for general liability coverage up to \$750,000 per occurrence, with excess general liability coverage up to \$40,000,000. The District is self-insured for pollution liability coverage up to \$75,000 per loss, with outside pollution liability insurance coverage up to \$10,000,000. In addition, the District has limited earthquake insurance partially covering several key structures; beyond that, the District relies on a combination of self-insurance and District reserves for all property damage from the perils of seismic activity as well as the expectation that some disaster relief funds may be available from the Federal Emergency Management Agency (“FEMA”) to address any resulting damage. See “DISTRICT REVENUES – Reserves” and “– Integrated Emergency Response Program.” There is no assurance that, in the event of a significant seismic event, a combination of self-insurance, District reserves or FEMA assistance would be available or sufficient for the repair or replacement of the affected property.

The District carries cyber liability coverage up to \$2,000,000 per occurrence, with a self-insured retention of \$100,000 per claim.

During the past five fiscal years there have been no settlements in excess of covered amounts. Claims against the District are primarily processed by outside claim administrators or the District’s General Counsel. The District believes that there are no unrecorded claims as of June 30, 2021 that would materially affect the financial position of the District.

For information regarding the District’s insurance coverage as of June 30, 2021, see Note 1 to the Annual Comprehensive Financial Report of the Orange County Sanitation District for the Year Ended June 30, 2021 set forth in Appendix A.

Existing Facilities

The Wastewater System currently consists of two wastewater plant facilities, an influent metering and diversion structure, 15 off-plant pump stations, various interplant pipelines and connections, and the ocean outfall facilities. The District’s Wastewater System includes approximately 388 miles of sewers within 12 trunk sewer systems, two discharge outfalls and two emergency weir outlets. The existing treatment plants have a rated primary treatment capacity of 376 mgd, including standby capacity.

Reclamation Plant No. 1 (“Plant No. 1”) is located in the City of Fountain Valley, approximately four miles inland of the Pacific Ocean and adjacent to the Santa Ana River. Influent wastewater entering Plant No. 1 passes through a flow metering and diversion structure, mechanical bar screens, grit chambers, and primary basins, before going to one of two air activated sludge processes, or trickling filters, and secondary basins. Up to 130 mgd of secondary treated effluent can be diverted to a plant owned by the Orange County Water District (the “OCWD”) for tertiary treatment prior to reclamation and groundwater recharge. See “ - Groundwater Replenishment System” below.

Solids treatment at Plant No. 1 includes co-thickening of primary and secondary sludge, followed by anaerobic digestion process and centrifuge dewatering of digested sludge to produce Class-B biosolids. Digester gas produced at Plant No. 1 is collected, cleaned, compressed, and transferred via a closed piping system, to the Central Power Generation Facility, as a renewable fuel for energy generation. In addition, Plant No. 1 includes facilities for odor control and chemical addition to support the aforementioned.

Treatment Plant No. 2 (“Plant No. 2”) is located in the City of Huntington Beach, 1,500 feet from the Pacific Ocean, at the mouth of the Santa Ana River. Raw sewage flow entering Plant No. 2 passes through a flow metering structure, mechanical bar screens, and grit removal chambers. Flow then passes through primary basins before being split between the oxygen activated sludge secondary treatment facility or the trickling filters/solids contact basins, where it is discharged directly to the ocean via the outfall pumping system.

Solids treatment at Plant No. 2 includes in-basin thickening of primary sludge, dissolved air flotation thickening of waste activated sludge and secondary sludge, anaerobic sludge digestion, and centrifuge dewatering. Plant No. 2 also has facilities for odor control and chemical addition. Digester gas produced at Plant No. 2 is collected, compressed, cleaned, and distributed to a Central Power Generation System as a renewable fuel for energy generation.

The District employs several phases in the treatment of wastewater. The first phase, preliminary treatment, removes debris such as eggshells, sand and other non-biodegradable items. See also “ - Biosolids Management” below. In the next phase, primary treatment, wastewater is pumped to large settling basins. The liquids are separated from the remaining solids which settle or float as the wastewater passes through large settling basins called clarifiers. The settled solids are sent to solids treatment facilities. All of the wastewater received by the District is sent to secondary treatment for further processing. During secondary treatment, the wastewater is treated with naturally occurring bacteria to remove most of the remaining dissolved and suspended microscopic organic solids. The treated wastewater from both plants is mixed together at Plant No. 2, where it is then pumped through the ocean outfall pipe that extends five miles offshore.

The ocean outfall system includes three discharge structures: Outfall No. 1, Outfall No. 2, and the Santa Ana River Emergency Overflow Weirs. Outfall No. 2 serves as the primary ocean outfall, discharging treated wastewater approximately five miles offshore at a depth of approximately 200 feet. It began service in 1971 and is currently undergoing a planned condition assessment to allow the District to scope a future rehabilitation of the outfall. This condition assessment work was postponed due to a recent oil spill off the nearby coast.

Set forth in Table 4 below are the treatment plants’ approximate treatment capacities.

Table 4
Wastewater System Treatment Capacities
(mgd)
As of June 30, 2021

	2020-21 <u>Actual Flows</u>	Primary Treatment <u>Capacity</u>	Secondary Treatment <u>Capacity</u>
Plant No. 1	118	208	182
Plant No. 2	<u>64</u>	<u>168</u>	<u>150</u>
Aggregate Treatment	<u>182</u>	<u>376</u>	<u>332</u>

Source: Orange County Sanitation District.

The District also has the capability to divert a portion of the influent flow from Plant No. 1 to Plant No. 2 through interplant connections. A portion of the flow destined for Plant No. 2 can also be diverted to Plant No. 1. Another interplant facility allows gas generated during solids treatment to be

transported between Plant No. 1 and Plant No. 2 and allows digester gas (which is used as fuel for many of the facilities' engines) from one plant to be used at the other to balance the supply and demand, which results in efficient gas utilization.

Permits, Licenses and Other Regulations

The District is subject to laws, rules and permits issued by federal, state, regional and local regulatory bodies. The Wastewater System is subject to regulations imposed by the 1972 Clean Water Act, as amended (the "Clean Water Act"), the California Environmental Quality Act of 1970, as amended ("CEQA") and the federal Clean Air Act. Regulatory requirements to conform with these laws are primarily administered by the United States Environmental Protection Agency (the "EPA"), the California Air Resources Board, the Santa Ana Regional Water Quality Control Board ("RWQCB"), and the South Coast Air Quality Management District ("AQMD"). These agencies regulate the standards of quality of water or air that can be discharged or emitted from the treatment plants and their processes. The Clean Water Act directs the EPA to monitor and regulate the discharge of pollutants into the waters of the United States, including a requirement that all wastewater treatment plants provide primary and secondary treatment. In 1977 Congress amended the Clean Water Act to allow modification (so-called "waivers") of secondary treatment standards for certain ocean dischargers, if they could demonstrate to the satisfaction of the EPA that no adverse environmental impacts would occur. The District currently has all applicable permits and licenses necessary to operate its facilities.

Since the passage of the Clean Water Act the District has discharged treated wastewater into the Pacific Ocean under a permit issued by the EPA and the RWQCB. The discharge permit included a modification under the Section 301(h) provisions of the Clean Water Act, allowing for less than full secondary treatment based on an ocean discharge of sufficient depth, distance, and dilution. The permit was initially issued in 1985 and was the first modified Section 301(h) permit issued to a major wastewater treatment facility. The permit was re-issued on May 6, 1998 and expired on June 8, 2003.

On July 17, 2002, the Board of Directors adopted Resolution No. OCSO 02-14, "Establishing the Policy for Level of Treatment of Wastewater Discharged into the Ocean." This resolution established the District's policy to treat all wastewater discharges into the ocean to secondary treatment standards, thereby providing for continued public safety, marine ecosystem protection, and water reclamation opportunities. To implement this policy, the District's staff was directed to immediately proceed with the planning, design and implementation of treatment methods that will allow the District to meet Clean Water Act secondary treatment standards with the expressed purposes of eliminating the need for the permit modification received under Section 301(h). The District completed these improvements ahead of schedule in December 2012 at a total capital improvement cost of \$537.8 million.

Following the determination by the Board of Directors in July 2002 to implement full secondary treatment standards, the District withdrew the waiver that applied at that time and prepared a National Pollutant Discharge Elimination System ("NPDES") Permit Application to meet secondary treatment standards. The District submitted its application to the EPA and the RWQCB in December 2002. The NPDES permit was approved by the EPA and became effective on October 31, 2004, with the EPA requiring that the District meet secondary treatment levels in accordance with a time schedule order.

The District renewed its permit in 2009 and 2012 and met the time schedule order in 2012. The 2012 NPDES permit went into effect on July 20, 2012 and was replaced on August 1, 2021. The active permit will remain in effect through July 31, 2026.

The District is also subject to the requirements of the Federal Clean Air Act, which mandates attainment with national ambient air quality standards for criteria pollutants (ozone, particulate matter,

carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide). Air pollutants cause adverse effects on human health and environment. The AQMD is the local air pollution control agency charged with implementing the Federal Clean Air Act. In addition to mandated criteria pollutants, the AQMD also implements numerous federal and State requirements related to the toxic air pollutants which can cause cancer or other severe localized health effects. For example, the State's Air Toxic Hot Spots Act requires facilities to conduct health risk assessments and notify the neighboring communities if the health risk exceeds the regulatory thresholds.

Pursuant to AQMD's requirements, the District must obtain permits before sewage treatment improvement projects can be constructed and operated. Such permits are project-specific and may contain conditions that govern design criteria, operating parameters, and emissions standards. Most of the District's treatment facilities are enclosed to capture and treat emissions to ensure regulatory emissions standards are met and to minimize odor impact to the neighboring communities. The District's treatment plants are also subject to the requirements of Title V of the Federal Clean Air Act amendments. The Title V permit is a single air quality permit for a facility that consolidates and replaces all of the air permits for individual pieces of equipment previously issued by the local air quality district. The permit contains all applicable local, state and federal requirements, including periodic self-certification of compliance and mandatory self-reporting of permit deviation.

All Title V permit-related reporting and documents submitted to the AQMD must be signed by the highest official – in this case, the General Manager. The Title V program also demands facilities to organize and conduct extensive training of the staff involved, including the field operation and maintenance staff. Another Title V important feature is a possibility of the public active participation and intervention in the cases of potential emission limits and monitoring violations. The District Title V permits did not receive any negative public responses or comments during the required public review period. The District received initial Title V permits for the treatment plants in January 2009. Title V permits are issued for a five-year period. Title V permits for both plants were re-issued on April 16, 2014, and again in September 2020 (Plant No. 1) and October 2020 (Plant No. 2).

The District is currently operating under a Regular Variance issued by AQMD in January 2021. The Regular Variance applies to the Resource Recovery System No. 1 (Central Generation Internal Combustion Engine No. 1 at Plant 1) which is currently going through an extensive rebuild and maintenance overhaul after many years of operation. Due to the length, complexity and difficulties encountered with the overhaul, the annual ammonia slip testing deadline could not be met as the engine is currently in a non-operable condition and testing cannot be conducted unless the engine is operable. The engine overhaul and reassembly effort is actively underway and expected to be completed by January 15, 2022, assuming no significant setbacks during the overhaul process. The Regular Variance has a final compliance date of no later than April 28, 2022. There are no excess emissions associated with the granting of the Regular Variance. The District does not expect the overhaul of Resource Recovery System No. 1 or compliance with the Regular Variance to have a material adverse effect on its finances or operations.

District Planning

The Board of Directors has adopted a comprehensive strategic plan regarding the District's service levels and operational needs (the "Strategic Plan"). The Strategic Plan is updated biennially and is the first step of a two-year, four step management process that creates and maintains vision alignment between the Board of Directors, staff and the public that the District serves. See "THE DISTRICT — Strategic Planning." In December 2017, the Board of Directors adopted a Facilities Master Plan (the "Master Plan") for the District. The Master Plan also incorporates and implements the levels of services defined by the Board of Directors that are included in the Strategic Plan.

Capital Improvement Program

The Master Plan identified a phased 20-year program of capital improvement projects (“CIP”) that will allow the District to maintain reliability and accommodate future growth, as well as meet future regulatory requirements, level of service goals, and strategic initiatives. With this phased 20-year program as a starting point, the Asset Management Program within the Planning Division continues assessing the condition of the District’s existing assets and systems to ensure that they can provide the necessary level of service. The District expects to accomplish the following under the CIP over the next 20 years:

- Major rehabilitation or replacement of facilities and components used in all stages of the treatment process - preliminary, primary, secondary, and solids treatment, outfall pumping and discharge system, and central generation at both treatment plants;
- Implementation of the recommendations of the Biosolids Master Plan to address seismic risks, to produce higher quality biosolids and accept food waste;
- Relocation of the District headquarters complex;
- Upgrade of the Supervisory Control and Data Acquisition (“SCADA”) system and network at Plant No. 2, replacement of the process control systems, uninterruptible power supply (“UPS”) system, and electrical power distribution system at both treatment plants;
- Implementation of the recommendations of the Climate Resiliency Study and Seismic Evaluation Study to withstand or adapt to adverse conditions such as heavy rains, flooding, sea level rise, earthquakes, tsunamis, extreme heat, wildfires and electrical grid interruptions;
- Replacement or rehabilitation of plant-wide infrastructures, such as buried process piping, tunnels and junction structures;
- Replacement or rehabilitation of District’s outlying pumping stations, including the abandonment and/or demolition of two pump stations;
- Rehabilitation of aging trunk sewers and manholes;
- Reduction of fence line odor to levels that minimize odor complaints; and
- Safety improvements at both treatment plants.

The CIP is reviewed, validated and updated annually to ensure that the project scopes of work and cost estimates are up-to-date. Through the budget validation process, each project’s schedule, staff resources, total project costs, cash flow and risks are assessed to confirm the budgetary requirements. The most recent CIP validation effort (the “2021 CIP Validation Study”) resulted in revisions to the CIP. The CIP currently includes 69 active and future capital projects, five programs, such as the Planning Studies Program and Small Construction Program, and budget for capital equipment purchases with a total CIP budget authority of \$4.25 billion. Set forth in Table 5 below is a summary of total CIP outlays, net of savings and deferrals, over the fiscal years 2021-22 through 2030-31. Of this ten-year, \$3.0 billion portion of the CIP program, \$235 million of CIP outlays and \$5 million of future rehabilitation and replacement are budgeted in Fiscal Year 2021-22. Also budgeted in a separate contra line item are anticipated offsetting CIP savings and deferrals of \$15 million, thereby reducing the net budgeted outlays to \$225 million for Fiscal Year 2021-22.

Table 5
Net Capital Improvement Program Outlays
Fiscal Years 2021-22 through 2030-31

<u>Project</u>	<u>Cost</u>
Rehabilitation and Replacement	\$2,333,236,923
Additional Capacity	119,480,750
Regulatory	14,837,100
Strategic Initiatives	475,212,850
Future Rehabilitation and Replacement	348,586,604
CIP Savings and Deferrals	<u>(319,507,384)</u>
Total Validated Capital Improvement Program	<u>\$2,971,846,843</u>

Source: 2021 CIP Validation Study, Orange County Sanitation District.

Groundwater Replenishment System

The District has taken a multi-jurisdictional approach to planning for capital facilities because many of the methods for reducing or managing flows involve other jurisdictions. One such project is the Groundwater Replenishment System (the “GWRS”). In March 2001, the District entered into an agreement with the OCWD to design and construct the GWRS. The capital cost of this Phase was shared equally (50% shares) by each agency. The GWRS is a joint effort by the two agencies to provide reclaimed water for replenishment of the Orange County Groundwater Basin and to augment the seawater intrusion barrier. The GWRS became operational in January of 2008 producing 70 mgd of highly purified water. The Initial Expansion of the GWRS broke ground in January 2012 to add approximately 30 mgd of production capacity and was completed in June 2015, resulting in purifying 100% of the treated wastewater from the District’s Fountain Valley-based Plant No. 1. The Initial Expansion of the GWRS was funded solely by the OCWD. In 2016, the District and the OCWD completed a \$2 million joint study to explore the Final Expansion of the GWRS which would increase GWRS capacity by an additional 30 mgd. The study identified an implementation plan to convey secondary effluent from the District’s Plant No. 2 in Huntington Beach using new and existing infrastructure to support the GWRS Final Expansion. The GWRS Final Expansion will be funded solely by the OCWD. The District currently has two active projects supporting the GWRS Final Expansion. The costs of these projects will be reimbursed by the OCWD. The Final Expansion of the GWRS is expected to be online in 2023.

Biosolids Management

Through the treatment of wastewater, the District recovers and treats nutrient-rich, organic matter (solids) to produce biosolids. Consistent with the regulations of the U.S. Environmental Protection Agency (“EPA”) and the regulations in place at the end-use sites, the District’s biosolids are recycled through composting, fertilizing non-food farm fields (land application), and drying and pyrolyzing (to produce fertilizing pellets and biochar). The District’s goal is to ensure our biosolids management strategies align with existing market conditions and continue a sustainable, reliable and economical biosolids management program that provides environmentally-sound practices and meets federal, State and local regulatory requirements.

The District’s biosolids averaged about 543 tons per day (“tpd”) in Fiscal Year 2020-21, with a total expenditure of 93% of the \$12.4 million budgeted, at an annual average cost per ton of \$61.45 for hauling and management at offsite locations, as described in the following table below. The District’s biosolids tonnage dropped in 2019 after the new solids centrifuge facilities were fully commissioned, which significantly reduced biosolids hauling and management costs. In addition, in September 2021 the

Irvine Ranch Water District’s solids discharge to the District has effectively ceased as commissioning of their new solids processing facilities approaches completion.

Biosolids Management Contracts

<u>Contractor</u>	<u>Location(s)</u>	<u>Product</u>	<u>Contract Term</u>	<u>Current tons per day managed (approximate)</u>	<u>Estimated cost per ton with fuel (Sept. 2021)</u>
Synagro Nursery Products	San Bernardino County, CA, and Kern County, CA, and failsafe back-up in La Paz County, AZ	Compost	Expires 12/26/22; four (4) one-year renewal options remaining	194 tpd ⁽¹⁾	\$58.68
Liberty Composting	Kern County, CA	Compost	Expires 12/15/22; three (3) one-year renewal options remaining	95 tpd	\$59.53
Inland Empire Regional Composting Facility (hailed by Denali Water Solutions)	Rancho Cucamonga, CA	Compost	Expires 6/30/24; two (2) one-year renewal options remaining	23 tpd	\$76.83
Tule Ranch, AgTech	Yuma County, AZ	Feed, seed and fiber crops	Expires 10/31/22 with no renewal options remaining	187 tpd	\$60.11
Rialto Bioenergy Facility	San Bernardino County, CA	Pellets, biochar	Expires 8/31/24; two (2) one-year renewal options remaining	19 tpd	\$94.00

The District’s contractors provide sufficient biosolids management capacity under the District’s normal operating conditions and during emergencies, if needed in California and Arizona that includes compost, land application, lime stabilization and landfill. Together, these options have the additional available capacity to manage more than ten times the District’s daily biosolids production to ensure sustainable, consistent and reliable operations. The District’s biosolids management contracts do not guarantee biosolids tonnage and are typically interim-term contracts with five (5) one-year renewal options, for a maximum contract term of 10 years.

In May 2017, the District completed its Biosolids Master Plan that included an evaluation of existing solids handling facilities, assessment of solids treatment alternatives, recommendations for future capital facilities’ improvements, identification of alternatives biosolids products that meet sustainable and beneficial reuse markets and plans for a high-strength organic (food waste slurry) co-digestion facility. The Biosolids Master Plan will serve as the District’s solids roadmap through construction of new Plant No. 2 solids handling facilities over a 20-year planning period (until 2037).

The 2021 Strategic Plan recognized several regulatory processes with potential impacts to the biosolids program including increased opportunities to manage biosolids in California, food waste

management, and future regulations on constituents of emerging concern which could limit biosolids recycling options.

Urban Runoff

Recognizing that County beaches were being affected by pollution carried by urban runoff, the Board of Directors adopted a number of resolutions to accept dry weather urban runoff into the sewer system. In June 2002, Assembly Bill 1892 amended the District's charter to formally allow the diversion and management of dry weather urban runoff flows. Resolution No. 01-07, adopted March 28, 2001, declared that the District will initially waive fees and charges associated with authorized discharges of dry weather urban runoff to the sewer system until the total volume of all runoff discharges exceeds 4 mgd calculated on a monthly average. For the first 12 years of the Urban Runoff Program, the average monthly flow averages remained less than the 4 mgd threshold, thus avoiding user fee costs being assessed to the diversion permittees. In 2012, the District received a number of diversion proposals to deal with bacteria and selenium loading to the upper Newport Bay. The discharge from the additional proposed diversions combined with the existing diversion flows would eventually exceed the four mgd fee threshold. On June 12, 2013, the Board of Directors adopted Resolution No. 13-09 expanding the waiver of fees or charges on the treatment of dry weather urban runoff from 4 mgd to 10 mgd. According to the Board of Directors, the change was necessary not only to protect the County's coastal resources, but also to provide an economic benefit to the local economy by helping to keep the County's beaches open.

The Dry Weather Urban Runoff Program is administered by the District's Resource Protection Division, which issues a discharge permit for each of the diversion structures. The permit functions as a control mechanism that specifically prohibits wet weather runoff and authorizes discharge only during periods of dry weather. The permit also establishes specific discharge limits, constituent monitoring and flow metering requirements. The District conducts routine sampling and analysis of the urban runoff discharges to ensure discharge limit compliance with the various regulated constituents.

There are currently 21 active urban runoff diversion structures; three owned and operated by the County of Orange, 11 owned and operated by the City of Huntington Beach, three owned and operated by the City of Newport Beach, three owned and operated by the IRWD, and one owned and operated by PH Finance (present owner of the Pelican Point Resort). To control bacteria loading to the Lower Newport Bay, the City of Newport Beach is currently in the permit application phase of two new diversions in an area known as the Arches Diversion. Additionally, the City of Santa Ana constructed the Santa Ana-Delhi Channel Diversion, on behalf of the parties in the Santa Ana-Delhi Channel Diversion Project Agreement. Built to control bacteria and selenium loading to the Upper Newport Bay, the Santa Ana-Delhi Channel Diversion is projected to contribute an additional 2 mgd of urban runoff. The Santa Ana-Delhi project is still in the process of calibrating the effluent meter before closing out the project, and a discharge agreement is scheduled to be finalized by the end of 2021. [Check status at end of year.] The District continues to work with the Orange County Public Works Department to prioritize existing and proposed diversion projects to ensure that the District's limited capacity is effectively utilized to improve coastal water quality.

Integrated Emergency Response Program

In recognition of the potential damage which could occur in the event of a major earthquake, flood, or other disaster, the District implemented an Integrated Emergency Response Program (the "IERP") in 1979. The IERP contains policies, plans and procedures preparing for, and responding to, emergencies. The District also analyzed disaster preparedness issues and policies within the Master Plan, and within a 1994 report titled Fault Rupture Hazard Investigation – Wastewater Treatment Plant No. 2 (the "1994 Report").

In 2020, the District updated the IERP to align with standards set by the Federal Emergency Management Agency's National Incident Management System (NIMS). The IERP is organized into Functional and Situational Annexes which guide the District's response to man-made and natural disasters. Functional Annexes align with the Federal Emergency Management Agency Emergency Support Functions (ESFs). Functional Annexes include logistics, communications, operations, maintenance, engineering, emergency management, cybersecurity, recovery, environmental, health and medical services, hazardous materials response, security, and public affairs. These are discipline-specific groups that develop Functional Annexes to describe goals, objectives, operational concepts, capabilities, organizational structures and replaced policies and procedures. Situational Annexes are developed for each of the hazard responses that are likely or could possibly occur at the District. Situational Annexes include earthquake, power outage, pandemic event, fire, tsunami, atmospheric hazard, hazardous materials spill or release, man-made physical disruption, man-made technological disruption, flood, landslide, coastal erosion, extreme weather, severe storm, high winds, severe thunderstorm, and drought. These Annexes stipulate certain actions to be taken by individuals at the time of the incident.

The disaster preparedness plan included in the Master Plan reviewed two possible major earthquake scenarios: an 8.3 Richter magnitude ("M") earthquake on the southern San Andreas fault system and an M 7.0 earthquake on the Newport-Inglewood fault zone, which includes Plant No. 2. An M 8.3 earthquake on the southern San Andreas fault, while on the whole more destructive than the M 7.0 Newport-Inglewood fault, may result in less damage to the District's service area due to the distance of the fault from most of the service area. However, the Master Plan stated that damage from such a major earthquake on the San Andreas fault would be extensive. Also, the Master Plan indicated that an M 7.0 earthquake on the Newport-Inglewood fault within five miles of the District's sewerage facilities could cause major destruction to those facilities. The disaster preparedness plan in the Master Plan indicated that it would not be economically feasible to upgrade all of the existing sanitary sewerage facilities to survive an earthquake of this magnitude along the Newport-Inglewood fault.

The Master Plan analyzed the vulnerability of the sanitary sewerage facilities and operations of the District and planned a risk reduction program wherein the vulnerability of many of the District's sanitary sewerage facilities to an earthquake could be reduced by recommended retrofit construction measures. The Master Plan also recommended that designs of existing major structures which were constructed prior to development of current seismic design standards be reviewed and the structures strengthened, if necessary.

Since the Master Plan and the 1994 Report, the District has completed retrofitting where deemed appropriate. Pursuant to the Master Plan, all recent and future projects have been, and will be, designed to the same high earthquake code standards as set for other essential services, such as hospitals and fire stations. Many of the older buildings analyzed in the Master Plan have been replaced by structures built after 1989.

The Army Corps of Engineers' "All-River Plan" has mitigated any future flooding of the Santa Ana River system and potential threats to the District's Wastewater System. Also, both Plant No. 1 and Plant No. 2 are built to federal standards.

The IERP addresses vulnerabilities from natural and man-made hazards including but not limited to floods, high flow events, tsunamis (large ocean waves generated by seismic activity), earthquakes, and hazardous material releases. No assurance can be given that any such events would not have a material adverse impact on the Wastewater System.

The District's High Flow Emergency Response Plan is included as an Annex in the IERP. This plan is based on a color code system from blue to yellow to orange to red and then purple that identifies

specific actions to be taken by staff in response to expected and actual increasing flow coming into the District's treatment plants and collection sewers. The District believes that wastewater collection, treatment and disposal systems typically undertaken in anticipation of normal wet weather should be able to withstand, for example, an "expected/average" El Nino event without significant disruption. While no assurances can be given, the District believes that the likelihood of a system failure is low due to the operational readiness of all of its equipment and the District's high level of equipment redundancy.

The Strategic Plan and IERP makes recommendations regarding fire protection of the Wastewater System. Most of the structures at Plant No. 1 and Plant No. 2 are constructed of fire-resistant materials. The IERP describes the procedures needed to respond to a possible disaster. For more information regarding emergency response policies, the disaster preparedness plan described in the IERP can be reviewed at the District's offices.

Strategic Planning

The District maintains a Strategic Plan to address future service levels and operational needs. The Strategic Plan envisions an organizational culture that adheres to the District's Core Values (approved on November 17, 2021) and makes efficient and effective use of all available resources. The District is committed to focusing efforts on customer service, protecting public health and the environment, fiscal responsibility, communications, partnering with others, and creating the best possible workforce.

The Strategic Plan is broken down into four broad categories with 15 topic areas that define District responsibilities and services.

These areas are:

- **Business Principles**
 - Budget Control and Fiscal Discipline - prudently manage the public funds that the District collects
 - Asset Management - assess and manage the collection system and treatment plant systems and assets to improve resilience and reliability while lowering lifecycle costs
 - Cybersecurity - maintain adequate cybersecurity techniques that protect computer assets, networks, programs, data, and industrial control equipment from unauthorized access or attacks
 - Property Management - identify and protect all District property rights to assure that assets are not encumbered or encroached upon so that the facilities may be properly operated, maintained, upgraded, and replaced
 - Organizational Advocacy and Outreach - maintain stakeholders informed to garner support for services while protecting the District's interest with legislative oversight.
- **Environmental Stewardship**
 - Energy Independence - strive to be a net energy exporter; maximize electrical, thermal, and methane gas generation; minimize energy utilization using sound engineering and financial principles
 - Climate and Catastrophic Event Resiliency - design, maintain and operate valuable wastewater assets that withstand or adapt to adverse conditions in a

reasonable manner that is both cost-effective and sustainable for present and future generations

- Food Waste Treatment - collaborate with local agencies and waste haulers to find ways to beneficially reuse food waste to assist cities in our service area in meeting their diversion requirements while increasing the District's energy production
- Water Reuse - seek to beneficially reuse all reclaimable water for potable, industrial, irrigation and environmental uses
- Environmental Water Quality, Stormwater Management and Urban Runoff - partner with stormwater permittees to accept up to 10 million gallons per day of dry weather urban runoff at no charge to improve water quality in streams, rivers and beaches as long as the constituents within the flow do not adversely impact the District's worker safety, treatment processes, reuse initiatives, or permit compliance
- Wastewater Management
 - Chemical Sustainability - identify chemicals key to District operation, investigate the market risks for those chemicals and devise strategies to mitigate identified risks to availability and pricing
 - Biosolids Management - remain committed to a sustainable biosolids program and beneficially reuse biosolids
 - Constituents of Emerging Concern - partner with other agencies, associations, and institutions to support the use of sound science to inform policy and regulatory decisions on constituents of emerging concern at the federal, state, and regional levels
- Workplace Environment
 - Resilient Staffing - attract and retain high-quality talent to support its mission and continue to be an industry leader
 - Safety and Physical Security - ensure the safety and security of employees, contractors and visitors through standard practices, policies, and procedures that support a safe and secure environment, provide an appropriate level of security and safeguard the District's property and physical assets

Climate Issues

Numerous scientific studies on climate change show that, among other effects on the global ecosystem, sea levels will rise, extreme temperatures, including droughts, will become more common, and extreme weather events will become more frequent as a result of increasing global temperatures attributable to atmospheric pollution. Sea levels will continue to rise in the future due to the increasing temperature of the oceans causing thermal expansion and growing ocean volume from glaciers and ice caps melting into the ocean. Coastal and low-lying areas like portions of the District's service area and facility locations are at risk of substantial flood damage over time, affecting private development and public infrastructure, including roads, utilities, emergency services, schools, and parks. Certain of these coastal areas are also at elevated risk to damage from tsunamis.

The District commissioned a study titled Climate Resiliency Study in 2018 to provide a comprehensive analysis of climate-related, site-specific risk assessments of the District's facilities using

available climate predictions, industry standards, and geographical information systems. A purpose of the study was to help improve the resiliency of District facilities and incorporate adaptation strategies in the design and construction of future projects.

District policy aims to design, maintain, and operate wastewater assets that withstand or adapt to adverse conditions in a reasonable manner that is both cost-effective and sustainable for present and future generations. These adverse conditions include heavy rains, flooding, sea level rise, earthquakes, tsunamis, extreme heat and wildfires.

The vulnerability assessment identified Plant No. 2 and a few pump stations located along the coast and by flood channels to be vulnerable to tsunami and flooding due to sea-level rise. At Plant No. 2, the recommendation is to install a flood wall along Brookhurst Street and the Talbert Marsh to protect the plant against a 100-year flood (with sea-level rise projected to 2070) as well as a tsunami up to 10 feet. As for the pump stations, the recommendation is to employ building-level adaptations such as stop logs over doors and watertight hatches to protect vulnerable equipment inside the pump stations. These recommended improvements are underway, with implementation planned in phases over time. The budget for the implementation of these recommendations have been incorporated into the District's 20-year Capital Improvement Program.

While the District's efforts aim to improve the resiliency of its facilities, natural disasters and other natural forces are not entirely predictable and may, nonetheless, result in material damage to District facilities with material costs to repair.

Climate change and natural forces may damage other property in the District's service area or impose new or larger economic costs, leading to negative impacts on the local economy. As a result, the District may experience negative impacts on service revenues and ad valorem tax revenues or increased District costs that could have a material adverse effect on the business operations or financial condition of the District.

Additionally, climate change and other environmental concerns have led, and may continue to lead, to new laws and regulations at the federal and state levels (including but not limited to air, water, hazardous substances and waste regulations) that could have a material adverse effect on the operations and financial condition of the District.

DISTRICT REVENUES

Sewer Service Charges

General. The District has the power to establish fees and charges for services of the Wastewater System. Such fees and charges are established by the District's Board of Directors and are not subject to review or approval by any other agencies. In Fiscal Year 1997-98, a Rate Advisory Committee (the "RAC") was established comprised of representatives from industrial, commercial and residential users. The goal of the RAC was to examine the then-current rate structure and, if needed, develop recommendations for change. The RAC analyzed the District's rate structure to determine whether its then current sewer service user fees (now known as "Sewer Service Charges") were equitable among residential and industrial customers. This review resulted in a proposal to expand the number of non-residential user categories from one to 23 and to provide for gradual rate increases in seven of the nine Revenue Areas. The Sewer Service Charges for those categories were based on the average flow and strength of wastewater discharged for each property type and remain currently in use.

The Board of Directors establishes the annual sanitary sewer service charges by ordinance. The sanitary sewer service charge ordinances are adopted by a two-thirds vote of the Board of Directors as required under law after conducting a noticed public hearing in compliance with Proposition 218. See “LIMITATIONS ON TAXES AND REVENUES – Article XIIC and Article XIID of the California Constitution.”

The District collects Sewer Service Charges from property owners through the semi-annual property tax bill distributed by the County throughout the District, except in Revenue Area No. 14. Pursuant to the IRWD Agreement, the District receives quarterly fee payments from the IRWD which directly collects fees from customers through a monthly billing procedure in Revenue Area No. 14.

The District currently participates in the County’s Teeter Plan under which the District receives annually 100% of the secured property tax levies to which it otherwise is entitled, regardless of whether the County has actually collected the levies.

The District has covenanted in the Master Agreement to fix, prescribe and collect fees and charges to satisfy certain coverage requirements as further described under “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS – Rate Covenant” herein.

Residential and Commercial Sewer Service Charges. In December 2017, the Board of Directors authorized a Proposition 218 notice on proposed rate increases for each year over the next five years. Pursuant to the adoption of Ordinance No. OCSD-49 on March 28, 2018, the District established residential Sewer Service Charges, except within Revenue Area No. 14, based on the cost of services and facilities provided to each customer of the District. The noticed public hearing held in connection with the adoption of this ordinance considered an increase in the single family residential rate, the underlying rate for all of the District’s sewer service charges, of 1.2% for Fiscal Year 2018-19 through Fiscal Year 2022-23. These increases were approved by the Board through the adoption of Ordinance No. OCSD-49. The District deferred the 1.2% rate increase for fiscal year 2020-21 as a COVID-19 relief measure but implemented the 1.2% increase scheduled for fiscal year 2021-22 and expects to implement the 1.2% increase scheduled in fiscal year 2022-23 as approved. Set forth in Table 6 below is a comparison of the past and projected Sewer Service Charge rate for single family residences (“SFRs”) for the fiscal years shown.

Table 6
Annual Sewer Service Charges
Single Family Residence Rate
Fiscal Years 2013-14 through 2022-23

<u>Fiscal Year</u>	<u>Sewer Service Charge</u>	<u>Percentage Change</u>
2013-14	\$308	-
2014-15	316	2.6
2015-16	322	1.9
2016-17	327	1.6
2017-18	331	1.2
2018-19	335	1.2
2019-20	339	1.2
2020-21	339	0
2021-22	343	1.2
2022-23	347	1.2

Source: Orange County Sanitation District.

The District expects to conduct a rate study in the first calendar quarter of 2022 for the fiscal years beginning on and after July 1, 2023.

Set forth in Table 7 below are the total average annual Sewer Service Charges for SFRs within the District, together with comparable total average annual charges for wastewater service within the jurisdictions of certain other cities and districts within the State as of July 1, 2021.

[Remainder of page intentionally left blank.]

Table 7
Comparison of Total Sewer Service Charges
For Single-Family Residences
As of July 31, 2021

<u>Entity</u>	<u>Average Dry Weather Flow (mgd)⁽¹⁾</u>	<u>Annual Sewer Service Charge⁽¹⁾</u>	<u>Treatment Level⁽²⁾⁽³⁾</u>	<u>Collection Responsibility⁽³⁾</u>	<u>Property Tax Income⁽³⁾</u>
City of Los Angeles	327	\$636	4	Yes	No
City of San Diego	168	573	4	Yes	No
Sacramento County	109	444	4	No	Yes
East Bay MUD	61	457	4	No	Yes
Orange County Sanitation District ⁽⁴⁾	182	343	3	Yes	Yes
Los Angeles County	N/A	226	4	No	Yes

(1) Source: Information obtained from respective entities listed.

(2) Treatment Level Categories:

“1” – Primary treatment.

“2” – Advanced primary or primary with some secondary treatment.

“3” – Secondary treatment.

“4” – Advanced secondary or secondary with some tertiary treatment.

“5” – Tertiary treatment.

(3) Source: Wastewater User Charge Survey Report by the California State Water Resources Control Board.

(4) The District’s Annual Sewer Service Charge for Fiscal Year 2021-22 is \$343.

The District’s SFR rate of \$343 for Fiscal Year 2021-22 remains below the average annual sewer rate of about \$527 according to the National Association of Clean Water Agencies 2020 Cost of Clean Water Index. The average annual sewer rate for Region 9 which includes California, Nevada and Arizona is \$505.

Industrial Sewer Service Charges. The District charges industrial Sewer Service Charges to customers discharging high-strength or high-volume wastes into the sewer systems. Customers subject to industrial Sewer Service Charges are billed directly by the District. The fee charged to each customer is based on the customer’s sewage volume, the concentration of suspended solids and biochemical oxygen demand. Total industrial Sewer Service Charges in Fiscal Year 2020-21 were approximately \$12.6 million. Industrial Sewer Service Charges are applied to both operating and capital funds. The Sewer Service Charge increases described above are necessary to meet the District’s cash flow needs arising from the addition of disinfection treatment and other operating requirements.

Additional Revenues

The District has several sources of additional revenue, including property taxes, Capital Facilities Capacity Charges, capacity rights, permit and inspection fees and interest earnings.

Property Taxes. The District receives approximately 2.5% of the one percent County ad valorem property tax levy, based on the allocation procedure under State law. Property tax revenues were \$88.3 million in Fiscal Year 2016-17, \$94.2 million in Fiscal Year 2017-18, \$99.5 million in Fiscal Year 2018-19, \$104.5 million in Fiscal Year 2019-20 and \$110.2 million in Fiscal Year 2020-21. The District currently estimates that its property tax receipts will increase by approximately 3.0% each year through Fiscal Year 2030-31. The apportionment of the ad valorem tax is pursuant to the Revenue Program

adopted in April 1979 to comply with regulations of the Environmental Protection Agency, the State Water Resources Control Board and Board of Directors' policy.

Capital Facilities Capacity Charges. Capital Facilities Capacity Charges (commonly referred to as connection fees) are one-time fees with two components, paid at the time property is developed and connected to the Wastewater System. The fees are imposed by the District pursuant to Section 5471 of the California Health and Safety Code and are levied to pay a portion of the District's capital costs and for access to capacity in the Wastewater System. The District currently has Capital Facilities Capacity Charges of \$5,346 per residential unit (base rate for three-bedroom, with other unit sizes having a rate that is a percentage of the base rate depending on the size of the unit); however, under the current industrial use ordinance, additional Capital Facilities Capacity Charges can be imposed on industrial users who place larger than average demand on the Wastewater System and certain units are exempt based on state law (i.e., junior additional dwelling units). Member cities and sanitary districts collect Capital Facilities Capacity Charges for the District when building permits are issued. Capital Facilities Capacity Charges are reviewed annually to reflect the changes in the value of the Wastewater System to which a new customer is connecting.

On December 15, 1999, the Board of Directors approved District Ordinance No. OCSD 11 (the "1999 Ordinance") which established a comprehensive Capital Facilities Capacity Charge. The 1999 Ordinance, effective as of January 1, 2000, renamed connection fees as Capital Facilities Capacity Charges and provided a more equitable schedule of fees among industrial, commercial and residential users. Pursuant to the 1999 Ordinance, Capital Facilities Capacity Charges were revised for high demand industrial users in five incremental increases from 1999 through 2001. Capital Facilities Capacity Charge rates have been further amended by ordinances enacted over time. For a summary of historical and projected revenues derived from Capital Facilities Capacity Charges, see Table 14 and Table 15 below.

Pursuant to an agreement with the IRWD, the IRWD is not required to pay Capital Facilities Capacity Charges and, in exchange, the IRWD provides funding to the District for the construction costs of certain wastewater collection, transmission, treatment and disposal facilities to be used by the IRWD and is obligated to make certain payments to the District for certain services arising from the Wastewater System (including any standby or availability charges).

Sale of Capacity. The District has entered into agreements with the Santa Ana Watershed Project Authority ("SAWPA") whereby wastewater from Upper Santa Ana River Basin dischargers can be transported through the District's Santa Ana River Interceptor to the District's wastewater treatment facilities. This program was developed in the early 1970s. The agreements establish control mechanisms regarding the quality of wastes deposited into the Wastewater System. At the present time, SAWPA has purchased and paid for 30 mgd of maximum regulated flow capacity rights in the District's Santa Ana River Interceptor and 17 mgd of monthly average flow capacity in the District's wastewater treatment plants. Projected revenues from SAWPA range from \$2.7 million to \$3.0 million over the next five years. Additional treatment plant capacity can be purchased in increments at the District's current replacement cost.

Federal Subsidy Payments. In connection with the District's Revenue Obligations, Series 2010A (the "2010A Revenue Obligations") and the District's Revenue Obligations, Series 2010C (the "2010C Revenue Obligations"), issued as "Build America Bonds," the District was scheduled to receive certain federal subsidy payments of approximately \$5.1 million annually through 2031 and lesser amounts thereafter until 2044. Subsidy payments with respect to the 2010A Revenue Obligations and the 2010C Revenue Obligations constitute Revenues as defined in the Master Agreement. In its financial reports, the District accounts for subsidy payments received in connection with the 2010A Revenue Obligations and the 2010C Revenue Obligations as a reduction in interest expense with respect to such obligations.

For the 2010A Revenue Obligations and the 2010C Revenue Obligations to be and remain Build America Bonds, the District must comply with certain covenants and establish certain facts and expectations with respect to the 2010A Revenue Obligations and the 2010C Revenue Obligations, the use and investment of proceeds thereof and the use of property financed thereby. Thus, it is possible that the District may not receive the federal subsidy payments due to the District's noncompliance. The federal subsidy payments are also subject to offset against amounts that may, for unrelated reasons, be owed by the District to any agency of the United States of America.

On March 1, 2013, the federal government announced the implementation of certain automatic spending cuts known as the sequester (the "Sequester"). As a result of the Sequester, aggregate federal subsidy payments for the 2010A Revenue Obligations and the 2010C Revenue Obligations were reduced by amounts ranging from \$220,679 to \$376,498 in each federal fiscal year ended September 30, 2013 through 2021, with annualized reduction rates ranging from 5.7% to 8.7%. The federal government has announced that the federal subsidy payments for the federal fiscal year ended September 30, 2021 through the federal fiscal year ending September 30, 2030 will be reduced at a rate of 5.7% annually.

The District is obligated to make all payments with respect to the 2010A Revenue Obligations and the 2010C Revenue Obligations from Revenues as defined in the Master Agreement, regardless of whether it receives the full amount of federal subsidy payments. The District cannot predict whether future reductions in federal subsidy payments will occur due to the Sequester. However, the District does not believe that any reduction in federal subsidy payments will have a material adverse effect on the District's ability to pay the 2010A Revenue Obligations or the 2010C Revenue Obligations.

Wastewater Treatment History

The wastewater flows for Fiscal Year 2016-17 through Fiscal Year 2020-21 were 188 mgd, 185 mgd, 191 mgd, 188 mgd and 182 mgd, respectively. The highest flow rate experienced was in January 2017 where peak flow of 586 mgd was recorded. There were no sewer failures or overflows during these events. See "THE DISTRICT – Integrated Emergency Response Program."

Customers

The historical number of customers served by the District for the Fiscal Years 2016-17 through Fiscal Year 2020-21 and the projected number of customers served by the District for the Fiscal Years 2021-22 through 2023-26, identified in equivalent dwelling units ("EDUs"), are set forth in Table 8 below. As discussed below, sewer service charges are based on the expected amount of wastewater flow for a single family dwelling.

[Remainder of page intentionally left blank.]

Table 8
Historical and Projected Equivalent Dwelling Units
Fiscal Years 2016-17 through 2025-26

<u>Fiscal Year</u>	<u>Historical EDUs⁽¹⁾</u>	<u>Fiscal Year</u>	<u>Projected EDUs</u>
2016-17	932,232	2021-22	923,730
2017-18	930,174	2022-23	926,501
2018-19	918,640	2023-24	929,281
2019-20	918,608	2024-25	932,069
2020-21	920,908	2025-26	934,865

Source: Orange County Sanitation District.

⁽¹⁾ Presentation in the Statistical Section of the District's Annual Comprehensive Financial Report set forth in Appendix A includes EDUs that equate to total Sewer Service Charge collections rather than levies.

Set forth in Table 9 below are the number of residential and commercial customers and industrial customers and the approximate percentages of Sewer Service Charge revenues derived from the combined residential and commercial use and industrial use for the last five fiscal years.

Table 9
Number of Accounts and Revenues by Customer Class
for the Fiscal Years 2016-17 through 2020-21
(\$ in Millions)

<u>Fiscal Year</u>	<u>Residential/Commercial</u>			<u>Industrial</u>		
	<u>Number of Equivalent Single-Family Dwellings</u>	<u>Total Revenue</u>	<u>Percentage of Sewer Service Charge Revenues</u>	<u>Number of Customer Accounts</u>	<u>Total Revenue</u>	<u>Percentage of Sewer Service Charge Revenues</u>
2016-17	859,869	\$281.2	95%	466	\$13.8	5%
2017-18	871,338	288.4	94	473	17.9	6
2018-19	871,312	291.9	97	476	9.4	3
2019-20	904,886	306.8	96	473	12.8	4
2020-21	908,219	307.9	96	467	12.3	4

Source: Orange County Sanitation District.

The EDUs set forth in Table 9 relate to total Sewer Service Charge collections while the EDUs set forth in Table 8 relate to total Sewer Service Charge Levies.

Set forth in Table 10 below are the ten largest principal sewer service customers of the District for the Fiscal Year ended June 30, 2021.

Table 10
Largest Principal Sewer Service Customers of the District
for the Fiscal Year Ended June 30, 2021

<u>User</u>	<u>Sewer Service Charges</u>
House Foods America Corp. (West)	\$1,532,692
Stremicks Heritage Foods, LLC	1,150,290
Pulmuone Wildwood, Inc.	651,887
Newport Fab, LLC (TowerJazz Semiconductor)	635,752
Ameripecc, Inc.	516,918
House Foods America Corp. (East)	511,698
MCP Foods, Inc.	487,078
Nor-Cal Beverage Co. Inc. (Main)	417,014
Brea Power II, LLC	405,600
Nor-Cal Beverage Co. Inc. (Main)	390,401

Source: Orange County Sanitation District.

Assessed Valuation

The assessed valuation of property in the County is established by the County Assessor, except for public utility property which is assessed by the State Board of Equalization. Due to changes in assessment required under State Constitution Article XIII A, the County assessment roll no longer purports to be proportional to market value. See “LIMITATIONS ON TAXES AND REVENUES” herein. Generally, property can be reappraised upward to market value only upon a change in ownership or completion of new construction. The assessed value of property that has not incurred a change of ownership or new construction must be adjusted annually to reflect inflation at a rate not to exceed 2% per year based on the State consumer price index. In the event of declining property value caused by substantial damage, destruction, economic or other factors, the assessed value must be reduced temporarily to reflect market value. For the definition of full cash value and more information on property tax limitations and adjustments, see “LIMITATIONS ON TAXES AND REVENUES” herein.

The County Assessor determines and enrolls a value for each parcel of taxable real property in the County every year. The value review may result in a reduction in value. Taxpayers in the County also may appeal the determination of the County Assessor with respect to the assessed value of their property.

[Remainder of page intentionally left blank.]

Set forth in Table 11 below is a five-year history of assessed valuations in the District for the fiscal years shown.

Table 11
Assessed Valuations of Property in the District
Fiscal Years 2017-18 through 2021-22
(\$ in Billions)

<u>Fiscal Year</u>	<u>Value</u>	<u>Percent Change</u>
2017-18	\$416.3	6.26%
2018-19	443.1	6.44
2019-20	468.7	5.78
2020-21	494.2	5.44
2021-22	516.2	4.45

Source: County of Orange Auditor-Controller.

Tax Levies and Delinquencies

Property taxes are based on assessed valuation which is determined as described under “DISTRICT REVENUES – Assessed Valuation” herein. In accordance with the California Revenue and Taxation Code, the County tax collector collects secured tax levies for each Fiscal Year. Property taxes on the secured roll are due in two installments, on November 1 and February 1. The District currently participates in the County’s Teeter Plan under which the District receives annually 100% of the secured property tax levies and Sewer Service Charges to which it otherwise is entitled, regardless of whether the County has actually collected the levies. This alternative method provides for funding each taxing entity included in the Teeter Plan with its total secured property taxes during the year the taxes are levied, including any amount uncollected at fiscal year-end. Under this plan, the District’s general fund receives the full amount of secured property taxes levied each year on its behalf and, for so long as such plan remains in effect, the participating entities, such as the District, no longer experience delinquent taxes. The County’s general fund is the designated recipient of future collections of penalties and interest on all delinquent taxes collected on behalf of participants in this alternative method of apportionment.

[Remainder of page intentionally left blank.]

Set forth in Table 12 below is a five-year history of the District’s *ad valorem* total property tax and Sewer Service Charge levies.

Table 12
Total Property Tax and Sewer Service Charge Levies
in the District for Fiscal Years 2016-17 through 2020-21
(In Thousands)

<u>Fiscal Year</u>	<u>Total Property Tax and Sewer Service Charge Levy</u>
2016-17	\$381,226
2017-18	386,538
2018-19	394,641
2019-20	401,604
2020-21	____ 405,878

Source: County of Orange Auditor-Controller.

Budgetary Process

The District’s operating fund budget relies on revenues from Sewer Service Charges and property taxes, both of which are collected on the property tax bill, as previously described under the captions “— Sewer Service Charges” and “— Additional Revenues.” The District receives tax revenues from the County in eight allocations, with the largest receipts in December and April. The District operates on a Fiscal Year beginning each July 1. The operating fund budgets include funds to cover the dry period of each tax year, i.e., the period from the beginning of the Fiscal Year until the first taxes are received. The dry-period requirement is budgeted at one-half of the annual operating fund budgeted expenditures. The District uses the accrual method of accounting in its budgets. The District has conformed to its budgets for the last five fiscal years and is conforming to its budget for the current fiscal year.

The District’s annual budget preparation process begins in January of each year and concludes in June upon its adoption. The General Manager reviews the final operating budgets and then distributes them to the Directors and District Committees for consideration. The Board of Directors then adopts the proposed annual budgets, with any revisions, in June of each year.

Budgetary control is exercised at the individual Department level and administrative policies provide guidelines on budget transfers and the authorization necessary to implement transfers. A budget adjustment is a transfer which does not change the total appropriated amount and does not require Board of Directors action. Approval may be granted by the General Manager or the Department Head in certain circumstances. Department Heads have the discretion to reappropriation funds between certain line items within a division but may not exceed total appropriated amounts for each department. They may also transfer staff across divisional lines. The General Manager and Board of Directors must approve additional capital outlay items.

A budget amendment is an adjustment to the total appropriated amount which was not included in the original budget. These supplemental appropriations require formal action by the Board of Directors. Prior year reserves or fund balances may be appropriated to fund items not previously included in the adopted budget. Reserves or fund balances exceeding minimum amounts required by fiscal policies may be appropriated if it is determined to be in the best interest of the District. Directors may also appropriate reserves in case of emergencies or unusual circumstances.

Reserves

The District has an established reserve policy with seven distinct reserve criterion which together comprise the District’s reserve fund target. Collectively, these individual criterion requirements average \$546 million a year over the current ten-year cash flow forecast to support the operation and maintenance of the District’s \$10.8 billion in assets.

Set forth in Table 13 below are the actual reserves at June 30, 2018, June 30, 2019, June 30, 2020 and June 30, 2021 for each fund.

Table 13
Cash and Investment Reserves
June 30, 2018 through 2021
(In Millions)

	2018 (June 30)	2019 (June 30)	2020 (June 30)	2021 (June 30)
Cash Flow Requirements Reserve:				
Operating Expenses	\$ 76	\$ 81	\$ 84	\$ 87
Certificates of Participation Payments	82	80	77	24
Operating Contingencies Reserve	15	16	17	17
Capital Improvement Program Reserve	284	365	488	564
Catastrophe and Self Insurance	57	57	57	100
Capital Replacement and Refurbishment	66	64	64	75
Debt Service Required Reserves ⁽¹⁾	100	97	94	94
Rate Stabilization Reserve	-	-	-	-
Total	<u>\$680</u>	<u>\$760</u>	<u>\$881</u>	<u>\$961</u>

⁽¹⁾ “Debt Service Required Reserves” constitute all amounts designated for reserves within the District’s investment management program, together with certain funds held directly by bond trustees. As of June 30, 2021, of the total Debt Service Required Reserves of \$94 million, \$0 was held by bond trustees to meet specific covenants in the District’s bond documents.

Source: Orange County Sanitation District.

The District’s reserves consist of the following components:

- Cash Flow Criterion has been established at a level to fund operations, maintenance and certificate of participation expenses for the first half of the fiscal year, prior to the receipt of the first installment of the property tax allocation and sewer service user fees which are collected as a separate line item on the property tax bill. The level of this criterion will be established as the sum of an amount equal to six months operations and maintenance expenses and the total of the annual debt or certificate of participation service payments due in August each year.
- Operating Contingency Criterion has been established to provide for non-recurring expenditures that were not anticipated when the annual budget was considered and adopted. The level of this criterion will be established at an amount equal to ten percent of the current fiscal year’s annual operating budget.
- Capital Improvement Criterion has been maintained to fund annual increments of the CIP. The target level of this criterion has been established at one half of the average annual cash outlay of

the CIP through the year 2030. Levels higher and lower than the target can be expected while the long-term financing and capital improvement programs are being finalized.

- Catastrophic Loss, or Self-Insurance Criterion has been maintained for property damage including fire, flood, and earthquake, for general liability and workers' compensation. This reserve criterion is intended to work with purchased insurance policies, FEMA and State disaster reimbursements. Based on the plant infrastructure replacement value, the level of this criterion has been set to fund the District's non-reimbursed costs, estimated to be \$100 million.
- Capital Replacement/Refurbishment Criterion has been established to provide funding to replace or refurbish the current collection, treatment and recycling facilities at the end of their useful economic lives. The current replacement value of these facilities is estimated to be approximately \$10.8 billion. The reserve criterion level had been established at \$75 million.
- Debt Service Required Reserves Criterion has been established at ten percent of the outstanding certificate of participation issues. Other debt service reserves are required to be under the control of a Trustee by the provisions of the certificate of participation issues. These funds are not available for the general needs of the District and must be maintained at specified levels.
- Accumulated Funds exceeding the targets specified by District policy will be maintained for Capital Improvement and Rate Stabilization. These funds will be applied to future years' CIP needs due to the timing of the actual CIP outlays, in order to moderate annual fluctuations. There is currently no established target for this reserve and, because the reserves of all other funds have not been exceeded, the reserve level for this reserve fund has been zero for Fiscal Years 2017-18 through 2020-21.

Summary of Operating Data

Set forth in Table 14 below is a summary of historical audited operating results for the District for Fiscal Years 2016-17 through Fiscal Year 2020-21. The information presented in the summary should be read in conjunction with the financial statements and notes. See APPENDIX A — “ANNUAL COMPREHENSIVE FINANCIAL REPORT OF THE ORANGE COUNTY SANITATION DISTRICT FOR THE YEAR ENDED JUNE 30, 2021.”

[Remainder of page intentionally left blank.]

Table 14
Summary of District Historical Revenues and Expenses
and Other Financial Information
For Fiscal Years 2016-17 through 2020-21
(\$ in Millions)

	Audited				
	<u>2016-17</u>	<u>2017-18</u>	<u>2018-19</u>	<u>2019-20</u>	<u>2020-21</u>
Revenues:					
Residential & Commercial Sewer Service Charges ⁽¹⁾					
Regional	\$281.2	\$288.4	\$291.9	\$306.8	\$307.9
Local ⁽²⁾	1.3	(0.1)	-	-	-
Industrial Sewer Service Charges	13.8	17.9	9.4	12.8	12.6
IRWD Assessments	36.0	9.9	36.3	20.8	16.0
SAWPA Assessments	3.3	2.7	2.9	2.6	2.8
Ad Valorem Taxes	88.3	94.2	99.5	104.5	110.2
Interest Earnings	3.1	3.2	29.1	33.7	1.7
Other Revenues	<u>5.0</u>	<u>6.4</u>	<u>8.0</u>	<u>11.2</u>	<u>25.0</u>
Total Revenues	<u>\$432.0</u>	<u>\$422.6</u>	<u>\$477.1</u>	<u>\$492.4</u>	<u>\$476.2</u>
Operations and Maintenance Expenses ⁽³⁾	<u>\$150.3</u>	<u>\$145.6</u>	<u>\$166.6</u>	<u>\$168.3</u>	<u>\$168.0</u>
Net Revenues	<u>\$281.7</u>	<u>\$277.0</u>	<u>\$310.5</u>	<u>\$324.1</u>	<u>\$308.2</u>
Debt Service	<u>\$ 82.7</u>	<u>\$ 75.6</u>	<u>\$ 76.1</u>	<u>\$ 76.4</u>	<u>\$ 72.5</u>
UAAL Payment ⁽⁴⁾	<u>\$ 39.1</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 38.0</u>	<u>\$ -</u>
Coverage Ratios	3.41x	3.66x	4.08x	4.24x	4.25x
CIP Outlay	<u>\$141.9</u>	<u>\$117.2</u>	<u>\$152.8</u>	<u>\$118.2</u>	<u>\$164.0</u>
Ending Reserves	<u>\$531.0</u>	<u>\$680.4</u>	<u>\$760.4</u>	<u>\$880.8</u>	<u>\$960.6</u>

⁽¹⁾ Net of rebates, if any, to commercial users.

⁽²⁾ Local sewer service East Orange County Water District in Fiscal Year 2016-17.

⁽³⁾ Excludes depreciation and amortization expenses.

⁽⁴⁾ As of December 31, 2020, the District had an unfunded actuarial accrued pension liability in its defined pension benefit plan administered by the Orange County Employees Retirement System of \$0. In Fiscal Year 2016-17 and Fiscal Year 2019-20 the District paid down \$39 million, and \$38 million of this liability, respectively.

Source: Orange County Sanitation District.

[Remainder of page intentionally left blank.]

Forecasted Operating Data

Set forth in Table 15 below are forecasted operating results for the District for Fiscal Years 2021-22 through 2025-26. Projections for Fiscal Years 2021-22 through 2025-26 are based on assumptions in the Fiscal Year 2021-22 Budget Update approved on June 23, 2021. They assume the number of projects and scheduled build out set forth in the 2021 CIP Validation Study. The projections also reflect (i) the Board-approved annual rate increases of 1.2% for each of Fiscals Year 2021-22 and 2022-23, and (ii) assumed rate increases of 1.7% for each of Fiscal Years 2023-24 and 2025-26. Principal outlay components of these projections are derived from the 2021 CIP Validation Study, which identified 69 individual capital projects with projected outlay of \$3.0 billion over the fiscal years 2021-22 through 2030-31 . Much of the construction is scheduled during the next five years, with average annual capital outlays of \$302.6 million . The District's net CIP cash flow budget for Fiscal Year 2021-22 is \$224.6 million, which factors in allocation for future rehabilitation and savings and deferrals. This CIP budget finances joint works treatment and disposal system improvement projects, and collection system improvement projects. The preparation of such projections was based upon certain assumptions and certain forecasts with respect to conditions that may occur in the future. While the District believes that these assumptions and forecasts are reasonable for the purposes of the projected selected operating data, it makes no representation that they will in fact occur. To the extent that actual future conditions differ from those assumed herein, the data will vary.

[Remainder of page intentionally left blank.]

Table 15
Summary of District Forecasted Revenues and Expenses
and Other Financial Information
for Fiscal Years 2021-22 through 2025-26
(\$ in Millions)⁽¹⁾

	<u>2021-22</u>	<u>2022-23</u>	<u>2023-24</u>	<u>2024-25</u>	<u>2025-26</u>
Revenues:					
Residential & Commercial					
Sewer Service Charges	\$301.8	\$306.5	\$313.0	\$319.7	\$326.2
Industrial Sewer Service Charges	12.6	12.8	13.0	13.2	13.4
IRWD Assessments	18.7	20.7	16.0	14.7	16.7
SAWPA Assessments	2.7	2.8	2.8	2.9	3.0
Ad Valorem Taxes	103.2	106.3	109.5	112.8	116.2
Interest Earnings	14.5	14.1	13.4	12.8	12.0
Other Revenues	12.1	8.8	9.2	9.5	9.9
Total Revenues	<u>465.6</u>	<u>472.0</u>	<u>476.9</u>	<u>485.6</u>	<u>497.4</u>
Build America Bonds Federal Subsidy	4.8	4.8	4.8	4.8	4.8
Operations and Maintenance Expenses	<u>(184.0)</u>	<u>(180.6)</u>	<u>(186.0)</u>	<u>(191.5)</u>	<u>(197.3)</u>
Net Revenues ⁽²⁾	<u>286.4</u>	<u>296.2</u>	<u>295.7</u>	<u>298.9</u>	<u>304.9</u>
Debt Service ⁽³⁾	<u>75.4</u>	<u>73.2</u>	<u>73.2</u>	<u>73.1</u>	<u>73.1</u>
Coverage Ratios ⁽²⁾	<u>3.8</u>	<u>4.0</u>	<u>4.0</u>	<u>4.1</u>	<u>4.2</u>
CIP Outlays	<u>219.6</u>	<u>302.3</u>	<u>283.7</u>	<u>275.6</u>	<u>311.1</u>
Replacement, Refurbishment & Rehabilitation ⁽⁴⁾	<u>5.0</u>	<u>-</u>	<u>1.4</u>	<u>7.6</u>	<u>24.6</u>
Debt Proceeds	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Ending Reserves	<u>\$966.6</u>	<u>\$975.5</u>	<u>\$916.7</u>	<u>\$876.0</u>	<u>\$841.0</u>

⁽¹⁾ Assumptions:

- a) Annual growth in equivalent dwelling units is projected to average 0.3% over the next five years.
- b) The Residential, Commercial, and Industrial Sewer Service Charge forecasts are based on the total projected equivalent dwelling units. They also reflect (i) the Board-approved annual rate increase of 1.2% for Fiscal Year 2021-22 and the annual rate increase of 1.2% scheduled for Fiscal Year 2022-23, and (ii) assumed rate increases of 1.7% for each of Fiscal Years 2023-24 and 2025-26.
- c) Revenue Area No. 14 Fees are derived based on the projected contribution of sewage flows to the District from the Irvine Ranch Water District.
- d) Ad Valorem Taxes are projected with annual increases of 3%.
- e) Interest earnings are projected to average 1.0% of annual cash balances.
- f) Operating and Maintenance Expenses are forecasted with a base increase of 3.0% per year beginning with Fiscal Year 2022-23 with adjustments for known periodic outlays that do not occur annually.
- g) Annual CIP Outlays are based on the cash flow projections developed from the 2021 CIP Validation Study, with adjustments for CIP savings and deferrals.

⁽²⁾ Calculated in accordance with the Master Agreement and the Installment Purchase Agreement.

⁽³⁾ Assumes refunding of the Refunded Obligations with the proceeds of the Revenue Obligations as described in "REFUNDING PLAN" herein and estimated debt service on the Revenue Obligations.

⁽⁴⁾ Replacement, Refurbishment & Rehabilitation are known future capital outlays that have been identified within the District's Asset Management Program but have not yet been developed into specific proposed projects and included within the CIP Program.

Source: Orange County Sanitation District.

Management's Discussion and Analysis of Operating Data

As of June 30, 2021, the District has a financial net position of \$2.7 billion. Compared to the prior year, assets and deferred outflows increased by \$150.2 million, primarily caused by higher balances in cash and investments, capital assets and pension assets. Total liabilities and deferred inflows decreased by \$21.1 million, mainly from debt repayments made during the year.

There was an increase in net position of \$171.4 million, which was \$7.1 million less than the prior year increase. Compared to the prior year, there was a decrease in total revenues of \$16.2 million, mostly due to lower investment income. Total expenses were \$14.1 million less than the previous year, primarily due to a reduced annual integration adjustment for Irvine Ranch Water District's equity share in the District's treatment facilities. Additionally, capital facilities capacity charges decreased by \$5 million, largely due to impacts of COVID-19 on new building construction and related sewer connections.

Total operating expenses for Fiscal Year 2020-21 is \$168.0 million compared to the prior year total of \$168.3 million. The largest change was a decrease in salaries and benefits, which reflects lower retirement expenses, resulting from an increase in projected and actual earnings on pension plan investments.

As of June 30, 2021, the District has total cash and investments of \$960.6 million, which is an increase of \$79.9 million over the prior year balance. These funds are available to pay for budgeted operating, debt service and increasing capital improvement program costs.

The District approved an updated Fiscal Year 2021-22 budget on June 23, 2021, which updated the previous budget adopted for that period approved about a year earlier as part of the District's two-year budgeting process. The District's updated Fiscal Year 2021-22 operating, capital improvement, debt service, and other financing requirements budget total is \$650 million. The Fiscal Year 2021-22 budget update includes the District's net CIP cash flow budget of \$224.6 million. The CIP cash flow budget finances collection system, joint works treatment and disposal improvement projects. The updated budget reflects a \$16.2 million decrease from the originally proposed Fiscal Year 2020-2021 and Fiscal Year 2021-2022 two-year budget. The decrease is attributable to changes in project schedules and estimates that result in deferred spending.

The District treated an average of 188 mgd of wastewater generated by 2.6 million residents and a 1.8-million-person employment in central and northwest Orange County. The updated budget to operate, maintain and manage the sewage collection, treatment and disposal system is \$183.9 million. The cost per million gallons of wastewater treated is \$2,681. The updated budgeted amount reflects an increase over the prior budgeted amount and is due to a \$9.4 million increase in total operating costs.

The total budgeted full time equivalent ("FTE") staff position count for Fiscal Year 2021-22 is 639.0 FTEs. Budgeted salaries and benefits increased \$5.7 million above the previously budgeted expenditures primarily due to the impacts of the collective bargaining agreements and increases in medical insurance premiums. The increases are partially offset by a decrease in workers' compensation costs and lower retirement premiums resulting from the District's previous decision to use available cash reserves to reduce the unfunded pension liability.

The professional services budget increased by \$2.7 million compared to previously budgeted amounts, primarily due to anticipated engineering costs and technical consulting for operationally funded projects and software program consultants. The repairs and maintenance budgeted amount increased by \$1.7 million primarily due to delayed rehabilitation projects for primary and secondary clarifiers, increases in basic repairs and maintenance costs and repairs to major trunklines in the collection system.

The other materials, supplies and services budgeted amount increased \$1.1 million due to lab certification and audit fees, regulatory operating fees and expenses associated with Per- and Polyfluoroalkyl Substances (PFAS) studies and monitoring.

In preparation of the Fiscal Year 2021-22 budget update, District staff developed levels of service and capital projects that are included in the Strategic Plan of the District. See “THE DISTRICT - District Planning.” In addition, staff validated the active capital projects currently being executed to ensure that the scope of work on the active projects remains appropriate, and that the cost estimates have been accurately updated. The Fiscal Year 2021-22 updated capital related cash flow budget was approved at \$240 million. After factoring in savings and deferrals, this updated capital budget was reduced by \$15 million to \$225 million. The 2021 CIP Validation Study includes 69 individual capital projects with 10-year outlays totaling approximately \$3.0 billion.

The Master Plan includes a Wastewater Revenue Program Rate Study that determines the appropriate rates going forward to support the proposed 20-year CIP. In March 2018, following a Proposition 218 notice process, the Board approved sewer rate increases for each year over the next five years averaging approximately 1.2% per year. The District deferred the approved 1.2% rate increase for Fiscal Year 2020-21 due to coronavirus concerns but implemented the 1.2% increase scheduled for Fiscal Year 2021-22 and expects to implement the 1.2% increases scheduled in fiscal year 2022-23 as approved. These increases are necessary to provide needed capital improvements, to meet additional treatment and disinfection requirements, and to minimize future rate increases. The impact of this five-year sewer fee schedule has increased the single-family residence user fee rate, the underlying rate for all sewer service user fees, an average of 1.0% a year from \$335 in Fiscal Year 2018-19 to \$347 in Fiscal Year 2022-23.

Investment of District Funds

State statutes authorize the District to invest in obligations of the United States Government, state and local governmental agencies, negotiable certificates of deposits, banker’s acceptances, commercial paper, reverse repurchase agreements and a variety of other investment instruments which are allowable under California Government Code Section 53600 *et seq.*

All District funds, except for Obligation Reserve Funds controlled by a bank trustee pursuant to the provisions of Existing Senior Obligations, are managed by an external money manager, Chandler Asset Management. U.S. Bank National Association serves as the District’s independent custodian bank for its investment program. Callan LLC serves as the District’s independent advisor.

As of June 30, 2021, the District’s externally managed fund consisted of a short-term investment portfolio of \$275.4 million with an average maturity of 169.0 days, and a long-term investment portfolio of \$683.6 million with average maturities of 2.6 years. Investments consist of United States government securities, corporate bonds and commercial paper. The District’s portfolio contains no structured investment vehicles (“SIVs”) or reverse repurchase agreements.

Deposits in banks are maintained in financial institutions which provide deposit protection on the bank balance from the Federal Deposit Insurance Corporation. The California Government Code requires State banks and savings and loans to secure local government deposits by pledging government securities equal to 110% of the deposits or by pledging first trust deed mortgage notes equal to 150% of the deposits.

The District’s Investment Policy requires that the District invest public funds in a manner which ensures the safety and preservation of capital while meeting reasonable anticipated operating expenditure needs, achieving a reasonable rate of return and conforming to all State and local statutes governing the

investment of public funds. The primary objectives, in order, of the District’s investment activities are safety, liquidity and return on investment.

FINANCIAL OBLIGATIONS

Existing Indebtedness

Currently, the District has Senior Obligations Outstanding payable on a parity with the Revenue Obligations. The table below describes the District’s outstanding parity certificates of participation as of January 1, 2022. The payment obligations in connection with each series of these certificates of participation constitute Senior Obligations, subject to the provisions of the Master Agreement and shall be afforded all of the benefits, interests and security afforded Senior Obligations pursuant to the Master Agreement. The District has no general obligation bonds or subordinate bonds outstanding.

Table 16
Outstanding Senior Obligations
As of January 1, 2022

	<u>Original Principal Amount</u>	<u>Issue Date</u>	<u>Outstanding Balance</u>	<u>Final Maturity</u>
2010A Revenue Obligations	\$ 80,000,000	05/18/10	\$ 80,000,000	02/01/40
2010C Revenue Obligations	157,000,000	12/08/10	157,000,000	02/01/44
2011A Revenue Obligations	147,595,000	10/03/11	13,795,000	02/01/22
2012A Revenue Obligations ⁽¹⁾	100,645,000	03/22/12	100,645,000	02/01/33
2012B Revenue Obligations ⁽²⁾	66,395,000	08/16/12	8,170,000	02/01/26
2014A Revenue Obligations	85,090,000	08/07/14	56,080,000	02/01/27
2015A Revenue Obligations	127,510,000	02/12/15	127,510,000	02/01/37
2016A Revenue Obligations	145,880,000	03/30/16	136,830,000	02/01/39
2017A Revenue Obligations	66,370,000	02/01/17	65,815,000	02/01/30
2021A Revenue Obligations	<u>133,510,000</u>	07/29/21	<u>133,510,000</u>	02/01/36
Total Senior Obligations	<u>\$1,109,995,000</u>		<u>\$879,355,000</u>	

⁽¹⁾ To be prepaid with a portion of the proceeds of the Revenue Obligations and other moneys; see “REFUNDING PLAN” herein.

⁽²⁾ A portion to be prepaid with a portion of the proceeds of the Revenue Obligations and other moneys; see “REFUNDING PLAN” herein.

In connection with the execution and delivery of the above-referenced outstanding certificates of participation, the District entered into certain installment purchase agreements, or equivalent documents, providing for the payment of installment payments or similar payments.

Anticipated Financings

From time to time the District may incur other obligations to finance portions of the CIP and to prepay the Revenue Obligations. Over the next five years, however, the District does not expect to issue any additional debt, other than refunding debt. The District expects to refund outstanding obligations from time to time. See “SECURITY AND SOURCES OF PAYMENT FOR THE REVENUE OBLIGATIONS – Sale Proceeds of Future Obligations.”

THE CORPORATION

The Corporation was organized on June 19, 2000 as a nonprofit public benefit corporation pursuant to the Nonprofit Public Corporation law of the State. The Corporation's purpose is to render assistance to the District in its acquisition of equipment, real property and improvements on behalf of the District. Under its articles of incorporation, the Corporation has all powers conferred upon nonprofit public benefit corporations by the laws of the State, provided that it will not engage in any activity other than that which is necessary or convenient for, or incidental to the purposes for which it was formed.

The Corporation is a separate legal entity from the District. It is governed by a twenty-five member Board of Directors. The Corporation has no employees. All staff work is performed by employees of the District. The members of the Corporation's Board of Directors are the Board of Directors of the District.

The District's Assistant General Manager, Director of Finance and Administrative Services and other District employees are available to provide staff support to the Corporation.

The Corporation has not entered into any material financing arrangements other than those referred to in this Official Statement. Further information concerning the Corporation may be obtained from the Orange County Sanitation District office at 10844 Ellis Avenue, Fountain Valley, California, 92708-7018.

LIMITATIONS ON TAXES AND REVENUES

Article XIII A of the California Constitution

On June 6, 1978, California voters approved Proposition 13 ("Proposition 13"), which added Article XIII A to the State Constitution ("Article XIII A"). Article XIII A, as amended, limits the amount of any *ad valorem* tax on real property to one percent of the full cash value thereof, except that additional *ad valorem* taxes may be levied to pay debt service on (i) indebtedness approved by the voters prior to July 1, 1978, (ii) (as a result of an amendment to Article XIII A approved by State voters on June 3, 1986) on bonded indebtedness for the acquisition or improvement of real property which has been approved on or after July 1, 1978 by two-third of the voters on such indebtedness, and (iii) bonded indebtedness incurred by a school district or community college district for the construction, reconstruction, rehabilitation or replacement of school facilities or the acquisition or lease of real property for school facilities, approved by 55% of the voters of the district, but only if certain accountability measures are included in the proposition. Article XIII A defines full cash value to mean "the county assessor's valuation of real property as shown on the 1975-76 tax bill under "full cash value," or thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment." The full cash value may be adjusted annually to reflect inflation at a rate not to exceed 2% per year or to reflect a reduction in the consumer price index or comparable data for the area under the taxing jurisdiction, or reduced in the event of declining property values caused by substantial damage, destruction, or other factors. Amendments to the California Constitution have implemented and modified limits on reassessment of property value upon transfers. Most recently, Proposition 19 limits people who inherit family properties from keeping a low property tax base resulting from the 2% restriction on increases, unless they use the home as their primary residence. It also allows homeowners who are over 55 years of age, disabled, or victims of a wildfire or natural disaster to transfer their assessed value of their primary home to a newly purchased or newly constructed replacement primary residence up to three times. Legislation enacted by the State Legislature to implement Article XIII A provides that notwithstanding any other law, local agencies may not levy any *ad valorem* property tax except to pay debt service on indebtedness approved by the voters as described above.

Legislation Implementing Article XIII A

Legislation has been enacted and amended a number of times since 1978 to implement Article XIII A. Under current law, local agencies are no longer permitted to levy directly any property tax (except to pay voter-approved indebtedness). The one percent property tax is automatically levied by the County and distributed according to a formula among taxing agencies. The formula apportions the tax roughly in proportion to the relative shares of taxes levied prior to 1979.

Increases of assessed valuation resulting from reappraisals of property due to new construction, change in ownership or from the 2% annual adjustment are allocated among the various jurisdictions in the "taxing area" based upon their respective "situs." Any such allocation made to a local agency continues as part of its allocation in future years.

Beginning in the 1981-82 fiscal year, assessors in the State no longer record property values on tax rolls at the assessed value of 25% of market value which was expressed as \$4 per \$100 assessed value. All taxable property is now shown at full market value on the tax rolls. Consequently, the tax rate is expressed as \$1 per \$100 of taxable value. All taxable property value included in this Official Statement is shown at 100% of market value (unless noted differently) and all tax rates reflect the \$1 per \$100 of taxable value.

Article XIII B of the California Constitution

An initiative to amend the State Constitution entitled "Limitation of Government Appropriations" was approved on September 6, 1979, thereby adding Article XIII B to the State Constitution ("Article XIII B"). Under Article XIII B, the State and each local governmental entity has an annual "appropriations limit" and is not permitted to spend certain moneys that are called "appropriations subject to limitation" (consisting of tax revenues, state subventions and certain other funds) in an amount higher than the appropriations limit. Article XIII B does not affect the appropriations of moneys that are excluded from the definition of "appropriations subject to limitation," including debt service on indebtedness existing or authorized as of January 1, 1979, or bonded indebtedness subsequently approved by the voters. In general terms, the appropriations limit is to be based on certain 1978-79 expenditures, and is to be adjusted annually to reflect changes in consumer prices, populations, and services provided by these entities. Among other provisions of Article XIII B, if these entities' revenues in any year exceed the amounts permitted to be spent, the excess would have to be returned by revising tax rates or fee schedules over the subsequent two years.

"Appropriations subject to limitation" are authorizations to spend "proceeds of taxes," which consist of tax revenues, state subventions and certain other funds, including proceeds from regulatory licenses, user charges or other fees to the extent that such proceeds exceed "the cost reasonably borne by such entity in providing the regulation, product or service," but "proceeds of taxes" excludes tax refunds and some benefit payments such as unemployment insurance. No limit is imposed on appropriations of funds which are not "proceeds of taxes," such as reasonable user charges or fees, and certain other non-tax funds.

Not included in the Article XIII B limit are appropriations for the debt service costs of bonds existing or authorized by January 1, 1979, or subsequently authorized by the voters, appropriations required to comply with mandates of courts or the federal government and appropriations for qualified capital outlay projects. The appropriations limit may also be exceeded in certain cases of emergency.

The appropriations limit for the District in each year is based on the District's limit for the prior year, adjusted annually for changes in the cost of living and changes in population, and adjusted, where

applicable, for transfer of financial responsibility of providing services to or from another unit of government. The change in the cost of living is, at the District's option, either (1) the percentage change in State per capita personal income, or (2) the percentage change in the local assessment roll on nonresidential property. Either test is likely to be greater than the change in the cost of living index, which was used prior to Proposition 111. Change in population is to be measured either within the jurisdiction of the District or the County as a whole.

As amended by Proposition 111, the appropriations limit is tested over consecutive two-year periods. Any excess of the aggregate "proceeds of taxes" received by a District over such two-year period above the combined appropriations limits for those two years is to be returned to taxpayers by reductions in tax rates or fee schedules over the subsequent two years. As originally enacted in 1979, the District's appropriations limit was based on 1978-79 authorizations to expend proceeds of taxes and was adjusted annually to reflect changes in cost of living and population (using different definitions, which were modified by Proposition 111). Starting with Fiscal Year 1990-91, the District's appropriations limit was recalculated by taking the actual Fiscal Year 1986-87 limit, and applying the annual adjustments as if Proposition 111 had been in effect. The District does not anticipate that any such appropriations limitations will impair its ability to make Installment Payments as required by the Installment Purchase Agreement.

Proposition 1A and Proposition 22

Proposition 1A ("Proposition 1A"), proposed by the Legislature in connection with the 2004-05 Budget Act and approved by the voters in November 2004, restricts State authority to reduce major local tax revenues such as the tax shifts permitted to take place in Fiscal Years 2004-05 and 2005-06. Proposition 1A provides that the State may not reduce any local sales tax rate, limit existing local government authority to levy a sales tax rate or change the allocation of local sales tax revenues, subject to certain exceptions. Proposition 1A generally prohibits the State from shifting to schools or community colleges any share of property tax revenues allocated to local governments for any fiscal year, as set forth under the laws in effect as of November 3, 2004. Any change in the allocation of property tax revenues among local governments within a county must be approved by two-thirds of both houses of the Legislature.

Proposition 1A provides, however, that beginning in Fiscal Year 2008-09, the State may shift to schools and community colleges up to 8% of local government property tax revenues, which amount must be repaid, with interest, within three years, if the Governor proclaims that the shift is needed due to a severe state financial hardship, the shift is approved by two-thirds of both houses and certain other conditions are met. Such a shift may not occur more than twice in any ten-year period. The State may also approve voluntary exchanges of local sales tax and property tax revenues among local governments within a county.

Proposition 1A was generally superseded by the passage of a new initiative constitutional amendment at the November 2010 election, known as Proposition 22 ("Proposition 22"). The effect of Proposition 22 is to prohibit the State, even during a period of severe fiscal hardship, from delaying the distribution of tax revenues for transportation, redevelopment, or local government projects and services. It prevents the State from redirecting redevelopment agency property tax increment to any other local government or from temporarily shifting property taxes from cities, counties and special districts to schools. This is intended to, among other things, stabilize local government revenue sources by restricting the State's control over local property taxes.

Prior to the passage of Proposition 22, the State invoked Proposition 1A to divert \$1.935 billion in local property tax revenues in fiscal year 2009-10 from cities, counties, and special districts to the State

to offset State general fund spending for education and other programs. Approximately \$5 million of the District's property tax revenues were diverted to the State as a result of this Proposition 1A suspension. The District participated in a Proposition 1A Securitization Program (the "Program") sponsored by the California Statewide Communities Development Authority. The Program allowed the District to exchange its anticipated State property tax receivable for an equal amount of cash. In addition, the State's adopted 2009-10 budget included a \$1.7 billion diversion in local property tax revenues from local redevelopment agencies. Many California Redevelopment Association members are actively engaged in litigation to block such diversion and recoup certain payments already made under certain legislation passed in July 2009 that is beyond the reach of Proposition 22, known as "ABX4 26."

Proposition 1A also provides that if the State reduces the vehicle license fee ("VLF") rate currently in effect, 0.65% of vehicle value, the State must provide local governments with equal replacement revenues. Further, Proposition 1A requires the State to suspend State mandates affecting cities, counties and special districts, excepting mandates relating to employee rights, schools or community colleges, in any year that the State does not fully reimburse local governments for their costs to comply with such mandates.

Article XIII C and Article XIII D of the California Constitution

Proposition 218, a State ballot initiative known as the "Right to Vote on Taxes Act," was approved by the voters on November 5, 1996. The initiative added Articles XIII C and XIII D to the California Constitution, creating additional requirements for the imposition by most local governments of "general taxes," "special taxes," "assessments," "fees," and "charges." Proposition 218 became effective, pursuant to its terms, as of November 6, 1996, although compliance with some of its provisions was deferred until July 1, 1997, and certain of its provisions purport to apply to any tax imposed for general governmental purposes (*i.e.*, "general taxes") imposed, extended or increased on or after January 1, 1995 and prior to November 6, 1996.

Article XIII D imposes substantive and procedural requirements on the imposition, extension or increase of any "fee" or "charge" subject to its provisions. A "fee" or "charge" subject to Article XIII D includes any levy, other than an *ad valorem* tax, special tax or assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership. Article XIII D prohibits, among other things, the imposition of any proposed fee or charge, and, possibly, the increase of any existing fee or charge, in the event written protests against the proposed fee or charge are presented at a required public hearing on the fee or charge by a majority of owners of the parcels upon which the fee or charge is to be imposed. Except for fees and charges for water, sewer and refuse collection services, the approval of a majority of the property owners subject to the fee or charge, or at the option of the agency, by a two-thirds vote of the electorate residing in the affected area, is required within 45 days following the public hearing on any such proposed new or increased fee or charge. The California Supreme Court decisions in *Richmond v. Shasta Community Services District*, 32 Cal.4th 409 (2004) ("*Richmond*"), and *Bighorn-Desert View Water Agency v. Verjil*, 39 Cal.4th 205 (2006) ("*Bighorn*") have clarified some of the uncertainty surrounding the applicability of Section 6 of Article XIII D to service fees and charges. In *Richmond*, the Shasta Community Services District charged a water connection fee, which included a capacity charge for capital improvements to the water system and a fire suppression charge. The Court held that both the capacity charge and the fire suppression charge were not subject to Article XIII D because a water connection fee is not a property-related fee or charge because it results from the property owner's voluntary decision to apply for the connection. In both *Richmond* and *Bighorn*, however, the Court stated that a fee for ongoing water service through an existing connection is imposed "as an incident of property ownership" within the meaning of Article XIII D, rejecting, in *Bighorn*, the water agency's argument that consumption-based water charges are not imposed "as an incident of property ownership" but as a result of the voluntary decisions of customers as to how much water to use.

Article XIID also provides that “standby charges” are considered “assessments” and must follow the procedures required for “assessments” under Article XIID and imposes several procedural requirements for the imposition of any assessment, which may include (1) various notice requirements, including the requirement to mail a ballot to owners of the affected property; (2) the substitution of a property owner ballot procedure for the traditional written protest procedure, and providing that “majority protest” exists when ballots (weighted according to proportional financial obligation) submitted in opposition exceed ballots in favor of the assessments; and (3) the requirement that the levying entity “separate the general benefits from the special benefits conferred on a parcel” of land. Article XIID also precludes standby charges for services that are not immediately available to the parcel being charged.

Article XIID provides that all existing, new or increased assessments are to comply with its provisions beginning July 1, 1997. Existing assessments imposed on or before November 5, 1996, and “imposed exclusively to finance the capital costs or maintenance and operations expenses for [among other things] water” are exempted from some of the provisions of Article XIID applicable to assessments.

Article XIIC extends the people’s initiative power to reduce or repeal existing local taxes, assessments, fees and charges. This extension of the initiative power is not limited by the terms of Article XIIC to fees, taxes, assessment fees and charges imposed after November 6, 1996 and absent other authority could result in retroactive reduction in any existing taxes, assessments, fees or charges. In *Bighorn*, the Court concluded that under Article XIIC local voters by initiative may reduce a public agency’s water rates and delivery charges. The Court noted, however, that it was not holding that the authorized initiative power is free of all limitations, stating that it was not determining whether the electorate’s initiative power is subject to the public agency’s statutory obligation to set water service charges at a level that will “pay the operating expenses of the agency, . . . provide for repairs and depreciation of works, provide a reasonable surplus for improvements, extensions, and enlargements, pay the interest on any bonded debt, and provide a sinking or other fund for the payment of the principal of such debt as it may become due.”

Under Ordinance No. OCSD-49 adopted on March 28, 2018, the District established residential Sewer Service Charges, except within Revenue Area No. 14 (for which service is billed directly to the IRWD), based on the cost of services and facilities provided to each customer of the District. The noticed public hearing held in connection with the adoption of this ordinance considered an increase in the single family residential rate, the underlying rate for all of the District’s sewer service charges, of 1.2% for Fiscal Year 2018-19 through Fiscal Year 2022-23. These increases were approved by the Board through the adoption of Ordinance No. OCSD-49. The District deferred the approved 1.2% rate increase for fiscal year 2020-21 due to coronavirus sensitivities but implemented the 1.2% increase for fiscal year 2021-22 and expects to implement the 1.2% increase scheduled in fiscal year 2022-23 as approved.

Pursuant to the Master Agreement, the District will, to the extent permitted by law, fix, prescribe and collect fees and charges for the services of the Wastewater System which will be at least sufficient to yield during each Fiscal Year (a) Net Revenues equal to 125% of Debt Service on Senior Obligations for such Fiscal Year, and (b) Net Operating Revenues equal to 100% of Debt Service on all Obligations for such Fiscal Year. The District may make adjustments from time to time in such fees and charges and may make such classification thereof as it deems necessary, but will not reduce the fees and charges then in effect unless the Revenues and Net Revenues from such reduced fees and charges will at all times be sufficient to meet the requirements of the Master Agreement. If service charges are determined to be subject to Article XIID, and proposed increased service charges cannot be imposed as a result of a majority protest, such circumstances may adversely affect the ability of the District to generate revenues in the amounts required by the Master Agreement, and to make Installment Payments as provided in the

Installment Purchase Agreement. No assurance may be given that Articles XIIC and XIID will not have a material adverse impact on Net Revenues.

Other Initiative Measures

Articles XIIA, XIIB, XIIC and XIID were adopted pursuant to California's constitutional initiative process. From time to time other initiative measures could be adopted by California voters, placing additional limitations on the ability of the District to increase revenues.

LEGAL MATTERS

The validity of the Revenue Obligations and certain other legal matters are subject to the approving opinion of Norton Rose Fulbright US LLP, Los Angeles, California, Special Counsel to the District. A complete copy of the proposed form of Special Counsel opinion is attached as Appendix F hereto. Special Counsel, in its capacity as Special Counsel to the District, undertakes no responsibility for the accuracy, completeness or fairness of this Official Statement. Certain legal matters will be passed on for the District and the Corporation by Woodruff, Spradlin & Smart, a Professional Corporation, Costa Mesa, California, and for the District by Norton Rose Fulbright US LLP, Disclosure Counsel to the District.

MUNICIPAL ADVISOR

The District has retained Public Resources Advisory Group as an independent registered municipal advisor (the "Municipal Advisor") in connection with the execution and delivery of the Revenue Obligations. The Municipal Advisor has not been engaged, nor have they undertaken, to audit, authenticate or otherwise verify the information set forth in the Official Statement, or any other related information available to the District, with respect to accuracy and completeness of disclosure of such information. The Municipal Advisor has reviewed this Official Statement but makes no guaranty, warranty or other representation respecting accuracy and completeness of the information contained in this Official Statement. The fees of the Municipal Advisor are contingent on the issuance and delivery of the Revenue Obligations.

ABSENCE OF LITIGATION

There is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body, pending or, to the best knowledge of the District, threatened against the District affecting the existence of the District or the titles of its directors or officers to their offices or seeking to restrain or to enjoin the sale or delivery of the Revenue Obligations, the application of the proceeds thereof in accordance with the Trust Agreement, or in any way contesting or affecting the validity or enforceability of the Revenue Obligations, the Trust Agreement, the Master Agreement, the Installment Purchase Agreement or any action of the District contemplated by any of said documents, or in any way contesting the completeness or accuracy of this Official Statement, or contesting the powers of the District or its authority with respect to the Revenue Obligations or any action of the District contemplated by any of said documents, nor, to the knowledge of the District is there any basis therefor.

There is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body pending or, to the best knowledge of the District, threatened against the District contesting or affecting the ability of the District to collect amounts from which Installment Payments are payable, or which would have a material adverse effect on the District's ability to make Installment Payments.

FINANCIAL STATEMENTS

The basic financial statements of the District included in Appendix A to this Official Statement have been audited by Macias Gini & O'Connell LLP, independent certified public accountants. See APPENDIX A – “ANNUAL COMPREHENSIVE FINANCIAL REPORT OF THE ORANGE COUNTY SANITATION DISTRICT FOR THE YEAR ENDED JUNE 30, 2021” herein. The District has received the Government Finance Officers Association Certificate of Achievement for “Excellence in Financial Reporting” for 26 consecutive years. The audited financial statements, including the footnotes thereto, should be reviewed in their entirety. Macias Gini & O'Connell LLP, the District's independent auditor, has not been engaged to perform, and has not performed, since the date of its report included in Appendix A, any procedures on the financial statements addressed in that report. Macias Gini & O'Connell LLP also has not performed any procedures relating to this Official Statement.

TAX MATTERS

Federal Tax Exemption

In the opinion of Norton Rose Fulbright US LLP, San Francisco, California, Special Counsel to the District, under existing statutes, regulations, rulings and judicial decisions, and assuming compliance by the District with certain covenants in the Trust Agreement, the Tax Certificate and other documents pertaining to the Revenue Obligations and requirements of the Internal Revenue Code of 1986 (the “Code”) regarding the use, expenditure and investment of proceeds of the Revenue Obligations and the timely payment of certain investment earnings to the United States, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is not included in the gross income of the owners of the Revenue Obligations for federal income tax purposes. Failure to comply with such covenants and requirements may cause the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation to be included in gross income retroactive to the date of execution and delivery of the Revenue Obligations.

In the further opinion of Special Counsel, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is not treated as an item of tax preference for purposes of the federal alternative minimum tax.

Ownership of, or the receipt of interest on, tax-exempt obligations may result in collateral federal income tax consequences to certain taxpayers, including, without limitation, financial institutions, property and casualty insurance companies, certain foreign corporations doing business in the United States, certain S corporations with excess passive income, individual recipients of Social Security or Railroad Retirement benefits, taxpayers that may be deemed to have incurred or continued indebtedness to purchase or carry tax-exempt obligations and taxpayers who may be eligible for the earned income tax credit. Special Counsel expresses no opinion with respect to any collateral tax consequences and, accordingly, prospective purchasers of the Revenue Obligations should consult their tax advisors as to the applicability of any collateral tax consequences.

Certain requirements and procedures contained or referred to in the Trust Agreement, the Tax Certificate or other documents pertaining to the Revenue Obligations may be changed, and certain actions may be taken or not taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of counsel nationally recognized in the area of tax-exempt obligations. Special Counsel expresses no opinion as to the effect of any change to any document pertaining to the Revenue Obligations or of any action taken or not taken where such change is made or action is taken or not taken without the approval of Norton Rose Fulbright US LLP or in reliance upon the advice of counsel other than Norton Rose Fulbright US LLP with respect to the exclusion from

gross income of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation for federal income tax purposes.

Special Counsel's opinion is not a guarantee of result, but represents its legal judgment based upon its review of existing statutes, regulations, published rulings and judicial decisions and the representations and covenants of the District described above. No ruling has been sought from the Internal Revenue Service (the "IRS") with respect to the matters addressed in the opinion of Special Counsel, and Special Counsel's opinion is not binding on the IRS. The IRS has an ongoing program of examining the tax-exempt status of the interest on municipal obligations. If an examination of the Revenue Obligations is commenced, under current procedures the IRS is likely to treat the District as the "taxpayer," and the owners of the Revenue Obligations would have no right to participate in the examination process. In responding to or defending an examination of the tax-exempt status of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation, the District may have different or conflicting interests from the owners. Additionally, public awareness of any future examination of the Revenue Obligations could adversely affect the value and liquidity of the Revenue Obligations during the pendency of the examination, regardless of its ultimate outcome.

Tax Accounting Treatment of Bond Premium and Original Issue Discount

Bond Premium. To the extent a purchaser acquires a Revenue Obligation at a price in excess of the amount payable at its maturity, such excess will constitute "bond premium" under the Code. The Code and applicable Treasury Regulations provide generally that bond premium on a tax-exempt obligation is amortized over the remaining term of the obligation (or a shorter period in the case of certain callable obligations) based on the obligation's yield to maturity (or shorter period in the case of certain callable obligations). The amount of premium so amortized reduces the owner's basis in such obligation for federal income tax purposes, though such amortized premium is not deductible for federal income tax purposes. This reduction in basis will increase the amount of any gain (or decrease the amount of any loss) to be recognized for federal income tax purposes upon a sale or other taxable disposition of the obligation. Special Counsel is not opining on the accounting for bond premium or the consequence to a Revenue Obligation purchaser of purchasing a Revenue Obligation with bond premium. Accordingly, persons considering the purchase of Revenue Obligations with bond premium should consult with their own tax advisors with respect to the determination of bond premium on such Revenue Obligations for federal income tax purposes and with respect to the state and local tax consequences of owning and disposing of such Revenue Obligations.

Original Issue Discount. The excess, if any, of the stated redemption price at maturity of Revenue Obligations of a particular maturity over the initial offering price to the public of the Revenue Obligations of that maturity at which a substantial amount of the Revenue Obligations of that maturity is sold to the public is "original issue discount." Original issue discount accruing on a Revenue Obligation is treated as interest excluded from the gross income of the owner thereof for federal income tax purposes under the same conditions and limitations as are applicable to interest payable on such Revenue Obligation. Original issue discount on a Revenue Obligation or a particular maturity purchased pursuant to the initial public offering at the initial public offering price at which a substantial amount of the Revenue Obligations of that maturity is sold to the public accrues on a semiannual basis over the term of the Revenue Obligation on the basis of a constant yield; and within each semiannual period accrues on a ratable daily basis. The amount of original issue discount on a Revenue Obligation accruing during each period is added to the adjusted basis of such Revenue Obligation, which will affect the amount of taxable gain upon disposition (including sale, redemption or payment on maturity) of such Revenue Obligation. The Code includes certain provisions relating to the accrual of original issue discount in the case of purchasers that purchase Revenue Obligations other than at the initial offering price. Special Counsel is not opining on the accounting for or consequence to a Revenue Obligation purchaser of purchasing a

Revenue Obligation with original issue discount. Accordingly, persons considering the purchase of Revenue Obligations with original issue discount should consult with their own tax advisors with respect to the determination of original issue discount on such Revenue Obligations for federal income tax purposes and with respect to the state and local tax consequences of owning and disposing of such Revenue Obligations.

Information Reporting and Backup Withholding

Interest paid on the Revenue Obligations will be subject to information reporting in a manner similar to interest paid on taxable obligations. Although such reporting requirement does not, in and of itself, affect the excludability of such interest from gross income for federal income tax purposes, such reporting requirement causes the payment of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation to be subject to backup withholding if such interest is paid to beneficial owners who (a) are not “exempt recipients,” and (b) either fail to provide certain identifying information (such as the beneficial owner’s taxpayer identification number) in the required manner or have been identified by the IRS as having failed to report all interest and dividends required to be shown on their income tax returns. Generally, individuals are not exempt recipients, whereas corporations and certain other entities are exempt recipients. Amounts withheld under the backup withholding rules from a payment to a beneficial owner are allowed as a refund or credit against such beneficial owner’s federal income tax liability so long as the required information is furnished to the IRS.

State Tax Exemption

In the further opinion of Special Counsel, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is exempt from personal income taxes imposed by the State of California.

Future Developments

Existing law may change to reduce or eliminate the benefit to owners of the Revenue Obligations of the exclusion of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation from gross income for federal income tax purposes or of the exemption of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation from State of California personal income taxation. Any proposed legislation or administrative action, whether or not taken, could also affect the value and marketability of the Revenue Obligations. Prospective purchasers of the Revenue Obligations should consult with their own tax advisors with respect to any proposed or future change in tax law.

A copy of the form of opinion of Special Counsel relating to the Revenue Obligations is included in APPENDIX F hereto.

CONTINUING DISCLOSURE

The District has covenanted for the benefit of holders and beneficial owners of the Revenue Obligations (a) to provide certain financial information and operating data (the “Annual Report”) relating to the District and the property in the District not later than eight months after the end of the District’s Fiscal Year (which currently would be March 1), commencing with the report for the 2021-22 Fiscal Year, and (b) to provide notices of the occurrence of certain enumerated events. The Annual Report will be filed by the District, or the Dissemination Agent on behalf of the District, with the Municipal Securities Rulemaking Board. The notices of enumerated events will be filed by or on behalf of the District with the Municipal Securities Rulemaking Board. The specific nature of the information to be

contained in the Annual Report or the notices of enumerated events is set forth in the Continuing Disclosure Agreement. See APPENDIX D – “FORM OF CONTINUING DISCLOSURE AGREEMENT.” These covenants have been made in order to assist the Initial Purchaser in complying with S.E.C. Rule 15c2-12.

RATINGS

The Revenue Obligations will be rated “___” by S&P Global Ratings, a business unit of Standard & Poor’s Financial Services LLC (“S&P”), “___” by Moody’s Investors Service, Inc. (“Moody’s”), and “___” by Fitch Ratings (“Fitch”). Such ratings reflect only the views of the rating agencies, and do not constitute a recommendation to buy, sell or hold the Revenue Obligations. Explanation of the significance of such ratings may be obtained only from the respective organizations at: S&P Global Ratings, 55 Water Street, New York, New York 10041, Moody’s Investors Service, Inc. 7 World Trade Center, 250 Greenwich Street, New York, New York 10007, and Fitch Ratings, One State Street Plaza, New York, New York 10004. There is no assurance that any such ratings will continue for any given period of time or that they will not be revised downward or withdrawn entirely by the respective rating agencies, if in the judgment of any such rating agency circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price of the Revenue Obligations.

PURCHASE AND REOFFERING

_____ (the “Initial Purchaser”) has purchased the Revenue Obligations from the District at a competitive sale for a purchase price of \$_____ (representing the aggregate principal amount of the Revenue Obligations, plus a premium of \$_____, and less an Initial Purchaser’s discount of \$_____). The public offering prices may be changed from time to time by the Initial Purchaser. The Initial Purchaser may offer and sell Revenue Obligations to certain dealers and others at prices lower than the offering prices shown on the inside cover page hereof.

MISCELLANEOUS

Included herein are brief summaries of certain documents and reports, which summaries do not purport to be complete or definitive, and reference is made to such documents and reports for full and complete statements of the contents thereof. Any statements in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Official Statement is not to be construed as a contract or agreement between the District and the purchasers or Owners of any of the Revenue Obligations.

The execution and delivery of this Official Statement has been duly authorized by the District.

ORANGE COUNTY SANITATION DISTRICT

By: _____
Chair of the Board of Directors

APPENDIX A

**ANNUAL COMPREHENSIVE FINANCIAL REPORT OF THE ORANGE COUNTY
SANITATION DISTRICT FOR THE YEAR ENDED JUNE 30, 2021**

[INSERT APPENDIX B]

[INSERT APPENDIX C]

[INSERT APPENDIX D]

APPENDIX E

BOOK-ENTRY SYSTEM

The description that follows of the procedures and recordkeeping with respect to beneficial ownership interests in the Revenue Obligations, payment of principal and interest evidenced by the Revenue Obligations to Participants or Beneficial Owners, confirmation and transfer of beneficial ownership interests in the Revenue Obligations, and other Revenue Obligation-related transactions by and between DTC, Participants and Beneficial Owners, is based on information furnished by DTC which the District and the Corporation each believes to be reliable, but the District and the Corporation take no responsibility for the completeness or accuracy thereof.

The Depository Trust Company – Book-Entry System

The Depository Trust Company (“DTC”), New York, NY, will act as securities depository for the securities (the “Revenue Obligations”). The Revenue Obligations will be issued as fully-registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered certificate will be issued for the Revenue Obligations in the aggregate principal amount of such issue, and will be deposited with DTC.

DTC is a limited-purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has a Standard & Poor’s rating of “AA+.” The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com. The information on such website is not incorporated herein by such reference or otherwise.

Purchases of Revenue Obligations under the DTC system must be made by or through Direct Participants, which will receive a credit for the Revenue Obligations on DTC’s records. The ownership interest of each actual purchaser of each Revenue Obligation (“Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Revenue Obligations are to be accomplished by entries made on

the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Revenue Obligations, except in the event that use of the book-entry system for the Revenue Obligations is discontinued.

To facilitate subsequent transfers, all Revenue Obligations deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co. or such other name as may be requested by an authorized representative of DTC. The deposit of Revenue Obligations with DTC and their registration in the name of Cede & Co. or such other nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Revenue Obligations; DTC's records reflect only the identity of the Direct Participants to whose accounts such Revenue Obligations are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Revenue Obligations may wish to take certain steps to augment transmission to them of notices of significant events with respect to the Revenue Obligations, such as prepayments, tenders, defaults, and proposed amendments to the security documents. For example, Beneficial Owners of Revenue Obligations may wish to ascertain that the nominee holding the Revenue Obligations for their benefit has agreed to obtain and transmit notices to Beneficial Owners, in the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of the notices be provided directly to them.

Prepayment notices shall be sent to DTC. If less than all of the Revenue Obligations within an issue are being prepaid, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be prepaid.

Neither DTC nor Cede & Co. (nor such other DTC nominee) will consent or vote with respect to the Revenue Obligations unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the District as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Revenue Obligations are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Prepayments with respect to the Revenue Obligations will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from the District or the Trustee on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, nor its nominee, the Trustee, or the District, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of prepayment proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the District or the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the Revenue Obligations at any time by giving reasonable notice to the District or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, Revenue Obligations are required to be printed and delivered.

The District may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Revenue Obligations will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the District believes to be reliable, but the District takes no responsibility for the accuracy thereof.

Discontinuance of DTC Services

In the event (i) DTC determines not to continue to act as securities depository for the Revenue Obligations, (ii) DTC shall no longer act and give notice to the Trustee of such determination or (iii) the District determines that it is in the best interest of the Beneficial Owners that they be able to obtain Revenue Obligations and delivers a written certificate to the Trustee to that effect, DTC services will be discontinued. If the District determines to replace DTC with another qualified securities depository, the District shall prepare or direct the preparation of a new single, separate, fully registered Revenue Obligation for each of the maturities of the Revenue Obligations, registered in the name of such successor or substitute qualified securities depository or its nominee. If the District fails to identify another qualified securities depository to replace DTC then the Revenue Obligations shall no longer be restricted to being registered in the certificate registration books in the name of Cede & Co., but shall be registered in such names as are requested in a certificate of the District, in accordance with the Trust Agreement.

All Revenue Obligations may be presented for transfer by the Owner thereof, in person or by his attorney duly authorized in writing, at the Principal Office of the Trustee, on the books required to be kept by the Trustee pursuant to the provisions of the Trust Agreement, upon surrender of such Certifications for cancellation accompanied by delivery of a duly executed written instrument of transfer in a form acceptable to the Trustee. The Trustee may treat the Owner of any Revenue Obligation as the absolute owner of such Revenue Obligation for all purposes, whether or not such Revenue Obligation shall be overdue, and the Trustee shall not be affected by any knowledge or notice to the contrary; and payment of the interest and principal evidenced by such Revenue Obligation shall be made only to such Owner, which payments shall be valid and effectual to satisfy and discharge the liability evidenced by such Revenue Obligation to the extent of the sum or sums so paid.

Whenever any Revenue Obligations shall be surrendered for transfer, the Trustee shall execute and deliver new Revenue Obligations representing the same principal amount in Authorized Denominations. The Trustee shall require the payment of any Owner requesting such transfer of any tax or other governmental charge required to be paid with respect to such transfer. Revenue Obligations may be presented for exchange at the Principal Office of the Trustee for a like aggregate principal amount of Revenue Obligations of other Authorized Denominations. The Trustee shall require the payment by the Owner requesting such exchange of any tax or other governmental charge required to be paid with respect to such exchange. The Trustee shall not be required to transfer or exchange any Revenue Obligation during the period in which the Trustee is selecting Revenue Obligations for prepayment, nor shall the Trustee be required to transfer or exchange any Revenue Obligation or portion thereof selected for prepayment from and after the date of mailing the notice of prepayment thereof.

APPENDIX F

FORM OF APPROVING OPINION OF SPECIAL COUNSEL

Upon the execution and delivery of the Revenue Obligations, Norton Rose Fulbright US LLP, Los Angeles, California, Special Counsel to the District, will render its final approving opinion with respect to the Revenue Obligations in substantially the following form:

[Date of Delivery]

Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, California 92708-7018

\$ _____
Orange County Sanitation District
Wastewater Refunding Revenue Obligations
Series 2022A

Ladies and Gentlemen:

We have acted as Special Counsel in connection with the \$ _____ aggregate principal amount of Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”) which are certificates of participation that evidence direct, fractional undivided interests of the Owners thereof in the installment payments (the “Installment Payments”), and the interest thereon, to be made by the Orange County Sanitation District (the “District”) pursuant to the Installment Purchase Agreement, dated as of February 1, 2022 (the “Installment Purchase Agreement”), by and between the District and the Orange County Sanitation District Financing Corporation (the “Corporation”). Pursuant to the Master Agreement for District Obligations, dated as of August 1, 2000 (the “Master Agreement”), by and between the District and the Corporation, the District has established conditions and terms upon which obligations such as the Installment Payments, and the interest thereon, will be incurred and secured. Installment Payments under the Installment Purchase Agreement are payable solely from Net Revenues as provided in the Installment Purchase Agreement, consisting primarily of all income and revenue received by the District from the operation or ownership of the Wastewater System of the District (the “Wastewater System”) remaining after payment of Maintenance and Operation Costs. Capitalized terms used and not otherwise defined herein shall have the meanings ascribed to such terms in the Installment Purchase Agreement.

The Revenue Obligations are to be executed and delivered pursuant to a Trust Agreement, dated as of February 1, 2022 (the “Trust Agreement”), by and among the District, the Corporation and U.S. Bank National Association, as trustee (the “Trustee”). Proceeds from the sale of the Revenue Obligations, together with other funds of the District, will be used to (i) prepay all of the District’s Wastewater Refunding Revenue Obligations, Series 2012A, outstanding in the aggregate principal amount of \$100,645,000, (ii) prepay the District’s Wastewater Refunding Revenue Obligations, Series 2012B, maturing on February 1, 2023 through 2026, inclusive, outstanding in the aggregate principal amount of \$6,670,000, and (iii) pay the costs incurred in connection with the execution and delivery of the Revenue Obligations.

As Special Counsel, we have examined copies certified to us as being true and complete copies of the Master Agreement, the Trust Agreement and the Installment Purchase Agreement and the proceedings of the District in connection with the execution and delivery of the Revenue Obligations. We have also

examined such certificates of officers of the District, the Corporation and others as we have considered necessary for the purposes of this opinion.

Based upon the foregoing, we are of the opinion that:

1. The Master Agreement, the Installment Purchase Agreement and the Trust Agreement each has been duly and validly authorized, executed and delivered by the District and, assuming the Master Agreement, the Installment Purchase Agreement and the Trust Agreement each constitutes the legally valid and binding obligation of the other parties thereto, each constitutes the legally valid and binding obligation of the District, enforceable against the District in accordance with its respective terms.

2. The obligation of the District to pay the Installment Payments, and the interest thereon, and other payments required to be made by it under the Installment Purchase Agreement is a special obligation of the District payable, in the manner provided in the Installment Purchase Agreement, solely from Net Revenues and other funds provided for in the Installment Purchase Agreement lawfully available therefor.

3. Assuming due authorization, execution and delivery of the Trust Agreement and the Revenue Obligations by the Trustee, the Revenue Obligations are entitled to the benefits of the Trust Agreement.

4. Under existing statutes, regulations, rulings and judicial decisions, and assuming compliance by the District with certain covenants in the Trust Agreement, the Tax Certificate and other documents pertaining to the Revenue Obligations and requirements of the Internal Revenue Code of 1986 regarding the use, expenditure and investment of proceeds of the Revenue Obligations and the timely payment of certain investment earnings to the United States, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is not includable in the gross income of the owners of the Revenue Obligations for federal income tax purposes. Failure to comply with such covenants and requirements may cause the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation to be included in gross income retroactive to the date of execution and delivery of the Revenue Obligations.

5. Under existing law, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is not treated as an item of tax preference for purposes of the federal alternative minimum tax.

6. Under existing law, the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation is exempt from personal income taxes imposed by the State of California.

Except as stated in paragraphs 4, 5 and 6 above, we express no opinion as to any federal or state tax consequence of the ownership or disposition of the Revenue Obligations. Further, certain requirements and procedures contained or referred to in the Trust Agreement, the Installment Purchase Agreement or in other documents pertaining to the Revenue Obligations may be changed, and certain actions may be taken, under the circumstances and subject to the terms and conditions set forth in such documents, upon the advice or with the approving opinion of counsel nationally recognized in the area of tax-exempt obligations. We express no opinion as to the effect of any change to any document pertaining to the Revenue Obligations or of any action taken or not taken where such change is made or action is taken or not taken without our approval or in reliance upon the advice of counsel other than ourselves

with respect to the exclusion from gross income of the portion of each Installment Payment representing interest and distributable in respect of any Revenue Obligation for federal income tax purposes.

The rights of the owners of the Revenue Obligations and the enforceability of the Revenue Obligations, the Master Agreement, the Trust Agreement and the Installment Purchase Agreement may be subject to bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights heretofore or hereafter enacted and may also be subject to the exercise of judicial discretion in appropriate cases. The enforceability of the Revenue Obligations, the Master Agreement, the Trust Agreement and the Installment Purchase Agreement is subject to the effect of general principles of equity, including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing, to the possible unavailability of specific performance or injunctive relief, regardless of whether considered in a proceeding in equity or at law, and to the limitations on legal remedies against governmental entities in California.

No opinion is expressed herein on the accuracy, completeness or fairness of the Official Statement or other offering material relating to the Revenue Obligations.

Our opinions are based on existing law, which is subject to change. Such opinions are further based on our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions to reflect any facts or circumstances that may hereafter come to our attention or to reflect any changes in any law that may hereafter occur or become effective. Moreover, our opinions are not a guarantee of result; rather, such opinions represent our legal judgment based upon our review of existing law that we deem relevant to such opinions and in reliance upon the representations and covenants referenced above.

Respectfully submitted,

CONTINUING DISCLOSURE AGREEMENT

THIS CONTINUING DISCLOSURE AGREEMENT (this “Disclosure Agreement”), dated February 1, 2022, is by and between the ORANGE COUNTY SANITATION DISTRICT, a county sanitation district organized and existing under the laws of the State of California (the “District”), and DIGITAL ASSURANCE CERTIFICATION, LLC, as Dissemination Agent (the “Dissemination Agent”).

WITNESSETH:

WHEREAS, the District has caused to be executed and delivered the Orange County Sanitation District Wastewater Refunding Revenue Obligations, Series 2022A (the “Revenue Obligations”), evidencing principal in the aggregate amount of \$ _____, pursuant to a Trust Agreement, dated as of the date hereof (the “Trust Agreement”), by and among U.S. Bank National Association, as trustee (the “Trustee”), the Orange County Sanitation District Financing Corporation (the “Corporation”) and the District; and

WHEREAS, this Disclosure Agreement is being executed and delivered by the District and the Dissemination Agent for the benefit of the owners and beneficial owners of the Revenue Obligations and in order to assist the purchaser of the Revenue Obligations in complying with the Rule (as defined herein);

NOW, THEREFORE, for and in consideration of the premises and of the mutual covenants herein contained, the parties hereto agree as follows:

Section 1. Definitions. Capitalized undefined terms used herein shall have the meanings ascribed thereto in the Trust Agreement or, if not defined therein, in the Master Agreement, dated as of August 1, 2000, by and between the District and the Corporation. In addition, the following capitalized terms shall have the following meanings:

“**Annual Report**” means any Annual Report provided by the District pursuant to, and as described in, Sections 2 and 3 hereof.

“**Annual Report Date**” means the date in each year that is eight months after the end of the Fiscal Year, which date, as of the date of this Disclosure Agreement, is March 1.

“**Disclosure Representative**” means the Director of Finance and Administrative Services of the District, or such other officer or employee of the District as the District shall designate in writing to the Dissemination Agent and the Trustee from time to time.

“**Dissemination Agent**” means an entity selected and retained by the District, or any successor thereto selected by the District. The initial Dissemination Agent shall be Digital Assurance Certification, LLC.

“**EMMA**” shall mean Electronic Municipal Market Access system, maintained on the internet at <http://emma.msrb.org> by the MSRB.

“**Financial Obligation**” shall have the meaning ascribed to it in the Rule, any other applicable federal securities laws and guidance provided by the SEC in its Release No. 34-83885 dated August 20, 2018 (the “2018 Release”), and any further amendments or written guidance provided by the SEC or its staff with respect to the amendments to the Rule effected by the 2018 Release.

“**Fiscal Year**” shall mean the period beginning on July 1 of each year and ending on the next succeeding June 30, or any twelve-month or fifty-two week period hereafter selected by the District, with notice of such selection or change in fiscal year to be provided as set forth herein.

“**Listed Events**” means any of the events listed in Section 4 hereof and any other event legally required to be reported pursuant to the Rule.

“**MSRB**” means the Municipal Securities Rulemaking Board established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934 or any other entity designated or authorized by the SEC to receive reports pursuant to the Rule. Until otherwise designated by the MSRB or the SEC, filings with the MSRB are to be made through EMMA.

“**Official Statement**” means the Official Statement, dated January __, 2022, relating to the Revenue Obligations.

“**Participating Underwriter**” means any of the original purchaser(s) of the Revenue Obligations required to comply with the Rule in connection with the offering of the Revenue Obligations.

“**Repository**” means, until otherwise designated by the SEC, EMMA.

“**Rule**” means Rule 15c2-12 adopted by the SEC under the Securities Exchange Act of 1934, as the same has been or may be amended from time to time.

“**SEC**” shall mean the United States Securities and Exchange Commission.

Section 2. Provision of Annual Reports.

(a) The District shall provide, or shall cause the Dissemination Agent to provide, to MSRB, through EMMA, not later than 15 days prior to the Annual Report Date, an Annual Report which is consistent with the requirements of Section 3 of this Disclosure Agreement. The Annual Report must be submitted in electronic format, accompanied by such identifying information as provided by the MSRB. The Annual Report may be submitted as a single document or as separate documents comprising a package, and may include by reference other information as provided in Section 3 of this Disclosure Agreement. Not later than 15 Business Days prior to such date, the District shall provide the Annual Report to the Dissemination Agent. If the Fiscal Year changes for the District, the District shall give notice of such change in the manner provided under Section 4(e) hereof.

(b) If by 15 Business Days prior to the date specified in subsection (a) for providing the Annual Report to the MSRB, through EMMA, the Dissemination Agent has not received a copy of the Annual Report the Dissemination Agent shall contact the District to determine if the District is in compliance with subsection (a). The District shall provide a written certification with each Annual Report furnished to the Dissemination Agent to the effect that such Annual Report constitutes the Annual Report required to be furnished by it hereunder. The Dissemination Agent may conclusively rely upon such certification of the District and shall have no duty or obligation to review such Annual Report.

(c) If the Dissemination Agent is unable to verify that an Annual Report has been provided to the MSRB by the date required in subsection (a), the Dissemination Agent shall send a notice to the MSRB in substantially the form attached as Exhibit A.

(d) The Dissemination Agent shall:

(i) determine the electronic filing address of, and then-current procedures for submitting Annual Reports to, the MSRB each year prior to the date for providing the Annual Report; and

(ii) to the extent appropriate information is available to it, file a report with the Authority certifying that the Annual Report has been provided pursuant to this Disclosure Agreement, stating the date it was provided.

Section 3. Content of Annual Reports. The District's Annual Report shall contain or incorporate by reference the following:

(a) Audited financial statements prepared in accordance with generally accepted accounting principles as promulgated to apply to governmental entities from time to time by the Governmental Accounting Standards Board. If the District's audited financial statements are not available by the Annual Report Date, the Annual Report shall contain unaudited financial statements in a format similar to the financial statements contained in the Official Statement, and the audited financial statements shall be filed in the same manner as the Annual Report when they become available.

(b) The principal evidenced by the Revenue Obligations Outstanding as of the June 30 next preceding the Annual Report Date and the principal amount of other Senior Obligations outstanding as of the June 30 next preceding the Annual Report Date.

(c) Updated information (not to include projections), for the Fiscal Year ended the June 30 next preceding the Annual Report Date, comparable to the information contained in the Official Statement in Table Nos. 2, 4, 6 (only with respect to information on 6 under the headings Fiscal Year and Sewer Service Charge), 8, 9, 10, 11, 12, 13, 14 and 16.

(d) In addition to any of the information expressly required to be provided under subsections (a), (b) and (c) of this Section, the District shall provide such further information, if any, as may be necessary to make the specifically required statements, in the light of the circumstances under which they are made, not misleading.

Any or all of the items listed above may be included by specific reference to other documents, including official statements of debt issues with respect to which the District is an "obligated person" (as defined by the Rule), which are available to the public on EMMA or filed with the SEC. The District shall clearly identify each such document to be included by reference.

Section 4. Reporting of Significant Events.

(a) Pursuant to the provisions of this Section 4, the District shall give, or cause to be given, notice of the occurrence of any of the following events with respect to the Revenue Obligations, in a timely manner not more than ten (10) Business Days after the event:

- (1) principal and interest payment delinquencies;
- (2) defeasances;
- (3) tender offers;
- (4) rating changes;

(5) adverse tax opinions or the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Revenue Obligations, or other material events affecting the tax status of the Revenue Obligations;

(6) unscheduled draws on the debt service reserves reflecting financial difficulties;

(7) unscheduled draws on credit enhancements reflecting financial difficulties;

(8) substitution of credit or liquidity providers or their failure to perform;

(9) bankruptcy, insolvency, receivership or similar proceedings; or

(10) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the District, any of which reflect financial difficulties.

For these purposes, any event described in the immediately preceding paragraph (9) is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent, or similar officer for the District in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the District, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement, or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the District.

(b) Pursuant to the provisions of this Section 4, the District shall give, or cause to be given, notice of the occurrence of any of the following events with respect to the Revenue Obligations, if material:

(1) consummation of a merger, consolidation, or acquisition involving the District or the sale of all or substantially all of the assets of the District, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms;

(2) appointment of a successor or additional Trustee or the change of the name of a Trustee;

(3) nonpayment related defaults;

(4) modifications to the rights of Owners;

(5) a notices of prepayment;

(6) release, substitution or sale of property securing repayment of the Revenue Obligations; or

(7) incurrence of a Financial Obligation of the District, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the District, any of which affect Revenue Obligation holders.

(c) Whenever the District obtains knowledge of the occurrence of an event, described in subsection (b) of this Section 4, the District shall as soon as possible determine if such event would be material under applicable federal securities law.

(d) If the District determines that knowledge of the occurrence of an event described in subsection (b) of this Section 4 would be material under applicable federal securities law, the District shall promptly notify the Dissemination Agent in writing and instruct the Dissemination Agent to report the occurrence to the Repository in a timely manner not more than ten (10) Business Days after the event.

(e) If the Dissemination Agent has been instructed by the District to report the occurrence of a Listed Event, the Dissemination Agent shall file a notice of such occurrence with the MSRB.

Section 5. Filings with the MSRB. All information, operating data, financial statements, notices and other documents provided to the MSRB in accordance with this Disclosure Agreement shall be provided in an electronic format prescribed by the MSRB and shall be accompanied by identifying information as prescribed by the MSRB.

Section 6. Termination of Reporting Obligation. The District's obligations under this Disclosure Agreement shall terminate upon the legal defeasance, prior prepayment or payment in full of all of the Revenue Obligations. If such termination occurs prior to the final maturity of the Revenue Obligations, the District shall give notice of such termination in the same manner as for a Listed Event under Section 4 hereof.

Section 7. Dissemination Agent. The District may, from time to time, appoint or engage another Dissemination Agent to assist it in carrying out its obligations under this Disclosure Agreement, and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. Notwithstanding any other provision to this Disclosure Agreement to the contrary, the District may provide any Annual Report to Beneficial Owners by means of posting such Annual Report on an internet site that provides open access to Beneficial Owners.

Section 8. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Agreement, the District may amend this Disclosure Agreement, provided no amendment increasing or affecting the obligations or duties of the Dissemination Agent shall be made without the consent of such party, and any provision of this Disclosure Agreement may be waived if such amendment or waiver is supported by an opinion of counsel expert in federal securities laws acceptable to the District and the Dissemination Agent to the effect that such amendment or waiver would not, in and of itself, cause the undertakings herein to violate the Rule if such amendment or waiver had been effective on the date hereof but taking into account any subsequent change in or official interpretation of the Rule.

Section 9. Additional Information. Nothing in this Disclosure Agreement shall be deemed to prevent the District from disseminating any other information, using the means of dissemination set forth in this Disclosure Agreement or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Agreement. If the District chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Agreement, the District shall have no obligation under this Disclosure Agreement to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

Section 10. Default. In the event of a failure of the District or the Dissemination Agent to comply with any provision of this Disclosure Agreement, the Trustee, at the written direction of any Participating Underwriter or the holders of at least 25% of the aggregate amount of principal evidenced by Outstanding Revenue Obligations and upon being indemnified to its reasonable satisfaction, shall, or any holder or beneficial owner of the Revenue Obligations may, take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the District or the Dissemination Agent, as the case may be, to comply with its obligations under this Disclosure Agreement. A default under this Disclosure Agreement shall not be deemed an Event of Default under the Trust Agreement, and the sole remedy under this Disclosure Agreement in the event of any failure of the District or the Dissemination Agent to comply with this Disclosure Agreement shall be an action to compel performance.

Section 11. Duties, Immunities and Liabilities of Trustee and Dissemination Agent. Article VIII of the Trust Agreement is hereby made applicable to this Disclosure Agreement as if this Disclosure Agreement were (solely for this purpose) contained in the Trust Agreement. Neither the Trustee nor the Dissemination Agent shall be responsible for the form or content of any Annual Report or notice of Listed Event. The Dissemination Agent shall receive reasonable compensation for its services provided under this Disclosure Agreement. The Dissemination Agent and the Trustee shall have only such duties as are specifically set forth in this Disclosure Agreement, and the District agrees to indemnify and save the Dissemination Agent and the Trustee, their officers, directors, employees and agents, harmless against any loss, expense and liabilities which it may incur arising out of or in the exercise or performance of its powers and duties hereunder, including the costs and expenses (including attorney's fees) of defending against any claim of liability, but excluding liabilities due to the Dissemination Agent's or the Trustee's respective negligence or willful misconduct. The obligations of the District under this Section shall survive resignation or removal of the Dissemination Agent and payment of the Revenue Obligations. The Dissemination Agent shall not be deemed to be acting in any fiduciary capacity for the District, any holder of a Revenue Obligation or any other party.

Section 12. Beneficiaries. This Disclosure Agreement shall inure solely to the benefit of the District, the Trustee, the Dissemination Agent, the Participating Underwriter and holders and beneficial owners from time to time of the Revenue Obligations, and shall create no rights in any other person or entity.

Section 13. Counterparts. This Disclosure Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Disclosure Agreement as of the date first above written.

ORANGE COUNTY SANITATION DISTRICT

By: _____
Lorenzo Tyner
Assistant General Manager & Director of Finance
and Administrative Services

DIGITAL ASSURANCE CERTIFICATION, LLC,
as Dissemination Agent

By: _____
Authorized Representative

Acknowledged and Accepted:

U.S. BANK NATIONAL ASSOCIATION,
as Trustee

By: _____
Authorized Officer

EXHIBIT A

**NOTICE TO MUNICIPAL SECURITIES RULEMAKING BOARD OF FAILURE
TO FILE ANNUAL REPORT**

Name of Obligor: Orange County Sanitation District

Name of Issue: \$ _____ Orange County Sanitation District
Wastewater Refunding Revenue Obligations, Series 2022A
(the "Revenue Obligations")

Date of Execution and Delivery: February 1, 2022

NOTICE IS HEREBY GIVEN that the Orange County Sanitation District (the "District") has not provided an Annual Report with respect to the above-captioned Revenue Obligations as required by Section 6.09 of the Trust Agreement, dated as of February 1, 2022, by and among U.S. Bank National Association, as Trustee, the Orange County Sanitation District Financing Corporation and the District. [The District anticipates that the Annual Report will be filed by _____.]

Dated: _____, 20__

ORANGE COUNTY SANITATION DISTRICT

By: _____
Title: _____

cc: Trustee
Dissemination Agent



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1980

Agenda Date: 12/8/2021

Agenda Item No: 8.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

NINTEX APPLICATION DEVELOPMENT SERVICES

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION: Recommend to the Board of Directors to:

Approve a Professional Services Agreement to AgreeYa Solutions, Inc. to provide Nintex Application Development Services, Specification No. CS-2021-1243BD, for a total amount not to exceed \$300,000.

BACKGROUND

Over the years, a variety of platforms for electronic forms and workflows have been adopted and used at Orange County Sanitation District (OC San), such as InfoPath, Nintex, and K2. More than 80 forms and workflows are in production at OC San today, facilitating a variety of critical business processes, ranging from COVID-19 Screening to Employee Status Changes and Payment Request Vouchers. Some of these forms and workflow platforms will no longer be supported by the vendors in the near future. Further, demand at OC San for moving paper-based processes into digital workflows has increased significantly as a result of COVID-19.

RELEVANT STANDARDS

- Maintain a culture of improving efficiency to reduce the cost to provide the current service level or standard
- Ensure the public's money is wisely spent

PROBLEM

Managing numerous forms and workflow platforms is problematic for OC San. Staff is working inefficiently, updating and maintaining various systems with similar functions. Staff is required to maintain various development skills required to work with multiple platforms. Additionally, several of these platforms will no longer be supported by the vendors in the near future, putting many business processes at risk. Lastly, the demand for new electronic forms and workflows, along with other high priority projects, has prevented staff from making significant progress in migrating existing forms and workflows to a more modern and fully supported system.

PROPOSED SOLUTION

Utilize professional services to consolidate and migrate existing electronic forms and workflows to a single modern workflow platform known as Nintex Workflow Cloud. Staff will oversee Nintex Application Development Services as they work to move existing forms and workflows to the new platform.

TIMING CONCERNS

Several electronic forms and workflow systems in use today will no longer be supported starting in 2023.

RAMIFICATIONS OF NOT TAKING ACTION

Without the use of these professional services, IT staff will be unable to recreate all the existing forms and workflows prior to support expiration. Any system failures that occur without an active support agreement may result in significant business process delays.

PRIOR COMMITTEE/BOARD ACTIONS

N/A

ADDITIONAL INFORMATION

A Request for Proposal was issued on August 3, 2021, via PlanetBids. A non-mandatory pre-proposal meeting was conducted virtually on August 31, 2021. Proposals were due on September 15, 2021. OC San received six responsive proposals valid for 180 calendar days from the proposal opening date.

Prior to receipt of proposals, an evaluation team was formed consisting of OC San staff listed below. The team was chaired by a Purchasing representative as a non-voting member. On September 21, 2021, the evaluation team met to discuss the policies and procedures for the evaluation process.

TITLE
IT Supervisor
Principal IT Analyst
IT Analyst III
IT Analyst II

Individual scoring was the chosen method of evaluation for this procurement. Members of the team performed an independent review of the proposals and later met as a group with the Buyer to discuss their preliminary scores and discuss any questions/concerns they had. Proposals were evaluated based on the following criteria:

CRITERION	WEIGHT
Qualifications & Experience of Firm	30%
Proposed Staffing & Project Organization	30%
Work Plan	10%
Presentation/Interview	10%
Cost	20%

The evaluation team first reviewed and scored the proposals based upon the criteria listed above, other than cost.

Rank	Proposer	Criterion 1 (Max 30%)	Criterion 2 (Max 30%)	Criterion 3 (Max 10%)	Subtotal Score (Max 70%)
1	Konica Minolta	29%	27%	9%	65%
2	AgreeYa Solutions, Inc.	27%	24%	8%	59%
3	Kambrian Corp.	16%	15%	5%	36%
4	ThoughtFocus Inc.	14%	14%	5%	33%
5	Chiron LLC	11%	11%	4%	26%
6	Sonus Software	8%	9%	1%	18%

The two highest ranking firms, AgreeYa and Konica Minolta, were selected for interviews. The interviews were conducted on October 12th and October 14th. Following the interviews, the evaluation team ranked the firms based on both the proposals and interviews using the evaluation criteria and weighting listed above.

Rank	Proposer	Subtotal Score (Max 70%)	Presentation (Max 10%)	Total Score without cost (Max 80%)
1	Konica Minolta	65%	9%	74%
2	AgreeYa Solutions, Inc.	59%	9%	68%

All proposals were accompanied by a sealed cost proposal. Only the cost proposals for the two highest ranked firms were opened and evaluated.

Rank	Proposer	Subtotal Score without cost (Max 80%)	Cost (Max 20%)	Total Weighted Score (Max 100%)
1	AgreeYa Solutions, Inc.	68%	20%	88%
2	Konica Minolta	74%	6%	80%

COST INFORMATION FOR OPENED PROPOSALS

Rank	Proposer	ORIGINAL RATE	BAFO
1	AgreeYa Solutions, Inc.	\$105/HR	\$105/HR
2	Konica Minolta	\$165/HR	\$154/HR

Based on these results, staff recommends approving the Professional Services Agreement to AgreeYa Solutions Inc. The term of this Agreement will begin upon effective date of Notice to Proceed.

CEQA

N/A

FINANCIAL CONSIDERATIONS

This request complies with authority levels of OC San’s Purchasing Ordinance. This item has been budgeted. (FY2020-21 & 2021-22 Budget, Section 8, Page 49, Information Technology Capital Program (M-MC-IT)).

<u>Date of Approval</u>	<u>Contract Amount</u>	<u>Contingency</u>
12/15/2021	\$300,000	N/A

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Draft Professional Services Agreement

PROFESSIONAL SERVICES AGREEMENT
Nintex Forms and Workflows
Specification No. CS-2021-1243BD

THIS AGREEMENT is made and entered into as of the date fully executed below, by and between Orange County Sanitation District, with a principal place of business at 10844 Ellis Avenue, Fountain Valley, CA 92708 (hereinafter referred to as "OC San") and [_____] with a principal place of business at [_____] (hereinafter referred to as "Consultant") collectively referred to as the "Parties".

WITNESSETH

WHEREAS, based on Consultant's expertise and experience, OC San desires to temporarily engage Consultant to provide [_____] "Services" as described in Exhibit "A"; and

WHEREAS, Consultant submitted its Proposal, dated [____]; and

WHEREAS, on [____], the Board of Directors, by minute order, authorized execution of this Agreement between OC San and Consultant; and

WHEREAS, OC San has chosen Consultant to conduct Services in accordance with Ordinance No. OC SAN-56; and

NOW, THEREFORE, in consideration of the mutual promises and mutual benefits exchanged between the Parties, the Parties mutually agree as follows:

1. Definitions

- 1.1. As-Built Documentation. The term "As-Built Documentation" means the Baseline Documentation plus the Documentation for any Configuration Changes and Customization Modifications. All "As-Built Documentation" shall supplement and not conflict with the terms of this Agreement. In the event of a conflict, the terms of this Agreement shall prevail.
- 1.2. Configuration Changes. The term "Configuration Changes" is defined as any modification or changes other than a Custom Modification.
- 1.3. Consultant Application Software. The term "Consultant Application Software" is defined as any Software owned or sublicensed, installed and/or configured by Consultant as a component of the Services provided, whether in machine readable or printed form, including, but not limited to any applications, modules, subsystems, Interfaces, Configuration Changes, Custom Modifications, Updates and Documentation.
- 1.4. Custom Modification. The term "Custom Modification" is defined as a modification of the Consultant Application Software Source Code or data base structure, which provides new or improved functions or features to address specific requirements of this Agreement.
- 1.5. Defect. The term "Defect" is defined as any error, failure, deficiency, or any other unacceptable variance or failure of the System or any component thereof to fully conform to the warranties and requirements described in this Agreement. With respect to the Consultant Application Software, the term "Defect" is defined as any error, failure, or deficiency or any other

unacceptable variance from any required, specified, or expected program behaviors as may be required by OC San or necessary for the Consultant Application Software to operate correctly and in full compliance with the terms of this Agreement. This includes expected program behaviors as described in any Consultant Application Software Documentation. In the event of a conflict between this Agreement and documentation provided by Consultant to OC San, the terms and conditions of this Agreement shall prevail.

- 1.6. Documentation. The term “Documentation” is defined as all written, electronic, or recorded works including all “As-Built Documentation” that describe the uses, features, functional capabilities, performance standards, and reliability standards of the System, or any subsystem, component, or Interface, and that are published or provided to OC San by Consultant or its subcontractors, including, without limitation, all end user and System administrator manuals, help files, training aids and manuals, training and support guides, program listings, data models, flow charts, logic diagrams, and other materials related to or for use with the System.
- 1.7. Final System Acceptance. The term “Final System Acceptance” shall be defined as that date on which all Services under Section Titled “Deliverables” of Exhibit “A” Scope of Work have been successfully completed by Consultant and accepted by OC San.
- 1.8. Fix Pack. The term “Fix Pack” is defined as a formal release of programming code and Documentation that provides corrections to any Consultant Application Software programs including, but not limited to, bug fixes, error corrections and patches.
- 1.9. Functional, Performance and Reliability Specifications and Requirements. The term “Functional, Performance and Reliability Specifications and Requirements” is defined as all definitions, descriptions, requirements, criteria, warranties, and performance standards relating to the System set forth in: (a) this Agreement; (b) any mutually agreed upon Amendment; and (c) any functional and/or technical specifications which are published or provided by Consultant or its licensors or suppliers from time to time with respect to the System or any Products.
- 1.10. Interfaces. The term “Interfaces” is defined as one or more of the specialized software applications developed or sublicensed by Consultant and installed as a part of the Project for the purpose of sharing information (data) between Consultant and/or Consultant Application Software and any other software program or device. Functional requirements for each Interface to be included as a part of the System are provided Exhibit “A”, Scope of Work.
- 1.11. Products. The term “Products” is defined as all Software listed in the “Exhibit “A” Scope of Work.
- 1.12. Project. The term “Project” is defined as the totality of Consultant’s obligation under this Agreement to develop, supply, install, configure, test, implement and maintain the System.
- 1.13. Services. The term “Services” is defined as the implementation, development, training, configuration, loading, testing, project management and other services to be provided by Consultant under this Agreement, including, without limitation, the tasks detailed in Exhibit “A”, Scope of Work.
- 1.14. Software. The term “Software” includes the following components provided and licensed by Consultant under this Agreement: (a) Consultant Application Software; (b) Third-Party Software; (c) Custom Modifications and (d) Interfaces.

- 1.15. System. The term “System” is defined as the collective whole of all Products and Services to be purchased, developed, licensed, supplied, installed, configured, tested and implemented by Consultant under this Agreement.
- 1.16. System Administrator Documentation. Is defined as that portion of the Documentation addressing the operation and maintenance functions of the System.
- 1.17. Third-Party Software. The term “Third-Party Software” is defined as any Software to be supplied under this Agreement that is purchased or licensed directly from any source external to Consultant for use with or integration into the System.
- 1.18. Updates. The term “Updates” is defined as modifications, improvements, additions, and corrections to the Products and/or related Documentation, including functional and/or product enhancements, bug fixes, patches, new releases, new versions, and replacement modules or products that Consultant makes generally available to its customers with or without an additional fee.
- 1.19. Go-Live Support. The term “Go-live Support” is as described in “Exhibit “A” Scope of Work.
- 1.20. Work Product. The term “Work Product” is defined as the Products and Services and all other programs, algorithms, reports, information, designs, plans and other items developed by Consultant under this Agreement, including all partial, intermediate or preliminary versions thereof.

2. Miscellaneous

- 2.1. Access to Premises. OC San shall provide Consultant with reasonable and timely access to the sites and personnel necessary for Consultant to perform its obligations under this Agreement. OC San shall allow Consultant personnel reasonable access to OC San site and facilities (telephone, facsimile, parking, etc.) during normal business hours and at other reasonable times as requested by Consultant and pre-approved by OC San. The assistance or presence of OC San’s personnel will not relieve Consultant of any responsibilities under this Agreement.
- 2.2. Amendments. No amendment or modification to this Agreement is valid unless it is contained in a writing signed by both Parties.
- 2.3. Approvals in Writing. All approvals or consents required or contemplated by this Agreement must be in writing to be effective.
- 2.4. Background Checks and Removal of Personnel. Prior to being allowed to perform any work on this project, all non-OC San personnel assigned to the project may be required to submit to and pass a background check by the Fountain Valley, California Police Department. In addition, OC San shall have the sole and exclusive right to require Consultant to immediately remove any individual from the project for any reason deemed to be in the best interests of OC San. Consultant shall replace any employee removed from the project within ten (10) business days of said removal.
- 2.5. Compliance with Work Rules. Consultant will ensure that, while they are on OC San premises, Consultant’s personnel and subconsultant(s) will comply with OC San’s working rules and policies, including OC San’s security procedures.

- 2.6. Successors and Assigns. This Agreement is binding on and inures to the benefit of the Parties and their respective successors and assigns.
- 2.7. Advertising. Consultant shall not refer to the existence of this Agreement in any press release, advertising or materials distributed to prospective customers without the prior written consent of OC San.
- 2.8. This Agreement and all Exhibits hereto (called the "Agreement") is made by OC San and Consultant. The terms and conditions herein exclusively govern the purchase of Services as described in the Scope of Work Exhibit "A".
- 2.9. Exhibits to this Agreement are incorporated by reference and made a part of this Agreement as though fully set forth at length herein.
- | | |
|-------------|---------------------------------------|
| Exhibit "A" | Scope of Work |
| Exhibit "B" | Proposal |
| Exhibit "C" | Determined Insurance Requirement Form |
| Exhibit "D" | Contractor Safety Standards |
| Exhibit "E" | Human Resources Policies |
- 2.10. In the event of any conflict or inconsistency between the provisions of this Agreement and any of the provisions of the Exhibits hereto, the provisions of this Agreement shall in all respects govern and control.
- 2.11. This Agreement may not be modified, changed, or supplemented, nor may any obligations hereunder be waived or extensions of time for performance granted, except by written instrument signed by both Parties.
- 2.12. The various headings in this Agreement are inserted for convenience only and shall not affect the meaning or interpretation of this Agreement or any Section or provision hereof.
- 2.13. Work Hours: The work required under this Agreement may include normal business hours, evenings, and weekends. OC San will not pay for travel time.
- 2.14. The term "days", when used in the Agreement, shall mean calendar days, unless otherwise noted as workdays.
- 2.15. The term "workday". Workdays are defined as all days that are not Saturday and Sunday, or OC San observed holidays. Meetings with OC San staff shall be scheduled from Monday through Thursday between the hours of 8 a.m. and 4 p.m. (exception is Operations staff who maintain plant operations 24/7 and work a rotated 12-hour shift) and shall conform to OC San work schedules. OC San review periods shall not include OC San observed holidays.
- 2.16. OC San holidays (non-working days) are as follows: New Year's Day, Lincoln's Birthday, Presidents' Day Monday, Memorial Day Monday, Independence Day, Labor Day Monday, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day.
- 2.17. Consultant shall provide OC San with all required premiums and/or overtime work at no charge beyond the total amount of the Agreement.
- 2.18. Except as expressly provided otherwise, OC San accepts no liability for any expenses,

losses, or action incurred or undertaken by Consultant as a result of work performed in anticipation of purchases of said services by OC San.

3. Scope of Work

3.1. Subject to the terms of this Agreement, Consultant shall perform the Services identified in Exhibit "A" Scope of Work. Consultant warrants that all of its Services shall be performed in a competent, professional, and satisfactory manner.

3.2. Modifications to Equipment and Facilities. OC San shall be responsible for making OC San-approved modifications identified in an OC San approved, site analysis report. Thereafter, Consultant will be precluded from asserting that it is unable to perform its obligations under this Agreement because of any pre-existing condition. During implementation, any changes to the system or any costs that may be incurred in order to complete the requirements of this Agreement but were not identified in the site analysis report will be the sole and exclusive responsibility of Consultant. In addition, if the system is unable to meet the functional, performance and reliability specifications and requirements in this Agreement after the identified upgrades and changes have been made, then Consultant will be responsible, at its own expense, for making any further upgrades or changes necessary to achieve this result.

4. **Transition** Consultant shall work with OC San to ensure a smooth and efficient transition from OC San's current system to the new System and to minimize disruption to current operations, even if it necessitates working late evening, early morning, or weekend hours. Any required disruptions to OC San's operations shall be scheduled in advance and approved by OC San.

5. **Modifications to Scope of Work** Requests for modifications to the Scope of Work hereunder can be made by OC San at any time. All modifications must be made in writing and signed by both Parties. A review of the time required for the modification will be made by OC San and Consultant and the Agreement period adjusted accordingly.

6. **Compensation** Compensation to be paid by OC San to Consultant for the Services provided under this Agreement shall be a total amount not to exceed [_____] Dollars (\$[_____]00).

7. California Department of Industrial Relations (DIR) Registration and Record of Wages

7.1. To the extent Consultant's employees and/or subconsultants who will perform work for which Prevailing Wage Determinations have been issued by the DIR and as more specifically defined under Labor Code Section 1720 et seq, Consultant and subconsultants shall comply with the registration requirements of Labor Code Section 1725.5. Pursuant to Labor Code Section 1771.4, the work is subject to compliance monitoring and enforcement by the DIR.


7.2. The Consultant and subconsultants shall maintain accurate payroll records and shall comply with all the provisions of Labor Code Section 1776, and shall submit payroll records to the Labor Commissioner pursuant to Labor Code 1771.4(a)(3). Penalties for non-compliance with the requirements of Section 1776 may be deducted from progress payments per Section 1776.

7.3. Pursuant to Labor Code Section 1776, the Consultant and subconsultants shall furnish a copy of all certified payroll records to OC San and/or general public upon request, provided the public request is made through OC San, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement of the Department of Industrial Relations.

7.4. The Consultant and subconsultants shall comply with the job site notices posting requirements

established by the Labor Commissioner per Title 8, California Code of Regulation Section 16461(e).

8. Payment and Invoicing

- 8.1. OC San shall pay, net thirty (30) days, upon receipt and approval, by OC San's Project Manager or designee, of itemized invoices submitted for deliverables completed as listed in the Scope of Work.
- 8.2. OC San, at its sole discretion, shall be the determining party  to whether the tasks and deliverables for each phase have been satisfactorily completed.
- 8.3. Invoices shall be emailed by Consultant to OC San Accounts Payable at APStaff@OCSan.gov and "INVOICE" with the Purchase Order Number and [] shall be referenced in the subject line.

9. Audit Rights Consultant agrees that, during the term of this Agreement and for a period of three (3) years after its termination, OC San shall have access to and the right to examine any directly pertinent books, documents, and records of Consultant relating to the invoices submitted by Consultant pursuant to this Agreement.

10. Commencement and Term The Services provided under this Agreement shall be completed within five hundred forty (540) calendar days from the effective date of the Notice to Proceed.

11. Extensions The term of this Agreement may be extended only by written instrument signed by both Parties.

12. Performance Time is of the essence in the performance of the provisions hereof.

13. Termination

- 13.1. OC San reserves the right to terminate this Agreement for its convenience, with or without cause, in whole or in part, at any time, by written notice from OC San. Upon receipt of a termination notice, Consultant shall immediately discontinue all work under this Agreement (unless the notice directs otherwise). OC San shall thereafter, within thirty (30) days, pay Consultant for work performed (cost and fee) to the date of termination. Consultant expressly waives any claim to receive anticipated profits to be earned during the uncompleted portion of this Agreement. Such notice of termination shall terminate this Agreement and release OC San from any further fee, cost or claim hereunder by Consultant other than for work performed to the date of termination.
- 13.2. OC San reserves the right to terminate this Agreement immediately upon OC San's determination that Consultant is not complying with the Scope of Work requirements, if the level of service is inadequate, or any other default of this Agreement.
- 13.3. OC San may also immediately terminate for default of this Agreement in whole or in part by written notice to Consultant:
- if Consultant becomes insolvent or files a petition under the Bankruptcy Act; or
 - if Consultant sells its business; or
 - if Consultant breaches any of the terms of this Agreement; or
 - if total amount of compensation exceeds the amount authorized under this Agreement.

13.4. All OC San property in the possession or control of Consultant shall be returned by Consultant to OC San on demand, or at the termination of this Agreement, whichever occurs first. In addition, Consultant will deliver to OC San all work product currently in existence and for which payment has been made.

13.5. Upon termination or expiration of this Agreement, Consultant will cooperate with OC San to assist with the orderly transfer of services, functions, and operations provided by Consultant under this Agreement to another provider or to OC San as determined by OC San in its sole discretion. Prior to the termination or expiration of this Agreement, OC San may require Consultant to perform those transition services described below that OC San deems necessary to migrate Consultant's work to another provider or to OC San. Transition services may include, but are not limited to the following:

13.5.1. *Pre-Migration*

13.5.1.1. Working with OC San to jointly develop a mutually agreed upon transition services plan to facilitate the termination of the Services;

13.5.1.2. Notifying all affected vendors and subconsultants by Consultant; and

13.5.1.3. Freezing all non-critical changes to the system.

13.5.2. *Migration and Post-Migration.*

13.5.2.1. Performing the transition services plan activities.

13.5.2.2. Answering questions regarding the services performed by Consultant or the System on an as-needed basis;

13.5.2.3. Providing such other reasonable services needed to effectuate an orderly transition to a new system.

13.6. OC San agrees to pay Consultant for transition services at an hourly rate of [_____] (\$_____) per hour, plus reasonable out-of-pocket expenses not to exceed [_____].

14. Indemnification and Hold Harmless Provision Consultant shall assume all responsibility for damages to property and/or injuries to persons, including accidental death, which may arise out of or be caused by Consultant's services under this Agreement, or by its subconsultant(s) or by anyone directly or indirectly employed by Consultant, and whether such damage or injury shall accrue or be discovered before or after the termination of the Agreement. Except as to the sole active negligence of or willful misconduct of OC San, Consultant shall indemnify, protect, defend and hold harmless OC San, its elected and appointed officials, officers, agents and employees, from and against any and all claims, liabilities, damages or expenses of any nature, including attorneys' fees: (a) for injury to or death of any person or damage to property or interference with the use of property, arising out of or in connection with Consultant's performance under the Agreement, and/or (b) on account of use of any copyrighted or uncopyrighted material, composition, or process, or any patented or unpatented invention, article or appliance, furnished or used under the Agreement, and/or (c) on account of any goods and services provided under this Agreement. This indemnification provision shall apply to any acts or omissions, willful misconduct, or negligent misconduct, whether active or passive, on the part of Consultant or anyone employed by or working under Consultant. To the maximum extent permitted by law, Consultant's duty to defend shall apply whether or not such claims, allegations, lawsuits, or proceedings have merit or are meritless, or which involve claims or allegations that any of the parties to be defended were actively, passively, or concurrently negligent, or which otherwise assert that the parties to be defended are responsible, in whole or in part, for any loss, damage, or injury. Consultant agrees to provide this defense immediately upon written notice from OC

San, and with well qualified, adequately insured, and experienced legal counsel acceptable to OC San. This section shall survive the expiration or early termination of the Agreement.

15. Insurance Consultant and all subconsultants shall purchase and maintain, throughout the life of this Agreement and any periods of warranty or extensions, insurance in amounts equal to the requirements set forth in the signed Determined Insurance Requirement Form, Exhibit "C". Consultant shall not commence work under this Agreement until all required insurance is obtained in a form acceptable to OC San, nor shall Consultant allow any subconsultant to commence service pursuant to a subcontract until all insurance required of the subconsultant has been obtained. Failure to maintain required insurance coverage shall result in termination of this Agreement.

16. Warranty

16.1. System Warranty. Consultant warrants that the System will meet the Functional, Performance and Reliability Specifications and Requirements as defined in this Agreement. As applicable, the System and/or each of its subsystems, components and Interfaces will be capable of operating fully and correctly in conjunction with the System Hardware. Consultant warrants that for the term of this Agreement, the System will perform as described in Exhibit "A" Scope of Work, and in material and workmanship and will remain in good working order. In the event the System does not meet these warranties, Consultant shall provide, at no charge, the necessary software, hardware, and/or services required to attain the levels or standards contained in these warranties.

16.2. Consultant Application Software Warranties. Consultant warrants that it owns or otherwise has the right to license the Consultant application software to OC San and that it possesses all rights and interests necessary to enter into this Agreement. In addition, Consultant warrants that:

16.2.1. All Consultant application software licensed under this Agreement is free of known Defects, viruses, worms and Trojan horses, or otherwise (except for documented security measures such as password expiration functions);

16.2.2. During the term of the Agreement; the Consultant Application Software will meet or exceed the Functional, Performance and Reliability Specifications and Requirements herein;

16.2.3. Consultant Application Software is and will be general release versions that have been fully tested at Consultant's site in accordance with best industry practices, and are not beta or pre-release versions (unless agreed to in writing by OC San); and,

16.2.4. Custom Modifications and Interfaces have been fully tested in accordance with best industry practices and are free of known Defects. Consultant further agrees that during the term of this Agreement, Consultant will provide OC San, if OC San so desires, with any Updates at no additional cost (including any and all costs associated with the installation of those Updates) immediately upon their commercial availability to any other entity.

16.3. Work Quality Warranty. Consultant warrants that all work performed by Consultant and/or its subcontractors under this Agreement will conform to best industry practices and will be performed in a professional and workmanlike manner by staff with the necessary skills, experience and knowledge to do so.

16.4. Regulatory Warranty. Consultant warrants that, for the Term of this Agreement, the System will comply with all processing and reporting requirements for State and Federal laws, and regulations. If the Software requires updating due to a change in a State or Federal law, or regulation, affecting OC San, Consultant will provide these changes per a mutually agreed to schedule at no additional charge to OC San. Notwithstanding this provision, in no event shall Consultant provide said update later than the date required by the State or Federal law or regulation affecting OC San. In the event OC San is notified of a change in State or Federal law or regulations that requires updating the Software, OC San will notify Consultant of that change as soon as reasonably possible.

16.5. Documentation Warranty. Consultant warrants that, for the Term of this Agreement, the Documentation for all licensed Consultant Application Software will be complete and accurate in all material respects. The Documentation will be revised to reflect all Updates and Interfaces provided by Consultant under this Agreement. This includes Documentation on any Custom Modification or Configuration Changes made to the System by Consultant during the installation process.

16.6. Service Warranty. During the term of this Agreement, Consultant warrants that it will remedy any failure, malfunction, Defect or nonconformity in the System, as follows:

16.6.1. Priority One (P1) Defects. For purposes of this Warranty, a P1 Defect includes, but is not limited to, loss of data, data corruption, a System or subsystem abort, any condition where productive use of the System or any component thereof is prohibited and no acceptable workaround is available. Examples of P1 Defects include, but are not limited to:

16.6.1.1. System is down

16.6.1.2. Application, module or Interface is down or non-operational

16.6.1.3. An Interface or application critical to System operation is substantially impaired or problematic

16.6.1.4. Loss of data or data corruption after data has been entered

16.6.1.5. A subsystem or component thereof is non-functional

16.6.1.6. Productive use is prohibited

16.6.1.7. two or more workstations or mobile devices lock up or malfunction intermittently

16.6.1.8. a user cannot log on to the System

16.6.2. Priority Two (P2) Defects. For purposes of this Warranty a P2 Defect includes, but is not limited to, compromise of the primary purpose of the System, subsystem or Interface to an external system. Productive use by the end user is substantially impacted and an acceptable workaround is not available. Examples of P2 Defects include, but are not limited to:

16.6.2.1. a Software function does not work correctly (enter an example, if possible)

16.6.2.2. The user cannot produce a report with correct calculations

16.6.2.3. System, subsystem or an Interface performance is deemed unacceptable per the Functional, Performance, and Reliability Specifications and Requirements.

16.6.2.4. Incorrect cross streets are displayed on a verified address or location

16.6.2.5. Cannot create a scheduled event

16.6.2.6. A single workstation or mobile device locks up or malfunctions intermittently

16.6.3. Priority Three (P3) Defects. For purposes of this Warranty, a P3 Defect includes, but is not limited to, incomplete operation of a System component which impacts productivity of staff but an acceptable workaround is generally available. Examples of P3 Defects include but are not limited to:

- 16.6.3.1. Single workstation or mobile device locks up intermittently but infrequently
- 16.6.3.2. Minor deficiencies occur intermittently in any component of the System
- 16.6.3.3. A mapping function doesn't work but the failure does not interfere with the user's ability to perform required tasks
- 16.6.3.4. A report does not function or report provides incorrect results
- 16.6.3.5. An incorrect message is presented in a dialog box

16.6.4. Priority Four (P4) Defects. For purposes of this Warranty, a P4 Defect consists of those problems deemed by OC San to be mainly cosmetic. Examples of P4 Defects include, but are not limited to:

- 16.6.4.1. A misspelled word in the header of a report or in a help file
- 16.6.4.2. A minor error in output that does not interfere with the correct outputting of statistics from the system
- 16.6.4.3. Minor printing errors in a report that does not impede OC San's ability to utilize the report for the required purpose.
- 16.6.4.4. Minor variances in text where the help file does not match the Documentation
- 16.6.4.5. Minor variances in text where the Documentation doesn't match the functionality but the System works properly
- 16.6.4.6. A print button doesn't work but the user can still print without opening or closing multiple windows or losing data or rebooting the System.

16.6.5. Multiple Failures. Any situation involving multiple, contemporaneous failures, regardless of their individual priorities, will be regarded as a Priority One Defect if, in OC San's determination, the situation results in OC San having essentially no productive use of the System or a major subsystem.

16.6.6. Permanent Cure. If OC San accepts a workaround or other temporary cure as the remedy for any reported Defect, Consultant shall provide and install at no cost to OC San a permanent correction or cure and installation support within ten (10) days after the permanent cure becomes available.

16.6.7. Third-party Warranty Coverage. Third-party products are provided with a pass-thru-warranty from the original manufacturer.

17. Key Personnel Personnel, as provided in Exhibit "B", are considered "key" to the work under this Agreement and will be available for the term of the Agreement. No person designated as key under this Agreement shall be removed or replaced without prior written consent of OC San. If OC San asks Consultant to remove a person designated as key under this Agreement, Consultant agrees to do so immediately regardless of the reason, or the lack of reason, for OC San's request. Consultant shall assign only competent personnel to perform Services pursuant to this Agreement.

18. Confidentiality and Non Disclosure

18.1. Consultant acknowledges that in performing the Services hereunder, OC San may have to

disclose to Consultant orally and in writing certain confidential information that OC San considers proprietary and has developed at great expense and effort.

18.2. Consultant agrees to maintain in confidence and not disclose to any person, firm, or corporation, without OC San's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of OC San.

18.3. Consultant further agrees to maintain in confidence and not to disclose to any person, firm, or corporation any data, information, technology, or material developed or obtained by Consultant during the term of this Agreement.

18.4. Consultant agrees as follows:

- To use the confidential information only for the purposes described herein; to not reproduce the confidential information; to hold in confidence and protect the confidential information from dissemination to and use by anyone not a party to this Agreement; and to not use the confidential information to benefit itself or others.
- To restrict access to the confidential information to its subconsultant or personnel of Consultant who (1) have a need to have such access and (2) have been advised of and have agreed in writing to treat such information in accordance with the terms of this Agreement.
- To return all confidential information in Consultant's possession upon termination of this Agreement or upon OC San's request, whichever occurs first.
- To hold in confidence information and materials, if any, developed pursuant to the Services hereunder.

18.5. The provisions of this section shall survive termination or expiration of this Agreement and shall continue for so long as the material remains confidential.

19. Ownership of Documents All drawings, specifications, reports, records, documents, memoranda, correspondence, computations, and other materials prepared by Consultant, its employees, subconsultants, and agents in the performance of this Agreement shall be the property of OC San and shall be promptly delivered to OC San upon request of OC San's Project Manager or designee, or upon the termination of this Agreement, and Consultant shall have no claim for further employment or additional compensation as a result of the exercise by OC San of its full rights of ownership of the documents and materials hereunder. Any use of such completed documents for other projects and/or use of incomplete documents without specific written authorization by the Consultant will be at OC San's sole risk and without liability to Consultant. Consultant shall ensure that all its subconsultants shall provide for assignment to OC San of any documents or materials prepared by them.

20. Ownership of Intellectual Property

20.1. Consultant agrees that all designs, plans, reports, specifications, drawings, schematics, prototypes, models, inventions, and all other information and items made during the course of this Agreement and arising from the Services (hereinafter referred to as "New Developments") shall be and are assigned to OC San as its sole and exclusive property.

20.2. Consultant agrees to promptly disclose to OC San all such New Developments. Upon OC San's request, Consultant agrees to assist OC San, at OC San's expense, to obtain patents or copyrights for such New Developments, including the disclosure of all pertinent information and data with respect thereto, the execution of all applications, specifications, assignments, and all other instruments and papers which OC San shall deem necessary to apply for and to assign

or convey to OC San, its successors and assigns, the sole and exclusive right, title and interest in such New Developments. Consultant agrees to obtain or has obtained written assurances from its employees and contract personnel of their agreement to the terms hereof with regard to New Developments and confidential information.

20.3. Consultant warrants that Consultant has good title to any New Developments, and the right to assign New Developments to OC San free of any proprietary rights of any other party or any other encumbrance whatever.

20.4. The originals of all computations, drawings, designs, graphics, studies, reports, manuals, photographs, videotapes, data, computer files, and other documents prepared or caused to be prepared by Consultant or its subconsultants in connection with these Services shall be delivered to and shall become the exclusive property of OC San. OC San may utilize these documents for OC San applications on other projects or extensions of this project, at its own risk.

21. Infringement Claims If an infringement claim occurs, Consultant has thirty (30) days after the receipt of OC San's written notice of the claim or the date on which Consultant first becomes aware of the claim, whichever is sooner, to either: (a) procure for OC San the right to continue using the affected Product, Service, subsystem, component or Interface and deliver or provide the Product, Service, subsystem, component, or Interface to OC San; or (b) repair or replace the infringing Product, Service, subsystem, component, or Interface so that it becomes non-infringing, provided the performance of the System or any subsystems, components, or Interfaces is not adversely affected by the replacement or modification. In the event Consultant is unable to comply with either subsection (a) or (b) of this paragraph within thirty (30) days, OC San may terminate this Agreement without any further obligation to Consultant. In the event of termination, in addition to any other legal remedies available to OC San, Consultant will refund OC San within ten (10) days of OC San's notice of termination, the license fees OC San paid to Consultant for the Product, Service, subsystem, component or Interface. If the inability to comply with either subsection (a) or (b) of this paragraph causes the System to fail to meet the Functional, Performance and Reliability Specifications and Requirements or to otherwise become ineffective, Consultant will refund OC San all fees paid to Consultant under this Agreement.

22. No Solicitation of Employees

22.1. Consultant agrees that it shall not, during the term of this Agreement and for a period of one (1) year immediately following termination of this Agreement, or any extension hereof, call on, solicit, or take away any of the employees whom Consultant became aware of as a result of Consultant's Services to OC San.

22.2. Consultant acknowledges that OC San's employees are critical to its business and OC San expends significant resources to hire, employ, and train employees. Should Consultant employ or otherwise engage OC San's employees during the term of this Agreement and for a period of one (1) year following termination of this Agreement, Consultant will pay OC San fifty percent (50%) of the former employee's most recent annual salary earned at OC San to accurately reflect the reasonable value of OC San's time and costs. This payment is in addition to any other rights and remedies OC San may have at law.

23. Independent Contractor Capacity

23.1. The relationship of Consultant to OC San is that of an independent contractor and nothing herein shall be construed as creating an employment or agency relationship.

- 23.2. Consultant shall act independently and not as an officer or employee of OC San. OC San assumes no liability for Consultant's action and performance, nor assumes responsibility for taxes, funds, payments or other commitments, implied or expressed, by or for Consultant.
- 23.3. Consultant shall not be considered an agent of OC San for any purpose whatsoever, nor shall Consultant have the right to, and shall not, commit OC San to any agreement, contract or undertaking. Consultant shall not use OC San's name in its promotional material or for any advertising or publicity purposes without expressed written consent.
- 23.4. Consultant shall not be entitled to any benefits accorded to those individuals listed on OC San's payroll as regular employees including, without limitation, worker's compensation, disability insurance, vacation, holiday or sick pay. Consultant shall be responsible for providing, at Consultant's expense, disability, worker's compensation or other insurance as well as licenses and permits usual or necessary for conducting the Services hereunder.
- 23.5. Consultant shall be obligated to pay any and all applicable Federal, State and local payroll and other taxes incurred as a result of fees hereunder. Consultant hereby indemnifies OC San for any claims, losses, costs, fees, liabilities, damages or penalties suffered by OC San arising out of Consultant's breach of this provision.
- 23.6. Consultant shall not be eligible to join or participate in any benefit plans offered to those individuals listed on OC San's payroll as regular employees. Consultant shall remain ineligible for such benefits or participation in such benefit plans even if a court later decides that OC San misclassified Consultant for tax purposes.

24. Licenses, Permits Consultant represents and warrants to OC San that it has obtained all licenses, permits, qualification and approvals of whatever nature that are legally required to engage in this work. Any and all fees required by Federal, State, County, City and/or municipal laws, codes and/or tariffs that pertain to work performed under the terms of this Agreement will be paid by Consultant.

25. Consultant's Representations In the performance of duties under this Agreement, Consultant shall adhere to the highest fiduciary standards, ethical practices and standards of care and competence for their trade/profession. Consultant agrees to comply with all applicable Federal, State and local laws and regulations.

26. Familiarity with Work By executing this Agreement, Consultant warrants that: 1) it has investigated the work to be performed; 2) it has investigated the site of the work and is aware of all conditions there; and 3) it understands the facilities, difficulties and restrictions of the work under this Agreement. Should Consultant discover any latent or unknown conditions materially differing from those inherent in the work or as represented by OC San, it shall immediately inform OC San of this and shall not proceed, except at Consultant's risk, until written instructions are received from OC San.

27. Right to Review Services, Facilities, and Records

- 27.1. OC San reserves the right to review any portion of the Services performed by Consultant under this Agreement, and Consultant agrees to cooperate to the fullest extent possible.
- 27.2. Consultant shall furnish to OC San such reports, statistical data, and other information pertaining to Consultant's Services as shall be reasonably required by OC San to carry out its rights and responsibilities under its agreements with its bondholders or noteholders and any

other agreement relating to the development of the project(s) and in connection with the issuance of its official statements and other prospectuses with respect to the offering, sale, and issuance of its bonds and other obligations.

27.3. The right of OC San to review or approve drawings, specifications, procedures, instructions, reports, test results, calculations, schedules, or other data that are developed by Consultant shall not relieve Consultant of any obligation set forth herein.

28. Force Majeure Neither party shall be liable for delays caused by accident, flood, acts of God, fire, labor trouble, war, acts of government or any other cause beyond its control, but said party shall use reasonable efforts to minimize the extent of the delay. Work affected by a Force Majeure condition may be rescheduled by mutual consent or may be eliminated from the Agreement.

29. Severability If any Section, Subsection, or provision of this Agreement, or any agreement or instrument contemplated hereby, or the application of such Section, Subsection, or provision is held invalid, the remainder of this Agreement or instrument in the application of such Section, Subsection or provision to persons or circumstances other than those to which it is held invalid, shall not be affected thereby, unless the effect of such invalidity shall be to substantially frustrate the expectations of the Parties.

30. Waiver The waiver of either party of any breach or violation of, or default under, any provision of this Agreement, shall not be deemed a continuing waiver by such party of any other provision or of any subsequent breach or violation of this Agreement or default thereunder. Any breach by Consultant to which OC San does not object shall not operate as a waiver of OC San's rights to seek remedies available to it for any subsequent breach.

31. Survival: All provisions of this Agreement that by their nature would reasonably be expected to continue after the termination of this Agreement will survive the termination of this Agreement, including, without limitation, the following Sections and Paragraphs:

- Payment
- License
- Audit
- Independent Contractor
- Warranties
- Indemnification
- Obligations Upon Expiration or Termination
- Transition of Services
- Confidentiality and Nondisclosure
- Forum for Enforcement

32. Remedies In addition to other remedies available in law or equity, if the Consultant fails to make delivery of the goods or Services or repudiates its obligations under this Agreement, or if OC San rejects the goods or Services or revokes acceptance of the goods or Services, OC San may (1) terminate the Agreement; (2) recover whatever amount of the purchase price OC San has paid, and/or (3) "cover" by purchasing, or contracting to purchase, substitute goods or Services for those due from Consultant. In the event OC San elects to "cover" as described in (3), OC San shall be entitled to recover from Consultant as damages the difference between the cost of the substitute goods or Services and the Agreement price, together with any incidental or consequential damages.

- 33. Governing Law** This Agreement shall be governed by and interpreted under the laws of the State of California and the Parties submit to jurisdiction in Orange County, in the event any action is brought in connection with this Agreement or the performance thereof.
- 34. Environmental Compliance** Consultant shall, at its own cost and expense, comply with all Federal, State, and local environmental laws, regulations, and policies which apply to the Consultant, its sub-consultants, and the Services, including, but not limited to, all applicable Federal, State, and local air pollution control laws and regulations.
- 35. Attorney's Fees** If any action at law or inequity or if any proceeding in the form of an Alternative Dispute Resolution (ADR) is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which it may be entitled.
- 36. Dispute Resolution**
- 36.1. In the event of a dispute as to the construction or interpretation of this Agreement, or any rights or obligations hereunder, the Parties shall first attempt, in good faith, to resolve the dispute by mediation. The Parties shall mutually select a mediator to facilitate the resolution of the dispute. If the Parties are unable to agree on a mediator, the mediation shall be conducted in accordance with the Commercial Mediation Rules of the American Arbitration Agreement, through the alternate dispute resolution procedures of Judicial Arbitration through Mediation Services of Orange County ("JAMS"), or any similar organization or entity conducting an alternate dispute resolution process.
- 36.2. In the event the Parties are unable to timely resolve the dispute through mediation, the issues in dispute shall be submitted to arbitration pursuant to California Code of Civil Procedure, Part 3, Title 9, Sections 1280 et seq. For such purpose, an agreed arbitrator shall be selected, or in the absence of agreement, each party shall select an arbitrator, and those two (2) arbitrators shall select a third. Discovery may be conducted in connection with the arbitration proceeding pursuant to California Code of Civil Procedure Section 1283.05. The arbitrator, or three (3) arbitrators acting as a board, shall take such evidence and make such investigation as deemed appropriate and shall render a written decision on the matter in question. The arbitrator shall decide each and every dispute in accordance with the laws of the State of California. The arbitrator's decision and award shall be subject to review for errors of fact or law in the Superior Court for the County of Orange, with a right of appeal from any judgment issued therein.
- 37. Damage to OC San's Property** Any OC San property damaged by Consultant will be subject to repair or replacement by Consultant at no cost to OC San.
- 38. Contractor Safety Standards and Human Resources Policies** OC San requires Consultant and its subconsultants to follow and ensure their employees follow all Federal, State and local regulations as well as Contractor Safety Standards while working at OC San locations. If during the course of the Agreement it is discovered that Contractor Safety Standards do not comply with Federal, State or local regulations, then the Consultant is required to follow the most stringent regulatory requirement at no additional cost to OC San. Consultant and all of its employees and subconsultants, shall adhere to all applicable Contractor Safety Standards attached hereto in Exhibit "D" and the Human Resources Policies in Exhibit "E".
- 39. Freight (F.O.B. Destination)** Consultant assumes full responsibility for all transportation, transportation scheduling, packing, handling, insurance, and other services associated with delivery of all products deemed necessary under this Agreement.

40. Assignments Consultant shall not delegate any duties nor assign any rights under this Agreement without the prior written consent of OC San. Any such attempted delegation or assignment shall be void.

41. Changes In Control of Consultant

41.1. In the event of a change in Control of Consultant, OC San shall have the option of terminating this Agreement by written notice to Consultant. Consultant shall notify OC San within ten (10) days of the occurrence of a change in Control. As used in this Section, "Control" is defined as the possession, direct or indirect, of either:

41.1.1. *the ownership or ability to direct the voting of fifty-one percent (51%) or more of the equity interests, value, or voting power in Consultant; or*

41.1.2. *the power to direct or cause the direction of the management and policies of Consultant, whether through ownership of voting securities, by contract, or otherwise.*

42. Conflict of Interest and Reporting

42.1. Consultant shall at all times avoid conflicts of interest or appearance of conflicts of interest in performance of this Agreement.

42.2. Consultant affirms that to the best of its knowledge there exists no actual or potential conflict between Consultant's families, business or financial interest or its Services under this Agreement, and in the event of change in either its private interests or Services under this Agreement, it will raise with OC San any question regarding possible conflict of interest which may arise as a result of such change.

43. Third Party Rights Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than OC San and Consultant.

44. Non-Liability of OC San Officers and Employees No officer or employee of OC San shall be personally liable to Consultant, or any successor-in-interest, in the event of any default or breach by OC San or for any amount which may become due to Consultant or to its successor, or for breach of any obligation of the terms of this Agreement.

45. Authority to Execute The persons executing this Agreement on behalf of the Parties warrant that they are duly authorized to execute this Agreement and that by executing this Agreement, the Parties are formally bound.

46. Read and Understood By signing this Agreement, Consultant represents that it has read and understood the terms and conditions of the Agreement.

47. Entire Agreement This Agreement constitutes the entire agreement of the Parties and supersedes all prior written or oral and all contemporaneous oral agreements, understandings, and negotiations between the Parties with respect to the subject matter hereof.

48. Notices All notices under this Agreement must be in writing. Written notice shall be delivered by personal service or sent by registered or certified mail, postage prepaid, return receipt requested, or by any other overnight delivery service which delivers to the noticed destination and provides proof of delivery to the sender. Any facsimile notice must be followed within three (3) days by written notice. Rejection or other refusal to accept or the inability to deliver because of changed address for which no notice was given as provided hereunder shall be deemed to be receipt of the notice, demand or request sent. All notices shall be effective when first received at the following addresses:

OC San: Heather Park, Buyer
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708-7018

Consultant:[Contact Name] [Contact Title]
[Company Name]
[Street Address]
[City, State, Zip Code]

Each party shall provide the other party written notice of any change in address as soon as practicable.

IN WITNESS WHEREOF, intending to be legally bound, the Parties hereto have caused this Agreement to be signed by the duly authorized representatives.

ORANGE COUNTY SANITATION DISTRICT

Dated: _____ By: _____
John B. Withers
Board Chairman

Dated: _____ By: _____
Kelly A. Lore
Clerk of the Board

Dated: _____ By: _____
Ruth Zintzun
Purchasing and Contracts Manager

[COMPANY]

Dated: _____ By: _____

Print Name and Title of Officer

XXX

EXHIBIT A
SCOPE OF WORK
For
Nintex Application Development

**EXHIBIT A
SCOPE OF WORK
NINTEX APPLICATION DEVELOPMENT
SPECIFICATION NO. CS-2021-1243BD**

The Orange County Sanitation District (OC San) operates the third largest wastewater agency west of the Mississippi River. Since 1954, OC San has safely collected, treated, and disposed of and/or reclaimed the wastewater generated by more than 2.6 million people living and working in central and northwest Orange County, California.

A professional staff of more than six hundred (600) employees manages the day-to-day activities of OC San. OC San facilities include 388 miles of sewer pipes, located throughout the county, and two (2) treatment plants – one in the City of Fountain Valley and the other in the City of Huntington Beach – where wastewater is treated in accordance with strict Federal and State standards.

OC San employees are on duty protecting health and the environment by ensuring the sewer system efficiently operates twenty-four (24) hours a day, seven (7) days a week, three hundred sixty-five (365) days a year.

1. Purpose

OC San is looking for Nintex professional services assistance in improving and recreating existing approximately 60 SharePoint, InfoPath, Nintex on-premises forms and workflows, and K2 Cloud forms and workflows in the Nintex Workflow Cloud (NWC)/Nintex Forms for O365/Nintex Workflow for O365 Platforms.

The purpose of this Scope of Work is for OC San to establish a Contract with a qualified full-time, US-based consultant to provide resources in Nintex software development on an hourly basis. The Consultant shall use hybrid Waterfall/Agile approach for application development and delivery.

Each Nintex application development process is divided into three (3) phases. During the initial phase, the Consultant shall conduct an interactive Requirements and Design workshop with the OC San Nintex application stakeholders to determine the full scope and design approach of each/multiple form(s) and workflow(s). Upon successful completion of the initial phase, interactive Requirements and Design workshop, the second phase would begin. During the second phase, the Consultant shall develop each application in OC San's Nintex Workflow Cloud (NWC)/Nintex Forms for O365/Nintex Workflow for O365 environment and conduct unit testing. During the third phase, User Acceptance Testing (UAT) will be conducted prior to production deployment, and the Consultant shall assist the OC San's Nintex development team to conduct user acceptance testing as needed.

2. Deliverables

OC San Project Manager will oversee the Consultant and monitor progress. The Consultant must provide a weekly status report including daily logs of the hours worked and a description of the work performed.

The Consultant shall provide personnel experienced in Nintex Workflow Cloud (NWC), Nintex Forms for O365, Nintex Workflow for O365, PowerShell, and SQL development, along with integration experience in SharePoint Online and SQL on-premise.

OC San Project Manager will provide the Consultant a list of Applications (Apps) based on the priority and the Consultant must conduct initial requirement gathering session(s) for each App with Nintex application stakeholders. Upon successful completion of the initial requirement

gathering, the Consultant shall provide its estimated number of hours for the project within two to three business days. This estimate will include a breakdown of hours for detailed requirement gathering (if necessary), preparing documentation, configuration, and UAT for each App. Estimated hours for each App needs to be approved by OC San's Nintex application stakeholders and OC San Project Manager prior to proceeding with the development.

The Consultant must provide documentation for requirement gathering, full scope, design approach, and deliverables of each App. All documentation needs to be reviewed and approved by OC San's Nintex application stakeholders and Project Manager.

Upon successful completion and approval of work done on each App and the documentation for requirement gathering, full scope, design approach, and deliverables of each App, the Consultant shall develop each application in OC San's Nintex Workflow Cloud (NWC)/Nintex Forms for O365/Nintex Workflow for O365 environment and conduct unit testing.

The Consultant will provide an UAT test case for each App, and OC San's Nintex development team will conduct a UAT and formal sign-off process. The Consultant shall assist the OC San's Nintex development team to conduct user acceptance testing as needed. Upon successful completion of UAT and formal sign-off, The Consultant will train OC San's Nintex development team and provide a technical documentation of each App including, but not limited, to the complex rules, security/permissions, and integrations.

If the Consultant is not meeting requirements – such as continually failing to meet deadlines, failing UAT, poor documentation, and/or lacking required skills – the Consultant may be replaced at OC San's discretion.

The Consultant may submit itemized invoices on a monthly basis for work completed, in a form acceptable to OC San to enable audit of the charges therein. The consulting work will continue until all the Nintex Apps are completed or the project budget has been exhausted.

3. Available Resources

OC San Nintex application stakeholders will be made available for interviews and meetings.

The Consultant will be assigned a single point of contact – Project Manager – on this project. Any meetings and/or correspondence related to this project shall be scheduled and approved by the Project Manager.

4. General Work Elements

4.1 Kick-Off Meeting

The kick-off meeting will be conducted virtually for introductions of OC San and Consultant staff, to identify lines of communication, to review and discuss the Consultant's proposed schedule, work breakdown structure, identify/schedule, initial meetings/interviews, and to discuss outstanding administrative issues, if any.

4.2 Progress Meetings

The Consultant shall schedule weekly progress meetings virtually with the assigned OC San Project Manager for the purposes of providing updates pertaining to the Consultant's overall progress, and to discuss any outstanding and/or new administrative and informational items required to complete this Scope of Work.

5. Work Elements

5.1 Phase 1 Interactive Requirements and Design workshop

Consultant shall conduct an interactive Requirements and Design workshop with the OC San Nintex application stakeholders to determine the full scope and design approach of each/multiple form(s) and workflow(s).

5.1.1 Phase 1 Deliverables

- Estimated hours to complete each App.
- Approval from OC San's Nintex application stakeholders and Project Manager.
- Documentation for requirement gathering, full scope, design approach, and deliverables of each App.
- Approval from OC San's Nintex application stakeholders and Project Manager.

5.2 Phase 2 Work Elements

5.2.1 Application Development

Based on the findings in Phase 1, The Consultant shall develop each application in Nintex Workflow Cloud (NWC)/Nintex Forms for O365/Nintex Workflow for O365 development environment and conduct unit testing.

5.2.2 Data Layer

5.2.2.1 Each application data will be stored in:

- SharePoint Online Lists and Libraries (primary data source).
- On-premises SQL tables as needed (OC San will use these data for analyzing and reporting).

5.2.2.2 Use existing SharePoint Online site to store a record of each submitted form's data including repeating section data, workflow status, a link to the submitted form, and a link to the Nintex workflow.

5.2.2.3 Use existing SharePoint Online site to store document attachments as needed.

5.2.2.4 Use existing custom on-premises SQL Server Chain of Command table or SharePoint Online Chain of Command list for approval route and Azure Active Directory for User Information.

5.2.3 Phase 2 Deliverables

- Development and implementation of Nintex Applications.
- Responsive forms.
- Design forms for mobile devices.
- Task history section (Bottom of each form should have a task history section).
- Integration with on-premises SQL Server, SharePoint Online, and Azure Active Directory.
- Unit testing.
- Provide UAT test case document for each App including Step No., App Name, Role, Action, Expected Results, and additional columns Actual Result, Pass/Fail, Tester Remarks columns for the testers to fill in.

5.3 Phase 3 Work Elements

5.3.1 User Acceptance Testing (UAT)

OC San Nintex development team will be conducting user acceptance testing, and the Consultant shall assist the Nintex development team as needed.

5.3.2 Phase 3 Deliverables

- UAT formal signoff.
- Knowledge transfer to OC San's Nintex applications development team.
- Live virtual training reviewing the elements of the technical documentation.
- Provide a technical documentation. Technical documentation should include, but not limited to, the items listed below:
 - Complex form and workflow rules.
 - Use of Variables.
 - Security/Permissions.
 - Integrations

6. Work Environment

Consultant shall work remotely and connect to OC San's resources using a virtual private network (VPN) and a virtual workstation. The virtual workstation must contain MS Office, Visio, and other software, as needed. Consultant shall supply their own computers, communication equipment, and internet connections. OC San's standard communication software is Microsoft Teams.

OC San headquarters are located at 10844 Ellis Avenue, Fountain Valley, CA. OC San does not anticipate work onsite; however, if work must be done onsite, Consultant shall provide their own transportation to and from OC San and between designated offices. When onsite, Consultant and Consultant's employees are to follow the OC San Safety Standards.

6.1. Workdays and Hours:

Consultant's day-to-day activities will be performed in coordination with OC San staff in the Information Technology and/or Nintex application stakeholders. Consultant shall be expected to work virtually with OC San staff during normal OC San's business hours (Monday – Friday 8AM to 5PM).

6.2. Holidays:

Consultant will not work the following OC San holidays without prior written authorization from the OC San Project Manager. Consultant shall verify specific dates for the holidays with the OC San Project Manager:

- New Year's Day
- Lincoln's Birthday
- President's Day
- Memorial Day
- Independence Day
- Veterans Day
- Labor Day
- Thanksgiving Day
- Day after Thanksgiving
- Christmas Eve or day after Christmas
- Christmas Day



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1994

Agenda Date: 12/8/2021

Agenda Item No: 9.

FROM: James D. Herberg, General Manager
Originator: Kathy Millea, Director of Engineering

SUBJECT:

ORANGE COUNTY SANITATION DISTRICT 2021 ASSET MANAGEMENT PLAN

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Information Item.

BACKGROUND

Development of an annual Asset Management Plan is one of the ongoing initiatives in the Orange County Sanitation District (OC San) Strategic Plan. The Asset Management Plan documents the condition of all critical OC San assets and identifies and prioritizes the short- to long-term plan for asset maintenance, rehabilitation, and replacement.

RELEVANT STANDARDS

- Protect OC San assets
- Sustain 1, 5, 20-year planning horizons
- Ensure the public's money is wisely spent
- Maintain a proactive asset management program
- 24/7/365 treatment plant reliability

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Orange County Sanitation District 2021 Asset Management Plan
- Presentation

2021 Asset Management Plan



Contents

Acronyms and Abbreviations	iii
Executive Summary	1
Asset Management Plan Intent and Purpose	1
Overview of OC San's Infrastructure	1
State of OC San's Infrastructure	4
Budgetary Considerations.....	9
1 Introduction	11
1.1 Overview of OC San's Infrastructure	14
1.1.1 Collection System	16
1.1.2 Reclamation and Treatment Plant System	17
1.1.3 Outfall System.....	18
1.2 Facility Valuation.....	19
1.3 Asset Management Organization.....	20
1.3.1 Predictive Maintenance.....	21
1.3.2 Preventive and Corrective Maintenance	24
2 State of OC San's Infrastructure	25
2.1 Asset Management System Summaries.....	25
2.2 Area Asset Management Summaries	30
3 Program Monitoring and Improvements.....	117
3.1 Program Monitoring.....	117
3.1.1 Data.....	117
3.2 Program Metrics.....	118
3.2.1 Proactive Maintenance Percent.....	118
3.2.2 Availability Percent.....	120
3.2.3 Break-In Percent	121
3.2.4 Maintenance Costs and Labor Hours	123
3.3 Maintenance Planning	125
3.3.1 Projected Maintenance Costs	126
3.4 Asset Management Program Accomplishments.....	126
3.4.1 Condition Assessment Program	126
3.4.2 Collection System Assets	126
3.4.3 Central Generation Facility Planning	127
3.4.4 Treatment Plant Project Delivery	127
3.5 Asset Management Program Improvement Opportunities	128
3.5.1 Short-to-Medium-Term Improvement Opportunities	128
3.5.2 Longer-Term Strategy and Improvement Opportunities	129
3.6 Reference.....	130
4 Budgetary Considerations	131
4.1 Capital Improvement Expenditures.....	131
4.2 Maintenance Expenditures	133
4.2.1 Five-Year Historical Maintenance Expenditures.....	133
4.2.2 Three-Year Look-Ahead Maintenance Expenditures.....	135

List of Figures

Figure ES-1-1. OC San's Service Area.....	2
Figure ES-1-2. Facility Valuation by Location.....	3
Figure ES-1-3. Plant No. 1 Process Area – Remaining Useful Life Score Map.....	5
Figure ES-1-4. Plant No. 2 Process Area – Remaining Useful Life Score Map.....	6
Figure ES-1-5. Collection System Pump Station – Remaining Useful Life Score Map.....	7
Figure ES-1-6. Collection System Pipelines – Remaining Useful Life Score Map.....	8
Figure ES-1-7. 20-Year CIP Outlay.....	9
Figure 1-1. OC San's Service Area.....	15
Figure 1-2. Facility Valuation by Area.....	19
Figure 1-3. Roles in Asset Management.....	20
Figure 1-4. PdM Summary.....	22
Figure 2-1. Plant No. 1 Process Area – Remaining Useful Life Score Map.....	26
Figure 2-2. Plant No. 2 Process Area – Remaining Useful Life Score Map.....	27
Figure 2-3. Collection System Pump Station – Remaining Useful Life Score Map.....	28
Figure 2-4. Collection System Pipelines – Remaining Useful Life Score Map.....	29
Figure 2-5. Area Asset Management Summary Structure.....	31
Figure 3-1. Electrical Emergency Work Orders.....	123
Figure 3-2. Mechanical Emergency Work Orders.....	123
Figure 3-3. Graph of Maintenance Costs (Materials and Services) at Plant No. 1.....	124
Figure 3-4. Representative Graph of Maintenance Labor Hours.....	124
Figure 3-5. Graph of Maintenance Costs (Materials and Services) at Plant No. 2.....	125
Figure 3-6. PM Workorder Broken Down by Both Craft and Frequency.....	125
Figure 4-1. 20-Year CIP Outlay.....	131
Figure 4-2. FY21-22 CIP Outlay by Process – \$234.6 Million.....	132
Figure 4-3. Five-Year Historical Maintenance Costs for Treatment Plants.....	133
Figure 4-4. Five-Year Historical Maintenance Costs for Collection System.....	134

List of Tables

Table ES-1-1. Plant No. 1 Remaining Useful Life and Replacement Value Summary.....	5
Table ES-1-2. Plant No. 2 Remaining Useful Life and Replacement Value Summary.....	6
Table ES-1-3. Pump Station and Force Main Remaining Useful Life and Replacement Value Summary ..	7
Table ES-1-4. Collection System Pipelines Remaining Useful Life and Replacement Value Summary.....	8
Table 1-1. Linkage between Asset Management Plan and Other Planning Activities.....	13
Table 1-2. High-Level Summary of OC San's Predictive Maintenance Program.....	23
Table 2-1. Plant No. 1 Remaining Useful Life and Replacement Value Summary.....	26
Table 2-2. Plant No. 2 Remaining Useful Life and Replacement Value Summary.....	27
Table 2-3. Pump Station and Force Main Remaining Useful Life and Replacement Value Summary.....	28
Table 2-4. Collection System Remaining Useful Life and Replacement Value Summary.....	29
Table 3-1. Proactive Maintenance Percent for Reclamation Plant No. 1.....	118
Table 3-2. Proactive Maintenance Percent for Reclamation Plant No. 2.....	118
Table 3-3. Proactive Maintenance Percent for Pump Stations.....	119
Table 3-4. Asset Availability for FY 20/21.....	120
Table 3-5. Availability Percent for the Pump Stations.....	120
Table 3-6 Break-in Percent for Reclamation Plant No. 1.....	121
Table 3-7. Break-in Percent for Reclamation Plant No. 2.....	122
Table 3-8 Break-in Percent for Pump Stations.....	122
Table 3-9. Projected Maintenance Costs Next 2 Fiscal Years.....	126
Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021).....	135

List of Appendices

Appendix A Resource Recovery Plant No. 1 Map
Appendix B Resource Recovery Plant No. 1 Process Diagram
Appendix C Treatment Plant No. 2 Map
Appendix D Treatment Plant No. 2 Process Diagram – Before GWRS Expansion
Appendix E Treatment Plant No. 2 Process Diagram – After GWRS Expansion
Appendix F AM KPI Supplemental Information

Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
AM	Asset Management
AS	Activated Sludge
AS1	Activated Sludge 1
AS2	Activated Sludge 2
BB	Blower Building
CCTV	Closed-Circuit Television
Cen Gen	Central Generation Facility
CIP	Capital Improvement Program
CP	Control Panel
CM	Corrective Maintenance
CTS	Co-thickened sludge
DAFT	Dissolved Air Flotation Thickener
DC	Distribution Center
DCJ	Distribution Center J
DIG	Digester
DIP	Ductile Iron Pipe
E&I	Electrical & Instrumentation
EBDB	East Basin Distribution Box
EJB	Effluent Junction Box
Elec.	Electrical
EPSA	Effluent Pump Station Annex
FE	Facilities Engineering
FeCl ₃	Ferric Chloride
FY	Fiscal Year
GWRS	Groundwater Replenishment System
H ₂ S	Hydrogen Sulfide
HCl	Hydrochloric Acid
HDPE	High-Density Polyethylene Resin
HP	Horsepower
HPU	Hydraulic Power Unit
HVAC	Heating, Ventilation, and Air Conditioning

Acronym or Abbreviation	Meaning
HW	Headworks
I&C	Instrumentation and Controls
Inst.	Instrument
JB	Junction Box
kV	Kilovolt
kW	Kilowatt
LEL	Lower Explosive Limit
LOFLO	Low Flow
LOX	Liquid Oxygen
M&D	Metering & Diversion
MCC	Motor Control Center
MES	Major Equipment Status
MGD	Million Gallons Per Day
ML	Mixed Liquor
MP	Maintenance Project
MSP	Main Sewage Pump
MTBF	Mean Time Between Failure
N/A	Not Applicable
NaOH	Sodium Hydroxide
NASSCO	National Association of Sewer Service Companies
NFPA	National Fire Protection Association
No.	Number
NPDES	National Pollutant Discharge Elimination System
NSC	North Scrubber Complex
O&M	Operations and Maintenance
OC San	Orange County Sanitation District
OCWD	Orange County Water District
OEM	Original Equipment Manufacturer
OOBS	Ocean Outfall Booster Station
OPT	Optimization
OSHA	Occupational Safety and Health Administration
OXI	Oxidizer
P1	Plant No. 1

Acronym or Abbreviation	Meaning
P2	Plant No. 2
PB	Power Building
PSB	Primary Sedimentation Basin
PdM	Predictive Maintenance
PE	Primary Effluent
PEDB	Primary Effluent Distribution Box
PEJB	Primary Effluent Junction Box
PEPS	Primary Effluent Pump Station
PISB	Primary Influent Splitter Box
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PRN	Project Request Number
PS	Pump Station
psi	Pounds Per Square Inch
PVC	Polyvinyl Chloride
PWPS	Plant Water Pump Station
RAS	Return-Activated Sludge
RCM	Reliability-Centered Maintenance
RCP	Reinforced Concrete Pipe
RFID	Radio Frequency Identification
RSS	Return Secondary Sludge
RUL	Remaining Useful Life
RWQCB	Regional Water Quality Control Board
SARI	Santa Ana River Interceptor
SBF	Sludge Blending Facility
SC	Secondary Clarifier
SCADA	Supervisory Control and Data Acquisition
SCR	Selective Catalytic Reduction
SE	Secondary Effluent
SEJB	Secondary Effluent Junction Box
SR	Secondary Return
SSC	South Scrubber Complex
T&D	Thickening & Dewatering

Acronym or Abbreviation	Meaning
TF	Trickling Filter
TFPS	Trickling Filter Pump Station
TFSC	Trickling Filter Secondary Clarifier
TFSE	Trickling Filter Secondary Effluent
TL	Trunkline
TPAD	Temperature-phased Anaerobic Digester
TSS	TSS
UPS	Uninterruptible Power Supply
V	Voltage
VCP	Vitrified Clay Pipe
VDC	Volts Direct Current
VFD	Variable Frequency Drive
WAS	Waste-Activated Sludge
WSS	Waste Sidestream, Waste Secondary Sludge (pg. 67)
WSSPS	Waste Sidestream Pump Station

Executive Summary

Asset Management Plan Intent and Purpose

The Orange County Sanitation District (OC San) Asset Management Plan is a tactical document that captures OC San's organizational structure maintenance plans, and capital improvement plan implementation on an annual basis. This document will continue to change in content and structure to reflect our efforts for continual improvement and to meet the needs of stakeholders.

Safe and reliable infrastructure and process equipment are essential to providing industry-leading wastewater collection and management, while achieving our mission and vision statements. We manage asset reliability, mitigate risk, and ensure the quality of our delivered services according to the following stated intent for our Asset Management Program:

“OC San will know the condition of assets we own and will have a plan to operate and maintain these assets to deliver the required level of service, at the lowest life cycle cost, with an acceptable level of risk.”

~ James D. Herberg, OC San General Manager

Overview of OC San's Infrastructure

OC San owns and operates wastewater collection system infrastructure, as well as two resource recovery and wastewater treatment facilities, located in Fountain Valley and Huntington Beach. Our collection system infrastructure includes 388 miles of regional trunk sewer pipelines and 15 pump stations located throughout the OC San service area (Figure ES-1-1). Wastewater is conveyed to Reclamation Plant No. 1 in Fountain Valley and Treatment Plant No. 2 in Huntington Beach. These facilities treat an average daily wastewater flow of 189 million gallons per day (MGD), serving over 2.6 million people in central and northern Orange County, California.

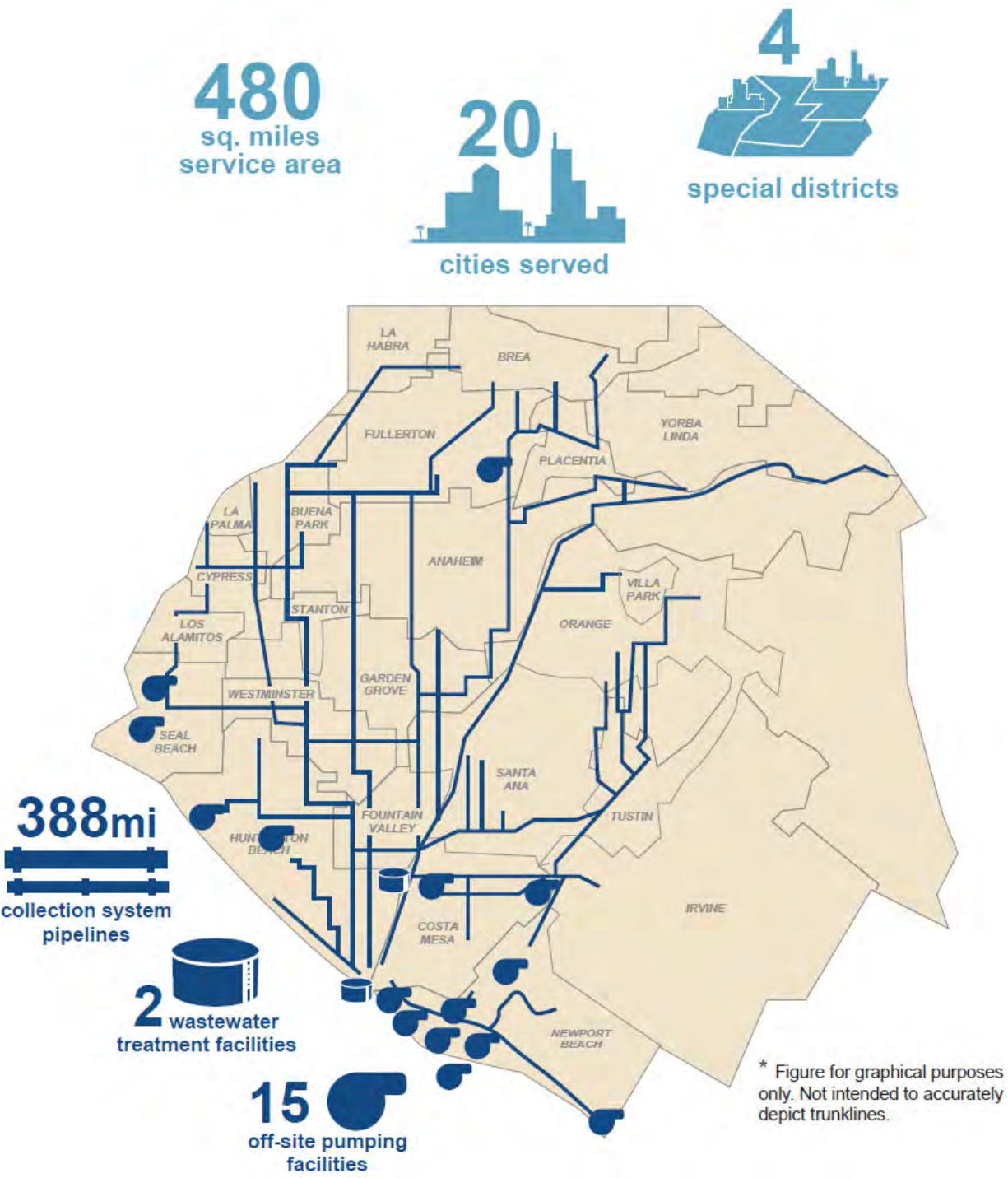


Figure ES-1-1. OC San's Service Area

Figure ES-1-2 shows the facility valuation by asset system for OC San's wastewater infrastructure. The valuation was prepared as part of the 2017 Facilities Master Plan.

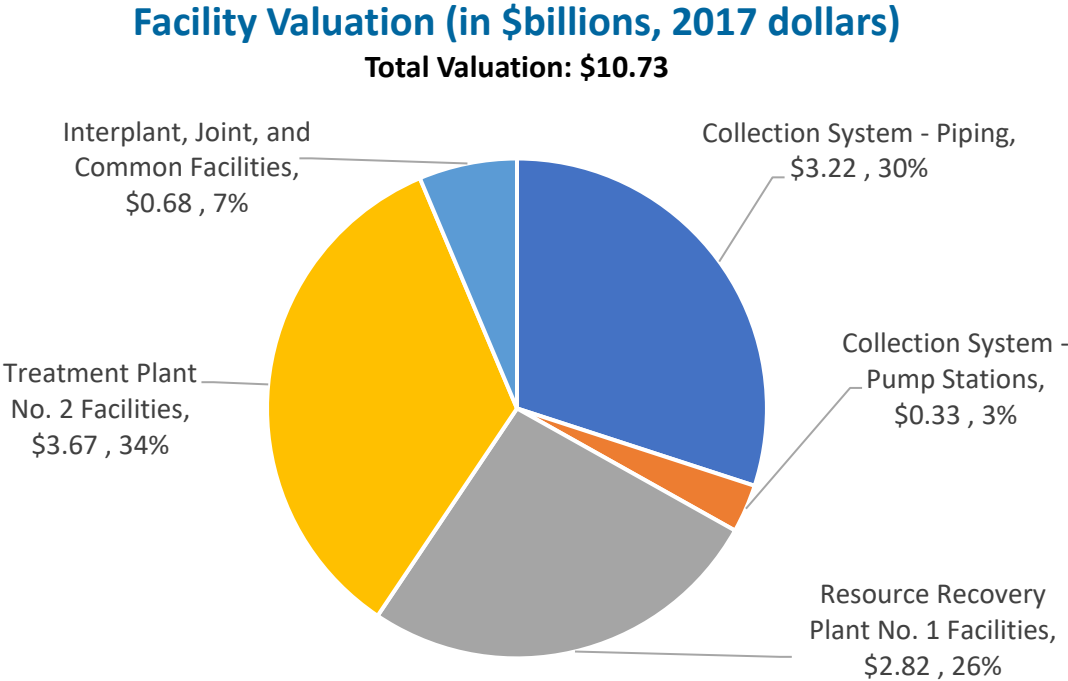


Figure ES-1-2. Facility Valuation by Location

State of OC San's Infrastructure

The following system-level summary tables and condition score maps provide a high-level overview of the Area Asset Management (AM) Summaries contained in Section 2. The system-level summaries are organized as follows:

- Plant No. 1 (Figure ES-1-3 and Table ES-1-1)
- Plant No. 2 (Figure ES-1-4 and Table ES-1-2)
- Collection System – Pump Stations and Newport Force Mains (Figure ES-1-5 and Table ES-1-3)
- Collection – Pipelines (Figure ES-1-6 and Table ES-1-4)

The system-level summaries generally include the following fields:

- **Area No.**
- **Area Name**
- **Average Remaining Useful Life (RUL) Score:** Estimated average RUL score for each discipline (civil, structural, mechanical, electrical, and instrumentation) or area based on an average of the RUL scores provided by Asset Engineers in the detailed Area AM Summaries.
- **Percentage of RUL Scores with 4s or 5s:** Percentage based on total number of RUL scores assigned to each area in the detailed Area AM Summaries. The percentage is an alternate metric for the overall condition of the area and equipment. A RUL score of 5 indicates less than 5 years of useful life remains for an asset or set of assets. A RUL score of 4 indicates 5 to 10 years of useful life remains for an asset or a set of assets.
- **Replacement Value (\$ millions):** Process area replacement value from the facility valuation.

ASSET MANAGEMENT SYSTEM SUMMARY – PLANT NO. 1 OVERVIEW

Figure ES-1-3. Plant No. 1 Process Area – Remaining Useful Life Score Map

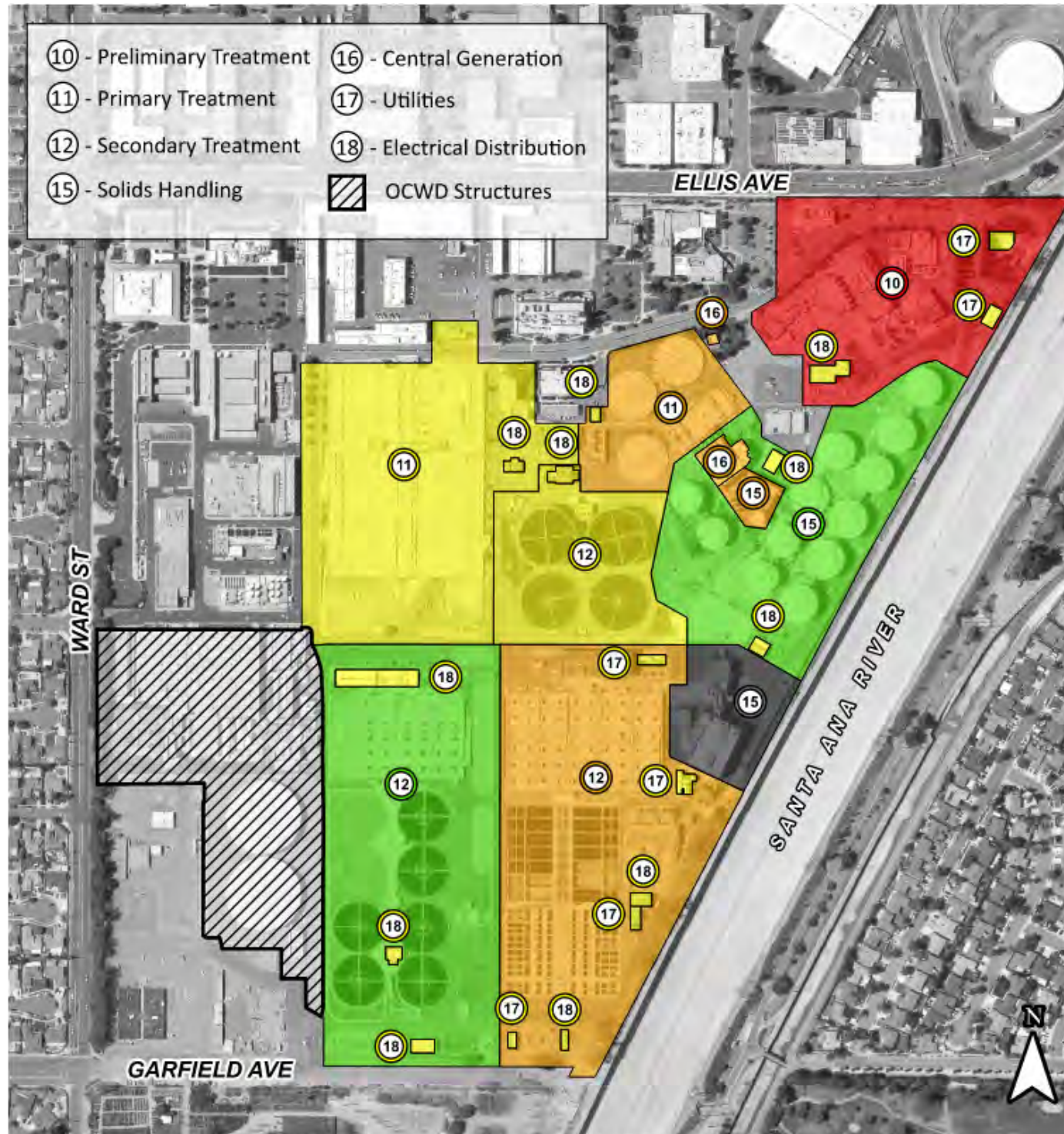


Table ES-1-1. Plant No. 1 Remaining Useful Life and Replacement Value Summary

Area No.	Area Name	Average Remaining Useful Life Score						Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)	
		Civil	Structural	Mechanical	Electrical	Instrumentation	All Assets			
10	Preliminary Treatment	2	3	5	5	5	5	67%	\$386.9	
11	Primary Treatment - Basins (1-5)	4	2	4	5	5	4	67%	\$107.2	
11	Primary Treatment - Basins (6-31)	4	2	3	3	3	3	20%	\$390.3	
12	Secondary Treatment - Activated Sludge 1	3	3	4	4	5	4	51%	\$604.1	
12	Secondary Treatment - Activated Sludge 2	1	1	2	3	2	2	13%	\$373.4	
12	Secondary Treatment - Trickling Filter	1	1	3	4	3	3	7%	\$67.8	
14	Interplant	2	2	2	2		2	17%	\$752.6	
15	Solids Handling - Digesters	2	1	2	2	2	2	3%	\$254.7	
15	Solids Handling - T&D Facilities	1	1	1	2	1	1	0%	\$190.2	
15	Solids Handling - Gas Handling	3	4	4	4	5	4	67%	\$37.3	
16	Central Generation ^a		3	3	4	4	4	46%	\$170.5	
17	Utilities	3	3	3	2	2	3	0%	\$194.2	
18	Electrical Distribution ^a				3		3	42%	\$81.6	
19	Miscellaneous Structures & Grounds	TBD						TBD	TBD	\$249.0
Plant No. 1 Total									32%	\$3,859.9

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

OCWD = Orange County Water District; RUL = Remaining Useful Life; TBD = To Be Determined;

T&D = Thickening and Dewatering

^a White box with diagonal line indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – PLANT NO. 2 OVERVIEW

Figure ES-1-4. Plant No. 2 Process Area – Remaining Useful Life Score Map

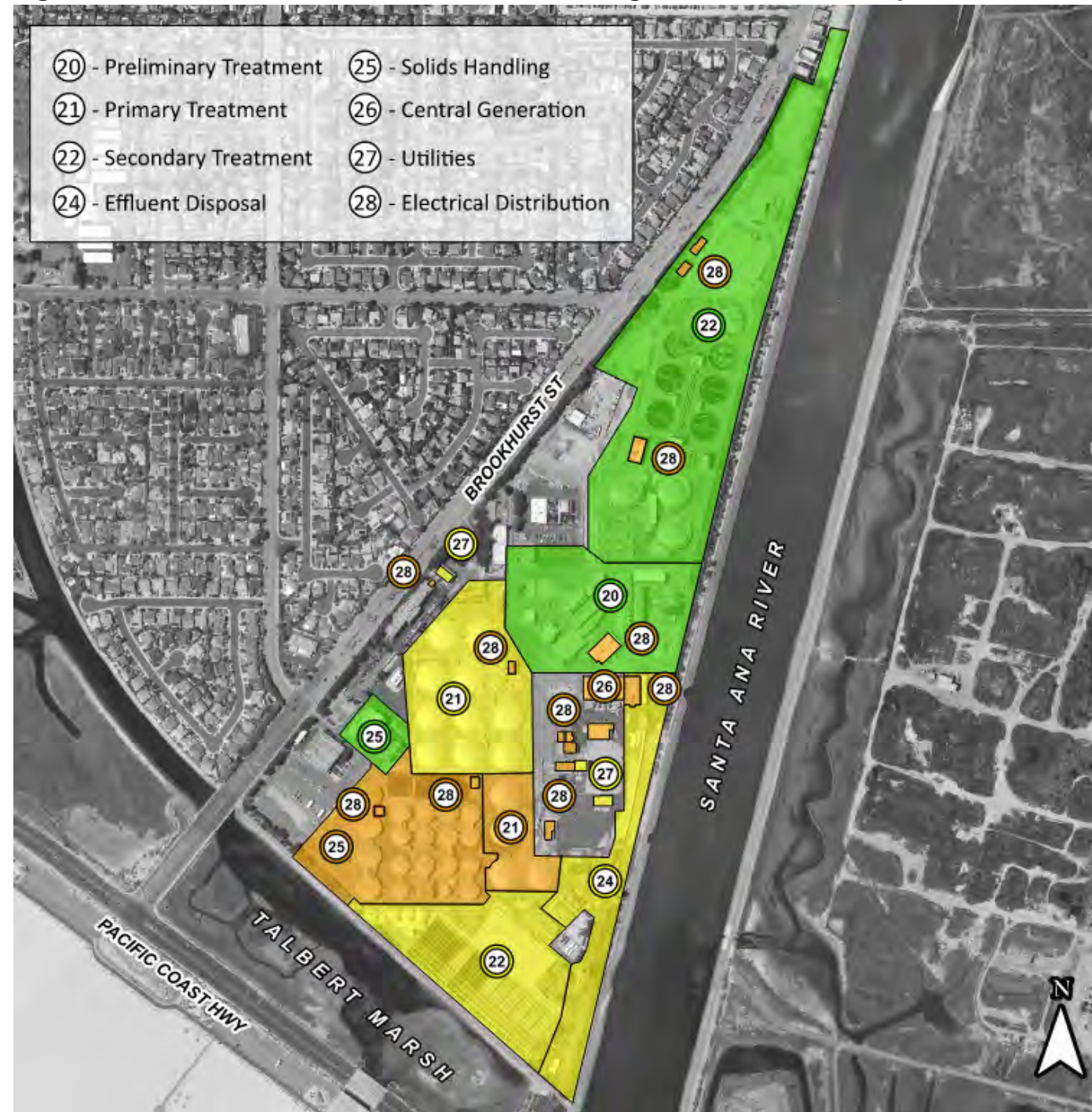


Table ES-1-2. Plant No. 2 Remaining Useful Life and Replacement Value Summary

Area No.	Area Name	Average Remaining Useful Life Score						Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)	
		Civil	Structural	Mechanical	Electrical	Instrumentation	All Assets			
20	Preliminary Treatment	1	1	2	2	2	2	2%	\$357.6	
21	Primary Treatment - A-Side	5	4	4	3	3	4	57%	\$166.8	
21	Primary Treatment - B- & C-Side	3	3	3	3	3	3	4%	\$333.6	
22	Secondary Treatment - Activated Sludge	3	3	3	4	3	3	20%	\$612.6	
22	Secondary Treatment - DAFT	4	1	3	3	3	3	9%	\$57.7	
22	Secondary Treatment - Trickling Filter	2	1	2	3	3	2	5%	\$342.4	
24	Effluent Disposal	2	2	3	3	4	3	21%	\$900.2	
25	Solids Handling - Digesters	3	4	4	4	4	4	72%	\$355.5	
25	Solids Handling - Facilities	2	1	2	2	2	2	5%	\$184.6	
25	Solids Handling - Gas Handling	3	3	4	4	4	4	33%	\$37.3	
26	Central Generation ^a		3	4	4	4	4	70%	\$363.8	
27	Utilities	3	3	3	3	2	3	0%	\$108.3	
28	Electrical Distribution ^a				4		4	65%	\$80.1	
29	Miscellaneous Buildings & Grounds	TBD						TBD	TBD	\$146.2
Plant No. 2 Total								38%	\$4,046.9	

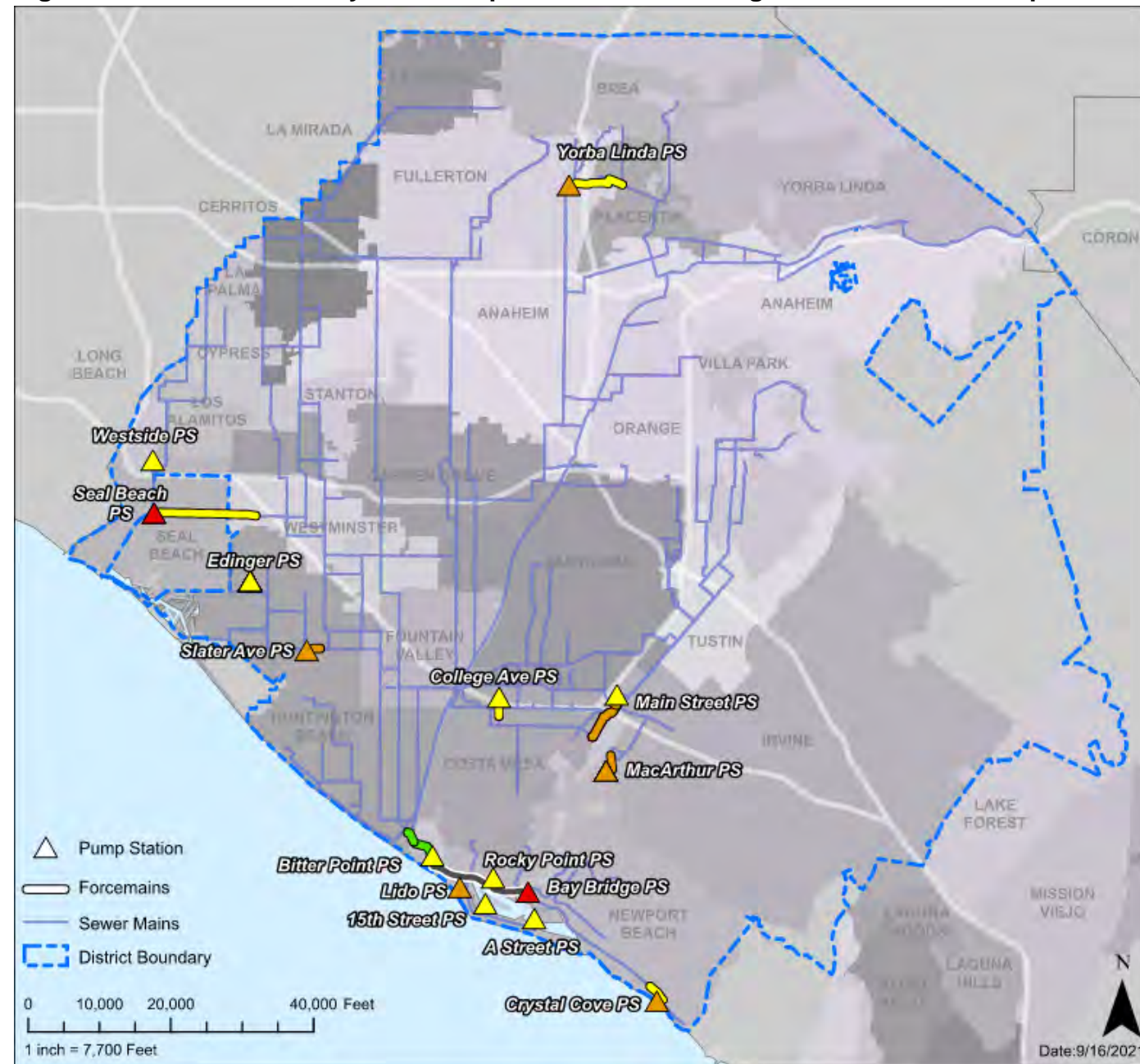
RUL Legend:
■ RUL <5 years ■ RUL 5-10 years ■ RUL 11-15 years ■ RUL 16-20 years ■ RUL >20 years

Acronym Key:
 DAFT = Dissolved Air Flotation Thickener; RUL = Remaining Useful Life; TBD = To Be Determined

^a White box with diagonal line indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM PUMP STATION OVERVIEW

Figure ES-1-5. Collection System Pump Station – Remaining Useful Life Score Map



Note: Not all pump station force mains are shown on this map. Only longer forcemains are shown.

Table ES-1-3. Pump Station and Force Main Remaining Useful Life and Replacement Value Summary

Service Area	Pump Station	Average Remaining Useful Life Score						Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)
		Civil	Structural	Mechanical	Electrical	Instrumentation	All Assets		
5	15th Street	3	4	3	3	2	3	25%	\$14.8
5	A Street	3	4	4	3	2	3	25%	\$12.9
5	Bay Bridge	4	4	5	4	5	5	85%	\$37.5
5	Bitter Point	2	3	4	2	2	3	23%	\$35.5
6	College	3	3	3	2	2	3	8%	\$26.4
5	Crystal Cove	3	3	4	4	3	4	33%	\$2.8
11	Edinger	4	3	3	3	3	3	27%	\$14.2
5	Lido	1	4	4	4	4	4	50%	\$22.2
7	MacArthur	4	4	4	4	2	4	64%	\$18.0
7	Main Street	4	3	4	3	3	3	46%	\$48.4
5	Rocky Point	1	4	4	2	2	3	23%	\$17.6
11	Slater	4	4	4	3	3	4	31%	\$38.8
3	Seal Beach	3	4	5	5	4	5	83%	\$45.8
3	Westside	3	3	3	2	3	3	8%	\$33.7
2	Yorba Linda	3	4	4	3	3	4	36%	Not Valued
5	Newport Force Mains ^a	1	-	-	-	-	1	0%	-
Collection PS Total								38%	\$368.6

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

PS = Pump Station; RUL = Remaining Useful Life

^a White box with dash lines indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM PIPELINES OVERVIEW

Figure ES-1-6. Collection System Pipelines – Remaining Useful Life Score Map

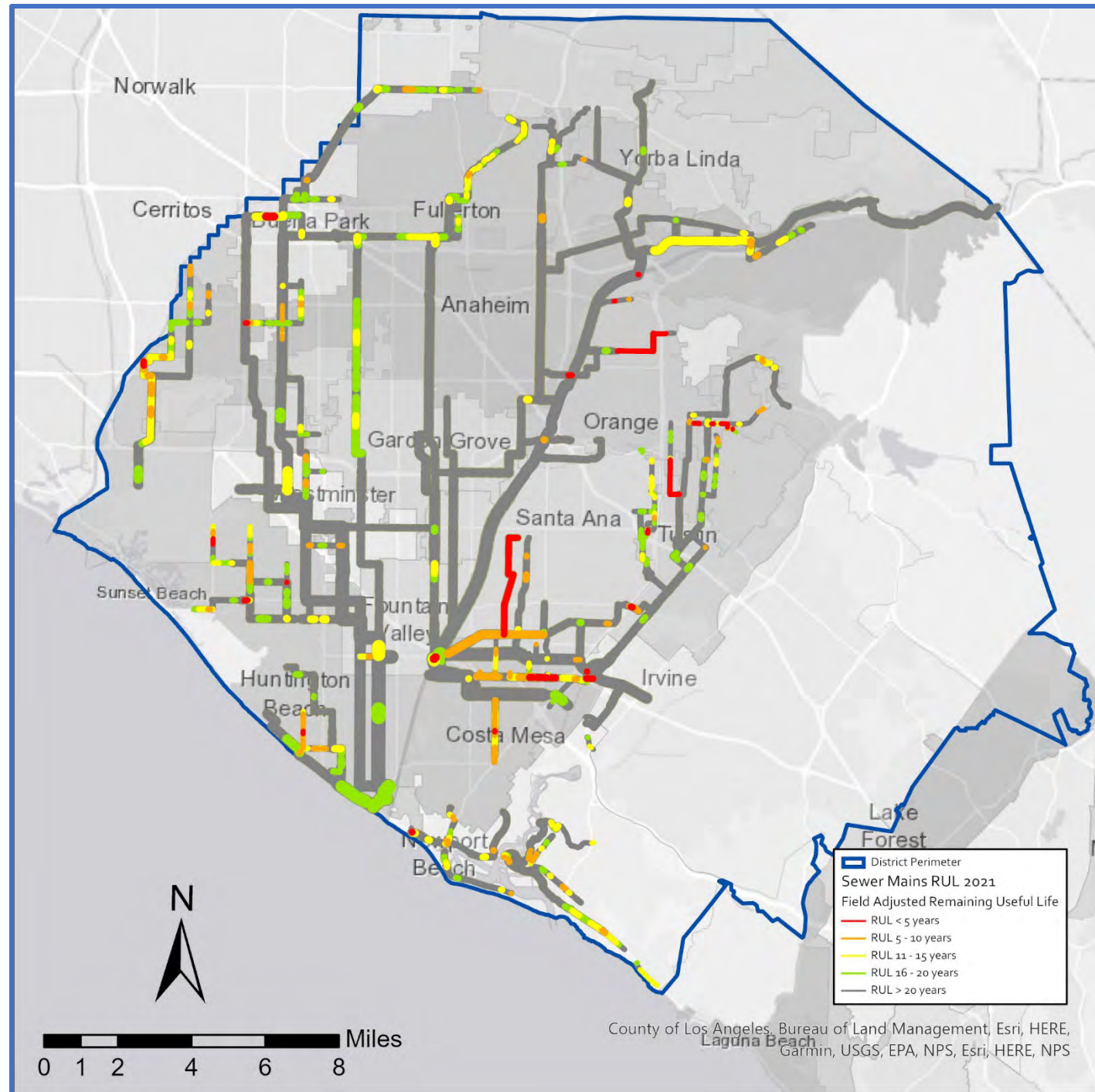


Table ES-1-4. Collection System Pipelines Remaining Useful Life and Replacement Value Summary

Trunklines	No. of Pipes with RUL Scores of 4 or 5	Miles of Pipes with RUL Scores of 4 or 5	Percentage of RUL Scores with 4s or 5s (By Length)	Replacement Value (\$ Millions, in 2021 Dollars) ^a
Baker-Main	74	5.62	14%	\$303.6
Bushard	0	0.00	0%	\$266.2
Coast	17	1.11	10%	\$108.6
Euclid	1	0.10	0%	\$297.4
Interplant	0	0.00	0%	\$127.1
Knott	37	3.23	5%	\$688.6
Miller-Holder	7	0.71	2%	\$326.3
Newhope	4	0.25	1%	\$230.3
Newport	17	0.82	4%	\$238.3
SARI	40	2.11	4%	\$568.6
Sunflower	12	0.72	2%	\$330.4
Talbert	74	5.86	70%	\$63.5
Total	283	20.53	6%	\$3,548.9

RUL Legend:
■ RUL <5 years ■ RUL 5-10 years ■ RUL 11-15 years ■ RUL 16-20 years ■ RUL >20 years

Acronym Key:
 RUL = Remaining Useful Life; SARI = Santa Ana River Interceptor

^a The abandoned pipelines at the Airbase (\$6,366,516) and the Harvard Area Trunk Sewer (\$191,784) areas are not included in the total.

Budgetary Considerations

The Asset Management Plan focuses on documenting short- to long-term planning of maintenance and capital improvement projects to support effective budget development and sustainable operations for robust planning purposes. OC San has been striving to identify more accurately medium- to long-term capital cash flow requirements.

Fiscal Year (FY) 2021-2022 Budget Update, the second year of the two-year budget adopted in June 2020, includes updates to the 20-year Capital Improvement Program (CIP) outlay. Figure ES-1-7 includes current and projected CIP projects.

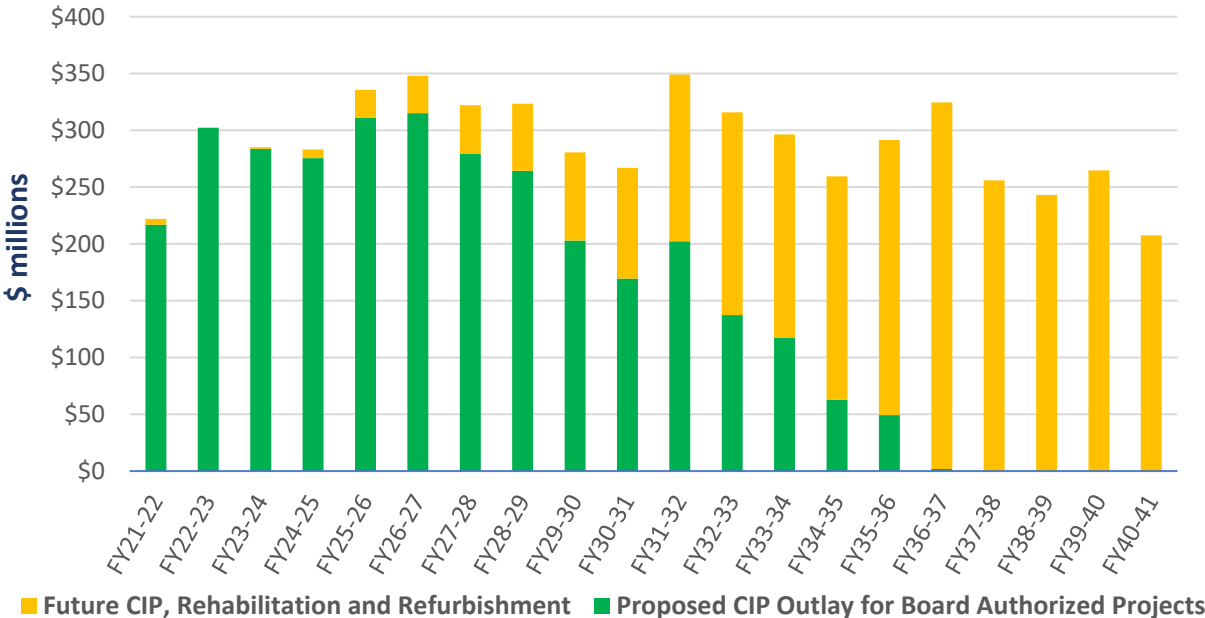


Figure ES-1-7. 20-Year CIP Outlay

This page is intentionally left blank.

1 Introduction

The Orange County Sanitation District (OC San) Board of Directors developed mission and vision statements to clearly communicate OC San's purpose to our stakeholders and to articulate OC San's organizational objectives. OC San's vision supports our mission by expressing what we strive to achieve now and into the future.

Our Mission

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

Our Vision

OC San will be a leader in:

- *Providing reliable, responsive, and affordable services in line with customer needs and expectations.*
- *Protecting public health and the environment utilizing all practical and effective means for wastewater, energy, and solids resource recovery.*
- *Continually seeking efficiencies to ensure that the public's money is well spent.*
- *Communicating our mission and strategies with those we serve and all other stakeholders.*
- *Partnering with others to benefit our customers, this region, and our industry.*
- *Creating the best possible workforce in terms of safety, productivity, customer service, and training.*

Through improved and robust asset management practices, we are better able to coordinate and plan actions to ensure our collection system, treatment, and resource recovery infrastructure is safe and reliable, and meets the rigorous level of service embodied by our mission statement.

In November 2019, OC San's strategic planning process resulted in the creation of an asset management policy and asset management initiatives. Collectively, the policy and initiatives make up OC San's asset management strategy.

Asset Management Policy

OC San will assess and manage the collection system and treatment plant systems and assets to improve resilience and reliability while lowering lifecycle costs. This will be accomplished through adaptive operation, coordinated maintenance and condition assessment, and planned capital investment. Staff will balance maintenance, refurbishment, and replacement strategies to maximize useful life, system availability, and efficiency.

Asset Management Initiatives

- *Create an annual Asset Management Plan documenting the condition of the collection system and treatment plants, and upcoming maintenance or capital projects.*
- *Coordinate the efforts of operations, collections, mechanical maintenance, electrical maintenance, instrument maintenance, and engineering through process teams to assure the Sanitation District's resources are focused on the high priority work functions.*

- *Maintain a 20-year forecast of all CIP projects needed to maintain or upgrade the Sanitation District's \$10.7 billion in assets on a prioritized risk basis to establish rate structures.*

The Asset Management Plan is a living document that describes constantly evolving operation strategies, maintenance and refurbishment plans and adaptations, and CIP implementation initially captured in the Facilities Master Plan and revised on an annual basis through the budgeting process. The information included in the Asset Management Plan encompasses the breadth of information needed to successfully align the capital and operational planning activities necessary to meet the Asset Management Program objectives. The key objectives that are built into the Asset Management Program include the following:

- 1) Take a proactive approach to repair, rehabilitation, and replacement.
- 2) Ensure assets are reliable and operating when needed.
- 3) Minimize unplanned outages and equipment downtime.
- 4) Manage risks associated with asset or service impairment through asset performance optimization.
- 5) Develop cost-effective management strategies for the long term.
- 6) Strive to implement world class asset management strategies through continual improvement in our asset management practices.

ALIGNMENT



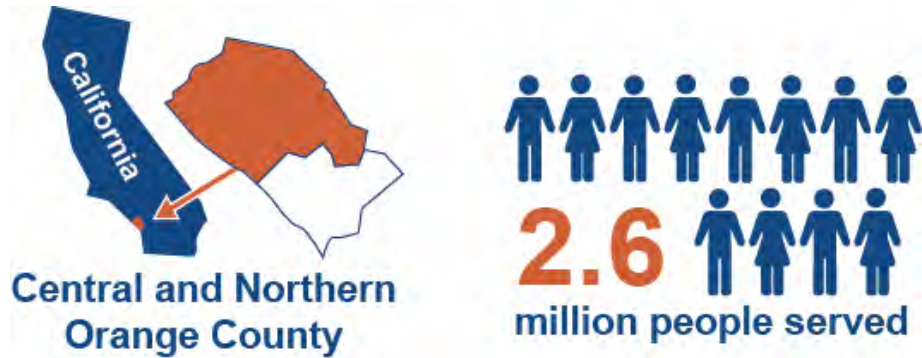
The Asset Management Plan is a key component of OC San's overall planning activities. It aligns with the OC San's Strategic Plan, and the Facilities Master Plan and projects identified therein, while identifying potential and new opportunities that may require funding in the budget development process. Table 1-1 describes the relationship of the Asset Management Plan to the other planning activities.

Table 1-1. Linkage between Asset Management Plan and Other Planning Activities

Planning Activity	Description	Planning Horizon	Update Cycle
Strategic Plan	Defines the strategic initiatives to be pursued by OC San and provides a basis for long-term financial, capital, and operating planning. The Asset Management Plan aligns with Strategic Plan goals and objectives.	5- to 10-year	Biennial
Facilities Master Plan	Identifies long-term capital improvement plans to address treatment and collection system infrastructure improvement needs. Projects identified in the Facilities Master Plan are incorporated into the Asset Management Plan and refined as appropriate.	20-year	Varies
Asset Management Plan	Documents the overall condition of treatment and collection system assets and plans to address key condition and performance issues to ensure assets meet OC San's levels of service.	1-year 5-year 10-year	Annual
Budget Document	Lays out the framework of OC San's activities and serves as a source of information for our Board of Directors, rate payers, and employees. It includes operational, capital, and debt service expenditures necessary to support our mission and to execute the Strategic Plan adopted by our Board of Directors. The Asset Management Plan identifies new operational, maintenance, and capital improvement activities for consideration during the budget development process.	2-year	Annual

1.1 Overview of OC San's Infrastructure

OC San is responsible for providing wastewater collection, treatment, and recycling services to over 2.6 million people in central and northern Orange County, California. OC San's two resource recovery and wastewater treatment facilities treat an average daily wastewater flow of 189 million gallons per day (MGD) from residential, commercial, and industrial sources.



In addition to our plant facilities, OC San owns and operates wastewater collection system infrastructure. Our collection system infrastructure includes 388 miles of regional trunk sewer pipelines and 15 pump stations located throughout OC San's service area (Figure 1-1). Wastewater is conveyed via the collection system to Reclamation Plant No. 1 in Fountain Valley, and Treatment Plant No. 2 in Huntington Beach, where resource recovery and wastewater treatment take place.

OC San's treatment plants currently operate under a regulatory permit from the Regional Water Quality Control Board (RWQCB). This authority is established through the National Pollutant Discharge Elimination System (NPDES) that permits the discharge of treated wastewater through an ocean outfall system to the Pacific Ocean. While some of this treated water is released five miles offshore through a deep-water ocean outfall system, most is recovered and delivered to the Orange County Water District (OCWD). OCWD further treats OC San's effluent, using the Groundwater Replenishment System, which improves the effluent water quality, to drinking water standards for groundwater recharge and irrigation purposes. The following sections briefly describe the key systems under OC San's management.

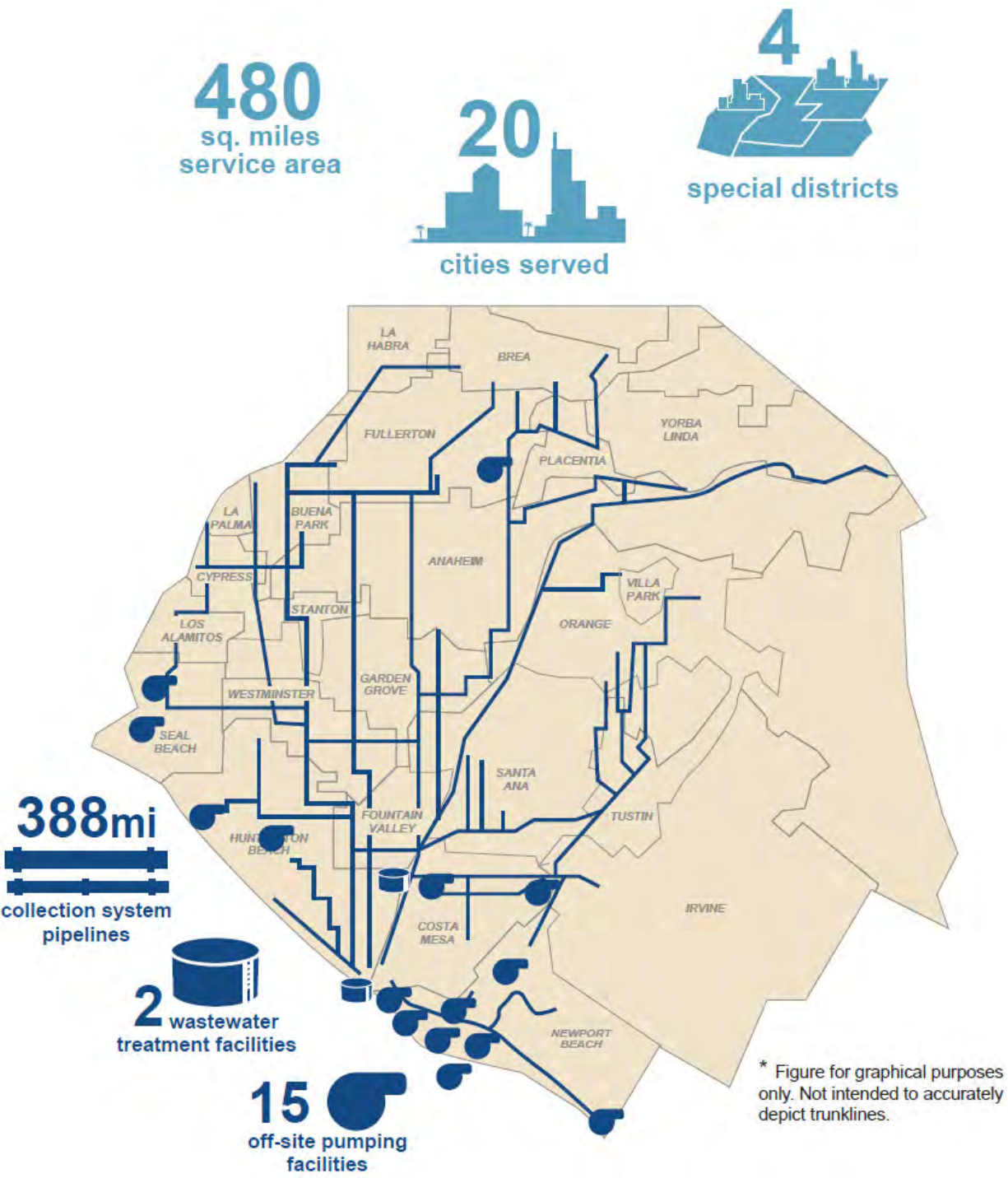
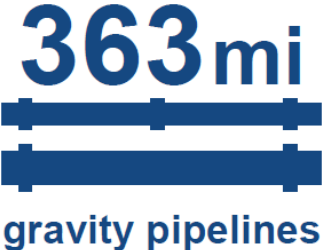


Figure 1-1. OC San's Service Area

1.1.1 Collection System

OC San’s collection system serves as a regional conveyance system, collecting and conveying flows from 20 cities and 4 special districts. OC San’s 388 miles of collection system pipelines and 15 pump stations are spread throughout northern Orange County and include 363 miles of gravity pipelines, 21 miles of force mains, 4 miles of inverted siphons and 4,471 manhole structures.



1.1.2 Reclamation and Treatment Plant System

OC San owns and operates two wastewater treatment plants that serve two primary functions—treatment and reclamation. **Reclamation Plant No. 1** (Plant No. 1) is located in the city of Fountain Valley, approximately 4 miles inland of the Pacific Ocean and adjacent to the Santa Ana River. Influent wastewater entering Plant No. 1 passes through a flow metering and diversion structure, mechanical bar screens, grit chambers, and primary basins, before going to one of two air-activated sludge processes, or trickling filters, and secondary clarifiers. Up to 135 MGD of secondary effluent can be diverted to OCWD's facilities for tertiary treatment prior to reuse. The remaining flow goes to the Plant No. 2 ocean outfall system. For a map of the facilities and more detailed understanding of how Plant No. 1 processes work together, please refer to Appendices A and B, respectively.

Solids treatment at Plant No.1 includes co-thickening of primary and secondary sludge, followed by anaerobic digestion process and centrifuge dewatering of digested sludge to produce Class-B biosolids. Digester gas produced at Plant No. 1 is collected, cleaned, compressed, and transferred via a closed piping system, to the Central Power Generation Facility, as a renewable fuel for energy generation. In addition, Plant No. 1 includes facilities for odor control and chemical addition to support the aforementioned

Treatment Plant No. 2 (Plant No. 2) is located in the City of Huntington Beach, adjacent to the Santa Ana River and east of Pacific Coast Highway. Raw sewage flow entering Plant No. 2 passes through a flow metering structure, mechanical bar screens, and grit removal chambers. Flow then passes through primary basins before being split between the oxygen activated sludge secondary treatment facility or the trickling filters/solids contact basins, where it is finally discharged directly to the ocean via the outfall pumping system.

Solids treatment at Plant No. 2 includes dissolved air flotation thickening of waste-activated sludge (WAS) and secondary sludge, anaerobic sludge digestion of primary and thickened secondary sludge, and centrifuge dewatering of digested sludge to produce Class-B biosolids. Plant No. 2 also has facilities for odor control and chemical addition. Digester gas produced at Plant No. 2 is collected, compressed, cleaned, and distributed to a Central Power Generation System as a renewable fuel for energy generation. Compressed digester gas can be shared between the plants through the interplant gas line.

Currently, Plant No.2 secondary effluent is discharged to the ocean through the outfall system. After the construction of OCWD's Groundwater Replenishment System (GWRS) final expansion and associated projects in 2023, Plant No. 2 reclaimable secondary effluent together with Plant No. 1 secondary effluent (a total of up to 175 MGD) will be diverted to OCWD for tertiary treatment and reuse. For a map of the facilities and more detailed understanding of how Plant No. 2 processes work together, before and after the final expansion of GWRS, please refer to Appendices C, D, and E, respectively.

1.1.3 Outfall System

The ocean outfall system includes three discharge structures: **Outfall No. 1**, **Outfall No. 2**, and the **Santa Ana River Emergency Overflow Weirs**.

Outfall No. 2 serves as the primary ocean outfall, discharging treated wastewater approximately 5 miles offshore at a depth of approximately 200 feet. It began service in 1971 and is currently undergoing planned assessment and rehabilitation activities to ensure its reliability for many years to come.

OUTFALL NO. 2 PRIMARY OCEAN OUTFALL



Outfall No. 1 serves as an emergency outfall. It was originally constructed in 1954 and was later modified in 1965. It is located over a mile offshore at a depth of approximately 65 feet and serves as a primary backup to Outfall No. 2. OC San's NPDES permit specifies that this outfall can only be used in the case of an emergency or during planned maintenance activities.

OUTFALL NO. 1 EMERGENCY OUTFALL



The outfall system has two **Santa Ana River Emergency Overflow Weirs** at Plant No. 2, which discharge directly to the Santa Ana River. These weirs are for extreme emergency use only and serve as a secondary backup to the primary outfall facilities, ensuring the safety and welfare of the community at large.

1.2 Facility Valuation

As part of the 2017 Facilities Master Plan, OC San commissioned an engineering study to determine the 2017 valuation of all OC San capital facilities, including Plant No. 1, Plant No. 2, interplant and joint treatment facilities, and the collection system, including sewer pipelines and lift stations.

Figure 1-2 shows the valuation information, presented in five general sub-process areas:

- Collections Systems Piping
- Collection Systems Pump Stations
- Reclamation Plant No. 1 Facilities
- Treatment Plant No. 2 Facilities
- Interplant, Joint, and Common Facilities

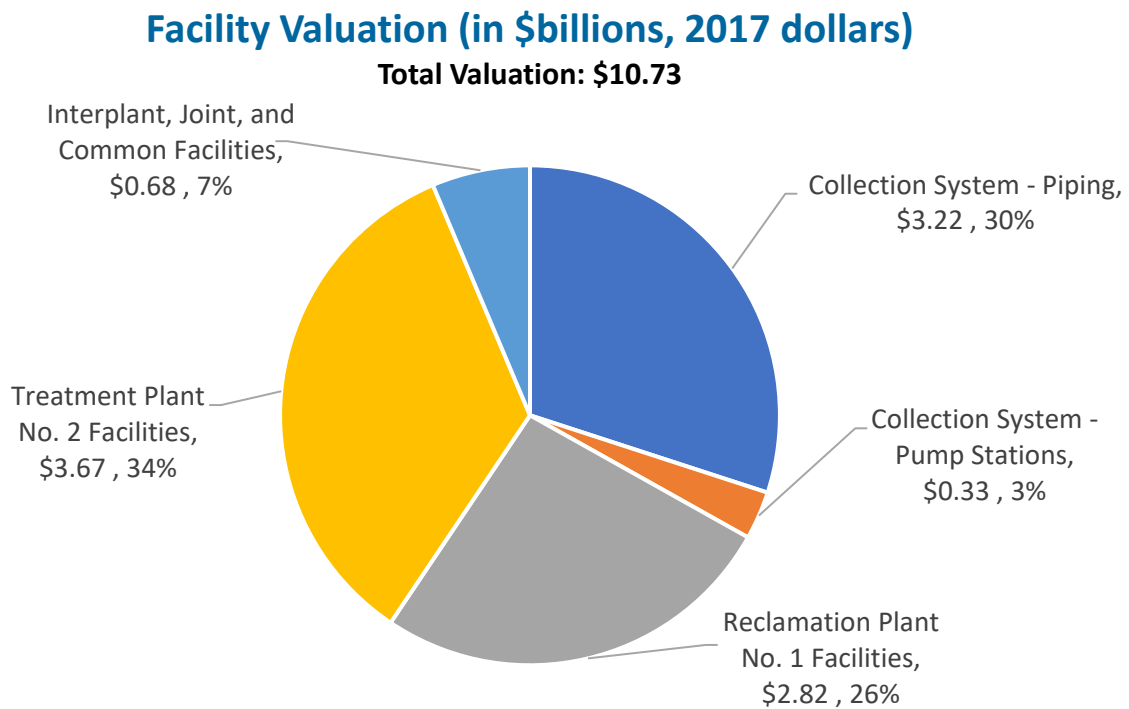


Figure 1-2. Facility Valuation by Area

1.3 Asset Management Organization

Asset management is an essential part of OC San, and our overall mission to deliver safe, economical, and reliable wastewater treatment services. Every part of our organization is involved in some aspect of asset management and ensuring that assets are designed, constructed, operated, and maintained to reliably deliver the required level of service to our customers. Through a very collaborative effort, each group plays an important role in ensuring that the individual asset management initiatives are properly executed (Figure 1-3).



Figure 1-3. Roles in Asset Management

- **Operations** operates and monitors assets and infrastructure that convey, treat, process, and recover resources.
- **Maintenance** performs proactive, corrective, and restorative activities in a planned setting to maintain asset reliability and capacity.
- **Engineering Planning** provides engineering support for short- and long-term management of assets, while working towards asset management objectives.
- **Project Management** manages design and construction of new facilities and the rehabilitation of older facilities. The Small Projects Delivery team within the Project Management Office is responsible for the design and construction management of facilities and maintenance projects.

- **Engineering Design** ensures projects and assets are designed in accordance with engineering standards and codes and meet stakeholder needs.
- **Construction Management** ensures assets are constructed in accordance with contract requirements.

To fulfill our commitment to our ratepayers for providing safe and reliable services, OC San's Asset Management Program is structured to align the Engineering, Operations, and Maintenance (O&M) departments. OC San's Asset Management Group, within the Engineering Planning Division, consists of nine Asset Engineers responsible for understanding the key issues or concerns related to the condition of OC San's assets and for developing and coordinating plans or strategies to ensure that the assets operate reliably and are functioning properly. The Asset Engineers, assigned to their respective process or collection system area(s), work closely with the O&M Area Team members to maintain familiarity with all aspects that may impact the operational, condition, process, and maintenance-related issues within their assigned areas. Collectively, the Area Teams work together to reach the goal of providing the required level of service to our customers, at the lowest lifecycle cost with an acceptable level of risk. This strategy involves a significant investment in internal coordination but ensures that we are properly assessing risks, solving problems and process deficiencies in a timely manner, and providing optimal water treatment services.

The mission of the Maintenance Division is to protect public health and the environment by providing reliable power distribution, electrical and instrument maintenance, civil facilities and grounds maintenance, and mechanical maintenance to the treatment plant and associated pump stations in outer lying service areas. The Maintenance Division provides required predictive, preventive, and corrective maintenance and planning activities to include project support in design and construction phases, collectively referred to as reliability-centered maintenance (RCM). The goals of RCM involve implementing well-coordinated maintenance strategies to ensure OC San's assets will operate at the required level of service.

1.3.1 Predictive Maintenance

OC San takes a proactive RCM approach emphasizing Predictive Maintenance (PdM). The Maintenance Reliability Group implements the PdM Program, which collects data through condition monitoring, enabling the real-time performance of assets. Methods of data collection are Insulation Resistance testing, Infrared Thermography, Structure Borne Ultrasound, Electrical Signal Analysis, Vibration Analysis, and Oil Analysis. The premise of PdM is a proactive approach to minimize unexpected breakdowns, reduce repair cost, extend the Mean Time Between Failure (MTBF), monitor the actual equipment health through quantifiable means, and perform advanced analysis and failure detection. In addition, when sudden changes or variations in the process manifest, they are often found during the regular Maintenance Reliability rounds as part of their everyday work. The ability to monitor equipment lends itself to helping Maintenance to optimize intervals between corrective repairs, minimizing the number and cost of unscheduled repairs created by machine-train failures, and improving the overall equipment reliability.

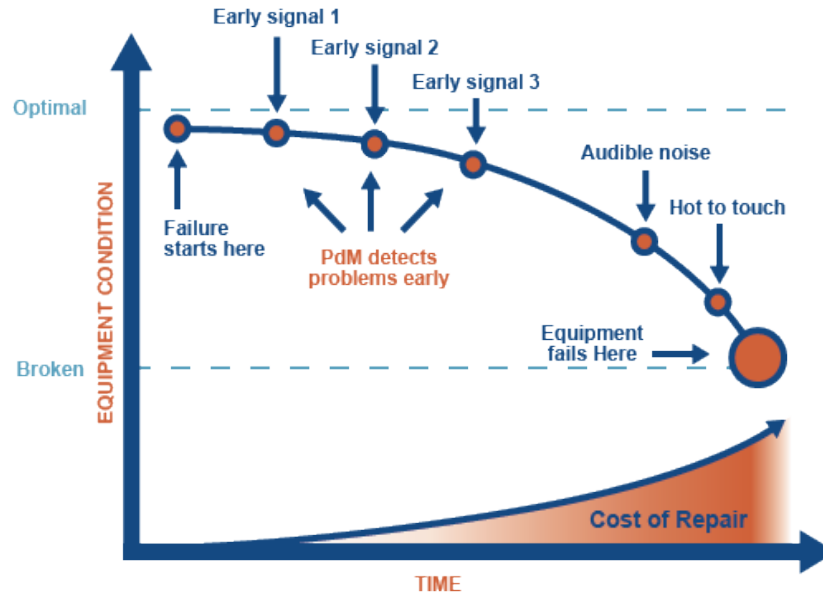


Figure 1-4. PdM Summary

The Maintenance Specialists and Reliability Technicians in this group use various techniques such as:

- Vibration analysis to measure imbalance in rotating equipment.
- Thermography to measure excessive temperature rise.
- Oil and wear debris analysis to predict lubricant and equipment degradation.
- Ultrasound inspection of electrical power distribution equipment for detecting corona and other destructive conditions that pose a potential for arc flash incidents.
- Motor circuit analysis of de-energized motors, large or small, for diagnosing condition of the motor and its associated power circuits for determining motor stator health, broken rotor bars, deteriorating motor connections, and any impending failure trends.
- Motion Amplification amplifies a regular video frame of operating equipment, turning each camera pixel into a pseudo-accelerometer, which allows for an advanced analysis of machine faults. In addition, it augments other reliability analysis tools for troubleshooting purposes.

OC San has a two-decade history of PdM as summarized in Table 1-2.

Table 1-2. High-Level Summary of OC San's Predictive Maintenance Program

Year	Activity
2002	Baseline vibration monitoring with consultant assistance
2006	Comprehensive vibration analysis program implementation at both treatment plants and 15 pump stations
2012	Comprehensive predictive maintenance program implementation and establishment of Reliability Maintenance Team that includes engineers and four Reliability Maintenance Technicians
2014	Predictive maintenance program assessment conducted by Allied Reliability Inc.
2018	Machinery lubrication program assessment conducted by Noria Corporation Inc.; added ultrasound and thermography to test electrical equipment
2019	Motion Amplification equipment by RDI Technology added to the Predictive Maintenance Program
2020	Motor circuit analysis for large and small motors

1.3.1.1 Mechanical Discipline

The mechanical discipline has the most mature PdM Program and involves variance trending of the PdM test results, which include:

- Vibration analysis
- Oil analysis
- Airborne Ultrasound
- Infrared thermograph
- IRIS motion camera (measures deflection and displacement)

In addition to PdM activities for mechanical equipment, OC San also uses laser alignment techniques to enhance alignment rotating machinery accuracy to increase operating life span.

1.3.1.2 Electrical Discipline

The electrical PdM Program continues to evolve and currently includes the following tests:

- Oil analysis for transformers
- Ultrasound to detect arcing
- Infrared thermography to detect hot spots
- Electrical power distribution equipment preventive maintenance
- Circuit breakers and protective relays preventive maintenance and testing
- Motor circuit analysis for large and small motors
- Medium voltage feeder cable testing to determine the health of cables and insulation

1.3.2 Preventive and Corrective Maintenance

Beyond the advanced PdM strategies, OC San also performs time and cycle-based preventive maintenance (PM) and corrective maintenance (CM) activities. It is these activities that, if well implemented, greatly extend the life of the assets. Recognizing the importance of these efforts, OC San has dedicated two groups of skilled individuals to reinforce and sustain these activities.

- OC San has created a PM Optimization Group that is tasked with conducting an in-depth assessment to optimize preventive maintenance strategies for new and existing assets and to establish maintenance approaches and strategies for assets installed by capital improvement projects prior to beneficial occupancy. The PM Optimization Program tracks, maintains, and manages assets throughout their lifecycles from design, construction, commissioning, beneficial occupancy, operations, and maintenance, to the eventual decommissioning or replacement of assets. This ensures that asset lifecycle is maximized with the lowest risk to process failure by achieving the intended reliability, at the lowest possible cost, and maximizing equipment availability.
- The Maintenance Planning Group drives reliability and effectiveness in the craft-based maintenance work groups they support by ensuring that work groups have sufficient ready-to-execute work with appropriate resources such as tools, materials, labor, and job plans. Maintenance Specialists in this group are responsible for managing blanket maintenance service contracts, planning and scheduling maintenance activities, optimizing preventive maintenance activities within Maximo (which includes fine tuning job plans based on input received from field staff, leads, and maintenance Supervisors and Engineers), and coordinating complex maintenance activities involving shutdowns and outages.

OC San's preventive and CM program is staffed to address the long-term reliable performance of civil, mechanical, electrical, and instrumentation assets. PM and CM activities specific to these disciplines are an integral part of OC San's maintenance program. The following lists provide examples of tasks performed; however, they are not meant to be inclusive of all maintenance responsibilities. Often, OC San staff get the job done by improvising in the field setting to meet the challenge.

1.3.2.1 Civil Discipline

PM and CM activities include:

- 1) Cleaning of civil facilities.
- 2) Chemical conditioning of the sewage to reduce corrosion and control odors.
- 3) Minor repairs.
- 4) Application and repair of coatings.
- 5) Maintenance and testing of cathodic protection systems.

1.3.2.2 Mechanical, Electrical, and Instrumentation Disciplines

PM and CM activities include:

- 1) Valve and gate exercising program comprising more than 264 PM tasks for over 1,650 valves and gates in both plants and collection system.
- 2) Equipment rotation program to ensure equipment wear is predictable.
- 3) Adjustments and mechanical alignments.
- 4) Equipment rebuilding and regular testing.
- 5) Changing of lubricants and filters.
- 6) Electrical equipment cleaning and tightening.
- 7) Sensors and meters calibration.

2 State of OC San's Infrastructure

The Area Asset Management (AM) Summaries are intended to summarize the condition of major assets, identify key issues for further investigation, and summarize maintenance and CIP projects planned over the next 10 to 15 years. The approach for developing the AM Summaries is to assemble a list of major assets, document key issues, define the average remaining useful lives of these assets, and identify OC San's plan to address performance and reliability issues of these assets over the 1-, 5-, and 10-year planning horizons. Each month, Asset Engineers present one or more of the AM Summaries to the AM Council; over the course of a year all the process areas, pump stations and collection system are presented. The Area AM Summaries are updated as needed and incorporated into the Asset Management Plan, which is published annually.

2.1 Asset Management System Summaries

The following system-level summaries provide a high-level overview of the Area AM Summaries contained in Section 2.2. The remaining useful life (RUL) scores are an average of the RUL scores for that discipline within that process area. Detailed condition scores are presented in the Area AM Summaries. The system-level summaries are organized by:

- Plant No. 1
- Plant No. 2
- Collection System – Pump Stations
- Collection System – Pipelines

The system-level summaries include an area map showing the general layout of the process areas or collection system, and a table with the following fields:

- **Area No.**
- **Area Name**
- **Average RUL Score:** Estimated average RUL score for each discipline (civil, structural, mechanical, electrical, and instrumentation) or area based on an average of the RUL scores provided by Asset Engineers in the detailed Area AM Summaries.
- **Percentage of RUL Scores with 4s or 5s:** Percentage based on total number of RUL scores assigned to each area by Asset Engineers in the detailed Area AM Summaries. The percentage is an alternate metric for the overall condition of the area. A RUL score of 5 indicates less than 5 years of useful life remains for an asset or set of assets. A RUL score of 4 indicates 5 to 10 years of useful life remains for an asset or a set of assets.
- **Replacement Value (\$million):** Process area replacement value from the 2017 facility valuation.

ASSET MANAGEMENT SYSTEM SUMMARY – PLANT NO. 1 OVERVIEW

Figure 2-1. Plant No. 1 Process Area – Remaining Useful Life Score Map

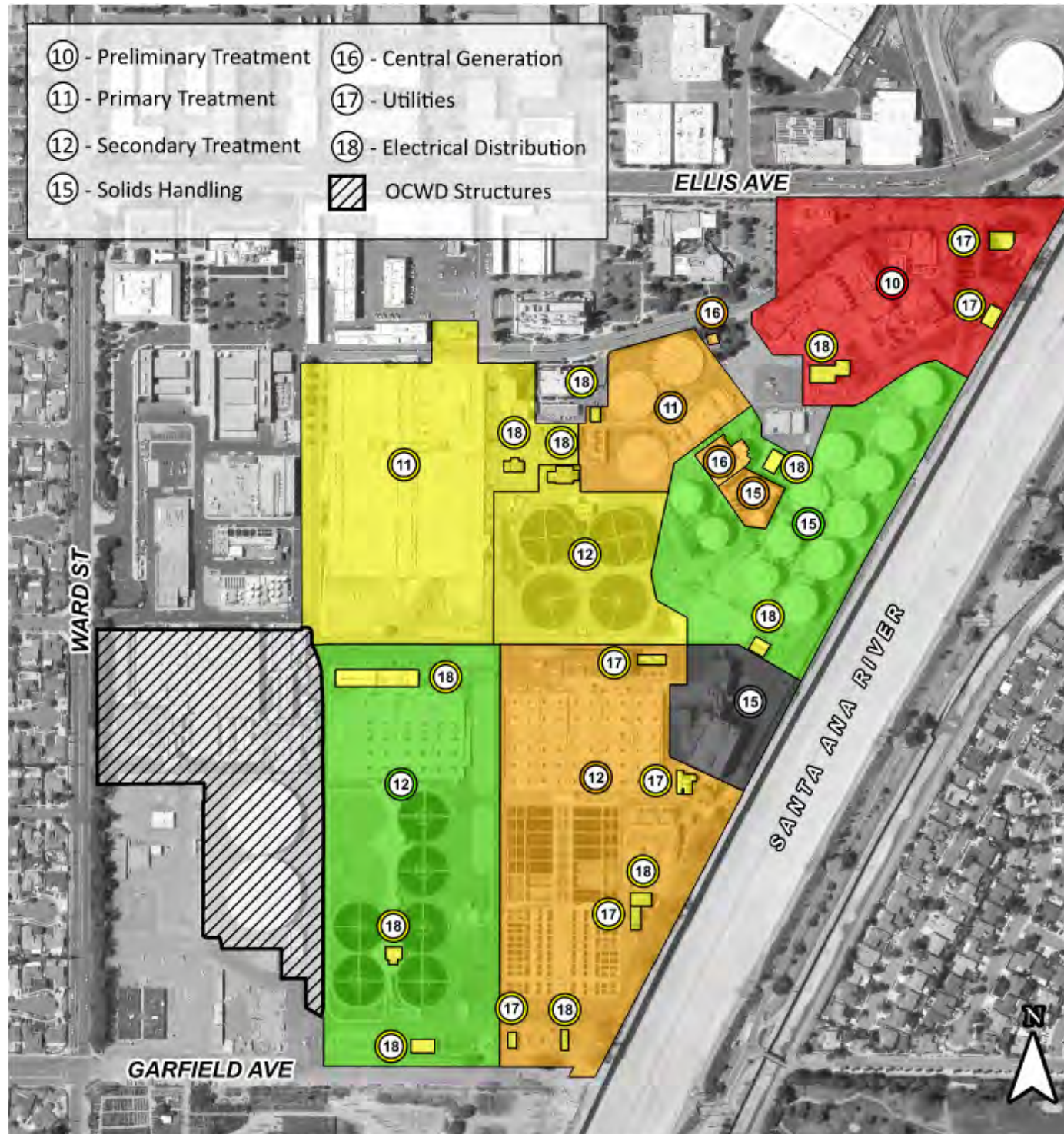


Table 2-1. Plant No. 1 Remaining Useful Life and Replacement Value Summary

Area No.	Area Name	Average Remaining Useful Life Score						Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)
		Civil	Structural	Mechanical	Electrical	Instrumentation	All Assets		
10	Preliminary Treatment	2	3	5	5	5	5	67%	\$386.9
11	Primary Treatment - Basins (1-5)	4	2	4	5	5	4	67%	\$107.2
11	Primary Treatment - Basins (6-31)	4	2	3	3	3	3	20%	\$390.3
12	Secondary Treatment - Activated Sludge 1	3	3	4	4	5	4	51%	\$604.1
12	Secondary Treatment - Activated Sludge 2	1	1	2	3	2	2	13%	\$373.4
12	Secondary Treatment - Trickling Filter	1	1	3	4	3	3	7%	\$67.8
14	Interplant	2	2	2	2		2	17%	\$752.6
15	Solids Handling - Digesters	2	1	2	2	2	2	3%	\$254.7
15	Solids Handling - T&D Facilities	1	1	1	2	1	1	0%	\$190.2
15	Solids Handling - Gas Handling	3	4	4	4	5	4	67%	\$37.3
16	Central Generation ^a		3	3	4	4	4	46%	\$170.5
17	Utilities	3	3	3	2	2	3	0%	\$194.2
18	Electrical Distribution ^a				3		3	42%	\$81.6
19	Miscellaneous Structures & Grounds							TBD	\$249.0
Plant No. 1 Total								32%	\$3,859.9

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

OCWD = Orange County Water District; RUL = Remaining Useful Life; TBD = To Be Determined;

T&D = Thickening and Dewatering

^a White box with diagonal line indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – PLANT NO. 2 OVERVIEW

Figure 2-2. Plant No. 2 Process Area – Remaining Useful Life Score Map



Table 2-2. Plant No. 2 Remaining Useful Life and Replacement Value Summary

Area No.	Area Name	Average Remaining Useful Life Score						Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)	
		Civil	Structural	Mechanical	Electrical	Instrumentation	All Assets			
20	Preliminary Treatment	1	1	2	2	2	2	2%	\$357.6	
21	Primary Treatment - A-Side	5	4	4	3	3	4	57%	\$166.8	
21	Primary Treatment – B- & C-Side	3	3	3	3	3	3	4%	\$333.6	
22	Secondary Treatment - Activated Sludge	3	3	3	4	3	3	20%	\$612.6	
22	Secondary Treatment - DAFT	4	1	3	3	3	3	9%	\$57.7	
22	Secondary Treatment - Trickling Filter	2	1	2	3	3	2	5%	\$342.4	
24	Effluent Disposal	2	2	3	3	4	3	21%	\$900.2	
25	Solids Handling - Digesters	3	4	4	4	4	4	72%	\$355.5	
25	Solids Handling - Facilities	2	1	2	2	2	2	5%	\$184.6	
25	Solids Handling - Gas Handling	3	3	4	4	4	4	33%	\$37.3	
26	Central Generation ^a		3	4	4	4	4	70%	\$363.8	
27	Utilities	3	3	3	3	2	3	0%	\$108.3	
28	Electrical Distribution ^a				4		4	65%	\$80.1	
29	Miscellaneous Buildings & Grounds	TBD						TBD	TBD	\$146.2
Plant No. 2 Total								38%	\$4,046.9	

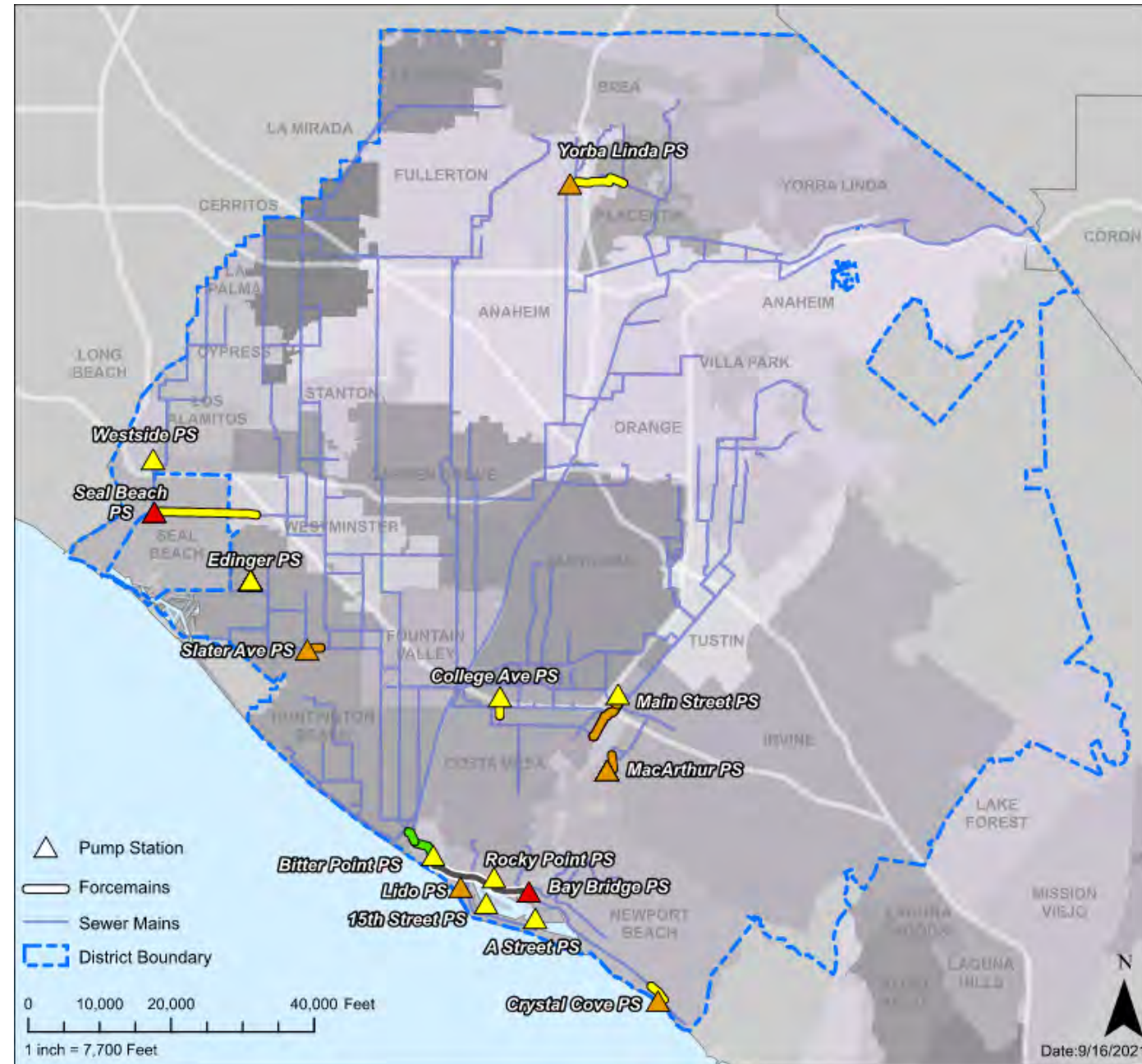
RUL Legend:
■ RUL <5 years ■ RUL 5-10 years ■ RUL 11-15 years ■ RUL 16-20 years ■ RUL >20 years

Acronym Key:
 DAFT = Dissolved Air Flotation Thickener; RUL = Remaining Useful Life; TBD = To Be Determined

^a White box with diagonal line indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM PUMP STATION OVERVIEW

Figure 2-3. Collection System Pump Station – Remaining Useful Life Score Map



Note: Not all pump station force mains are shown on this map. Only longer force mains are shown.

Table 2-3. Pump Station and Force Main Remaining Useful Life and Replacement Value Summary

Service Area	Pump Station	Average Remaining Useful Life Score					Percentage of RUL Scores with 4s or 5s	Replacement Value (\$ Millions, in 2021 Dollars)	
		Civil	Structural	Mechanical	Electrical	Instrumentation			All Assets
5	15th Street	3	4	3	3	2	3	25%	\$14.8
5	A Street	3	4	4	3	2	3	25%	\$12.9
5	Bay Bridge	4	4	5	4	5	5	85%	\$37.5
5	Bitter Point	2	3	4	2	2	3	23%	\$35.5
6	College	3	3	3	2	2	3	8%	\$26.4
5	Crystal Cove	3	3	4	4	3	4	33%	\$2.8
11	Edinger	4	3	3	3	3	3	27%	\$14.2
5	Lido	1	4	4	4	4	4	50%	\$22.2
7	MacArthur	4	4	4	4	2	4	64%	\$18.0
7	Main Street	4	3	4	3	3	3	46%	\$48.4
5	Rocky Point	1	4	4	2	2	3	23%	\$17.6
11	Slater	4	4	4	3	3	4	31%	\$38.8
3	Seal Beach	3	4	5	5	4	5	83%	\$45.8
3	Westside	3	3	3	2	3	3	8%	\$33.7
2	Yorba Linda	3	4	4	3	3	4	36%	Not Valued
5	Newport Force Mains ^a	1	-	-	-	-	1	0%	-
Collection PS Total								38%	\$368.6

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

PS = Pump Station; RUL = Remaining Useful Life

^a White box with dash lines indicates there are no assets assigned to this discipline within this process area.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM PIPELINES OVERVIEW

Figure 2-4. Collection System Pipelines – Remaining Useful Life Score Map

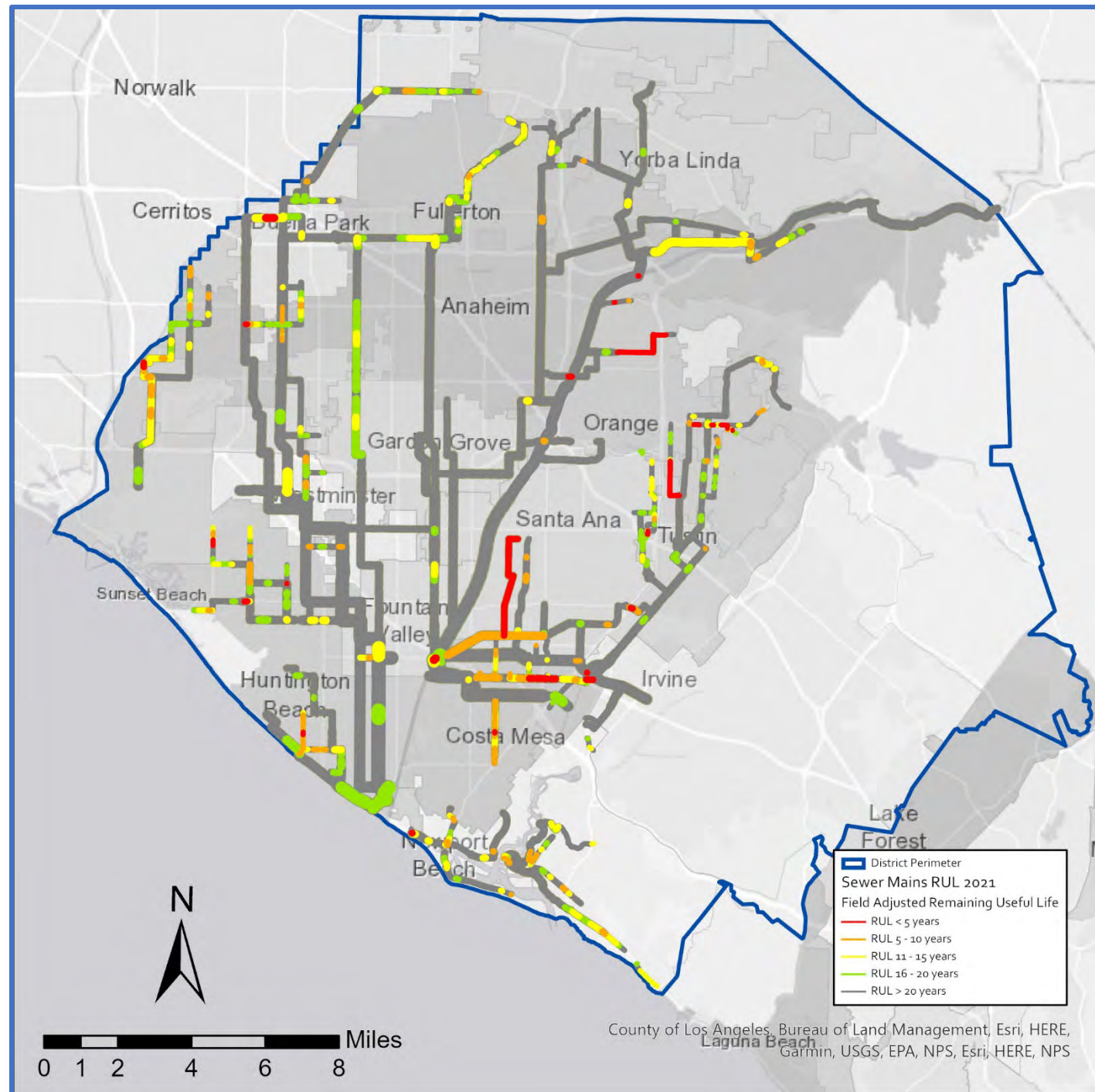
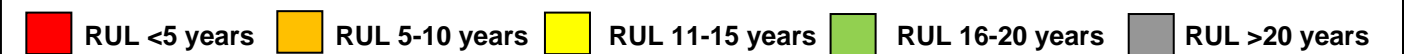


Table 2-4. Collection System Remaining Useful Life and Replacement Value Summary

Trunklines	No. of Pipes with RUL Scores of 4 or 5	Miles of Pipes with RUL Scores of 4 or 5	Percentage of RUL Scores with 4s or 5s (By Length)	Replacement Value (\$ Millions, in 2021 Dollars) ^a
Baker-Main	74	5.62	14%	\$303.6
Bushard	0	0.00	0%	\$266.2
Coast	17	1.11	10%	\$108.6
Euclid	1	0.10	0%	\$297.4
Interplant	0	0.00	0%	\$127.1
Knott	37	3.23	5%	\$688.6
Miller-Holder	7	0.71	2%	\$326.3
Newhope	4	0.25	1%	\$230.3
Newport	17	0.82	4%	\$238.3
SARI	40	2.11	4%	\$568.6
Sunflower	12	0.72	2%	\$330.4
Talbert	74	5.86	70%	\$63.5
Total	283	20.53	6%	\$3,548.9

RUL Legend:



Acronym Key:

RUL = Remaining Useful Life; SARI = Santa Ana River Interceptor

^a The abandoned pipelines at the Airbase (\$6,366,516) and the Harvard Area Trunk Sewer (\$191,784) areas are not included in the total.

2.2 Area Asset Management Summaries

The following AM Summaries document the current state of process areas in both plants and the collection system. The remainder of this section contains the AM Summaries organized as follows:

Plant No. 1 Asset Management Summaries

- Preliminary Treatment
- Primary Treatment
- Secondary Treatment – Activated Sludge
- Secondary Treatment – Trickling Filters
- Interplant
- Solids Handling – Digesters
- Solids Handling – Facilities
- Central (Power) Generation
- Utilities
- Electrical Distribution

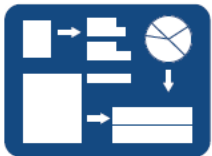
Plant No. 2 Asset Management Summaries

- Preliminary Treatment
- Primary Treatment
- Secondary Treatment – Activated Sludge
- Secondary Treatment – Trickling Filters/Solids Contact
- Effluent Disposal
- Solids Handling – Digesters
- Solids Handling – Facilities
- Central (Power) Generation
- Utilities
- Electrical Distribution

Collection System Asset Management Summaries

- Pump Stations
- Pipelines

The AM Summaries are built around a common structure. This structure provides a framework for continued use and development of the summaries. Key structure elements for AM Summaries are shown on Figure 2-5 below.



Process Schematic

Provides high-level process schematic to communicate area function and interrelation of key assets within the area



Count of Major Assets

Provides a count of major assets within the area



Major Assets Remaining Useful Life

Provides high-level summary of the condition of area systems and asset types



Key Issues, Actions and Recommendations

Identifies key issues and planned or recommended actions to remedy the issue



Current & Future Projects Over the Next Ten Years

Identifies the timing of current and planned projects impacting major assets within the area

Figure 2-5. Area Asset Management Summary Structure

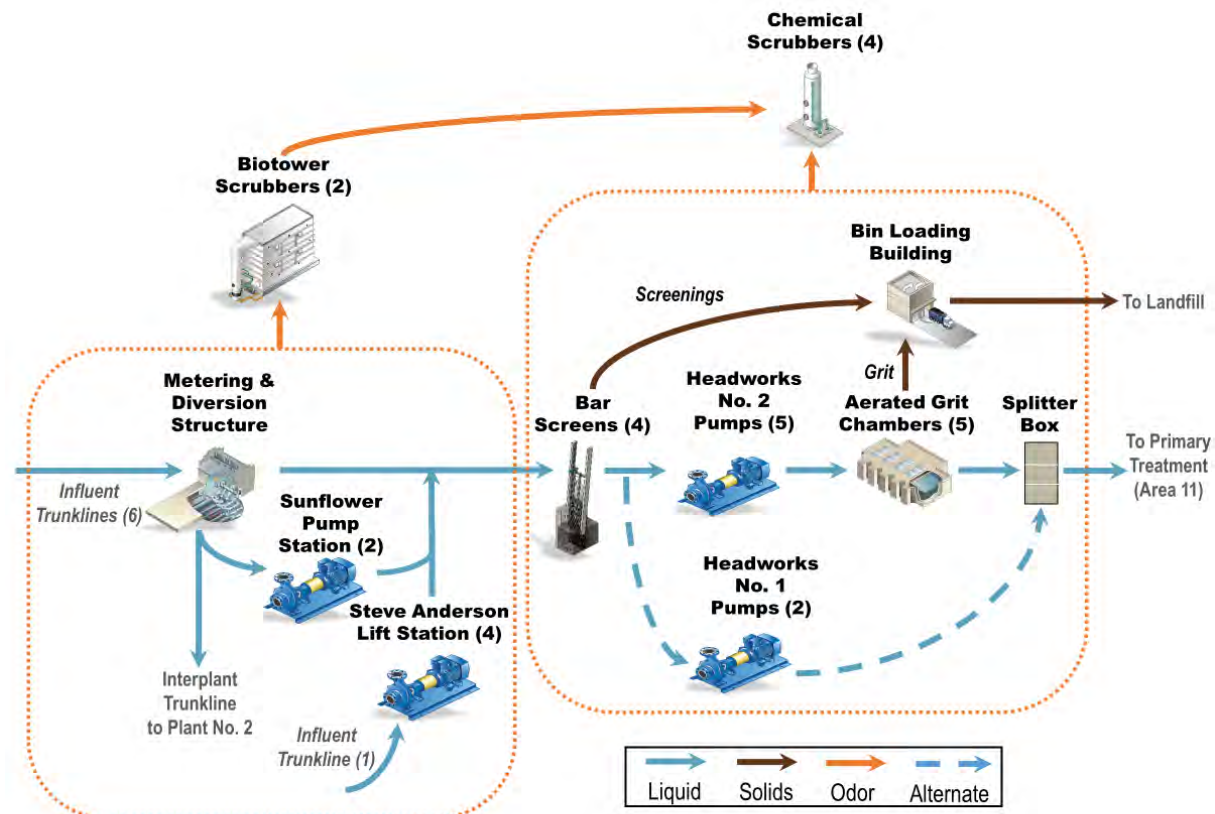
This page is intentionally left blank.

Plant No. 1 Asset Management Summaries

This page is intentionally left blank.

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 10 – PLANT NO. 1 PRELIMINARY TREATMENT

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Metering & Diversion	Sunflower Pump Station	Steve Anderson Lift Station	Barscreens	Main Sewage Pumps	Grit Chamber	Splitter Box	Bin Loading	Odor Control
Civil									
Effluent Piping	-	-	-	-	-	-	2	-	-
Structural									
General	2	3	1	2	2	2	3	3	3
Mechanical									
Piping	5	-	1	-	2	-	-	-	-
Gates/Valves	5	5	2	5	5	5	5	-	5
Gearboxes	-	5	-	1	-	-	-	4	-
Screens	-	-	-	4	-	-	-	-	-
Pumps	-	4	2	-	4	-	-	-	5
Conveyors	-	-	-	4	-	-	-	4	-
Fans/Blowers	4	4	2	5	5	5	-	5	5
Electrical									
Operators	5	-	-	-	-	-	5	-	-
Motors	-	4	1	2	5	-	-	5	-
Variable Frequency Drives	-	-	3	-	4	-	-	-	4
Motor Control Centers	5	5	2	5	5	5	-	5	5
Instrumentation									
General	4	5	3	4	4	-	5	-	5

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Major Assets

Major Assets	Quantities
Metering & Diversion	
Flowmeters	7
Gates	26
Sunflower Pump Station	
Screw Pumps	2
Motors	2
Gearboxes	2
Lube Oil Systems	2
Gates	5

Major Assets	Quantities
Steve Anderson Lift Station	
Pump/Motor/VFD	4
Flowmeter	1
Barscreens	
5/8" Barscreens	2
1" Barscreens	2
Gates	22

Major Assets	Quantities
Main Sewage Pumps	
Pump/Motor/VFD	5
Headworks #1 Pumps	2
Gates	15
Splitter Box	
Gates	5
Weir Gates	15
Flowmeters	3

Major Assets	Quantities
Grit Chambers	
Grit Chambers	5
Gates	19
Stop Plates	10
Flap Gates	5
Blowers	3
Bin Loading	
Paddle Conveyors	2
Belt Conveyor	1

Major Assets	Quantities
Odor Control	
Bioscrubbers	2
Chemical Scrubbers	4

Acronym Key:
 RUL = Remaining Useful Life;
 VFD = Variable Frequency Drive

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 10 – PLANT NO. 1 PRELIMINARY TREATMENT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> P1-105 Construction – This project will rehabilitate most assets throughout the preliminary treatment area; however, the construction completion date is February 2028. Some assets have very little remaining life or have failed already and will need interim solutions before they are addressed by the project, such as exhaust fans and ducts in Rag/Grit Room. 	<ul style="list-style-type: none"> Continue to actively monitor the condition of aging assets scheduled for repairs/replacement under P1-105 and develop temporary/minimal solutions as applicable until a permanent solution is provided by P1-105.
<ul style="list-style-type: none"> Fugitive Odors – Presence of fugitive odors at the headworks area was noted. Upon further investigation four major sources of contribution were identified which included splitter boxes, bin loading structure, headworks scrubbers and metering and diversion building. 	<ul style="list-style-type: none"> Corrective actions were taken at all the identified locations to eliminate or minimize presence of fugitive odors until P1-105 replaces the foul air system in this area.
<ul style="list-style-type: none"> Headworks Vulnerability Assessment – Evaluate bar screens and other equipment to identify vulnerabilities and weak points within the Headworks process based on a high debris/ragging event. 	<ul style="list-style-type: none"> Review design criteria and operating philosophies for P1-105 and identify assets that lack redundancy and may fail during a high debris/ragging event. Provide recommendations to improve headworks process resiliency.
<ul style="list-style-type: none"> Headworks 1 Capacity – Existing pumps at Headworks 1 were deemed unreliable to provide sufficient pumping capacity during wet weather. P1-105 bypass will be installed in 21-22 wet weather season. 	<ul style="list-style-type: none"> A temporary pumping system will be installed by P1-105 during wet weather season of 21-22 to provide sufficient pumping capacity.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
				P1-105	Headworks Rehabilitation at Plant No. 1	Headworks	<ul style="list-style-type: none"> Rehabilitate structures of impacted facilities. Replace mechanical/electrical/instrumentation as needed throughout impacted facilities. Improve grit handling. 	Construction	Construction	Construction	Construction	Construction	Construction	Construction				
FE19-04	Sunflower Pump Replacement at Plant No. 1	Sunflower Pump Station	<ul style="list-style-type: none"> Rehabilitate Sunflower Pump Station. 	Construction	Construction													
FE20-01	Wastehauler Station Safety and Security Improvements	Wastehauler Station	<ul style="list-style-type: none"> Install automatic samplers, RFID entrance system, and temporary office trailer. 	Design	Construction	Construction												
FE18-11	Headworks Explosive Gas Monitoring Systems at Plant No. 1 and No. 2	Metering & Diversion, Odor Control	<ul style="list-style-type: none"> Install Lower Explosive Limit monitoring system to detect explosive gas. 	Construction														
X-102	Wastehauler Facility Improvements	Wastehauler Station	<ul style="list-style-type: none"> Demolish abandoned wastehauler pump station and provide permanent building for staff. 					Design	Design	Design	Construction	Construction						
X-044	Steve Anderson Lift Station Rehabilitation	Steve Anderson Lift Station	<ul style="list-style-type: none"> Rehabilitate or replace mechanical, electrical, and instrumentation. 													Design	Design	Construction

Types of Project Legend:

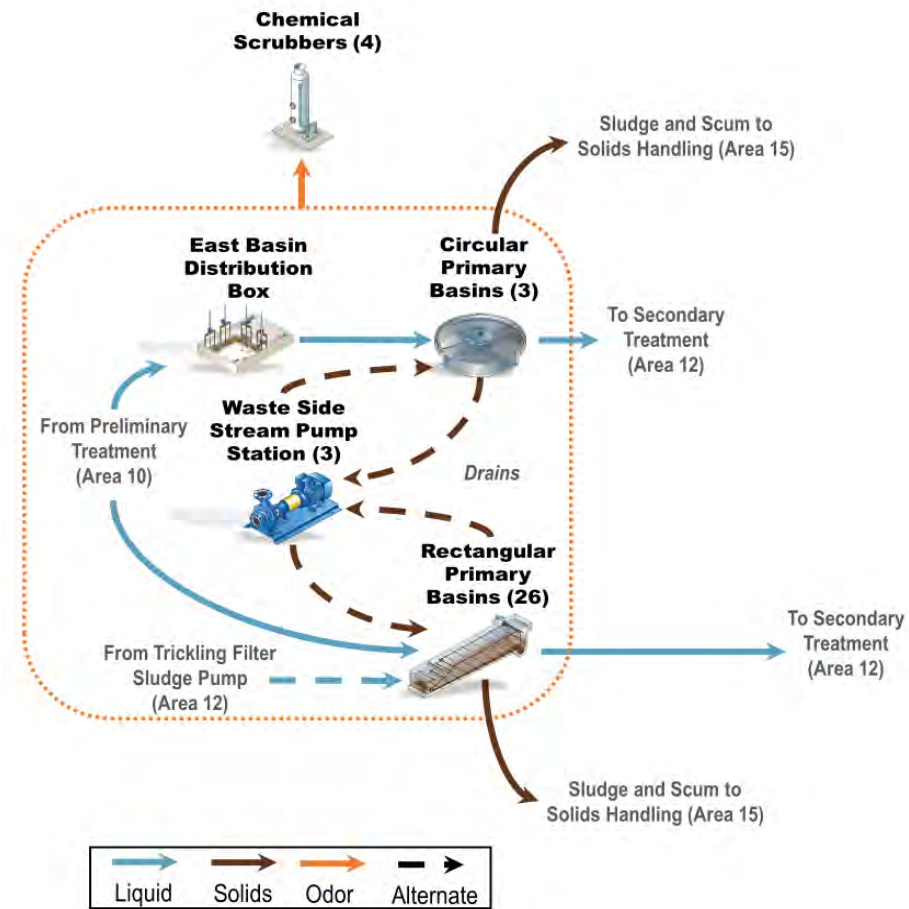
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CIP = Capital Improvements Program; FY = Fiscal Year; RFID = Radio-Frequency Identification

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 11 – PLANT NO. 1 PRIMARY TREATMENT

Process Schematic



Note: Primary Basins No. 1 and 2 are not shown. The facilities are available for emergency capacity during high flows and are scheduled to be demolished within the next ten years.

Major Assets

Major Assets	Quantities
Rectangular Primary Basins	
Basins	26
Thickened Sludge Pumps	9
Dilute Sludge Pumps	4
Dilute Sludge Sumps	2
Scum Pumps	12
Scum Pits	6

Major Assets	Quantities
Circular Primary Basins	
Basins	3
Sludge Pumps	4
Scum Pumps	3
Chemicals	
Polymer Tanks	4
FeCl ₃ Tanks	1

Major Assets	Quantities
Waste Sidestream Pump Station 1	
Pumps	3
Primary Odor Scrubber Complex	
Chemical Scrubbers	4
HCl Tanks	1
HCl Pumps	2
NaOH Tanks	1

Major Assets	Quantities
NaOH Pumps	5
Bleach Tanks	1
Bleach Pumps	8

Acronym Key:
 EBDB = East Basin Distribution Box;
 FeCl₃ = Ferric chloride; HCl = Hydrochloric acid; NaOH = Sodium hydroxide;
 PEDB-1 = Primary Effluent Distribution Box 1; PEJB = Primary Effluent Junction Box;
 PSB = Primary Sedimentation Basin;
 PISB = Primary Influent Splitter Box;
 RUL = Remaining Useful Life;
 WSSPS = Waste Sidestream Pump Station

Major Assets Remaining Useful Life

Asset Type	EBDB	PEDB-1	PEJB	PSB 1-2	PSB 3-5	PSB 6-15	PSB 16-31	WSSPS	PISB	Centerfeed Channels	Phys Chem	Odor Control
Civil												
Effluent Piping	4	5	4	5	4	5	5	3	-	-	-	-
Structural												
Structures	1	3	1	3	3	2	2	3	4	2	3	2
Cover	-	-	-	2	3	2	2	-	2	2	-	-
Mechanical												
Piping	-	-	-	-	-	-	-	3	-	-	3	-
Gates/Valves	2	4	3	5	5	3	3	3	3	3	3	2
Sludge/Scum Collection System	-	-	-	5	5	3	3	-	-	-	-	-
Sludge Pumping System	-	-	-	5	4	3	4	-	-	-	-	-
Scum Pumping System	-	-	-	5	4	4	4	-	-	-	-	-
Electrical												
General	-	-	-	5	4	2	2	5	2	-	3	3
Instrumentation												
General	-	-	-	5	4	3	3	3	3	-	3	5

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 11 – PLANT NO. 1 PRIMARY TREATMENT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Rectangular Primary Basin – The rectangular primary basins experience relatively frequent issues with mechanical parts and sludge pumping system that require maintenance. These issues require ongoing attention from maintenance and can affect Plant No. 1 treatment capacity. 	<ul style="list-style-type: none"> Several projects are planned to address rectangular primary basin issues and reliability including P1-133 and X-017. However, these projects cannot make the rectangular basins maintenance free. OC San should expect to dedicate a significant amount of maintenance and operations labor hours to these basins, especially during times when capacity is reduced by projects.
<ul style="list-style-type: none"> Construction Sequencing – There are many upcoming projects that will perform work on the Plant No. 1 primary treatment system. These projects are largely interdependent on one another and will temporarily impact the primary capacity at Plant No. 1. 	<ul style="list-style-type: none"> Continue to holistically assess the capacity/treatment consequences of the upcoming projects, especially if schedules change during design and construction.
<ul style="list-style-type: none"> Circular Primary Basin – Influent pipes to circular basins 3 and 4 were identified with cracks and leaking joints. To maintain desired peak flow capacity of 320 MGD, the circular basins are required to be in service. 	<ul style="list-style-type: none"> Develop repair options and implement an interim solution until P1-126 replaces the circular sedimentation basins.
<ul style="list-style-type: none"> Scum Management – The scum collection system in rectangular primary basins have been experiencing operational issues such as trapped scum in various locations, overflow and failure of scum tipping troughs, and clogs in the scum pits and scum pumps. 	<ul style="list-style-type: none"> Two studies are planned to evaluate options to improve scum collection in rectangular primary basins, RE19-01 and PRN-00563. RE19-01 is focused on the use of new equipment in the scum pits such submersible chopper pump to address clogging issues. PRN-00563 will perform a comprehensive evaluation of the scum collection system and provides recommendations.
<ul style="list-style-type: none"> Primary Effluent Piping Manhole – The Primary effluent piping from rectangular basins is equipped with two pressure manholes for access to the piping. The pressure manhole located on the eastside piping has experienced sever corrosion and must be replaced. 	<ul style="list-style-type: none"> Eastside pressure manhole cover and pressure plate must be replaced to prevent manhole cover failure. The westside pressure manhole requires additional cover to avoid collection of surface runoff water on top of pressure plate and to prevent further corrosion.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
PRN-00563	P1-33/37 Scum Study	Primary Basins 6-31	<ul style="list-style-type: none"> Perform a study to determine the best solution to the various scums system issues, such as issues for the scum pumping system. 															
RE19-01	Primary Scum Equipment Evaluation at Plant No. 1	Primary Basins 6-31	<ul style="list-style-type: none"> Perform a test by utilizing a submersible conditioning pump in the scum pit and evaluate the improvements on scum pumping. 															
PRN-00567	Plant No. 1 Primary Basin Rebar Protection Blanket Contract	Primary Basins 6-15	<ul style="list-style-type: none"> Repair and protect exposed rebar. 															
P1-133	Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1	Primary Basins 6-31	<ul style="list-style-type: none"> Upgrade the sludge pumping system. Structural repair of launders in PISB. Repair of foul air system. Provide adequate lighting and ventilation alarm improvements to meet current codes. 															
P1-126	Primary Clarifiers Replacements and Improvements at Plant No. 1	Primary Basins 3, 4, and 5	<ul style="list-style-type: none"> Replace Primary Basins 3, 4, and 5 and primary scrubber system. Rehabilitate associated conveyance pipes and structures. Demolish Primary Basins 1-2. 															
X-017	Plant No. 1 Primary Clarifiers 6-31 Rehabilitation	Primary Basins 6-31	<ul style="list-style-type: none"> Major rehabilitation of Primary Basins 6-31. 															
X-006	Waste Sidestream Pump Station Upgrade	Waste Sidestream Pump Station	<ul style="list-style-type: none"> Pump station rehabilitation and capacity increase. 															

Types of Project Legend:

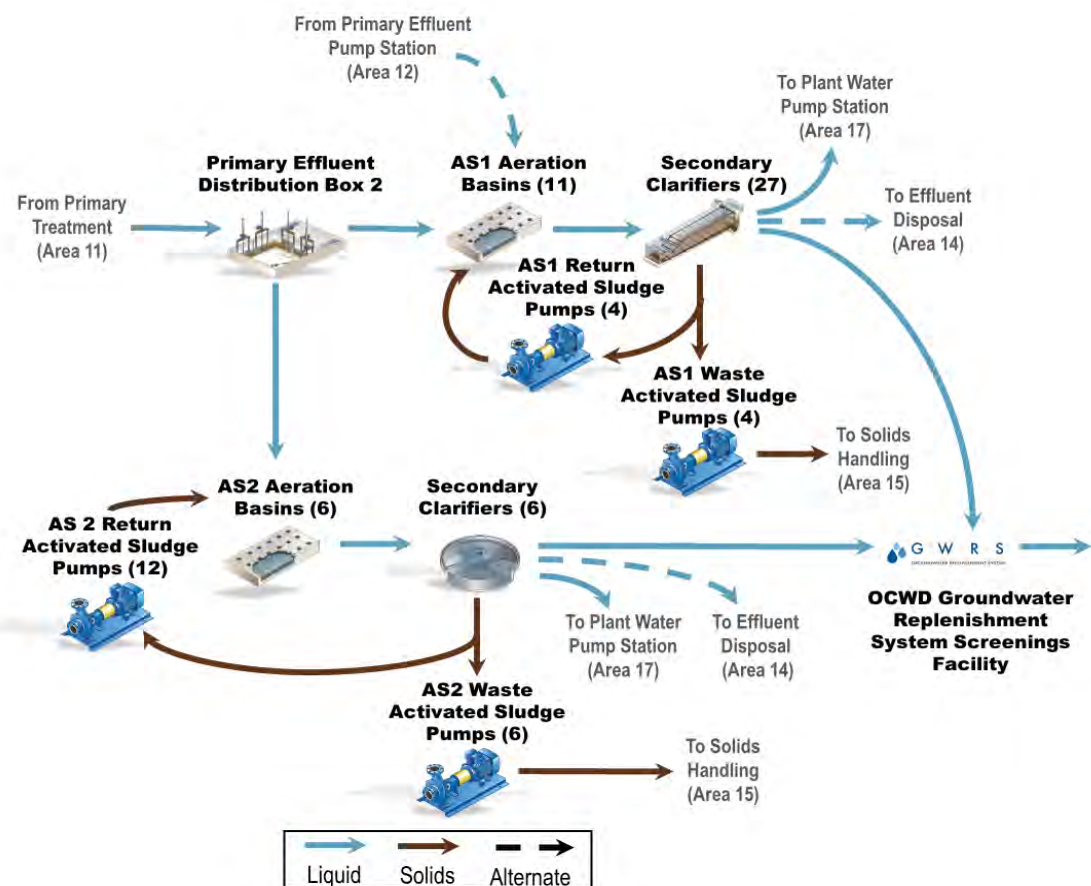
■ CIP - Planning
 ■ CIP - Design
 ■ CIP - Construction
 ■ Maintenance Project

Acronym Key:

CIP = Capital Improvements Program; FY = Fiscal Year; GWRS = Groundwater Replenishment System; MGD = Million Gallons per Day; OC San = Orange County Sanitation District; OCWD = Orange County Water District; PISB = Primary Influent Splitter Box

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 12 – PLANT NO. 1 SECONDARY TREATMENT – ACTIVATED SLUDGE

Process Schematic



Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Activated Sludge Plant No. 1 – AS1 is an aging facility 	<ul style="list-style-type: none"> Condition assessments show corrosion on the wall between reactors and steel rebar support chairs missing. Baffle wall supports and vertical airpipes were damaged on some of the basins. RAS piping has severe corrosion and will be replaced by FE20-03. Instrumentation is monitoring and replacing the equipment as needed.
<ul style="list-style-type: none"> Activated Sludge Basins Diffusers 	<ul style="list-style-type: none"> Diffusers for activated sludge plants will be replaced in-house by Maintenance.
<ul style="list-style-type: none"> AS1 Blower Controls 	<ul style="list-style-type: none"> Blower control system is obsolete and requires an upgrade to operate efficiently.
<ul style="list-style-type: none"> Primary Effluent Pump Station 	<ul style="list-style-type: none"> One VFD's has failed and is being replaced. PEPS will be demolished by a future project (P1-126).
<ul style="list-style-type: none"> AS1 Waste-activated Sludge Pumps 	<ul style="list-style-type: none"> Pumps have reached their useful life and two pumps do not meet pumping capacity required.
<ul style="list-style-type: none"> Plant Water Pump Station 	<ul style="list-style-type: none"> PWPS only receives water from AS1. Need additional source from AS2 for reliability.

Major Assets Remaining Useful Life

Asset Type	PEPS	Blower Building 1	AS1 Aeration Basins	AS1 Clarifiers	AS1 RAS PS	AS1 WAS	AS2 PEPS 2	AS2 Blowers	AS2 Aeration Basins	AS2 Clarifiers	AS2 RAS/WAS PS	WSSPS 2	PEPS 2	PEDB2	AS1 & AS2 Junction Boxes	DAFTs	DAFTs Polymer System
Civil																	
Effluent Piping	-	3	3	3	5	-	-	-	-	-	-	-	1	1	1	4	-
Structural																	
Buildings	2	2	-	-	2	-	-	1	-	-	-	-	-	-	-	4	-
Structures	3	-	2	3	-	-	1	-	1	1	-	1	1	1	1	4	-
Mechanical																	
Piping	3	2	3	3	5	3	2	2	2	2	2	2	-	-	-	4	4
Pumps	3	-	-	-	3	3	-	-	-	-	3	3	-	-	-	5	5
Diffusers	-	-	4	-	-	-	-	-	4	-	-	-	-	-	-	-	-
Mixers	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Clarifier/DAFT Moving Mechanism	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	4	-
Blowers	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Drain Gates & Inlet Gates	-	-	3	3	-	-	-	-	2	2	-	-	1	2	-	-	-
HVAC & Ventilation	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Chemical/polymer Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Electrical																	
Variable Frequency Drives	3	-	2	2	2	2	-	-	4	4	4	4	-	-	-	2	2
Motor Control Centers	4	-	4	4	4	4	-	-	2	2	2	2	-	-	-	3	3
Instrumentation-																	
PLC's, Flow Meters	5	5	5	5	5	5	-	2	2	2	2	2	-	-	-	5	5

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

AS1 = Activated Sludge Plant No. 1; AS2 = Activated Sludge Plant No. 2; DAFT = Dissolved Air Flotation Thickener; HVAC = Heating, Ventilation, and Air Conditioning; OCWD = Orange County Water District; PEDB1 = Primary Effluent Distribution Box 1; PEDB2 = Primary Effluent Distribution Box 2; PEPS = Primary Effluent Pump Station; PEPS 2 = Primary Effluent Pump Station 2; PLC = Programmable Logic Controller; PS = Pump Station; RAS = Return Activated Sludge; RUL = Remaining Useful Life; WAS = Waste-activated Sludge; WSSPS2 = Waste Sidestream Pump Station 2

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 12 – PLANT NO. 1 SECONDARY TREATMENT – ACTIVATED SLUDGE

Major Assets

Major Assets	Quantities
Primary Effluent Pump Station	
Building	1
Wetwell	1
Pumps	2
Discharge Valves	3
AS1 Aeration Basins	
Aeration Basins	10
Inlet Gates	10
AS1 Blower Building 1	
Blower Building	1
Blowers	5

Major Assets	Quantities
AS1 Secondary Clarifiers	
Secondary Clarifiers	26
Inlet Gates	78
Sludge Collectors	52
AS1 RAS PS/WAS PS	
RAS PS Building	1
RAS Pumps	5
WAS Pumps	4
Primary Effluent Pump Station 2	
Structure	1
Gate	1

Major Assets	Quantities
AS2 Aeration Basins	
Aeration Basins	6
Inlet Gates	6
AS2 Blower Building 2	
Blower Building	1
Blowers	4
AS2 Secondary Clarifiers	
Secondary Clarifiers	6
Sludge Collectors	6
AS2 RAS PS/WAS PS	
RAS Pumps	12
WAS Pumps	6
Surface Wasting Pumps	6
Scum Pumps	6

Major Assets	Quantities
Waste Side Stream Pump Station 2	
Pumps	2
Structure	1
Primary Effluent Distribution Box 1	
Structure	1
Gates	1
Primary Effluent Distribution Box 2	
Structure	1
Gates	11
AS1 and AS2 Junction Boxes	
Junction Box Structures	8

Major Assets	Quantities
Dissolved Air Flotation Thickeners	
Concrete Tanks	6
Mechanical Sweep	6
Recycle Pumps	12
Retention Tank	6
TWAS Pumps	12
DAFTs Polymer System	
Storage Tank	2
Mix Tank	2
Polymer Transfer Pumps	2
Feed Pumps	6

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
PRN-00698	Plant No. 1 Activated Sludge WAS Pump Replacement	AS1 WAS Pumps	<ul style="list-style-type: none"> Project P1-140 will replace 4 WAS pumps and VFDs. 															
FE20-03	Return-Activated Sludge Discharge Piping Replacement at Activated Sludge Plant No. 1	AS1 RAS Pipe Discharge	<ul style="list-style-type: none"> Replace the RAS discharge pipe located in Basins 3 and 8. 															
X-043	DAFT Demolition at Plant No. 1	DAFTS	<ul style="list-style-type: none"> Demolish DAFTs since the new thickening centrifuges are in service and DAFT is no longer needed. 															
P1-140	Activated Sludge -1 and Secondary Clarifier Rehabilitation	AS1 Aeration Basin, clarifiers and blowers	<ul style="list-style-type: none"> Major rehabilitation of all mechanical, electrical, and instrumentation assets including the blower system. 															

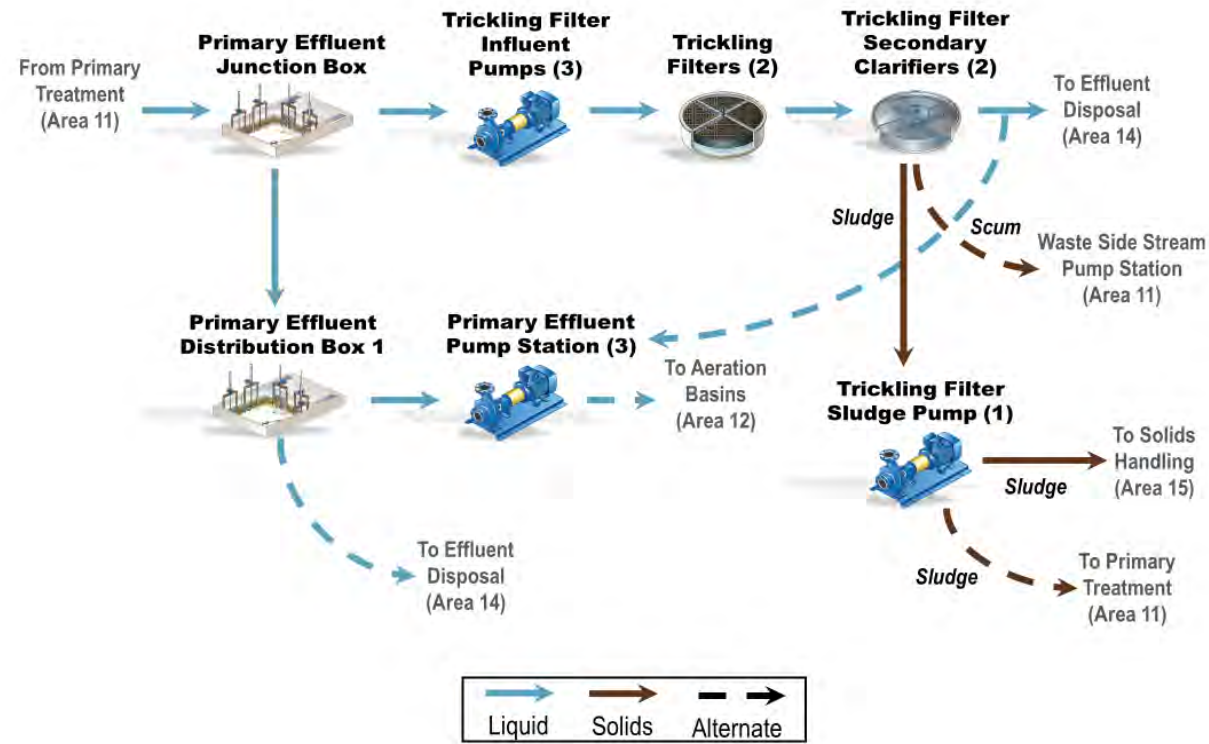
Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:
 AS1 = Activated Sludge Plant No. 1; AS2 = Activated Sludge Plant No. 2; CIP = Capital Improvement Program; FY = Fiscal Year; DAFT = Dissolved Air Flotation Thickeners; PEPS = Primary Effluent Pump Station; PS = Pump Station; RAS = Return-activated Sludge; WAS = Waste-activated Sludge; TWAS = Thickened Waste-activated Sludge

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 12 – PLANT NO. 1 SECONDARY TREATMENT – TRICKLING FILTERS

Process Schematic



Major Assets

Major Assets	Quantities
Trickling Filter Pump Station	
Structure	1
Trickling Filter Pumps	3
Trickling Filters	
Trickling Filter Basins	2
Rotary Distributor	2
Recirculation Fans	8
Secondary Clarifiers	
Circular Clarifiers	2
Sludge Collector	2
Sludge Pump	1
Junction Boxes	
Structure	6

Major Assets Remaining Useful Life

Asset Type	Trickling Filter Pump Station	Trickling Filters	Secondary Clarifiers	Junction Boxes
Civil				
Effluent Piping	1	1	1	1
Structural				
Buildings	-	1	1	-
Structures	1	1	1	1
Mechanical				
Piping	2	2	2	2
Pumps	3	-	3	-
Distributor Drive	-	3	-	-
Ventilation Fans	-	3	-	-
Trickling Filter Media	-	4	-	-
Clarifier Moving Mechanism	-	-	3	-
Valves, Gates	-	-	-	2
Electrical				
Motor Control Centers	3	3	3	-
Variable Frequency Drives	5	3	5	-
Instrumentation				
PLCs & Flow Meters	3	3	3	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

PLC = Programmable Logic Controller;
 RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 12 – PLANT NO. 1 SECONDARY TREATMENT – TRICKLING FILTERS

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Trickling Filter Sludge Pumps – Currently, only one sludge pump is in service. 	<ul style="list-style-type: none"> Project FE19-03 will replace the trickling filter’s sludge pump with two sludge pumps and VFD’s and remove the scum pumps.
<ul style="list-style-type: none"> Trickling Filter Influent Pumps – VFDs are obsolete and need to be replaced. Replacement parts are not available. 	<ul style="list-style-type: none"> Clearinghouse approved the replacement of the VFDs (PRN-00492) and the addition of a second source of power from SWGR-TFB bus to VFD #1. Project FR1-0011 is in design for these improvements.
<ul style="list-style-type: none"> Electrical – Low voltage cable failures. 	<ul style="list-style-type: none"> Several damaged cables were replaced by Maintenance in the past, and Clearinghouse approved a project to assess the remaining low voltage cables and replace the damaged cables (PRN-00409). FE19-03 will add new cables for the sludge pumps. Project FR1-0008 will replace the remaining cables.

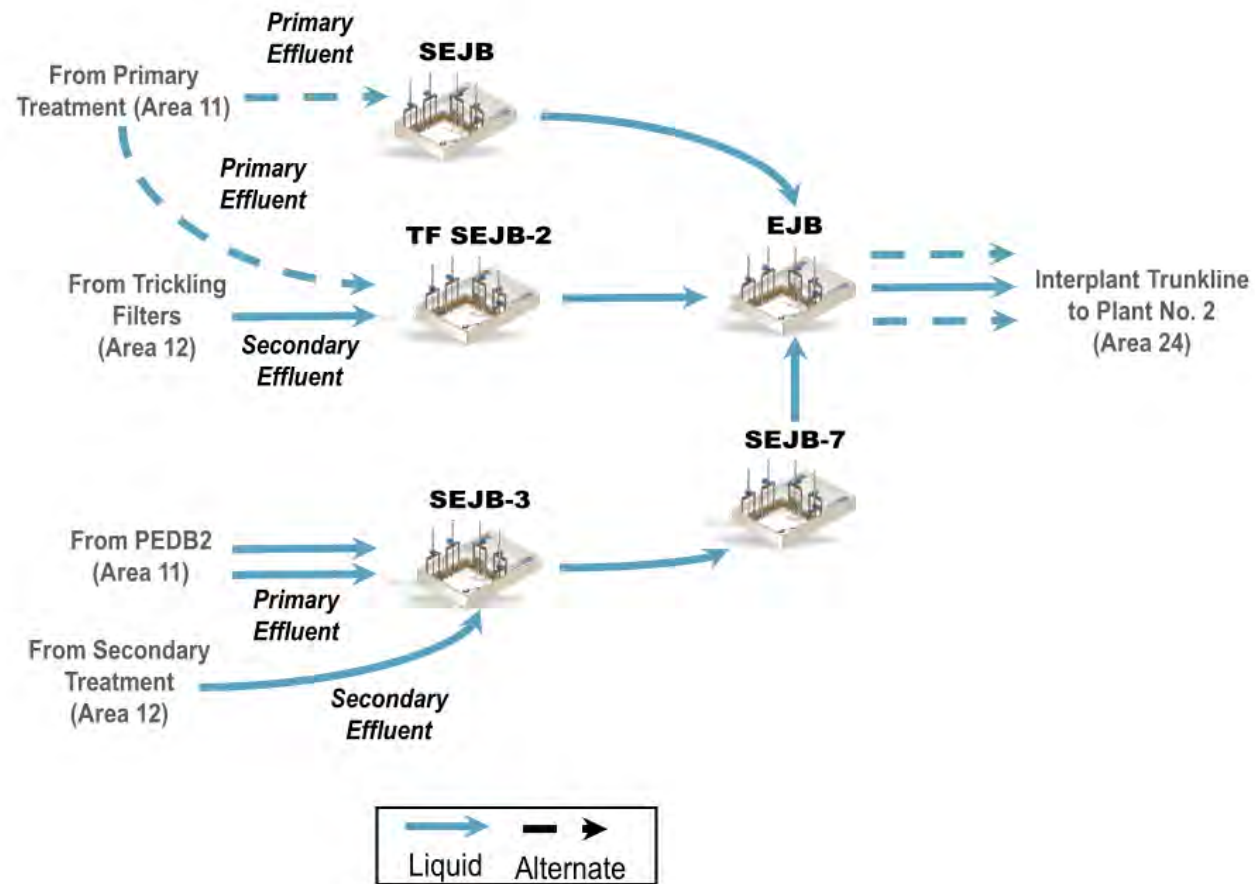
Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	Fiscal Year															
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
FE19-03	FE19-03 Trickling Filter Sludge and Scum Pumps Replacement at Plant No. 1	Sludge pumping	<ul style="list-style-type: none"> Replace the sludge pump with two new pumps and remove three scum pumps. 																
PRN-00414	Snail Control at Plant No. 1 Trickling Filters	Trickling Filters	<ul style="list-style-type: none"> Project P1-126 will install permanent caustic dosing pumps and pipes to dose caustic to the Trickling Filters. Currently, Operations is using caustic totes. 																
FR1-0011	Plant No. 1 Trickling Filter Pumps VFD replacement (three pumps)	Trickling Filters Pump Station	<ul style="list-style-type: none"> Replace the obsolete VFDs on the Trickling Filter influent pumps. 																
FR1-0008	Low Voltage Cable Replacement	Low voltage cables from Power Building 8 to the Trickling Filters	<ul style="list-style-type: none"> Assess and replace the failed cables. 																
X-015	Trickling Filters Facilities Rehabilitation at Plant No. 1	Major rehabilitation project	<ul style="list-style-type: none"> Replace the Trickling Filter Feed Pumps, distribution arms and media, and secondary clarifier mechanisms. 																

<p>Types of Project Legend:</p> <p> CIP - Planning CIP - Design CIP - Construction Maintenance Project </p>	<p>Acronym Key:</p> <p>CIP = Capital Improvements Program; FY = Fiscal Year; VFD = Variable Frequency Drive</p>
--	--

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 14 - PLANT NO. 1 INTERPLANT

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Plant No. 1 Facility										Santa Ana Corridor			Brookhurst Corridor	Ellis/Bushard Corridor	
	EJB	TFSEJB-2	SEJB	SEJB3	SEJB7	PEJB1	SEJB2	66" PE/SE	84" PE/SE	108" PE/SE	66" PE/SE	84" PE/SE	120" PE/SE			16" Gas
Civil																
Pipeline	-	-	-	-	-	-	-	4	3	3	4	2	1	-	1	-
Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Structural																
Structure	1	1	3	2	1	4	1	-	-	-	-	-	-	-	-	-
Mechanical																
Sluice Gates	2	-	-	3	1	5	-	-	-	-	-	-	-	-	-	-
Butterfly Valves	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical																
Fiber Optic	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

EJB = Effluent Junction Box; PE = Primary Effluent; PEDB2 = Primary Effluent Distribution Box 2; PEJB1 = Primary Effluent Junction Box 1; RUL = Remaining Useful Life; SE = Secondary Effluent; SEJB = Secondary Effluent Junction Box; SEJB2 = Secondary Effluent Junction Box 2; SEJB3 = Secondary Effluent Junction Box 3; SEJB7 = Secondary Effluent Junction Box 7; TFSEJB-2 = Trickling Filter Secondary Effluent Junction Box 2

Major Assets

Major Assets	Quantities
Plant No. 1 Facility	
Junction Boxes	6
Gates	17
Butterfly Valves	7
Large Diameter Piping	4

Major Assets	Quantities
Santa Ana Corridor	
Large Diameter Piping	3
Fiber Optic Communication	1
Digester Gas Piping	1

Major Assets	Quantities
Brookhurst Corridor	
Large Diameter Piping	1
Ellis/Bushard Corridor	
Fiber Optic Communication	1

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 14 – PLANT NO. 1 INTERPLANT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> PEJB-1 – The sluice gates in PEJB-1 are in very poor condition and no longer properly seal. PEJB-1 structure is also in poor condition. 	<ul style="list-style-type: none"> Future small project (or future CIP project this work is added to) will rehabilitate the PEJB-1 structure and replace existing sluice gates with new ones.
<ul style="list-style-type: none"> 66-inch IPP – 66-inch pipelines between PEJB-1 and EJB are in poor condition. Conditions have not changed significantly in 12 years. 	<ul style="list-style-type: none"> Perform reassessment in 5 years. A future project will rehabilitate the 66-inch pipelines between PEJB-1 and EJB.
<ul style="list-style-type: none"> Soil Erosion – Soil loss has been occurring in the unprotected slopes along the interplant utility corridor paralleling the Santa Ana River for many years. Soil erosion is directly affecting blowoff Vaults 5 and 7 on the Interplant Digester Gas Line. 	<ul style="list-style-type: none"> Project MP-657 installed temporary erosion control and project FE18-12 will provide a permanent solution north of Hamilton Avenue. Project FRJ-0003 will abandon Vaults 5 and 7 on the Interplant Digester Gas Line.
<ul style="list-style-type: none"> Interplant Digester Gas Line Deficiencies – Surface corrosion of various severity in all blowoff vaults, water intrusion in Vaults 1-4, Vault 4 outside existing utility easement, measurable gas leaks in Vaults 4, 7, 8, and 10, access difficulties to Vaults 8 and 9, structural damage to Vault 10, lack of dedicated blowdown valves, and areas of inadequate cover over pipeline. 	<ul style="list-style-type: none"> Project FRJ-0003 will abandon four blowoff vaults, fully replace five vaults, and repair one vault. The project also includes installing blowdown valve manifolds, site work to enclose Vault 3 in secured fencing and improve access to Vault 8, survey and obtain new easement for Vault 4 (if required), as well as install reinforced concrete encasement for shallow bury areas and additional cathodic protection as required.
<ul style="list-style-type: none"> Interplant Digester Gas Line Signage – Inadequate markers and signage for interplant gas line in plant and public areas. 	<ul style="list-style-type: none"> PRN-00726 will add needed markers and signage in plant, bike trail, nursery, and other public areas.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
				J-117A	Interplant Effluent Pipeline Rehabilitation (Warranty)	84" IPP	<ul style="list-style-type: none"> Perform warranty inspection of rehabilitated pipelines. 											
J-36-2	GWRS Final Expansion Coordination (Slipline 66" IPP)	66" IPP	<ul style="list-style-type: none"> Install new OCWD force main within existing 66-inch interplant pipe. 															
PRN-00726	Interplant Gas Line Signage Repair & Improvements	Digester Gas Piping	<ul style="list-style-type: none"> Repair existing public warning signs and install additional signs. 															
FRJ-0003	Interplant Gas Line Blow Off Repairs	Digester Gas Piping	<ul style="list-style-type: none"> Repair coatings to valves and piping, install vault drainage systems. 															
AI-332 & 350	Interplant Gas Line Deficiencies	Digester Gas Piping	<ul style="list-style-type: none"> Addition of blowdown valves, vault repair and/or abandonment, etc. to address facility risks and code deficiencies. 															
FE18-12	Erosion Control at Santa Ana River and Hamilton	Interplant Piping	<ul style="list-style-type: none"> Permanent erosion control of earthen slope above the interplant pipes. 															
N/A	PEJB-1 Rehabilitation	PEJB-1	<ul style="list-style-type: none"> Rehabilitate the PEJB-1 structure and replace existing sluice gates. 															
X-XXX	Plant No. 1 66-Inch Interplant Pipelines Rehabilitation	66" PE/SE	<ul style="list-style-type: none"> Rehabilitate the Plant No. 1 66-inch piping. 															
X-118	Plant No. 1 84-Inch Interplant Pipelines Rehabilitation	84" PE/SE	<ul style="list-style-type: none"> Rehabilitate the Plant No. 1 84-inch piping. 															

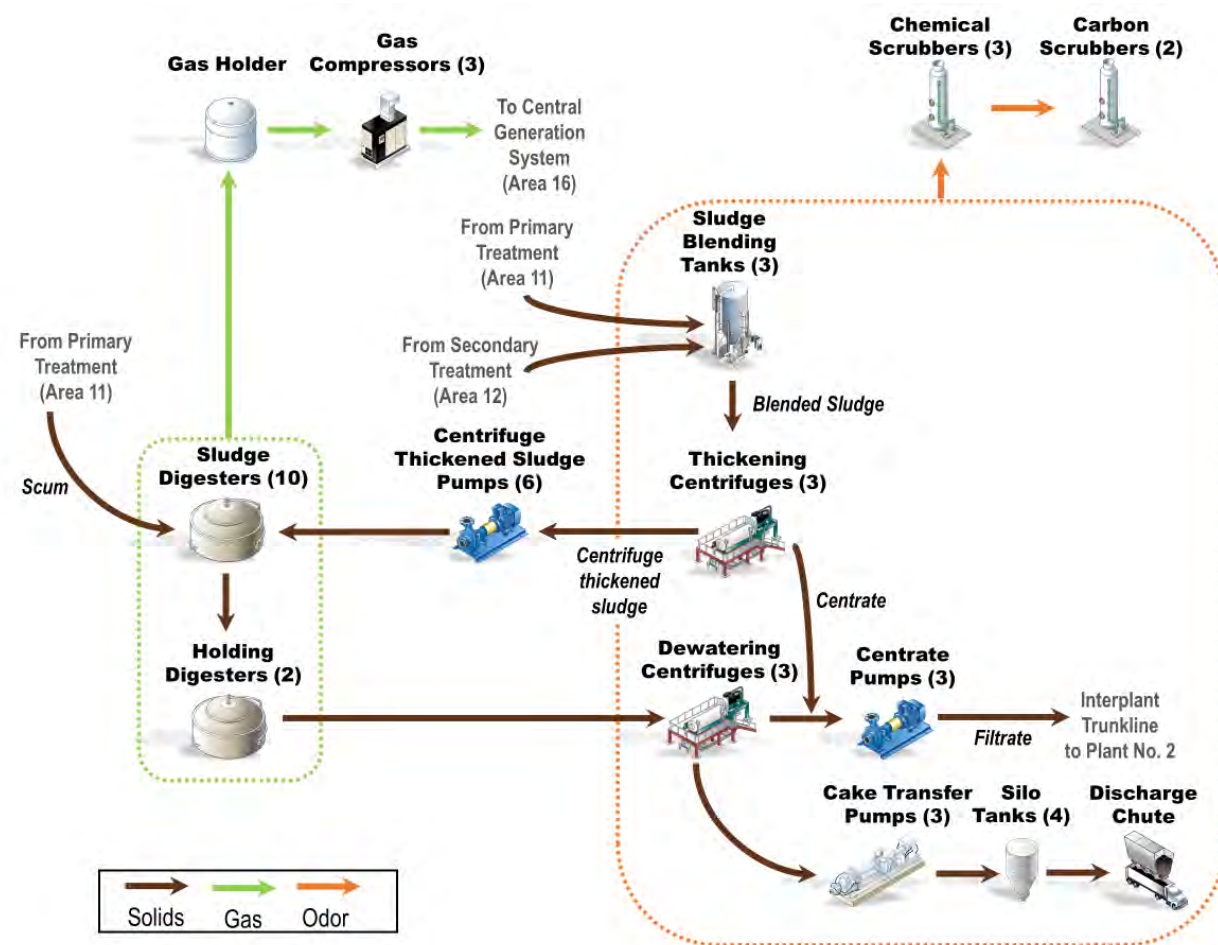
Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:
 CIP = Capital Improvement Program; EJB = Effluent Junction Box; FY = Fiscal Year; GWRS = Groundwater Replenishment System; IPP = Interplant Piping; OCWD = Orange County Water District, PE = Primary Effluent; PEJB-1 = Primary Effluent Junction Box 1; SE = Secondary Effluent

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 15 – PLANT NO. 1 SOLIDS HANDLING – DIGESTERS

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Digester 5	Digester 6	Digester 7	Digester 8	Digester 9	Digester 10	Digester 11	Digester 12	Digester 13	Digester 14	Digester 15	Digester 16	Ferric System
Civil													
Effluent Piping	2	2	2	2	2	2	2	2	2	2	2	2	-
Structural													
Digester	1	1	1	1	1	1	1	1	1	1	1	1	-
Mechanical													
Piping	2	2	2	2	2	2	2	2	2	2	2	2	4
Chemical Pumps	-	-	-	-	-	-	-	-	-	-	-	-	4
Ferric Control System	-	-	-	-	-	-	-	-	-	-	-	-	4
Sludge Mixing Pumps	3	3	2	2	2	2	2	2	2	2	2	2	-
Sludge Recirculation & Heating System	-	-	2	2	2	2	2	2	2	2	2	2	-
Hot Water System	-	-	2	2	2	2	2	2	2	2	2	2	-
Sludge Transfer Pumps	2	2	2	2	2	2	2	2	2	2	2	2	-
Electrical													
Motor Control Centers	2	2	2	2	2	2	2	2	2	2	2	2	-
Instrumentation													
PLCs & Flow Meters	2	2	2	2	2	2	2	2	2	2	2	2	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

PLC = Programmable Logic Controller;
RUL = Remaining Useful Life

Major Assets

Major Assets	Quantities
Anaerobic Digesters	
Digesters (7-16)	10
Holding Digesters (5 & 6)	2
Sludge Mixing Pumps	22
Grinders	10+3
Sludge Recirculation Pumps	10

Major Assets	Quantities
Anaerobic Digesters (Continued)	
Hot Water Circulation Pumps	10
Heat Exchangers	10
Bottom Sludge Pumps	5
Digesters Transfer Pumps	3
Ferric System	
Storage Tanks	2
Feed Pumps	2

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 15 – PLANT NO. 1 SOLIDS HANDLING – DIGESTERS

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> High Rate Mixing Pump Mechanical Seal Failures – The high rate mixing pumps are experiencing higher than expected failures of the mechanical seals. 	<ul style="list-style-type: none"> There are several efforts by Maintenance and Engineering to reduce the failure rate including precision alignment of the pumps, studying sludge piping supports (PS19-01), and monitoring the vibrations. PS19-01 recommends adding expansion joints to the discharge of the pumps and pipe supports. PRN-00722 – P1 Digester Pump and Piping Vibration Mitigation was approved to install expansion joints and pipe supports on the pump systems that are vibrating. In progress.
<ul style="list-style-type: none"> Structures – Seismic risk. 	<ul style="list-style-type: none"> The PS15-06 Seismic Evaluation of Structures at Plant No. 1 and Plant No. 2 has identified lateral spread as the main seismic risk for the digesters and structures close to the Santa Ana River.

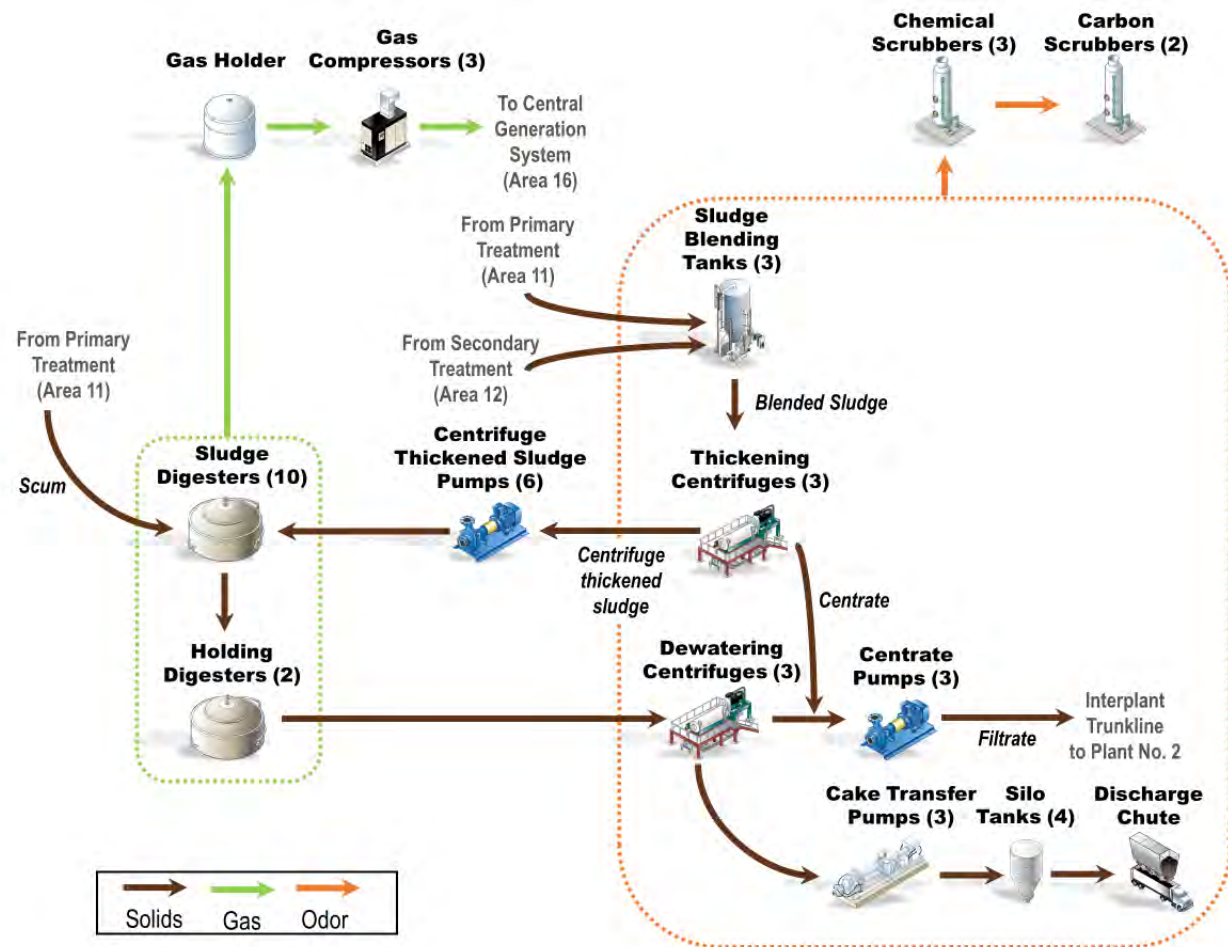
Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work															
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
P1-135	Digester Ferric Chloride Piping Replacement at Plant No. 1	Digesters, ferric dosing system	<ul style="list-style-type: none"> This project will replace the digester ferric chloride piping, valves, and appurtenances to its point of connection with the digesters. 															
PRN-00722	Plant No. 1 Digester Mixing Pump and Piping Vibration Mitigation	Only digesters that experience vibration	<ul style="list-style-type: none"> Add expansion joints and pipe supports where needed. 															
PRN- 00496	Plant No. 1 Digesters 8 and 11 Area Lighting Installation	Digesters 8 and 11	<ul style="list-style-type: none"> Add additional lighting. 															
MP- 610	CP-DIG LEL Area Safety Monitoring Obsolescence	The LEL monitoring system in Digester 11 to 16 pump room and tunnels	<ul style="list-style-type: none"> Upgrade the LEL monitors. 															
RE20-04	Holding Digester 6 Solids Shredder Trial	Holding Digester Mixing Pumps	<ul style="list-style-type: none"> Research project RE20-06 will install a shredder to reduce plugging. 															
N/A	Digester Cleaning	Ongoing maintenance activity	<ul style="list-style-type: none"> Clean the digesters and performing preventive condition assessment every 5 to 7 years. 															

<p>Types of Project Legend:</p> <p> CIP - Planning CIP - Design CIP - Construction Maintenance Project </p>	<p>Acronym Key:</p> <p>CIP = Capital Improvement Program; CP = Control Panel; DIG = Digester; FY = Fiscal Year; LEL= Lower Explosive Limit; N/A = Not Applicable</p>
--	---

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 15 – PLANT NO. 1 SOLIDS HANDLING – FACILITIES

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Boiler System	Sludge Blending Facility	Thickening System	Dewatering System	Dewatering Odor Control	Truck Loading	Gas Handling	Gas Holder
Civil								
Effluent Piping	-	1	1	1	-	1	-	-
Structural								
Structures	-	1	-	-	-	1	-	3
Buildings	-	-	1	1	-	1	4	-
Mechanical								
Piping	1	-	1	1	1	1	3	3
Pumps-grinders	-	1	1	1	1	1	-	-
Boilers & Heat Exchangers	2	-	-	-	-	-	-	-
Centrifuges	-	-	2	2	-	-	-	-
Carbon Unit	-	-	-	-	2	-	-	-
Chemical/Polymer System	-	-	1	1	2	-	-	-
Gas Compressors	-	-	-	-	-	-	5	-
Gas Dryer	-	-	-	-	-	-	4	-
Gas Flares	-	-	-	-	-	-	4	-
Silo Cake Conveyors	-	-	-	-	-	1	-	-
Silo Sliding Frames	-	-	-	-	-	1	-	-
Electrical								
Variable Frequency Drives	-	2	4	4	-	2	-	-
Motor Control Centers	2	1	1	1	1	1	4	-
Instrumentation								
PLCs & Flow Meters	1	1	1	1	1	1	5	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

- RUL = Remaining Useful Life;
- PLC = Programmable Logic Controller

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 15 – PLANT NO. 1 SOLIDS HANDLING – FACILITIES

Major Assets

Major Assets	Quantities
Thickening System	
Sludge Blending Tanks	3
Thickening Grinders	3
Centrifuge Feed Pumps	3
Thickening Centrifuges	3
Thickened Sludge Wet Wells	3
Thickened Sludge Pumps	6

Major Assets	Quantities
Thickening System (Continued)	
Centrate Wetwell	1
Centrate Pumps	3
Chemical Equipment	
Thickening Polymer Feed Pumps	3
Dewatering Polymer Feed Pumps	3

Major Assets	Quantities
Chemical Equipment (Continued)	
Polymer Mixing/Aging Tank	6
Polymer Make-Down Unit	4
Dewatering System	
Dewatering Grinders	2
Centrifuge Feed Pumps	3
Dewatering Centrifuges	3
Cake Transfer Pumps	3

Major Assets	Quantities
Dewatering Odor Control	
3-Stage Packed Tower Scrubbers	3
Carbon Media	2
Truck Loading	
Cake Storage Silos	4
Cake Silo Transfer Pumps	4
Standby Truck Loading Bay	1

Major Assets	Quantities
Gas Handling	
Low Pressure Gas Holder	1
Gas Compressors	3
Gas Dryer	1
Gas Flares	3
Boiler	1

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Maintainability of the Equipment – There are several improvements that are needed for Thickening and Dewatering Area including lighting improvement, equipment access for maintenance, instrument air and power access and improving drains. 	<ul style="list-style-type: none"> Most of the improvements will be done by Maintenance. PRN-00505 small project for safety improvements. PRN-00540 small project regarding equipment access and platform installation. PRN-00815 will replace the diverter gate.
<ul style="list-style-type: none"> Gas Handling System – Gas compressor system is aging and needs replacement of major units. 	<ul style="list-style-type: none"> Project J-124 Digester Gas Facilities rehabilitation is in design Gas compressors repair and gas compressor overhaul by Maintenance.
<ul style="list-style-type: none"> Gas Dryer – Out of service. Currently, gas goes through a heat exchanger and condensate drop out. 	<ul style="list-style-type: none"> The gas dryer refrigerator system will be replaced by J-124 Project.
<ul style="list-style-type: none"> Corrosion from plant water on equipment is causing premature wear on pumps. 	<ul style="list-style-type: none"> PS20-09 will evaluate the plant water and make recommendations for improvements.

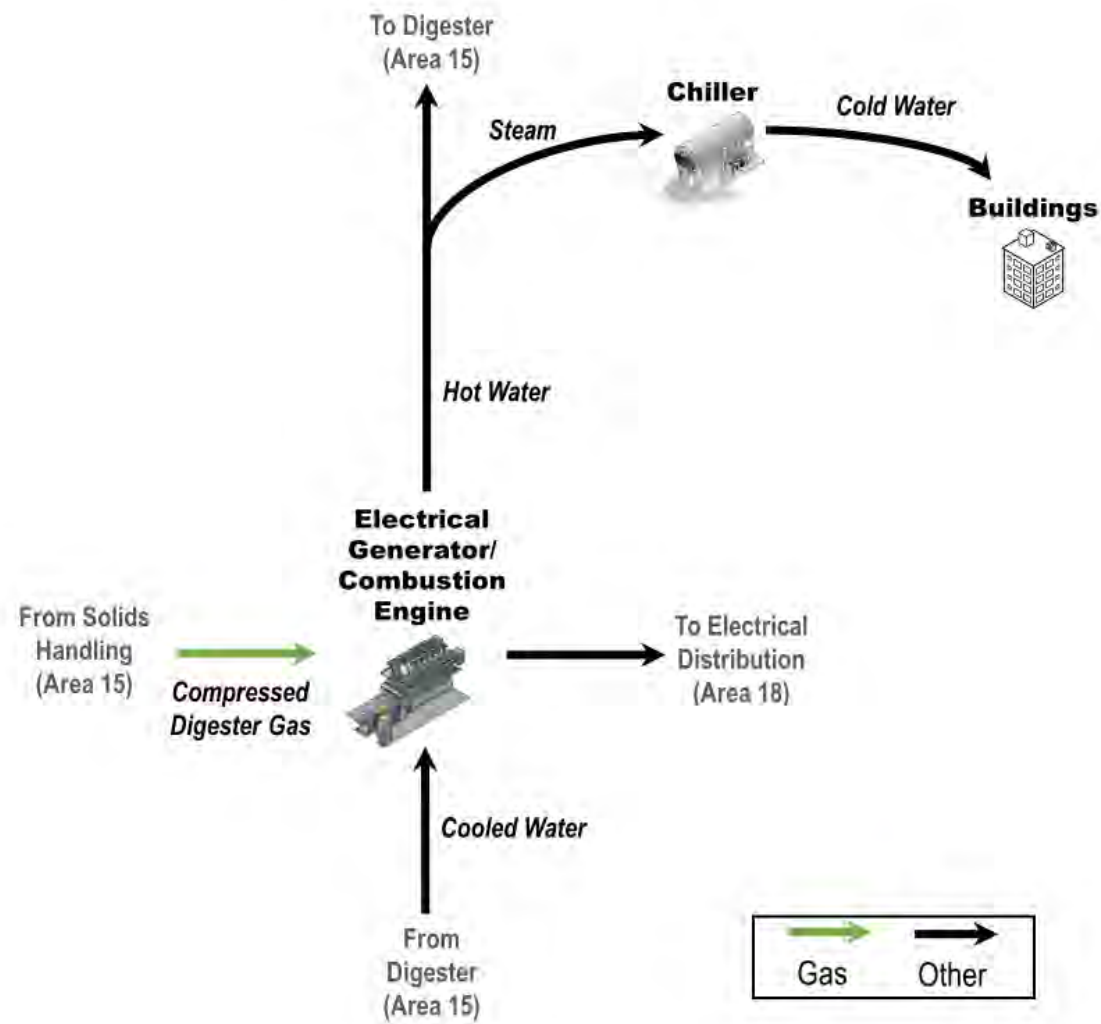
Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
				J-124	Digester Gas Facilities Rehabilitation	Gas compressors, dryers, and flares	Replace the entire gas handling system including the gas compressor building.											
FE18-16	New Floor and Equipment Drains for the Truckloading Basement	Truckloading Facility	Improve the drainage in the basement.															
RE20-01	CTS Sludge Density Meter Evaluation	Thickening centrifuges	Evaluate several density meters.															
PRN-00505	Safety Improvements at the Thickening and Dewatering Building	Thickening and Dewatering Building	Improve safety outside of the thickening and dewatering building.															
PRN-00540 FR1-0013	Truckloading silo's slide frame conveyor motor access platform	Truckloading slide frame	Improve access to the equipment for maintenance activities.															
PS20-09	Thickening and Dewatering Plant Water Study	Thickening and Dewatering Building	The study will evaluate the plant water used at the T&D building and determine why the water is causing corrosion on equipment.															
RE20-06	Co-thickened Sludge Pump Trial	Co-thickening pumps	Field test a rotary lobe pump in place of the progressive cavity CTS pump.															

Types of Project Legend: CIP - Planning CIP - Design CIP - Construction Maintenance Project	Acronym Key: CIP = Capital Improvement Program; CTS = Co-thickened sludge; FY = Fiscal Year
---	---

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 16 – PLANT NO. 1 CENTRAL GENERATION

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Engine Generator #1	Engine Generator #2	Engine Generator #3	Absorption Chiller #1	Absorption Chiller #2	Deaerator Vessel	Heat Recovery Boiler #1	Heat Recovery Boiler #2	Heat Recovery Boiler #3	OXI Catalyst	SCR Catalyst	Urea Injection System	Starting Air Compressor #1	Starting Air Compressor #2	Inst. Air Compressor #1	Inst. Air Compressor #2	Battery Backup	Building Elevator	Plant Water Piping	Miscellaneous
Structural																				
Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mechanical																				
General	5	5	5	3	3	2	3	3	3	3	3	3	4	4	5	5	-	1	5	-
HVAC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Lube Oil System	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical																				
General	4	4	4	-	-	-	-	-	-	-	-	3	3	3	5	5	5	1	-	-
Switchgear	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Instrumentation																				
General	5	5	5	4	4	3	3	3	3	3	3	3	4	4	5	5	5	1	-	-

RUL Legend:
■ RUL <5 years ■ RUL 5-10 years ■ RUL 11-15 years ■ RUL 16-20 years ■ RUL >20 years

Acronym Key:
 HVAC = Heating, Ventilation, and Air Conditioning; Inst. = Instrument; OXI = Oxidizer; RUL = Remaining Useful Life; SCR = Selective Catalytic Reduction

Major Assets

Major Assets	Quantities
Engine Generator	
Gas Engine (12 Cylinders)	3
Electrical Generator	3
Engine Lube Oil System	3
Cooling System	
Absorption Chiller	2
Deaerator Vessel	1

Major Assets	Quantities
Engine Emission Control	
OXI Catalyst	3
SCR Catalyst	3
Urea Injection System	3
Heat Recovery System	
Heat Recovery Boiler	3

Major Assets	Quantities
Building	
Elevator	1
Piping	Various
HVAC	
Ventilation Exhaust Fans	5
Air Compressors	
Engine Starting Air	2
Instrument Air	2

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 16 – PLANT NO. 1 CENTRAL GENERATION

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Gas Engine Generator Set Reliability – Aging components and systems required to operate the Central Generation Engines are creating reliability issues and need to be addressed. 	<ul style="list-style-type: none"> Engine #1 undergoing overhaul. Replace obsolete systems (e.g., Battery Backup, Switch Gear, Ignition System, PLC Upgrade, etc.).
<ul style="list-style-type: none"> Engine Lube Oil System – The Lube Oil Centrifuges are no longer operational. 	<ul style="list-style-type: none"> Install new instrumentation and controls onto the existing two units (PRN-00211).
<ul style="list-style-type: none"> Plant Water Piping – The plant water (i.e., cooling water) piping has degraded and needs replacement. 	<ul style="list-style-type: none"> Replace all plant water piping in the basement of Central Generation (FE19-02).
<ul style="list-style-type: none"> Backup Battery System – The batteries used to provide backup power for switching of the switch gear during loss of power events, has reached the end of its useful life. 	<ul style="list-style-type: none"> Replace the lead acid batteries and their respective battery chargers with a suitable backup battery system (FR1-0005).
<ul style="list-style-type: none"> Pressure Vessel Integrity – The asset integrity of pressure containing vessels needs a detailed assessment. 	<ul style="list-style-type: none"> The assessment results will be used to formulate an asset management strategy to ensure safety over time (PS20-05).

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	Fiscal Year															
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
FE17-03	Battery Storage System	Plantwide	<ul style="list-style-type: none"> Install batteries for electricity storage purposes. 	■															
P1-136	Switch Gear Replacement	Engine Generator	<ul style="list-style-type: none"> Install new Switch Gear for the engines. 		■	■	■	■	■										
FE19-02	Plant Water Pipe Rehabilitation	Plant Water Piping	<ul style="list-style-type: none"> Replace existing plant water piping with new. 	■	■	■													
PRN-00211	Engine Lube Oil System Controls Upgrade	Engine Generator	<ul style="list-style-type: none"> Install new instrumentation and controls onto the existing oil centrifuge units. 	■															
MP-227	Starting Air Compressor System Rehabilitation	Starting Air Compressor System	<ul style="list-style-type: none"> Rehabilitation of the Air Compressors. 		■	■													
J-135	Engine Overhauls	Engine Generator	<ul style="list-style-type: none"> Perform top/bottom end engine overhauls. 	■	■														
MP-608	Engine Ignition Timing Sensor Obsolescence Repair	Engine Generator	<ul style="list-style-type: none"> Replace and install new Hall Effect Sensors onto each engine. 	■															
FR1-0005	Battery Backup Rehabilitation	Battery Backup	<ul style="list-style-type: none"> Replace the existing backup batteries for the switch gear. 	■	■														
PRN-00697	Engine Cylinder Pressure Sensing and Diagnostics	Engine Generator	<ul style="list-style-type: none"> Install Pressure Sensors onto each Cylinder, incl. Software/HMI. 			■	■	■											
AI-225	Engine Ignition System Obsolescence Repair	Engine Generator	<ul style="list-style-type: none"> Replace and install new Ignition Systems onto each engine. 		■	■													
PS20-05	Pressure Vessel Integrity Assessment	Pressure Vessels & Heat Exchangers	<ul style="list-style-type: none"> Formulate a detailed asset management strategy. 	■	■	■													

Types of Project Legend:

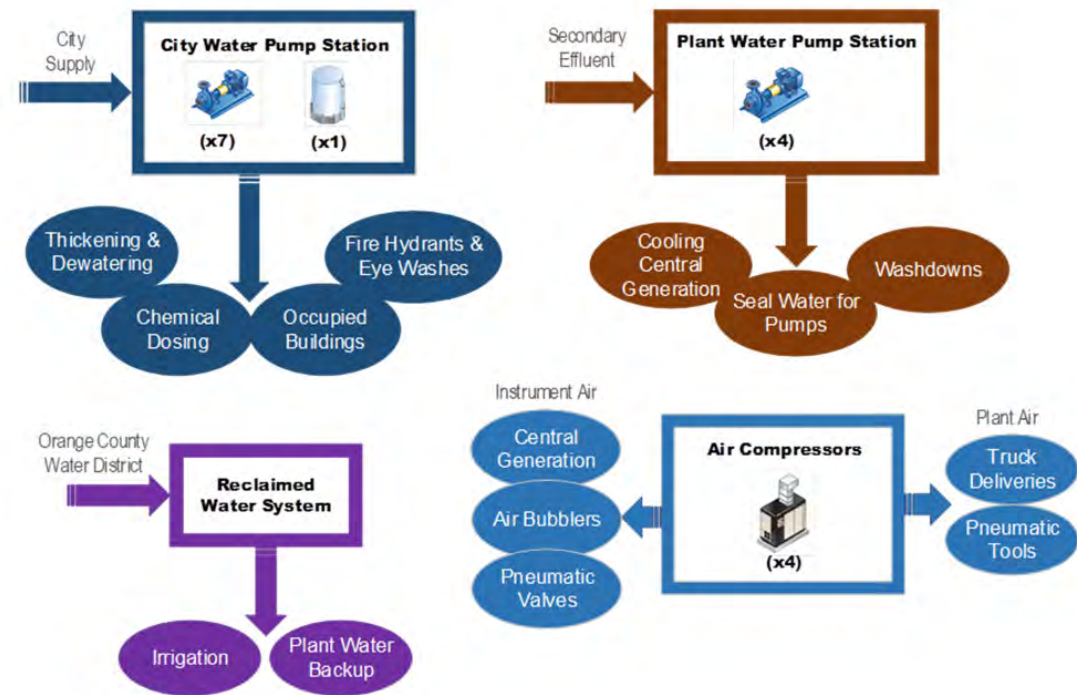
■ CIP - Planning
 ■ CIP - Design
 ■ CIP - Construction
 ■ Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; FY = Fiscal Year; HMI = Human Machine Interface; HVAC = Heating, Ventilation, and Air Conditioning; OXI = Oxidizer; RUL = Remaining Useful Life; PLC = Programmable Logic Controller; SCR = Selective Catalytic Reduction

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 17 – PLANT NO. 1 UTILITIES

Process Schematic



Major Assets

Major Assets	Quantities
City Water	
Pumps	7
Tanks	3
Piping	10.6 Miles
Plant Water	
Pumps	4
Strainers	3
Piping	12.5 Miles
Reclaimed Water	
Piping	5.4 Miles
Plant Air	
Compressors	4
Plant Air Piping	4 Miles
Instrument Air Piping	3.5 Miles

Major Assets Remaining Useful Life

Asset Type	City Water System	Plant Water System	Reclaimed Water Piping	Plant Air Systems
Civil				
Piping	3	3	2	3
Structural				
Pump Station	1	3	-	-
Tanks	3	-	-	-
Mechanical				
Pumps	3	3	-	-
Strainers	-	3	-	-
Compressors	-	-	-	3
Ventilation System	2	3	-	-
Electrical				
Motor Control Centers	2	2	-	-
Variable Frequency Drives	3	2	-	-
Instrumentation				
PLCs, Flowmeters	2	2	-	2

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

RUL= Remaining Useful Life;
 PLC=Programmable Logic Controller

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 17 – PLANT NO. 1 UTILITIES

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Plant/Instrument Air Lines – Possible corrosion issues and leaks. 	<ul style="list-style-type: none"> Using on-call contractors to perform a condition assessment of the plant air system and identify any leaks or other deficiencies such as improper connections. Current plan is to use the information from the assessment to create larger CIP projects that can improve the piping network throughout the plant. Smaller repairs will be done using on-call contractors and maintenance/asset issues projects.
<ul style="list-style-type: none"> City Water Pump Station – Pumps are possibly undersized. 	<ul style="list-style-type: none"> The three medium pumps at the City Water Pump Station continuously run causing excessive wear. There is one smaller jockey pump that runs very infrequently. PRN-00541: Plant No. 1 City Water Demand Flow Assessment is expected to properly size the pumps at the station to meet the current needs of the plant.
<ul style="list-style-type: none"> Plant Water – Piping failures. 	<ul style="list-style-type: none"> Due to the corrosive nature of the plant water, the current ductile iron pipes are corroding prematurely and causing failures throughout the plant. FE19-02 will address aging plant water piping at Cen Gen and FE20-05 will address recent plant water pipe failures at the secondary clarifiers. Overall goal for these and future projects is to replace ductile iron pipes with either Fiberglass Reinforced or HDPE piping material.
<ul style="list-style-type: none"> Reclaimed Water System – This system needs a pressure regulating valve installed. 	<ul style="list-style-type: none"> Due to recent operational changes at OCWD, Reclaimed water pressure has increased to 100-130psi, however, OC San plant water has remained at 80 psi. In order to prevent using reclaimed water when plant water is plentiful, a pressure regulating valve installed at the OCWD/OC San reclaimed water connection point is necessary.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work																			
				FY21/22	FY22/23	FY23/24	FY24/25	FY25/26	FY26/27	FY27/28	FY28/29	FY29/30	FY30/31	FY31/32	FY32/33	FY33/34	FY34/35	FY35/36				
FE19-02	Cen Gen Plant Water Pipe Replacement at Plant No. 1	Central Generation	<ul style="list-style-type: none"> Replace approximately 800 feet of plant water pipe within Cen Gen. 																			
FE18-06	Instrument Air Compressors at Central Generation	Central Generation	<ul style="list-style-type: none"> Replace Instrument Air compressors at Central Generation. 																			
P1-105	Headworks Rehabilitation at Plant No. 1	City Water Pump Station	<ul style="list-style-type: none"> Refeed city water pumps from new power building and replace current compressor at headworks with two new compressors. 																			
FE18-20	DAFT Air Compressor Replacement	DAFT	<ul style="list-style-type: none"> Replace current compressor with two new compressors. 																			
FE20-05	Plant Water Piping Replacement at Secondary Clarifiers	Secondary Clarifiers	<ul style="list-style-type: none"> Replace corroded and failing plant water piping around secondary clarifiers. 																			
P1-126	Primary Clarifier Replacement and Improvement	Primary Clarifier	<ul style="list-style-type: none"> Address plant water pipes near primary clarifiers. 																			
X-038	City Water Pump Station Replacement	City Water Pump Station	<ul style="list-style-type: none"> Replace City Water Pump Station. 																			
X-039	Plant Water Pump Station Rehabilitation	Plant Water Pump Station	<ul style="list-style-type: none"> Rehabilitate Plant Water Pump Station. 																			
XPS-053	City Water Demand Flow Assessment at Plant No. 1	City Water Pump Station	<ul style="list-style-type: none"> Study to determine current and future city water needs. 																			
PS20-09	Plant Water Study at T&D Building	T&D Building & Plant Water Station	<ul style="list-style-type: none"> The study will evaluate the plant water used at the T&D building and determine why the water is causing corrosion on equipment. 																			
AI-201	Re-Pipe Irrigation Piping at Plant No. 1	City Water and Reclaimed Water Systems	<ul style="list-style-type: none"> Reduce the use of city water for irrigation purposes. 																			

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; FE = Facilities Engineering; FY = Fiscal Year; HDPE = High-Density Polyethylene Resin; HP = Horsepower; OC San = Orange County Sanitation District; OCWD = Orange County Water District

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 17 – PLANT NO. 1 UTILITIES

Remaining Useful Life of Utility Infrastructure



RUL Legend:

■ RUL <5 years	■ RUL 5-10 years	■ RUL 11-15 years	■ RUL 16-20 years	■ RUL >20 years
---	--	---	--	---

Acronym Key:

RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 17 – PLANT NO. 1 UTILITIES

Remaining Useful Life of Utility Infrastructure



RUL Legend:

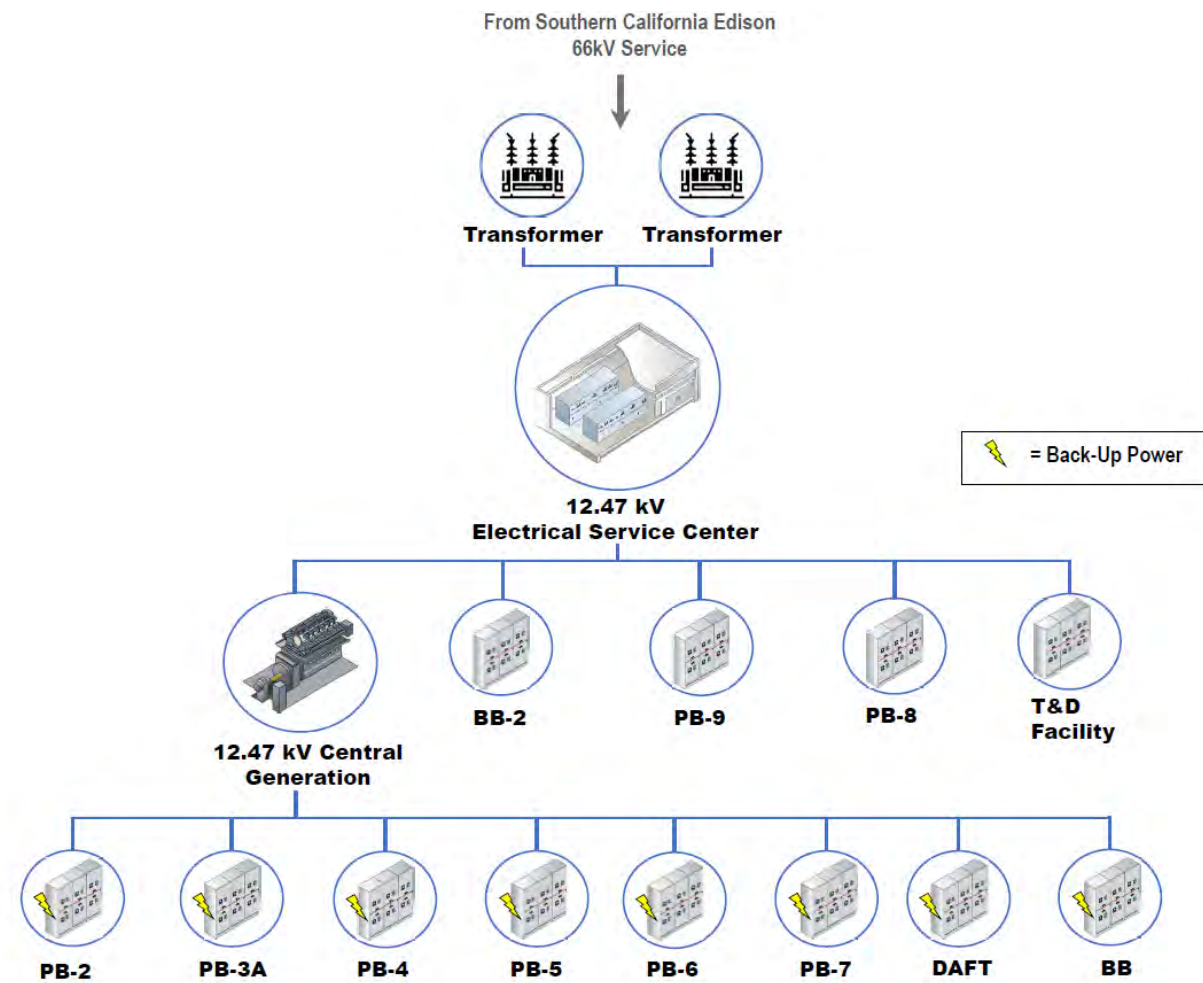
■ RUL < 5 years	■ RUL 5-10 years	■ RUL 11-15 years	■ RUL 16-20 years	■ RUL > 20 years
--	--	---	--	--

Acronym Key:

RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 18 – PLANT NO. 1 ELECTRICAL DISTRIBUTION

Process Schematic



Major Assets

Major Assets	Quantities
Transformers	40
Standby Generators	8
12Kv and 5kv Switchgears	16
480V Switchgears	38
125VDC and 24VDC Battery Systems	25
UPS	24

Major Assets Remaining Useful Life

Asset Type	Service Center	Cen Gen	PB-2	PB-3A	PB-4	PB-5	PB-6	PB-7	PB-8	PB-9	DAFT	BB-1	BB-2	T&D FACILITY
Tier I – 12.47kV Primary Distribution Level														
Transformers: 12.47/4.16kV		-	-	-	-	-	-	-	-	-		3	1	1
Transformers: 12.47/0.48kV	4	4	3	3	3	2	3	1	2	1	3	3	1	1
12.47kV Switchgears	4	4	4	4	4	4	4	-	-	-	-	-	3	1
12.47kV Transfer Switchers	3	-	-	-	-	-	-	-	-	-	-	-	-	-
12.47kV Load Interrupter Switches	3	-	4	4	3	-	-	1	1	1	3	3	-	-
12.47kV Feeders	1	4	4	4	4	4	4	1	1	1	3	3	1	1
Tier II – 4.16kV Distribution Level														
4.16kV Switchgears	-	-	-	-	-	-	-	-	-	-	-	3	1	-
4.16kV Feeders	-	-	-	-	-	-	-	-	-	-	-	3	1	-
Tier IV – 480V Distribution Level														
480V Switchgears	-	4	3	4	-	2	4	1	1	1	3	3	1	1
Transfer Switches	-	-	2	2	4	-	2	-	-	-	4	4	1	-
Generators	-	-	5	5	5	-	-	1	1	-	-	5	-	-
Tier V – Uninterruptible Power Supply														
UPSs Individual	-	1	-	5	-	-	4	-	3	2	4	3	2	-
Tier VI – 125 VDC and 24 VDC Battery Systems														
125VDC Chargers	5	5	5	5	-	2	4	3	3	2	3	-	3	1
125VDC Batteries	5	5	5	5	-	2	4	3	3	2	3	-	3	1
24VDC Chargers	-	5	5	5	5	-	-	3	3	-	-	3	-	1
24VDC Batteries	-	5	5	5	5	-	-	3	3	-	-	3	-	1
Generator Controls														
Generator Controls	-	5	5	5	5	-	-	1	1	-	-	5	-	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

- BB = Blower Building;
- Cen Gen = Central Generation Facility;
- kV = Kilovolt;
- PB = Power Building;
- RUL = Remaining Useful Life;
- T&D = Thickening and Dewatering;
- VDC = Volts of Direct Current;
- UPS = Uninterruptible Power Supply

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 18 – PLANT NO. 1 ELECTRICAL DISTRIBUTION

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Standby Generators <ul style="list-style-type: none"> - Power Building 2, &3A: Overheating at 75%-80% loading. - Power Building 4: Engine unable to drive the generator at 100% loading. - Blower Building 1: Shut down on high temp. at 100%, cannot synchronize both generators. 	<ul style="list-style-type: none"> P1-105 will install centralized standby system with (4)-2500kW, 12kV diesel generators for Headworks Area, Power Building 2, 5 and Blower Building standby loads. P1-105 will demolish generators at Power Building 3A. P1-126 will demolish Power Building 4 Generator and refeed standby loads from Power Building 8. P1-139 Project will design feeders from new generators to Power Building 2 and Blower Building 1 Standby Loads.
<ul style="list-style-type: none"> Battery Chargers and Batteries – Aging. 	<ul style="list-style-type: none"> XPS0061 DC Battery Monitoring and Management Solutions: Study to develop technical solution to monitor existing battery life, develop path forward for replacing aged battery and charger systems. Project FR1-0005 will replace critical batteries and chargers at 12kV Service Center and Cen Gen.
<ul style="list-style-type: none"> Cabling – Aging medium voltage cabling infrastructure. 	<ul style="list-style-type: none"> MP-320: Service Contract in place for testing aging medium voltage cables to perform Condition Assessment and develop plan for PM.
<ul style="list-style-type: none"> Variable Frequency Drive – Obsolescence. 	<ul style="list-style-type: none"> Developed VFD Replacement Strategy. Plant No. 1 obsolete VFDs will be addressed under FR1-011 Project.
<ul style="list-style-type: none"> Power Building 2 – Seismic and liquefaction improvements required. 	<ul style="list-style-type: none"> P1-105 Project will transfer Power Building 2 Loads to T&D Building and eliminate the need for Power Building 2.
<ul style="list-style-type: none"> Currently some secondary treatment processes do not have backup power from generators. 	<ul style="list-style-type: none"> J-98 Project will provide capability for Plant No. 1 Load shedding to implement this along with Emergency Operation Procedures.
<ul style="list-style-type: none"> Undervoltage Auto Transferring Scheme upgrades at Plant No. 1 Blower Building 2 and Power Building 9 (current auto transferring scheme does not work correctly; must switchover manually) 	<ul style="list-style-type: none"> J-98 will upgrade Auto Transferring Scheme and aging protective relays per latest OC San Standards for Blower Building 2 and Power Building 9 12.47kV, 4.16kV and 480V Switchgears.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work																
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 35/36		
FR1-0005	P1 Cen Gen and Service Center Battery and Charger Upgrade	Plant No. 1 Power Distribution	<ul style="list-style-type: none"> Replace existing obsolete 125VDC and 24VDC batteries and battery chargers. 																
MP-320	On-call P1 and P2 Medium Voltage Cable Testing Services	Plant No. 1 and Plant No. 2 Power Distribution	<ul style="list-style-type: none"> Medium voltage cables aging infrastructure assessment. 																
FR1-0011	P1 VFD Replacement at Plant No. 1	CWPS, RAS, DAFT, WSS	<ul style="list-style-type: none"> Replacement of existing obsolete Plant No. 1 CWPS, RAS, DAFT, WSS VFDs with new VFDs. 																
P1-105	Headworks Rehabilitation at Plant No. 1	Plant No. 1 Headworks, Bars Screen, Metering Structure, Power Buildings	<ul style="list-style-type: none"> Project will rehabilitate/upgrade Plant No. 1 Headworks and will replace most of electrical power distribution systems and equipment in Power Building 3A. Project will construct new Power Building 3B and new electrical building in vicinity of Headworks loads. 																
J-98	Electrical Power Distribution System Improvements	Various Plant No. 1 and Plant No. 2 condition based electrical distribution systems	<ul style="list-style-type: none"> Project will perform various Electrical Distribution System Improvements at various areas throughout Plant No. 1. The scope covers both 480V and 12kV Switchgear, Motor Control Centers, breakers, conductors, load shedding and arc flash mitigation. 																
P1-132	Uninterruptable Power Supply Improvements at Plant No. 1	Plant No. 1 multiple UPS Loads	<ul style="list-style-type: none"> This project will provide a new regional UPS at Power Building 8 to provide critical power to facilities in the northwest region of Plant No. 1. 																

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 35/36
XPS-0061	Critical UPS and DC power backup battery condition monitoring and management solution	Plant No. 1 and Plant No. 2 125 VDC Battery Systems	<ul style="list-style-type: none"> Project will develop automated approach to actively managing and maintaining battery systems to allow to view the status of battery line ups immediately and predict battery failures well in advance of an actual failures. Project will investigate replacing old batteries and chargers. 														
P1-126	Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1	Plant No. 1 Power Distribution	<ul style="list-style-type: none"> Demolish Power Building 4 Diesel Generator, refeed standby loads from Power Building 8. 														
P1-136	12.47kV Switchgear replacement at Plant No. 1 Central Generation and Control Center	Plant No. 1 Power Distribution	<ul style="list-style-type: none"> The project will be replacing existing 12.47kV electrical switchgears at the Plant No. 1 Central Generation facility and Control Center. The project will also assess existing Central Generation 12.47kV feeders and replace ones that fail electric tests. 														

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; DC = Direct Current; FE= Facilities Engineering; FY = Fiscal Year; HVAC = Heating, Ventilation, and Air Conditioning; kV = Kilovolt; kW = Kilowatt; MCC = Motor Control Center; P1 = Plant No. 1; P2 = Plant No. 2; RAS = Return Activated Sludge; T&D = Thickening and Dewatering; UPS = Uninterruptible Power Supply; V = Volts; VDC = Volts of Direct Current; VFD = Variable Frequency Drive; WSS = Waste Sidestream

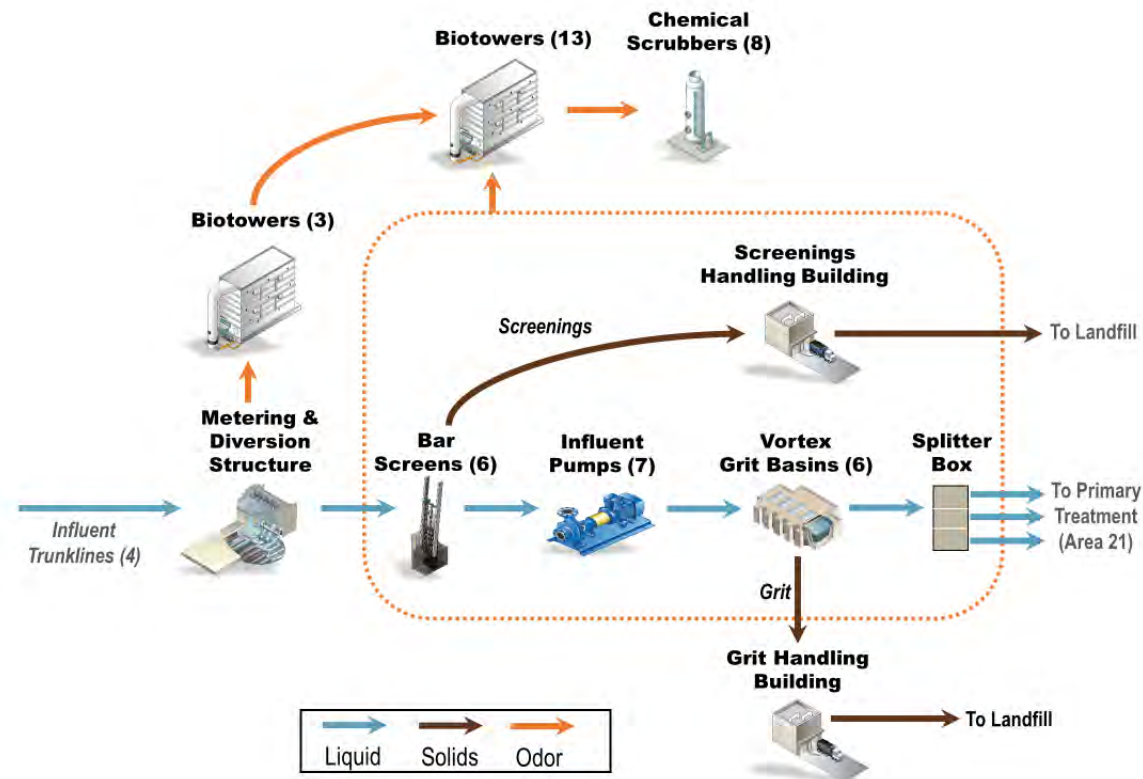
This page is intentionally left blank.

Plant No. 2 Asset Management Summaries

This page is intentionally left blank.

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 20 – PLANT NO. 2 PRELIMINARY TREATMENT

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Headworks							Distribution Center H
	Metering & Diversion	Bar Screens	Main Sewage Pump	Grit Basins	Splitter & Metering	Trunkline Odor Control	Headworks Odor Control	
Civil								
Effluent Piping	-	-	-	-	1	-	-	-
Structural								
Building	-	1	1	1	-	-	-	1
Concrete & Tanks	1	1	1	1	1	2	2	-
Mechanical								
Piping & Valve	2	2	2	2	2	-	-	-
Pump	-	-	2	2	-	2	2	-
Screening Washer Compactor	-	3	-	-	-	-	-	-
Grit Cyclone/Classifier	-	-	-	3	-	-	-	-
Conveyor	-	3	-	3	-	-	-	-
Fans & Blower	-	-	-	-	-	2	2	-
Control Gate	2	5	2	2	2	-	-	-
HVAC	-	3	3	3	-	-	-	3
Crane	-	2	2	-	-	-	-	-
Electrical								
Process – Motor, MCC, VFD	-	3	3	-	-	2	2	2
Instrumentation								
PLCs, Flow Meters	2	2	2	2	2	2	2	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

HVAC = Heating, Ventilation, and Air Conditioning;

MCC = Motor Control Center;

PLC = Programmable Logic Controller;

RUL = Remaining Useful Life;

VFD = Variable Frequency Drive

Major Assets

Major Assets	Quantities
Metering & Diversion Structure	
Influent Flow Meter	4
Control Gate	7
Trunk Odor Control	
Supply Fan	3
Biotower	3
Recirculation Pump	6

Major Assets	Quantities
Bar Screens	
Bar Screen	6
Screening Washer Compactor	3
Screenings Conveyor	4
Control Gate	14

Major Assets	Quantities
Main Sewage Pump	
Pump	7
Control Gate	16
Splitter and Metering	
Flow meter	3
Control Gate	26

Major Assets	Quantities
Grit Basins	
Grit Basins	6
Grit Slurry Pump	6
Grit Cyclone/Classifier	4
Control Gate	12

Major Assets	Quantities
Headworks Odor Control	
Supply Fan	21
Biotower	13
Chemical Scrubber	8
Recirculation Pump	42
Bleach Tank	1
Bleach Pump	16

Major Assets	Quantities
Headworks Odor Control (Continued)	
Acid Tank	1
Acid Pump	2
Caustic Tank	1

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 20 – PLANT NO. 2 PRELIMINARY TREATMENT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Headworks Low Voltage Cable – Many of Headworks 480 volts cables are failing, triggering ground faults on 480-volt equipment. Original MP-509 addressed identified grounded cables, but the project continued to discover additional grounded circuits. 	<ul style="list-style-type: none"> FR2-0024 Headworks 480V Cable Replacement at Plant No. 2 is currently in construction phase. Scheduled to be completed in November 2021 Standalone MP2-001 Screening Loading Building Exhaust Fan 1 Cable Replacement at Plant No. 2 was created due to its recent failure and urgency
<ul style="list-style-type: none"> M&D Trunkline and Barscreen Grit Build-Up – Due to low flow and low velocity, heavy grit build-ups were observed at the lowest point of M&D trunklines. This issue may escalate once P2-122 splits the headworks into two trains. 	<ul style="list-style-type: none"> Operations rotate the trunklines monthly and keep only two trunklines in service to help prevent build-up Maintenance created a biannual PM to have barscreen inlets cleaned PRN-00535 Influent Metering Structure Trunkline Probes Relocation is in progress to relocate probes from the grit build-up
<ul style="list-style-type: none"> Washer Compactor Vulnerability – On August 21, 2021, Plant No. 2 observed a slug of rags that plugged two of Washer Compactors. 	<ul style="list-style-type: none"> Current equipment cannot handle a large load of debris, and the planning will investigate ways to improve the reliability of the Washer Compactor
<ul style="list-style-type: none"> Headworks Condition Assessment – Field condition assessment data of the Headworks are limited. It has been around 10 years since the system was operational, so field data are required to build a condition baseline. 	<ul style="list-style-type: none"> A condition assessment was done between M&D pipeline and barscreen when it was down for P2-122 construction. Asset engineer will continue to work with P2-122 to look for opportunities to perform other assessments

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Headworks	<ul style="list-style-type: none"> Modify headworks and sidestream routing to create reclaimable and non-reclaimable trains to support GWRS Final Expansion. Replace 3 of 7 MSPs with more efficient lower capacity pumps. 															
FR2-0024	Headworks 480V Cable Replacement at Plant No. 2	Headworks	<ul style="list-style-type: none"> In-house engineering design and bid for service contract for repairs on faulty cables. 															
MP2-001	Screening Loading Building Exhaust Fan 1 Cable Replacement at Plant No. 2	Headworks	<ul style="list-style-type: none"> In-house engineering design and bid for service contract for repairs on Screening Loading Building Exhaust Fan 1 cable. 															
PRN-00718	MSP VFD UPS Reconfiguration at Plant No. 2	DC-H	<ul style="list-style-type: none"> Reconfigure internal UPS by adding a manual transfer switch to allow the drive to bypass from UPS to control power transformer. 															
PRN-00535	Influent Metering Structure Trunkline Probes Relocation at Plant No. 2	M&D Structure	<ul style="list-style-type: none"> Relocate pH and conductivity probes for each trunkline in M&D Structure. 															
PRN-00731	Trunkline Biotower #3 Repair at Plant No. 2	TL Odor Control	<ul style="list-style-type: none"> Repair internal mechanism of the TL Biotower #3. 															
N/A	Headworks Scrubber Media Replacement at Plant No. 2	TL & HW Odor Control	<ul style="list-style-type: none"> Replace scrubber media for odor control scrubbers. 															
X-030	Headworks Rehabilitation at Plant No. 2	Headworks	<ul style="list-style-type: none"> Rehabilitate any equipment, electrical, structures, or materials that cannot provide 25 years of useful life. 															

Types of Project Legend:

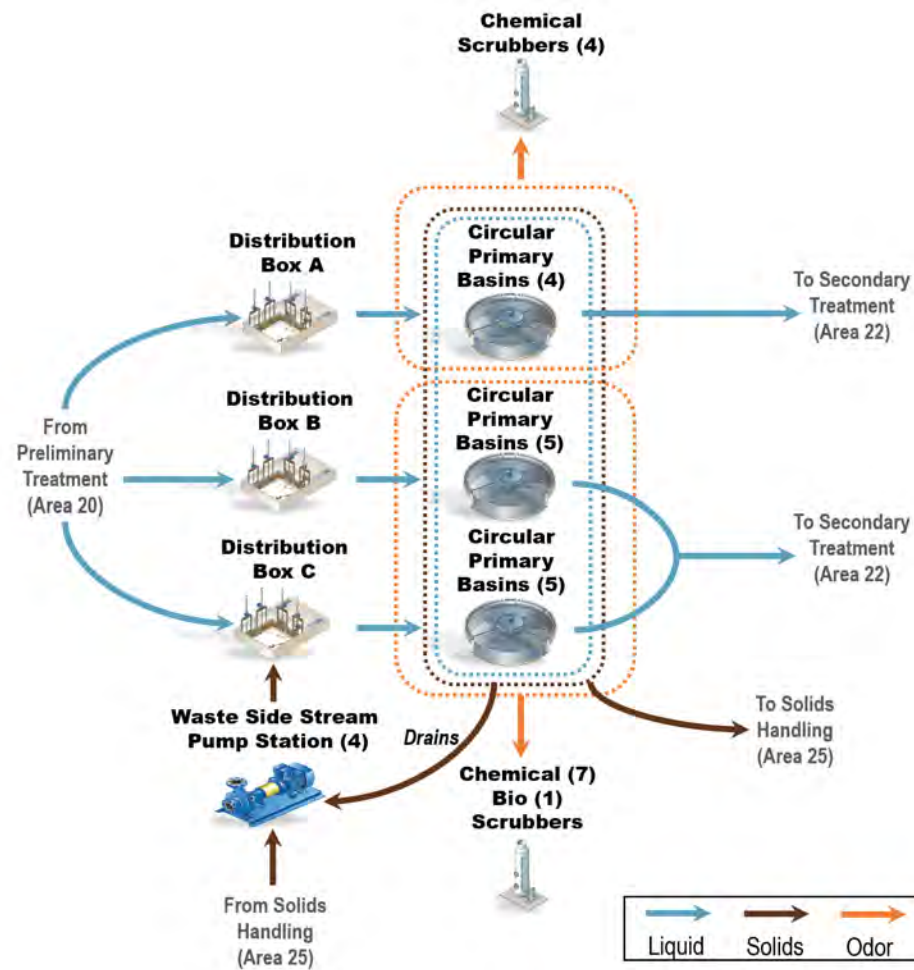
■ CIP - Planning
 ■ CIP - Design
 ■ CIP - Construction
 ■ Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; DC = Distribution Center; FY = Fiscal Year; GWRS = Groundwater Replenishment System; HW = Headworks; M&D = Metering & Diversion; MSP = Main Sewage Pump; N/A = Not Applicable; PM = Preventive Maintenance; SARI = Santa Ana River Interceptor; TL = Trunkline; UPS = Uninterruptible Power Supply; V = Volts; VFD = Variable Frequency Drive

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 21 – PLANT NO. 2 PRIMARY TREATMENT

Process Schematic



Acronym Key:

HVAC = Heating, Ventilation, and Air Conditioning; MCC = Motor Control Center; NSC = North Scrubber Complex; PB = Power Building; PLC = Programmable Logic Controller; RUL = Remaining Useful Life; SSC = South Scrubber Complex; VFD = Variable Frequency Drive; WSSPS = Waste Sidestream Pump Station

Major Assets Remaining Useful Life

Asset Type	A-Side				B-Side				C-Side				NSC	SSC	Polymer System	Ferric System	Distribution Box	WSSPS-C		
	PB-D	PB-E	PB-F	PB-G	PB-H	PB-I	PB-J	PB-K	PB-L	PB-M	PB-N	PB-O							PB-P	PB-Q
Civil																				
Effluent Piping	5	5	5	5	3	3	3	3	3	3	3	3	3	3	-	-	-	-	3	
Structural																				
General	4	4	4	4	3	3	3	3	3	3	2	2	2	2	3	3	3	2	4	1
Dome	4	4	4	4	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-
Mechanical																				
Piping	4	4	4	4	3	1	3	1	1	1	1	1	2	2	3	4	-	2	5	2
Internal Mechanism & Gates	4	4	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	5	-
Fans & Pumps		3		3		3		3		3		3		3		3		2	-	2
HVAC		3		3		3		3		3		3		3		-		-	-	-
Drains	4	4	4	4	3	3	3	3	1	1	1	1	3	3	3	4	-	-	-	-
Electrical																				
Process – Motor, MCC, VFD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	2	-	2
Instrumentation																				
PLC, Flow Meters	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	2	-	2

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Major Assets

Major Assets	Quantities
Primary Basin – A-Side	
Primary Basin	4
Sludge/Scum Collectors	4
Sludge/Scum Pump	8
Supply Fan	6
Primary Basin – B-Side	
Primary Basin	5
Sludge/Scum Collectors	5
Sludge/Scum Pump	10
Supply Fan	7

Major Assets	Quantities
Primary Basin – C-Side	
Primary Basin	5
Sludge/Scum Collectors	5
Sludge/Scum Pump	10
Supply Fan	8
North Scrubber Complex	
Chemical Scrubber	7
Bio Scrubber	1
Recirculation Pump	16
Supply Fan	8
Caustic Tank	1

Major Assets	Quantities
North Scrubber Complex (Continued)	
Acid Feed Pump	2
Bleach Tank	1
Bleach Feed Pump	14
Caustic Feed Pump	16
Acid Tank	1
South Scrubber Complex	
Supply Fan	4
Scrubbers	4
Recirculation Pump	8
Caustic Tank	1

Major Assets	Quantities
South Scrubber Complex (Continued)	
Caustic Feed Pump	8
Acid Tank	1
Acid Feed Pump	2
Bleach Tank	1
Bleach Feed Pump	3
Polymer System	
Polymer Bulk Tank	3
Polymer Bulk Transfer Pump	4
Polymer Mix Tank	2

Major Assets	Quantities
Polymer System (Continued)	
Polymer Feed Pump	4
Ferric System	
Ferric Bulk Tank	2
Ferric Feed Pump	6
Distribution Boxes	
Structure	3
Sluice Gates	24
Waste Sidestream Pump Station C	
Waste Sidestream Pump	4

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 21 – PLANT NO. 2 PRIMARY TREATMENT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Reliability of B-Side Primary Basins – Distribution Structure B distributes primary influents to Primary Basin H, I, J, K, and L. There are 2 slide gates per basin, and all 10 gates are not operational, preventing operations to control and isolate flows to 5 individual basins. 	<ul style="list-style-type: none"> On February 2021, OC San conducted a condition assessment around the DS-B, and identified 10 inoperable gates, along with few major corroded parts PRN-00757 Primary DS-B Gates Repair is in progress, and currently waiting on Board approval in September to start the construction phase.
<ul style="list-style-type: none"> Reliability of Primary Sedimentation Basins - A-side, B-side, and C-side primary basins were built in 1960s, 1970s, and 1980s, respectively. These basins are close to the end of their useful life and require major rehabilitation to continue to operate reliably for next 30+ years. 	<ul style="list-style-type: none"> P2-98B performed interim repairs to B- and C-sides of primary basins to extend their useful life for 10-15 years P2-98A is in a construction phase to replace all four A-side primary basins Future project P2-133 is in place to perform long-term rebuild on B and C sides of primary basins after the P2-98A completion.
<ul style="list-style-type: none"> Reliability of Polymer System –The polymer system was built in 1988 and no major project was done since it was built. Replacement of the aged system is included in P2-133 scope, but the system may not last until the project. 	<ul style="list-style-type: none"> Asset Engineer conducted a job walk with maintenance supervisors and identified assets that would be difficult for maintenance to replace in case of failures. Most of these parts are E&I due to obsolescence. A new maintenance project will be created to address the issue above, and maintenance will continue to maintain the overall system until P2-133 replacement.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
P2-98A	A-Side Primary Clarifiers Replacement at Plant No. 2	A-Side Primary Basins	<ul style="list-style-type: none"> Demolish and replace four existing A-Side Primary Basins, including piping and distribution box Demolish and replace the South Scrubber Complex. 																
P2-98B	B- and C-Side Primary Clarifiers Interim Repair at Plant No. 2	B- and C-Side Primary Basins	<ul style="list-style-type: none"> Repair the structural steel mechanism members of 12 primary basins. Interim repairs to make basins reliable for 10-15 years during P2-98A construction. 																
P2-133	B- and C-Side Primary Clarifiers Rehabilitation at Plant No. 2	B- and C-Side Primary Basins	<ul style="list-style-type: none"> Long-term rebuilds to extend RUL of B- and C-side basins to 40 years or greater. 																
PRN-00818	Anionic Polymer E&I Replacement at Plant No. 2	Anionic Polymer System	<ul style="list-style-type: none"> Replace obsolete E&I assets within the Anionic Polymer System. 																
PRN-00757	Primary DS-B Gates Repair at Plant No. 2	Distribution Structure B	<ul style="list-style-type: none"> Repair 10 slide gates and replace corroded weir plates. 																
X-054	Waste Sidestream Pump Station C Rehabilitation at Plant No. 2	Waste Sidestream Pump Station C	<ul style="list-style-type: none"> Replace pumps and associated equipment with chemical resistant material to provide reliable operation. 																

Types of Project Legend:

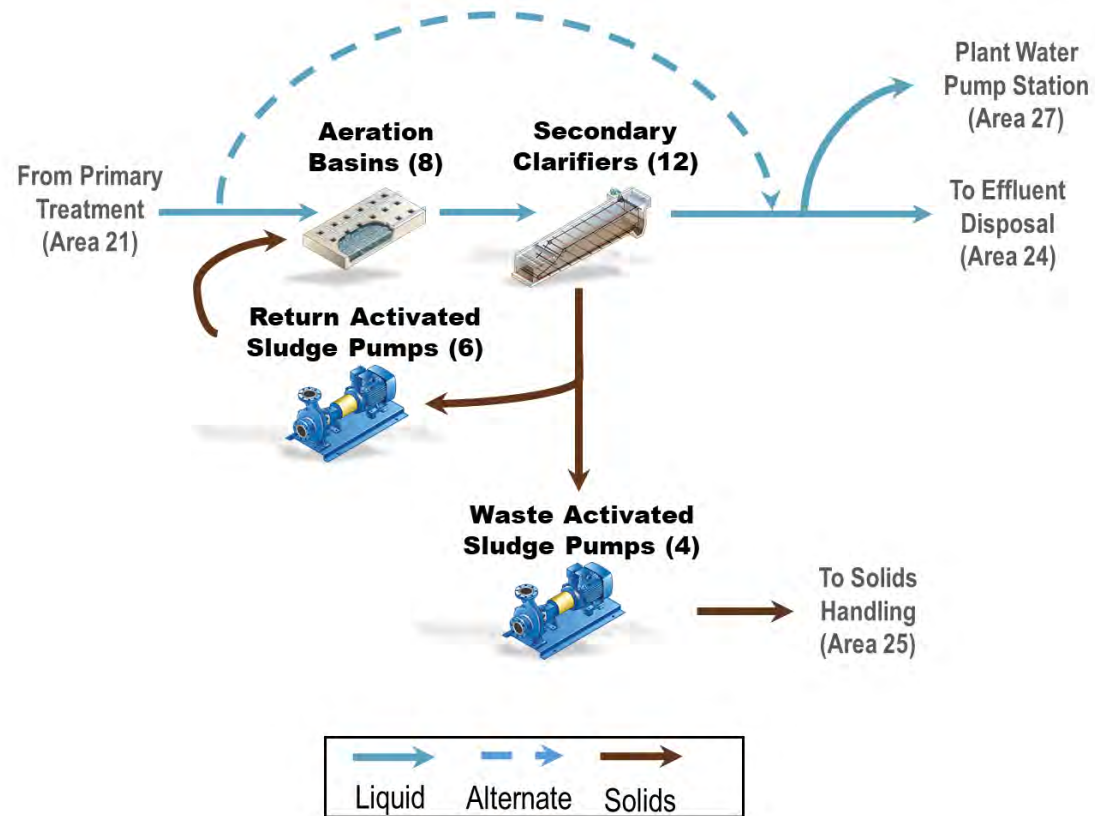
■ CIP - Planning	■ CIP - Design	■ CIP - Construction	■ Maintenance Project
--	--	--	--

Acronym Key:

DS = Distribution Structure; CIP = Capital Improvement Program; E&I = Electrical & Instrumentation FY = Fiscal Year; OEM = Original Equipment Manufacturer; RUL = Remaining Useful Life; WSSPS = Waste Sidestream Pump Station

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 22 – PLANT NO. 2 SECONDARY TREATMENT – ACTIVATED SLUDGE

Process Schematic



Acronym Key:
 DAFT = Dissolved Air Flotation Thickener; LOX = Liquid oxygen; MCC = Motor Control Center;
 PEPS = Primary Effluent Pump Station; PLC = Programmable Logic Controller; PS = Pump Station;
 RAS = Return Activated Sludge; RUL = Remaining Useful Life; SEJB = Secondary Effluent Junction Box;
 TWAS = Thickened Waste-activated Sludge; VFD = Variable Frequency Drive; WAS = Waste-activated Sludge; WSSPS = Waste Sidestream Pump Station

Major Assets Remaining Useful Life

Asset Type	PEPS	Aeration Basins	Secondary Clarifiers A-L	SEJB	East RAS /WAS PS	West RAS/WAS PS	Oxygen Facility	DAFTs A-D	DAFTs Polymer System	DAFTs Odor Control	WSSPS
Civil											
Effluent Piping	2	-	3	3	4	4	-	-	-	-	4
Structural											
Building	2	-	-	-	2	2	-	1	-	-	-
Structure	2	4	3	3	-	-	-	1	1	1	-
Mechanical											
Pump	2	-	-	-	3	3	-	2	2	-	3
Aerator	-	4	-	-	-	-	-	-	-	-	-
Piping and Valve	3	4	3	3	3	3	4	2	2	3	3
Clarifier/DAFT Moving Mechanism	-	-	4	-	-	-	-	2	-	-	-
Channel Air Blower	-	-	-	-	-	4	-	-	-	-	-
Control Gate	-	3	2	3	-	-	-	-	-	2	4
LOX Facility	-	-	-	-	-	-	4	-	-	-	-
HVAC and Ventilation	2	-	-	-	3	3	-	-	-	-	-
Crane	3	-	-	-	-	-	-	-	-	-	-
Electrical											
MCC and VFD	4	3	3	-	4	4	-	3	3	3	3
Instrumentation											
PLC and Flow Meter	3	3	3	-	3	3	3	3	3	-	3

RUL Legend:
■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Major Assets	Quantities
Primary Effluent Pump Station	
Building	1
Structure	1
Pumps	4
Aeration Basins	
Basins	8
Surface Aerators	32
Inlet gates	8

Major Assets	Quantities
Secondary Clarifiers A-L	
Basins	12
Inlet gates	36
Sludge collectors	24
Secondary Effluent Junction Box	
Structure	1
Control Gate	1
East RAS/WAS PS	
RAS/WAS Pumps	5

Major Assets	Quantities
West RAS/WAS PS	
RAS Pumps	3
WAS Pumps	2
Channel air blowers	2
Sliding Frames	2
Oxygen Facility	
LOX Storage Tanks	2
Vaporizer	6
Oxygen Purging Fan	2

Major Assets	Quantities
DAFTs A-D	
Concrete Tanks	4
Mechanical Sweep	4
Recycle Pumps	6
Saturation Tank	4
TWAS Pumps	8
DAFTs Polymer System	
Storage Tank	1
Aging Tank	2

Major Assets	Quantities
DAFTs Polymer System (Continued)	
Storage Tank Rec. Pumps	2
Blend Pumps	2
Feed Pumps	6
DAFTs Odor Control	
Biofilters	3
Foul Air Fans	3
Waste Sidestream Pump Station	
Pumps	3

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 22 – PLANT NO. 2 SECONDARY TREATMENT – ACTIVATED SLUDGE

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> PEPS – Obsolete VFD parts Aged PEPS pumps and corrosion on suction pipes Missing flapper gates on the area drains inlets to the basins 	<ul style="list-style-type: none"> PRN-00573 (FE19-08) project will replace the PEPS VFDS. AI-323 generated to perform condition assessment of the pumps. Pump No. 4 had been removed and disassembled by pump repair company in August 2021. All four pumps will be rebuilt or replaced based on the condition assessment findings. Condition assessment will be performed to determine the condition.
<ul style="list-style-type: none"> Aeration Basins – Cracks and concrete spalling on aeration basins deck Aerator motor corrosion and oxygen piping corrosion Inlet gates not totally sealed Oxygen leaking from aerator base and access manholes on top of the aeration deck 	<ul style="list-style-type: none"> P2-118 filled the concrete cracks on west aeration basins, P2-123 filled the concrete cracks on east aeration basins. AI-266 performed condition assessment of oxygen leaking from aerator bases and manhole, P2-123 change order to seal the leaking locations. AI-374 to perform condition assessment and temporary repair on oxygen piping. Maintenance coating program will recoat oxygen piping. P2-136 to replace all oxygen piping, structurally rehab. the aeration basins, replace all aerators, and inlet gates.
<ul style="list-style-type: none"> Clarifiers – Broken clarifier mechanism need to be repaired or replaced Corroded Inlet gates need to be replaced Clarifier entry gate not meeting the OSHA requirement Loosing handrails Damaged concrete on the deck 	<ul style="list-style-type: none"> MP-248 replaced D, L, G, J, C, F, and the remaining six will be replaced by FR2-0018. MP-638 replaced all the 36 inlet gates in 2021. FR2-0023 will add safe entry access platform to each secondary clarifier. AI-375 Condition assessment performed and repair in under planning. AI-373 Condition assessment done and repair is under construction.
<ul style="list-style-type: none"> RAS/WAS Pump Stations – Obsolete VFDs Corroded RAS piping Clarifier inlet channel air blower, one broken and out of service, and the model is obsolete 	<ul style="list-style-type: none"> PRN-00573 (FE19-08) will replace the RAS and WAS VFDs. P2-123 will replace the RAS piping. AI-322 AS Blower Replacement. Task order to design the replacement by Jacobs completed. Maintenance will do in-house installation.
<ul style="list-style-type: none"> Oxygen Facility – LOX Tank A out of service due to leaking flange 	<ul style="list-style-type: none"> Asset engineer is working with O&M for the condition assessment of the Tank.
<ul style="list-style-type: none"> WSSPS – Wet well drain gate (draining to Coast Trunk) actuator difficult to operate Flooding of the pump dry well causing WSSPS pump motor damage 	<ul style="list-style-type: none"> P2-122 bulkheaded and plugged the drain line to avoid the accident draining the flow from the non-reclaimable side to the reclaimable side. Maintenance replaced the sump pump at the dry well to prevent the flooding. X-007 will replace the pumps with dry pit submersible type.
<ul style="list-style-type: none"> DAFT – Seismic issues 	<ul style="list-style-type: none"> X-107 Geotechnical improvements to DAFTs A-C, DAFT D and DAFT A-C Gallery, and structural improvements to DAFT D.
<ul style="list-style-type: none"> AS Plant Replacement 	<ul style="list-style-type: none"> X-114 will replace the AS Plant. A planning study will study the replacement options and make recommendations.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	Fiscal Year																
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36		
FR2-0018	Plant No. 2 AS Plant Clarifiers Rehabilitation - Phase 2	Secondary clarifiers	<ul style="list-style-type: none"> Replace Clarifiers A, B, E, G, H, and L moving mechanism. 																	
AI-322	AS Plant Blower Replacement	Secondary Clarifiers	<ul style="list-style-type: none"> Replace both blowers, modify the piping and support skids. 																	
P2-122	P2-122 - Headworks Modifications at Plant No. 2 for GWRS Final Expansion	AS plant, WSSPS	<ul style="list-style-type: none"> Separate the reclaimable and non-reclaimable streams. AS Plant will treat non-reclaimable flow. WSSPS discharge piping to be directed to PEPS. 																	
P2-123	Return-Activated Sludge Piping Replacement at Plant No. 2	RSS PSs and secondary clarifiers	<ul style="list-style-type: none"> Replace RAS piping, area lights and fix the concrete cracks and spalling on east aeration basin decks. 																	
FE19-08	Plant No. 1, Plant No. 2, Collections VFD Drives Replacement	PEPS, RSS pump stations	<ul style="list-style-type: none"> Replace PEPS, RAS and WAS VFDs. 																	
P2-136	Activated Sludge Aeration Basin Rehabilitation at Plant No. 2	AS Plant aeration basins	<ul style="list-style-type: none"> Rehabilitate the AS process. 																	
X-52	Activated Sludge RAS/WAS/PEPS/Vaporizers Rehabilitation at Plant No. 2	AS Plant	<ul style="list-style-type: none"> Rehabilitate the RAS/WAS/PEPS/LOX vaporizers. 																	
FR2-0023	Activated Sludge Clarifier Entry Improvements at Plant No. 2	Secondary clarifiers	<ul style="list-style-type: none"> Add safe entry access platform to each secondary clarifier. 																	
X-007	Waste Sidestream Pump Station A Upgrade at Plant No. 2	WSSPS A	<ul style="list-style-type: none"> Replace the WSSPS pumps with dry pit submersible type. 																	
X-107	Seismic Improvements to Dissolved Air Flotation Thickeners Area at Plant No. 2	DAFTs	<ul style="list-style-type: none"> Geotechnical improvements to DAFTs A-C, DAFT D and DAFT A-C Gallery, and structural improvements to DAFT D. 																	
PS-XXX	Activated Sludge Facility Replacement Planning Study at Plant No. 2	AS Plant	<ul style="list-style-type: none"> Planning study to plan for AS Plant replacement. 																	
X-114	Activated Sludge Facility Replacement at Plant No. 2	AS Plant	<ul style="list-style-type: none"> Replace the entire AS Plant facility. 																	

Types of Project Legend:

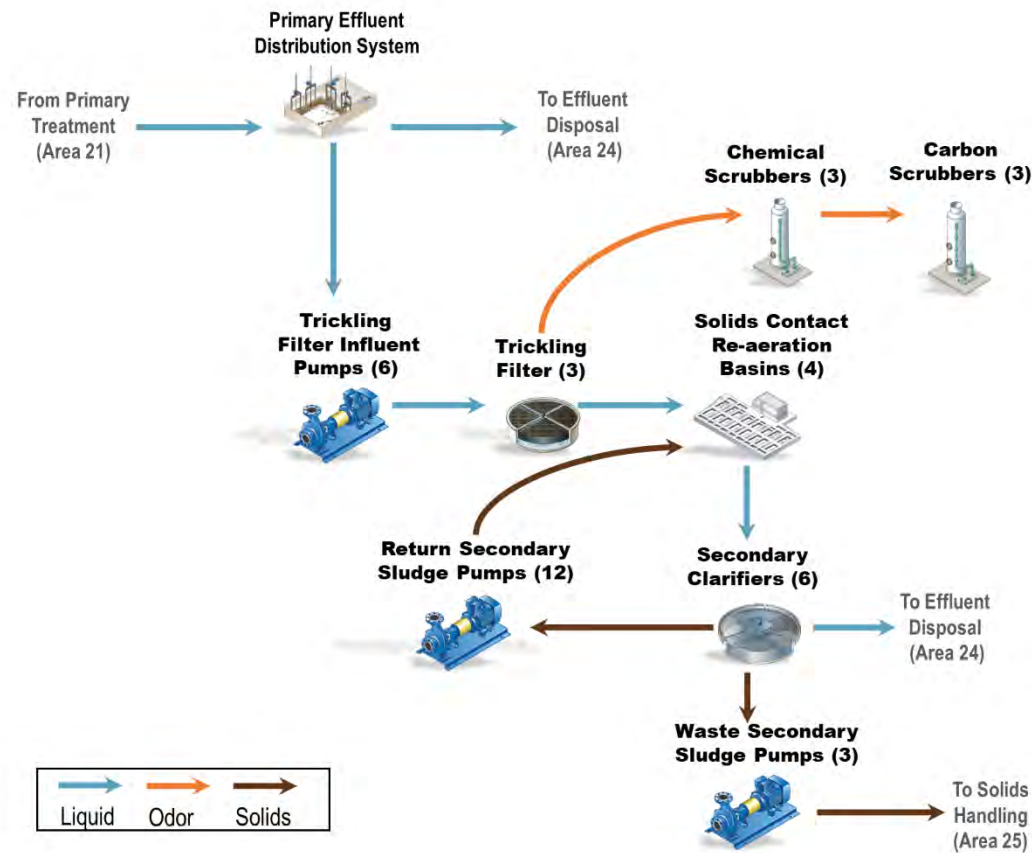
■ CIP - Planning
 ■ CIP - Design
 ■ CIP - Construction
 ■ Maintenance Project

Acronym Key:

AS = Activated Sludge; CIP = Capital Improvement Program; DAFT = Dissolved Air Flotation Thickener; FY= Fiscal Year; GWRS = Groundwater Replenishment System; LOX = Liquid Oxygen; OSHA = Occupational Safety and Health Administration; PEPS = Primary Effluent Pump Station; RAS = Return Activated Sludge; RSS = Return Secondary Sludge; VFD = Variable Frequency Drive; WAS = Waste-activated Sludge; WSSPS=Waste Sidestream Pump Station

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 22 - PLANT NO. 2 SECONDARY TREATMENT – TRICKLING FILTERS AND SOLIDS CONTACT

Process Schematic



Major Assets Remaining Useful Life

Asset Type	TFPS & Elec Room	Trickling Filters A-C	Solids Contact & ML Channel	Blower/ WSS PS Building	Secondary Clarifiers A-F	RSS PS A	RSS PS B	RSS PS C & Elec. Room	DCJ	Odor Control Facility	Chemical Facility
Civil											
Effluent Piping	2	2	2	2	2	2	2	2	-	2	2
Structural											
Building	1	-	-	1	-	1	1	1	-	-	-
Structure	1	1	1	-	1	-	-	-	-	2	2
Mechanical											
Pump	2	-	-	2	2	2	2	2	-	2	3
TF Rotary Distributor	-	4	-	-	-	-	-	-	-	-	-
TF Media	-	3	-	-	-	-	-	-	-	-	-
Clarifier Sludge Collector	-	-	-	-	3	-	-	-	-	-	-
Blower & Fan	-	2	-	2	-	-	-	-	-	2	-
Control Gate	-	3	3	3	3	-	-	-	-	-	-
Piping and Valve	2	2	2	2	2	2	2	2	-	2	2
Diffusor	-	-	2	-	-	-	-	-	-	-	-
HVAC & Ventilation	2	-	-	2	-	2	2	2	2	-	-
Crane	2	-	-	2	-	2	2	2	-	-	-
Electrical											
MCC & VFD	3	3	-	3	3	-	-	3	3	3	3
Instrumentation											
PLCs & Flow Meters	3	3	-	3	3	3	3	3	3	3	3

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:
 HVAC = Heating, Ventilation, and Air Conditioning;
 DCJ = Distribution Center J;
 Elec. = Electrical;
 RUL = Remaining Useful Life;
 RSS = Return Secondary Sludge;
 MCC = Motor Control Center;
 ML = Mixed Liquor;
 PLC = Programmable Logic Controller;
 PS = Pump Station;
 TF = Trickling Filter;
 TFPS = Trickling Filter Pump Station;
 VFD = Variable Frequency Drive;
 WSS = Waste Secondary Sludge

Major Assets

Major Assets	Quantities
Trickling Filter Pump Station	
Building	1
Pumps	6
Trickling Filters A-C	
Basins	3
Rotary Distributor	3
Recirculation Fans	6

Major Assets	Quantities
Solids Contact & ML Channel	
Structures	4 SCRs, 4 SRRs, 2 MLs
Control gates	multiple
Diffusors	multiple
Blower/WSS PS Building	
Building	1
SR Blowers	3
SC Blowers	3
WSS Pumps	3

Major Assets	Quantities
Secondary Clarifiers A-F	
SC Basins	6
Sludge Collector	6
Scum pumps	6
RSS PS A	
Buildings	1
RSS Pumps	4

Major Assets	Quantities
RSS PS B	
Buildings	1
RSS Pumps	4
RSS PS C & Electrical Room	
Buildings	1
RSS Pumps	4
Distribution Center J	
Building	1

Major Assets	Quantities
Odor Control Facility	
Foul Air Fans	3
Chemical scrubbers	3
Carbon Units	3
Chemical System	
Bleach Storage Tanks	2
Caustic Storage Tank	1
Bleach Pumps	7
Caustic Pumps	6

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 22 - PLANT NO. 2 SECONDARY TREATMENT – TRICKLING FILTERS AND SOLIDS CONTACT

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> TFPS – No backup power to TFPS; pump failure could result in primary effluent to ocean outfall and potential contaminating the future GWRS intake flow at P2 	<ul style="list-style-type: none"> J-117B will provide a plantwide load shedding system to power critical DC-J load from Cen Gen. AI-230 implemented a change to allow the remote resetting and restarting of TFPS pumps from SCADA instead of locally at VFD.
<ul style="list-style-type: none"> TFs –TF-A distribution arm gears broke again after last year’s repair. TF-A and TF-C center column seals leaking 	<ul style="list-style-type: none"> PRN-00643 (AI-155) Maintenance and asset engineer are working on a series of repairs to bring TF-A back to service. The TF-A and TF-C seals were replaced with Ovivo’s newer designed seals in September 2020. TF-A orifices were adjusted and tested to run TF-A hydraulically in October 2020. Ovivo provided a quotation for improved design of the gear and bearing for the distribution arm. P.O.s of parts had arrived in August 2021, and the installation is scheduled this year.
<ul style="list-style-type: none"> Secondary Clarifiers –Scum pump cannot clear the scum pit 	<ul style="list-style-type: none"> AI-259 TFSC Scum Pump Issue. Asset engineer will facilitate an investigation of the problem.
<ul style="list-style-type: none"> Snail control – Signs of snail shell accumulation at process area and excessive wearing on RSS and WSS pipes 	<ul style="list-style-type: none"> Changed from 25% caustic injection to 50%. PS18-10 did the evaluation and recommended to change the injection the original design of flooding. Will do flooding test after TF-A is back to service.
<ul style="list-style-type: none"> Site piping – Deficiency of cathodic protection on some underground piping 	<ul style="list-style-type: none"> Condition assessment and survey done and the team is developing solutions which may include replacing the existing cathodic protection system.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
PRN-00643	P2 TF-A Rotary Distributor Damage Evaluation and Repair	TF-A	<ul style="list-style-type: none"> Repair TF-A distribution arm and adjusting the orifices to run it with hydraulic power while waiting for parts and installation. 															
J-117B	Outfall Low Flow Pump Station	DCJ, TFPS	<ul style="list-style-type: none"> New PWPS to draw flow from TFSC secondary effluent Provide a plantwide load shedding system to power critical DC-J load from Cen Gen. 															
P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	TFSC	<ul style="list-style-type: none"> TFSC to treat the reclaimable stream. 															
J-36-2	GWRS Final Expansion Coordination	TFSC	<ul style="list-style-type: none"> New diversion structure and weir box to divert the TFSC effluent to OCWD equalization tanks and pump station at P2. 															
X-031	Plant No. 2 TFSC Rehabilitation	TFSC facility	<ul style="list-style-type: none"> Overall rehabilitation of TFSC. Replace the TF media. 															

Types of Project Legend:

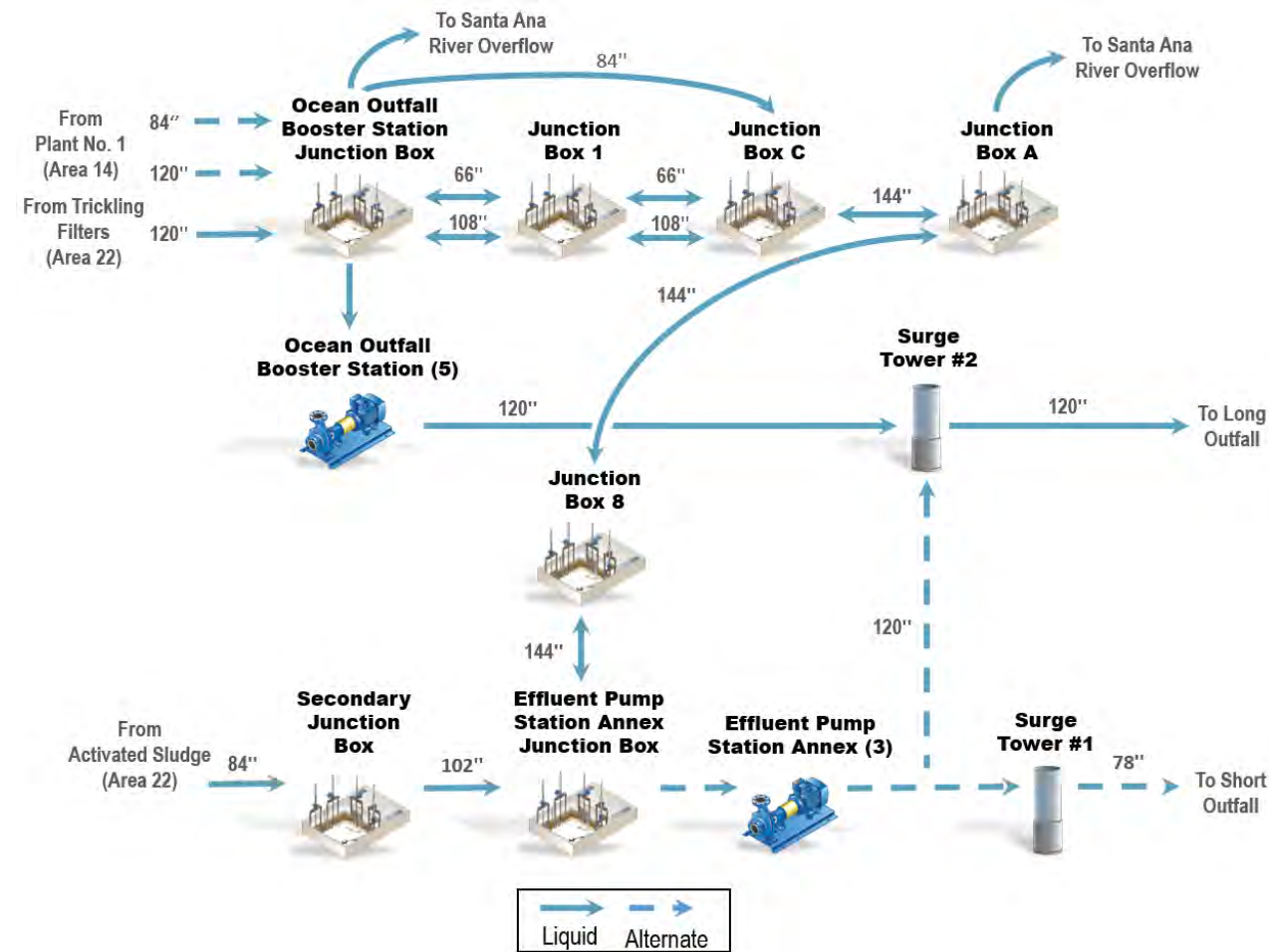
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; DCJ = Distribution Center J; FY = Fiscal Year; GWRS =Groundwater Replenishment System; OCWD = Orange County Water District; PWPS = Plant Water Pump Station; RSS = Return Secondary Sludge; SC = Secondary Clarifier; SCADA = Supervisory Control and Data Acquisition; TF = Trickling Filter; TFPS = Trickling Filter Pump Station; TFSC = Trickling Filter Secondary Clarifier

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 24 – PLANT NO. 2 EFFLUENT DISPOSAL

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Junction Boxes				EP SA	Disinfection System	Land Outfalls					
	OBS	JB-1	JB-C	JB-A			JB-8	Surge Tower #1	Surge Tower #2	Sample Building	Beach Box	120" Ocean Outfall
Civil												
Effluent Piping	1	2	2	2	2	-	1	2	1	2	-	-
Structural												
Structures, Buildings	4	2	2	4	2	2	1	2	1	2	1	1
Mechanical												
Pumps, Fans	5	-	-	-	-	2	4	-	-	-	-	-
Gates	5	3	3	3	3	3	-	-	-	-	5	-
Valves	2	-	-	-	-	3	-	3	3	-	-	-
Pipes	2	2	2	2	2	2	3	1	2	1	1	-
Tank	-	-	-	-	-	-	5	-	-	-	-	-
Manhole Covers	-	-	-	-	-	-	-	-	-	-	TBD	TBD
Monel Parts	-	-	-	-	-	-	-	-	-	-	5	TBD
Ballast	-	-	-	-	-	-	-	-	-	-	TBD	TBD
Electrical												
Process – Motor, MCC, VFD	5	-	-	-	-	3	4	2	3	2	-	-
Instrumentation												
PLC, Flow Meters	5	-	-	-	-	3	4	2	5	2	-	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

- EP
SA = Effluent Pump Station Annex;
- JB = Junction Box;
- MCC = Motor Control Center;
- OBS = Ocean Outfall Booster Station;
- PLC = Programmable Logic Controller;
- RUL = Remaining Useful Life;
- TBD = To Be Determined;
- VFD = Variable Frequency Drive

Major Assets

Major Assets	Quantities
Ocean Outfall Booster Station	
Pump	5
Wingwall Structure	1
Gate	3
Junction Boxes	
Junction Boxes	4
Wingwall Structure	1
Gate	13

Major Assets	Quantities
Effluent Pump Station Annex	
Pump	3
Gate	14
Disinfection Facility	
Sodium Bisulfite Tank	3
Sodium Bisulfite Feed Pump	6
Bleach Tank	6
Bleach Feed Pump	8

Major Assets	Quantities
Land Outfalls	
Surge Tower	2
Valve	2
Sample Building	1
Flowmeters	3
Beach Box	1
120" Ocean Outfall	
Port hole	500
Manhole cover	47

Major Assets	Quantities
78" Ocean Outfall	
Port hole	125
Manhole cover	14

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 24 – PLANT NO. 2 EFFLUENT DISPOSAL

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Reliability of Disinfection System—OC San no longer discharges primary effluent to the ocean, and in 2015, OC San received an approval to stop disinfection for the Long Outfall. The Bleach Station is minimally used to disinfect plant water, but the Sodium Bisulfite Station was inactive since then. Both systems need to be available in case the Short Outfall is used during emergencies or planned maintenance. 	<ul style="list-style-type: none"> OC San installed a temporary tote system for sodium bisulfite in case of emergency. OC San will procure and install a temporary tank to replace the tote system and increase the storage capacity. The tank will be in service until P2-135 Sodium Bisulfite Station Rehabilitation completion. P2-98A will demolish the existing Bleach Station and build a new Bleach Station that primarily serves as an odor control for new primary sedimentation basins. The new station has a provision to disinfect effluent if needed.
<ul style="list-style-type: none"> Ocean Outfall Capacity and Maintainability Strategy- After J-117B completion, Low Flow Pump Station will be the main mode of operation, and OOBS and EPSA will stay standby. Due to low flow and low probability of high flow events, assets required for high flow will be difficult to exercise and maintain. 	<ul style="list-style-type: none"> OC San will start a planning study to evaluate future required outfall capacity and develop a comprehensive plan to maintain outfall assets.
<ul style="list-style-type: none"> Reliability of Long Ocean Outfall— PS18-09 Ocean Outfall Condition Assessment and Scoping Study is in progress to develop a detailed scope of work for the future X-053 Long Ocean Outfall Rehabilitation. The project identified few critical parts, such as tie rods, that have corroded and need to be repaired in near future. 	<ul style="list-style-type: none"> Immediately required repairs will be executed as a standalone project before the X-053 X-053 Long Ocean Outfall Rehabilitation is scheduled to start in 2023
<ul style="list-style-type: none"> Short Ocean Outfall Assessment – Short outfall was last used in 2012 to support J-112A construction. Inspection was not a part of compliances until new NPDES permit was renewed in 2021. The outfall was built in 1952 and requires a thorough assessment to ensure its availability and reliability. 	<ul style="list-style-type: none"> OC San will start a planning study for the Short Outfall similar to the PS18-09 Ocean Outfall Condition Assessment and Scoping Study.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
PS18-09	Ocean Outfall Condition Assessment	120" Ocean Outfall	<ul style="list-style-type: none"> Determine condition of Ocean Outfall and provide recommendations to extend its useful life. 															
J-117B	Outfall Low Flow Pump Station	OOBS & New Low Flow Pump Station	<ul style="list-style-type: none"> Rehabilitate the OOBS and construct a new Low Flow Pump Station. Replace the Plant Water Pump Station. 															
P2-135	Sodium Bisulfite Station Rehabilitation	Sodium Bisulfite Station	<ul style="list-style-type: none"> Downsize existing sodium bisulfite facility to address new design conditions and rehabilitate to extend the useful life. 															
X-053	Long Ocean Outfall Rehabilitation	120" Ocean Outfall	<ul style="list-style-type: none"> Rehabilitate Long Ocean Outfall per PS18-09 recommendations. 															
PSXX-XX	Short Ocean Outfall Condition Assessment	78" Ocean Outfall	<ul style="list-style-type: none"> Determine condition of Short Outfall and provide recommendations to extend its useful life. 															
PSXX-XX	Ocean Outfall Capacity and Maintainability Strategy	OOBS, EPSA, and Disinfection Systems	<ul style="list-style-type: none"> Evaluate future required outfall capacity and develop a comprehensive plan to maintain outfall assets. 															
SC20-02	OOBS Elevator Rehabilitation	OOBS	<ul style="list-style-type: none"> Modernize one hydraulic service elevator and bring it up to the latest codes. 															
FE19-06	EPSA Motor Cooling Improvement	EPSA	<ul style="list-style-type: none"> Modify motor cooling system to provide adequate cooling to the motor at a lower design speed. 															
P2-139	Santa Ana River Wingwall Rehabilitation	OOBS & JB-A	<ul style="list-style-type: none"> Rehabilitate wingwalls by OOBS and JB-A per PS17-10 final report recommendations. 															
N/A	Outfall External Inspection	120" & 78" Ocean Outfalls	<ul style="list-style-type: none"> Ocean outfall external inspection every 2.5 years per the NPDES permit and lease agreement with the California State Lands Commission. 															
N/A	Outfall Structural Integrity Report	120" & 78" Ocean Outfalls	<ul style="list-style-type: none"> Ocean outfall structural integrity report every 5 years per the NPDES Permit. 															

Types of Project Legend:

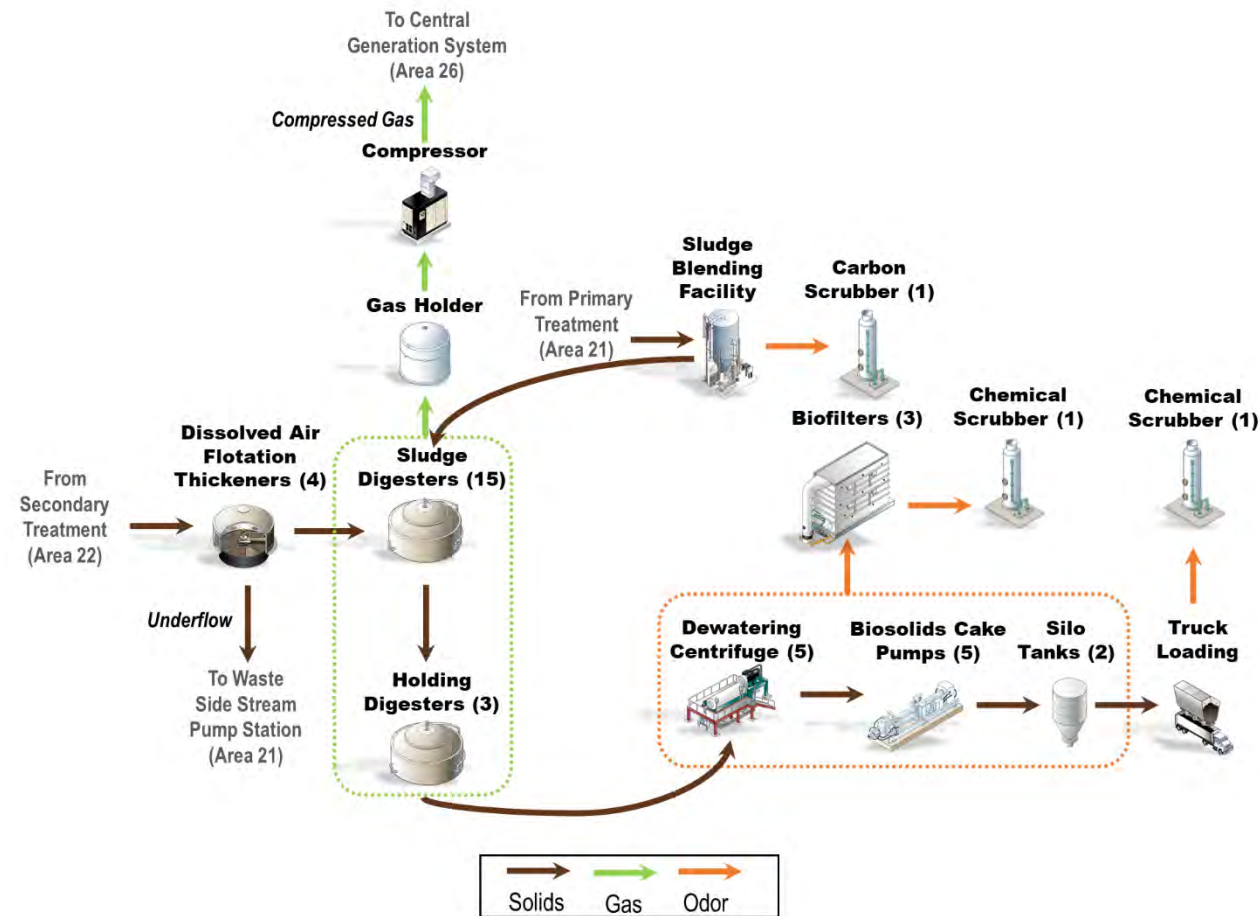
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; EPSA = Effluent Pump Station Annex; FY = Fiscal Year; JB = Junction Box; N/A = Not Applicable; NPDES = National Pollutant Discharge Elimination System; OOBS = Ocean Outfall Booster Station; TO = Task Order; VFD = Variable Frequency Drive

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 25 – PLANT NO. 2 SOLIDS HANDLING – DIGESTERS

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Digester C	Digester D	Digester E	Digester F	Digester G	Digester H	Digester I	Digester J	Digester K	Digester L	Digester M	Digester N	Digester O	Digester P	Digester Q	Digester R	Digester S	Digester T	Digester Ferric
Civil																			
Effluent Piping	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
Structural																			
Structure	4	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	2
Digester Dome	4	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	-
Mechanical																			
Sludge Mixing Pumps/Jet Mixing	4	4	2	4	4	2	2	2	4	4	4	4	2	2	2	2	2	2	-
Sludge Recirculation and Heating System	4	4	4	4	4	4	2	2	-	4	4	4	4	4	4	4	4	4	-
Hot Water System	4	4	4	4	4	4	2	2	-	4	4	4	4	4	4	4	4	4	-
Sludge Transfer Pump	4		4		2		2		4		4		4		4		4		-
Piping & Valve	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	2
Chemical Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Electrical																			
MCC & VFD	4	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	2
Instrumentation																			
PLC & Flow Meter	4	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	2
RUL Legend:																			
■ RUL <5 years ■ RUL 5-10 years ■ RUL 11-15 years ■ RUL 16-20 years ■ RUL >20 years																			

Major Assets

Major Assets	Quantities
Anaerobic Digesters (C-T)	
Active Digesters	15
Active/Holding Digesters (I and J)	2
Holding Digesters (K)	1
Sludge Mixing Pumps	15+1+4 (1 each Digester + 1 in Digester K+ 1 backup in each Digester L, M, N, & O)

Major Assets	Quantities
Anaerobic Digesters (C-T) (Continued)	
Jet Mixing Pumps	4 (2 each in Digesters I and J)
Sludge Recirculation Pumps	17
Hot Water Circulation Pumps	17
Heat Exchangers	17
Bottom Sludge Pumps	10

Major Assets	Quantities
Digester Ferric Facility	
Digester Ferric Storage Tanks	2
Ferric Feed Pumps	6

Acronym Key:
 MCC = Motor Control Center;
 RUL = Remaining Useful Life;
 PLC = Programmable Logic Controller;
 VFD = Variable Frequency Drive

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 25 – PLANT NO. 2 SOLIDS HANDLING – DIGESTERS

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Reliability of Digesters – Keep the existing digesters in operable condition before the digesters being replaced by new TPAD digesters as planned by the Biosolids Master Plan. 	<ul style="list-style-type: none"> Condition assessment after digester cleaning and perform urgent repairs found from condition assessment by Maintenance projects. FE20-02 Digester C, D, F & G Rehabilitation to replace high rate mixing pumps, heat exchangers, sludge recirculation pumps, bottom sludge transfer pumps, and hot water pumps and piping. P2-137 Digesters Rehabilitation at Plant No. 2 to repair domes, walking bridges, digester walls, handrails, hot water piping and, and replace MCCs. PRN-00684 P2 Digester Maintenance Projects to replace heat exchangers, sludge recirculation pumps and bottom sludge transfer pumps.
<ul style="list-style-type: none"> Digester Replacement – Building new digester complex as recommended by Biosolids Master Plan to replace the aging digesters. 	<ul style="list-style-type: none"> Series of projects identified by Biosolids Master Plan and 2017 Facility Master Plan to replace the digesters with TPAD facility and improve the site, including, P2-128 TPAD Digester Facility; P2-129 - Digester P, Q, R, and S Replacement; XP2-131 - Digester I, J, and K Replacement; XP2-130 - Food Waste Receiving Facility; XP2-132 - Digester Demolition.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work																
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY35/36	
FR2-0022	Digester O Structural Repairs	Dig. O	<ul style="list-style-type: none"> Repair corroded penetration pipes, walkway, pipe supports and concrete spalling. 																
FR2-0025	Digester O-T and Q-R Bridge Repair	Dig. O, T, Q, R	<ul style="list-style-type: none"> Repair walking bridges between Dig. O-T and Q-R that have structural deficiencies. 																
FE19-10	Digesters C, D, F, G, and I Gas Balance Lines Replacement	Dig. C, D, F, G, I	<ul style="list-style-type: none"> Replaces digester gas balance lines from PVC to Stainless Steel (C to D, D to I, and F to G). 																
PRN-00684	P2 Digester Maintenance Projects	Dig. E, H, L, M, N, O, P, Q, R, S, T	<ul style="list-style-type: none"> Replace major mechanical equipment including heat exchangers, sludge recirculation and transfer pumps. 																
FE20-02	Digester C, D, F, and G Rehabilitation	Dig. C, D, F, G	<ul style="list-style-type: none"> Replace major mechanical equipment including high rate mixing pumps, heat exchangers, sludge recirculation, and transfer pumps, hot water pumps and piping. 																
P2-137	Digesters Rehabilitation at Plant No. 2	Dig. C, D, F, G, H, L, M, N, O, P, Q, R, S, T	<ul style="list-style-type: none"> Digester domes, walls, large pipe penetration, hot water piping, handrails, walking bridges and MCC rehabilitation. 																
P2-124	Interim Food Waste Receiving Facility	All Digesters, gas treatment facilities and Central Generation	<ul style="list-style-type: none"> Receive 150 wet ton per day of source separated and processed organic food waste to digesters for Co-digestion. 	Design completed. Construction is pending on food waste contract.															
P2-128	TPAD Digester Facility	New TPAD Digester Facility	<ul style="list-style-type: none"> Build six new thermophilic digesters, batching and cooling facilities and use the existing digesters as the mesophilic phase to treat the sludge by TPAD process. 																
P2-129	Digester P, Q, R, and S Replacement	Digester P, Q, R, S	<ul style="list-style-type: none"> Replace digester P, Q, R, S as the new mesophilic digesters. 																
XP2-130	Food Waste Receiving Facility	All Digesters, gas treatment facilities and Central Generation	<ul style="list-style-type: none"> 500 wet tons of preprocessed food waste receiving facility. 																
XP2-131	Digester I, J, and K Replacement	All digesters	<ul style="list-style-type: none"> Final three new digesters in addition to the new digesters. 																
XP2-132	Digester Demolition	All digesters	<ul style="list-style-type: none"> Demolish exiting digesters after 13 total new digesters built. 																

Types of Project Legend:

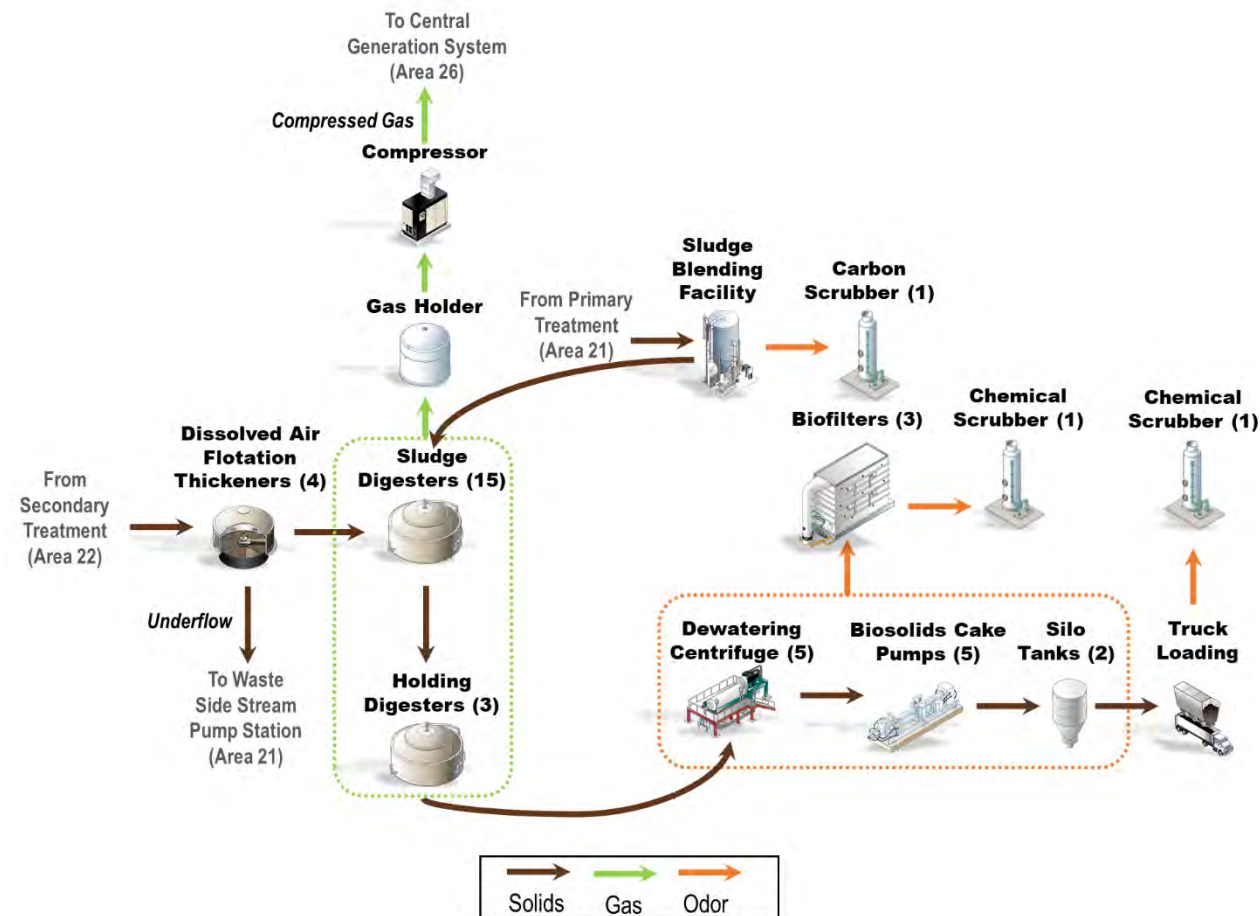
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; FY = Fiscal Year; MCC = Motor Control Center; N/A = Not Applicable; TPAD = Temperature Phased Anaerobic Digestion

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 25 – PLANT NO. 2 SOLIDS HANDLING – FACILITIES

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Sludge Blending Facility	Plant Boiler	Centrifuge Dewatering	Centrifuge Bldg. & Silos Odor Control	Truck Loading Bay Odor Control	Truck Loading	Gas handling	Gas Holder
Civil								
Effluent Piping	2	-	-	-	-	-	-	-
Structural								
Structure	2	-	1	1	1	1	-	3
Building	1	3	1	-	-	-	3	-
Mechanical								
Pump	3	-	1	1	1	-	-	-
Fan	-	-	-	1	2	-	-	-
Boiler & Heat Exchanger	-	4	-	-	-	-	-	-
Centrifuge	-	-	1	-	-	-	-	-
Polymer System	-	-	1	-	-	-	-	-
Biofilter	-	-	-	1	-	-	-	-
Chemical System	-	-	-	1	3	-	-	-
Gas Compressor	-	-	-	-	-	-	5	-
Gas Dryer	-	-	-	-	-	-	3	-
Gas Flare	-	-	-	-	-	-	4	-
Screw Conveyor	-	-	-	-	-	2	-	-
Sliding Frame	-	-	-	-	-	4	-	-
Piping & Valve	3	3	1	1	1	2	3	3
Scale	-	-	-	-	-	4	-	-
Electrical								
MCC & VFD	2	2	2	2	2	3	4	-
Instrumentation								
PLC & Flow Meter	2	2	2	2	2	3	3	-

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

- MCC = Motor Control Center;
- PLC = Programmable Logic Controller;
- RUL = Remaining Useful Life;
- VFD = Variable Frequency Drive

Major Assets

Major Assets	Quantities
Sludge Blending Facility	
Sludge Blending Tanks	2
Digester Feed Pumps	6
Electrical Building	1
Plant Boiler Facility	
Building	1
Boilers and Heat Exchangers	2

Major Assets	Quantities
Dewatering	
Centrifuges	5
Sludge Feed Pumps	5
Cake Transfer Pumps	5
Polymer System	1

Major Assets	Quantities
Centrifuge Building & Silos Odor Control	
Biofilters	3
Ammonia Scrubber	1
Gas Handling	
Gas Compressors	3
Gas Dryer	1

Major Assets	Quantities
Gas Flares	3
Gas Holder	
Gas Holder Tank	1
Truck Loading	
Cake Storage Silos	2
Sliding Frames	2
Screw Conveyors	12

Major Assets	Quantities
Truck Loading Bay Odor Control	
2-stage Chemical Scrubbers	2

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 25 – PLANT NO. 2 SOLIDS HANDLING – FACILITIES

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Boilers and Heat Exchangers – Boiler tube leaking; no steam bypass outlet during boilers PM and AQMD required testing; boiler corrosion issues 	<ul style="list-style-type: none"> FR2-0021 – P2 Boiler Re-tubing to be completed. FE18-15 – Plant Boiler System Relief at Plant No. 2. P2-128 decided to add the third boiler to cover exiting boiler capacity. Existing boiler facility demolition will be added to XP2-132 P2 Digester Demolition.
<ul style="list-style-type: none"> Gas Handling System – Gas compressor system end of useful life and needs replacement 	<ul style="list-style-type: none"> J-124 – Digester Gas Facilities rehabilitation. Gas compressors repair and overhaul by Maintenance.
<ul style="list-style-type: none"> Truck Loading – Aged hydraulic power units Corroded sliding frame hydraulic cylinders Truck loading bay fugitive odors escaping Aged and corroded scales 	<ul style="list-style-type: none"> Maintenance purchase order to refurbish the HPU's. Silo B-side completed. Silo A-side is under repair. PRN-00619 P2 Truck Loading Sliding Frame Hydraulic Cylinders Replacement. PS20-03 Truck Loading Bay Odor Control Improvement Study at Plant No. 2 to develop improvements needed. Maintenance repairs. PS20-03 will evaluate if scale modification needed. If no modification, will plan direct replacement. X-032 Truck Loading Rehabilitation. Plan to add the improvements recommended by PS20-03.
<ul style="list-style-type: none"> Truck Loading Odor Control – Corroded bleach pumps 	<ul style="list-style-type: none"> PRN-00794 - P2 Truck Loading Bay Odor Control Scrubber Bleach Pump Replacement by Maintenance. First pump installed. Will replace the remaining three after the performance proved.
<ul style="list-style-type: none"> Centrifuge – Centrifuge #2 flight damage 	<ul style="list-style-type: none"> PRN-00570 – Centrifuge #2 repair and spare rotating assembly purchase. Centrifuge #2 rotating assembly is replaced with the new one, and the damaged rotating assembly is in the manufacturer's shop for refurbishment and will be used as spare one.
<ul style="list-style-type: none"> Sludge Blending Facility – To be replaced by new sludge blending facility by P2-128 	<ul style="list-style-type: none"> SBF to be demolished after P2-128 completion. SBF demolition will be added to XP2-132 P2 Digester Demolition.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	Fiscal Year															
				FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
FE18-15	Plant Boiler System Relief at Plant No. 2	Boiler system	<ul style="list-style-type: none"> Add steam bypass to release the steam to the atmosphere at boiler bldg. room level. 																
FR2-0021	2 Boiler Re-tubing	Boiler system	<ul style="list-style-type: none"> Re-tube both boilers. 																
N/A	HPU Overhaul	Truck Loading Station	<ul style="list-style-type: none"> Overhaul the hydraulic power units and replace the hydraulic hose. 																
PS20-03	PS20-03 Truck Loading Bay Odor Control Improvement Study at Plant No. 2	Truck Loading Station	<ul style="list-style-type: none"> Plan CIP project to modify existing facility to better capture odor. 																
PRN-00619	Truck Loading Sliding Frame Hydraulic Cylinders Replacement	Truck Loading Station	<ul style="list-style-type: none"> Replace all the four cylinders driving the sliding frames at both silos. 																
PRN-00794	P2 Truck Loading Bay Odor Control Scrubber Bleach Pump Replacement	Truck Loading Bay Odor Control	<ul style="list-style-type: none"> Replace all four bleach pumps with newer and simpler model pumps. 																
N/A	Gas Compressor Overhaul by Maintenance	Gas compressor facility	<ul style="list-style-type: none"> Overhaul all gas compressors. 																
J-124	Digester Gas Facilities Rehabilitation	Gas compressors, dryers, flares, and holder system	<ul style="list-style-type: none"> Replace the entire gas handling system including the gas compressor building. 																
X-032	Truck Loading Rehabilitation	Truck Loading Station	<ul style="list-style-type: none"> Overall rehabilitation of the truck loading station, and plan to add the modification recommended by PS20-03 																

Types of Project Legend:

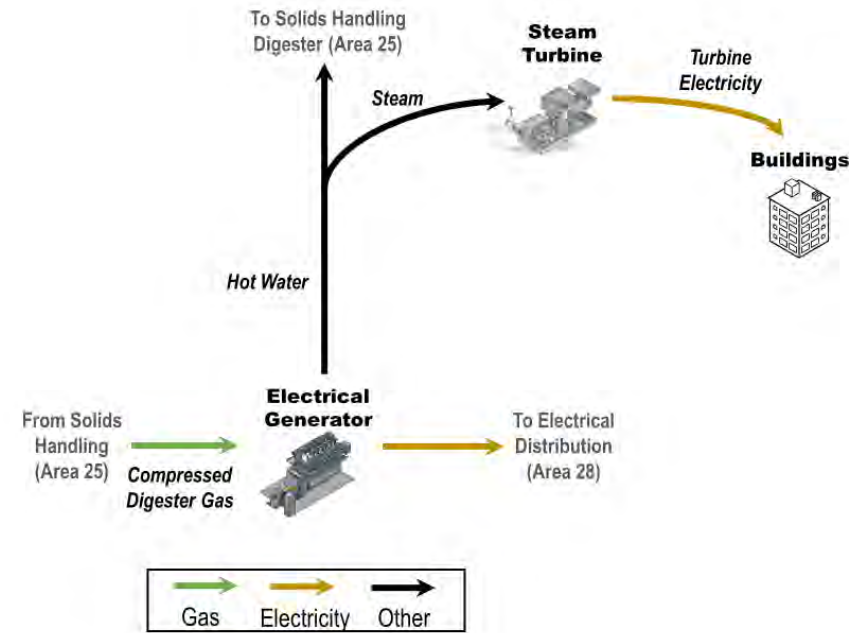
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

AQMD = Air Quality Management District; CIP = Capital Improvement Program; FY = Fiscal Year; HPU = Hydraulic Power Unit; N/A = Not Applicable; NTP= Notice to Proceed; PM = Preventative Maintenance; SBF = Sludge Blending Facility

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 26 – PLANT NO. 2 CENTRAL GENERATION

Process Schematic



Major Assets Remaining Useful Life

Asset Type	Engine Generator #1	Engine Generator #2	Engine Generator #3	Engine Generator #4	Engine Generator #5	Steam Turbine Generator	Steam Condenser	Deaerator Vessel	Heat Recovery Boiler #1	Heat Recovery Boiler #2	Heat Recovery Boiler #3	Heat Recovery Boiler #4	Heat Recovery Boiler #5	OXI Catalyst	SCR Catalyst	Urea Injection System	Starting Air Compressor #1	Starting Air Compressor #2	Starting Air Compressor #3	Inst. Air Compressor #1	Inst. Air Compressor #2	Battery Backup	Plant Water Piping	Miscellaneous
Structural																								
Building	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mechanical																								
General	5	5	5	5	5	1	1	3	3	3	3	3	3	4	4	3	3	3	3	5	5	-	5	-
HVAC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Lube Oil System	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical																								
General	4	4	4	4	4	3	-	-	-	-	-	-	-	-	-	3	3	3	3	5	5	5	-	-
Switchgear	5	5	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Instrumentation																								
General	5	5	5	5	5	4	3	3	4	4	4	4	4	3	3	4	4	4	4	5	5	5	-	-

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

Acronym Key:

HVAC = Heating, Ventilation, and Air Conditioning; Inst. = Instrument; OXI = Oxidizer; RUL = Remaining Useful Life; SCR = Selective Catalytic Reduction

Major Assets

Major Assets	Quantities
Engine Generator	
Gas Engine (16 Cylinders)	5
Electrical Generator	5
Engine Lube Oil System	5
Steam Turbine Generator	
Steam Turbine	1
Electrical Generator	1
Steam Condenser	1
Deaerator Vessel	1

Major Assets	Quantities
Heat Recovery System	
Heat Recovery Boiler	5
Building	
Building	1
Piping	Various
Engine Emission Control	
OXI Catalyst	5
SCR Catalyst	5
Urea Injection System	5

Major Assets	Quantities
HVAC	
Ventilation Supply Fans	5
Ventilation Exhaust Fans	6
Air Compressors	
Engine Starting Air	3
Instrument Air	2

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 26 – PLANT NO. 2 CENTRAL GENERATION

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Gas Engine Generator Set Reliability – Aging components and systems required to operate the five Central Generation Engines are creating reliability issues and need to be addressed 	<ul style="list-style-type: none"> Overhaul engines (J-135). Replace obsolete systems (e.g., battery backup, switch gear, ignition system, PLC upgrade, etc.) (J-117B, PRN-00627, PRN-00697, AI-225).
<ul style="list-style-type: none"> Engine Lube Oil System – Lube Oil Centrifuges instrumentation and controls need to be upgraded 	<ul style="list-style-type: none"> Install new instrumentation and controls onto the existing two units (PRN-00211).
<ul style="list-style-type: none"> Steam Turbine System Rehabilitation – Steam Turbine has degraded and needs rehabilitation 	<ul style="list-style-type: none"> Overhaul the Steam Turbine and Steam Condenser (PRN-00262).
<ul style="list-style-type: none"> Plant Water Piping – Plant water (i.e., Cooling Water) piping has degraded and needs replacement 	<ul style="list-style-type: none"> Replace all plant water piping in the basement of Central Generation (FE20-04).
<ul style="list-style-type: none"> Emission Control System – Housings on the Oxidizer Catalysts are failing prematurely 	<ul style="list-style-type: none"> Analyze and design new Catalyst Housings (PRN-00427).
<ul style="list-style-type: none"> Instrument Air Compressors – Air Compressors are no longer operational 	<ul style="list-style-type: none"> Replace the entire Instrument Air System, installing new compressors and appurtenances (PRN-00536).

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
J-117B	Outfall Low Flow Pump Station	Battery Backup, Switch Gear	Replace legacy Battery Backup and Switch Gear equipment.															
PRN-00536	Instrument Air Compressor Replacement	Instrument Air Compressor System, Urea Injection System	Install two new (like for like) Instrument Air Compressors.															
PRN-00394	Steam Turbine Surface Condenser	Steam Turbine Generator	Rehabilitation of the Steam Turbine Surface Condenser.															
PRN-00211	Engine Lube Oil System Controls Upgrade	Engine Generator	Install new instrumentation and controls onto the existing units.															
PRN-00427	Engine Emission Control Redesign	OXI/SCR Catalyst	Analyze and design new Catalyst Housings.															
J-135	Engine Overhauls	Engine Generator	Overhaul the engines as needed.															
PRN-00314	Ventilation Supply Fan Rehabilitation	HVAC	Replace one fan and rehabilitation the fan support structures.															
FE20-04	Plant Water Pipe Rehabilitation	Plant Water Piping	Replace existing plant water piping with new.															
PRN-00627	Engine Ignition Timing Sensor Obsolescence Repair	Engine Generator	Replace and install new Hall Effect Sensors onto each engine.															
PRN-00697	Engine Cylinder Pressure Sensing and Diagnostics	Engine Generator	Install Pressure Sensors onto each Cylinder, incl. Software/HMI.															
AI-225	Engine Ignition System Obsolescence Repair	Engine Generator	Replace and install new engine Ignition Control Systems onto each engine.															

Types of Project Legend:

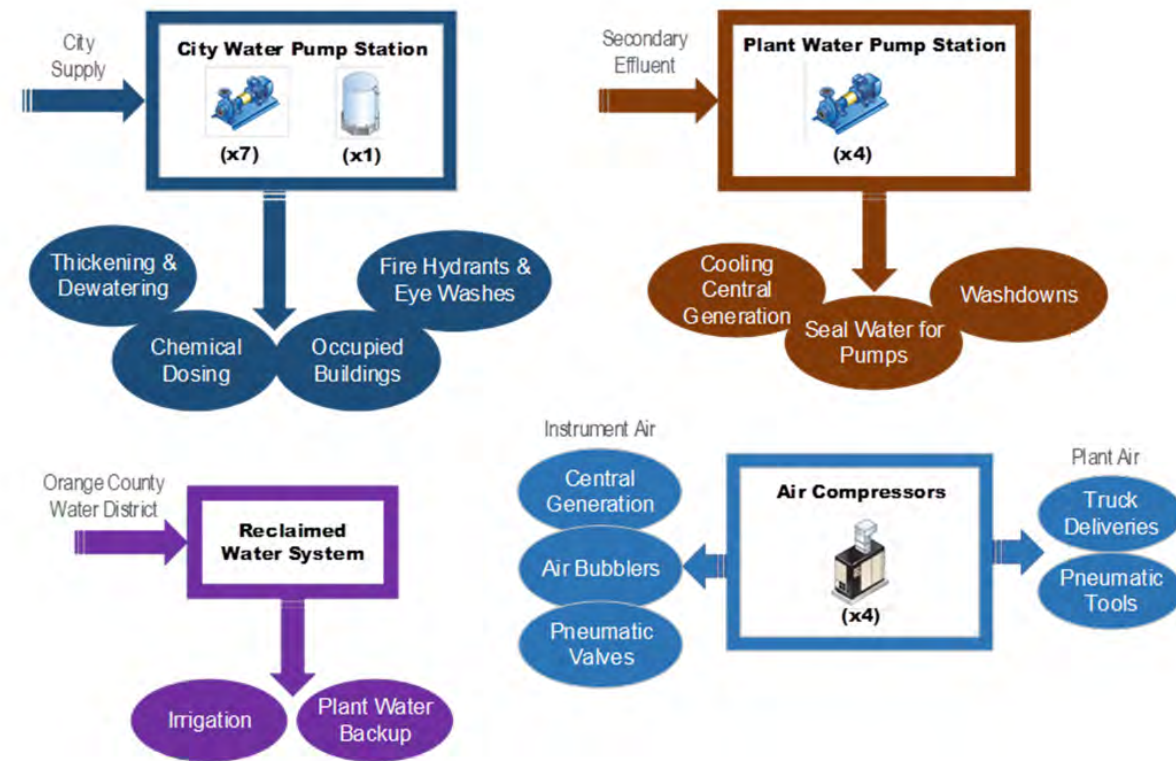
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvement Program; FY = Fiscal Year; HMI = Human Machine Interface; HVAC = Heating, Ventilation, and Air Conditioning; OXI =Oxidizer; RUL = Remaining Useful Life; PLC = Programmable Logic Controller; SCR = Selective Catalytic Reduction

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 27 – PLANT NO. 2 UTILITIES

Process Schematic



Major Assets Remaining Useful Life

Asset Type	City Water System	Plant Water System	Reclaimed Water Piping	Plant Air Systems
Civil				
Pipes	2	3	2	3
Structural				
Pump Station	3	3	-	-
Tanks	3	-	-	-
Mechanical				
Pumps	3	3	-	-
Strainers	-	3	-	-
Compressors	-	-	-	3
Ventilation System	2	2	-	-
Electrical				
MCC	2	2	-	-
VFD	3	3	-	-
Instrumentation				
PLC, Flowmeter	2	2	-	2

Asset RUL Legend:

- RUL <5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL >20 years

Acronym Key:

- MCC = Motor Control Center;
- RUL = Remaining Useful Life;
- PLC = Programmable Logic Controller;
- VFD = Variable Frequency Drive

Major Assets

Major Assets	Quantities
City Water	
Pumps	7
Tanks	4
Piping	8.9 Miles

Major Assets	Quantities
Plant Water	
Pumps	4
Strainers	4
Piping	10.6 Miles

Major Assets	Quantities
Reclaimed Water	
Piping	6 Miles

Major Assets	Quantities
Plant Air	
Compressors	3
Plant Air Piping	6.7 Miles
Instrument Air Piping	1.6 Miles

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 27 – PLANT NO. 2 UTILITIES

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Plant/Instrument Air Lines have possible corrosion issues and leaks 	<ul style="list-style-type: none"> Using on-call contractors to perform a condition assessment of the plant air system and identify any leaks or other deficiencies such as improper connections. Current plan is to use the information from the assessment to create larger CIP projects that can improve the piping network throughout the plant. Smaller repairs will be done using on-call contractors and maintenance/asset issues projects.
<ul style="list-style-type: none"> Plant Water Piping is corroding and some failures have occurred 	<ul style="list-style-type: none"> Due to the corrosive nature of the plant water, the current ductile iron pipes are corroding prematurely and causing failures throughout the plant. FE18-14 will address aging plant water piping in the tunnels and PRN-00740 will replace a small portion of plant water piping with HDPE. Overall goal for these and future projects is to replace ductile iron pipes with either Fiberglass Reinforced or HDPE piping material.

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work															
				FY21/22	FY22/23	FY23/24	FY24/25	FY25/26	FY26/27	FY27/28	FY28/29	FY29/30	FY30/31	FY31/32	FY32/33	FY33/34	FY34/35	FY35/36
FE18-14	Plant Water Pipeline Rehabilitation	Piping in tunnels	<ul style="list-style-type: none"> Replace 1600 feet of piping in the tunnels. 															
J-117B	Outfall Low Flow Pump Station	Plant Water Pump Station	<ul style="list-style-type: none"> Replace Plant Water Pump Station and plant water piping near project. 															
P2-133	B- and C-Side Primary Clarifiers Rehabilitation	Primary Clarifiers	<ul style="list-style-type: none"> Replace City water piping near project. 															
P2-98A	Primary Treatment Rehabilitation	City Water Pump Station	<ul style="list-style-type: none"> Refeed City Water Pump Station directly from DC-F 480 switchgear. 															
X-036	Plant No. 2 City Water Pump Station	City Water Pump Station	<ul style="list-style-type: none"> Rehabilitation of City Water Pump Station. 															
X-037	Plant No. 2 Plant Water Pump Station Demolition	Plant Water Pump Station	<ul style="list-style-type: none"> Demo Plant Water Pump Station as a new Plant Water Station will be built by J-117B. 															
AI-36	Air, Reclaimed, & Plant Water Valve Replacements	Cen Gen & Grit Handling Building	<ul style="list-style-type: none"> Several failed valves in the area need to be replaced. 															
PRN-00740	6 in DIP Plant Water Pipe Replacement	Primary Sedimentation Basin	<ul style="list-style-type: none"> Replacing 100 feet of DIP near PSB-P & Q by Maintenance Project. 															

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

Cen Gen = Central Generation Facility; CIP = Capital Improvement Program; DIP = Ductile Iron Pipe; DC-F = Distribution Center F; FY = Fiscal Year; HP = Horsepower; PSB = Primary Sedimentation Basin

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 27 – PLANT NO. 2 UTILITIES

Remaining Useful Life of Utility Infrastructure



RUL Legend:

■ RUL <5 years	■ RUL 5-10 years	■ RUL 11-15 years	■ RUL 16-20 years	■ RUL >20 years
---	--	---	---	---

Acronym Key:

RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 27 – PLANT NO. 2 UTILITIES

Remaining Useful Life of Utility Infrastructure



RUL Legend:

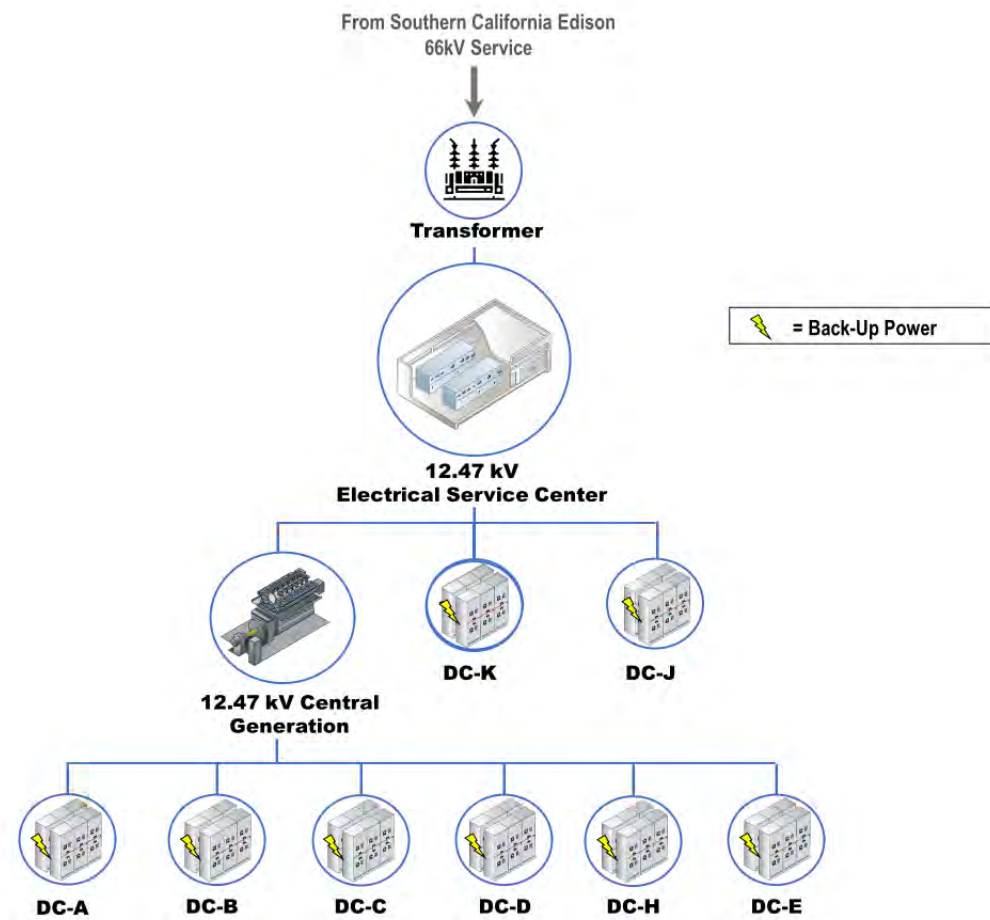
■ RUL <5 years	■ RUL 5-10 years	■ RUL 11-15 years	■ RUL 16-20 years	■ RUL >20 years
---	--	---	---	---

Acronym Key:

RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 28 – PLANT NO. 2 ELECTRICAL DISTRIBUTION

Process Schematic



Major Assets

Major Assets	Quantities
Transformers	58
Standby Generators	9
12kV Switchgears	27
480V Switchgears	32
125VDC and 24VDC Battery Systems	38
UPS	27

Acronym Key:
 Cen Gen = Central Generation Facility;
 DC = Distribution Center;
 EPSA = Effluent Pump Station Annex
 kV = Kilovolt;
 PB = Power Building;
 SPF = Standby Power Facility
 RUL = Remaining Useful Life;
 VDC = Volts of Direct Current;
 UPS = Uninterruptible Power Supply
 V = Volts

Major Assets Remaining Useful Life

Asset Type	Service Center	Cen Gen	DC-A	DC-B	DC-C	DC-D	DC-E (EPSA)	EPSA SPF	DC-H (Headworks)	Headworks Standby Building	DC-J	DC-K	PB-A	PB-B	PB-C	PB-D
Tier I – 12.47KV Primary Distribution Level																
Transformers: 12.47/2.4kV	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Transformers: 12.47/0.48kV	3	4	3	3	4	3	3	-	2	-	2	1	4	4	4	4
12.47kV Switchgears	3	5	3	3	4	4	4	3	2	2	2	1	-	-	-	-
12.47 kV Load Interrupter Switches	-	-	-	3	-	-	-	-	-	-	-	1	4	4	4	4
12.47kV Feeders	4	4	1	1	4	4	4	3	2	2	2	1	1	1	4	4
12.47kV Generators	-	-	-	-	-	-	-	3	-	3	-	-	-	-	-	-
Tier II – 4.16kV Distribution Level																
4.16kV Feeders	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Tier III – 2.4kV Distribution Level																
2.4kV Feeders	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Tier IV – 480V Distribution Level																
480V Switchgears	-	4	3	3	4	4	-	-	2	-	2	1	4	4	4	4
Transfer Switches	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4
Generators	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
Tier V – UPS																
UPSs Individual	-	5	-	-	5	4	-	-	4	-	-	4	-	4	-	-
UPSs Regional	-	-	-	1	-	-	1	-	-	-	4	-	-	-	-	-
Tier VI – 125 VDC and 24 VDC Battery Systems																
125VDC Chargers	4	5	5	5	-	-	-	4	4	4	4	2	4	4	-	-
125VDC Batteries	4	5	5	5	-	-	-	4	4	4	4	2	4	4	-	-
24VDC Chargers	-	5	-	-	-	-	-	4	-	4	-	-	-	-	4	4
24VDC Batteries	-	5	-	-	-	-	-	4	-	4	-	-	-	-	4	4
Generator Controls																
Generator Controls	-	5	-	-	-	-	-	3	-	3	-	-	-	-	4	4

RUL Legend:

■ RUL <5 years
 ■ RUL 5-10 years
 ■ RUL 11-15 years
 ■ RUL 16-20 years
 ■ RUL >20 years

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 28 – PLANT NO. 2 ELECTRICAL DISTRIBUTION

Key Issues

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Southern California Edison is currently a single 66kV Feeder Service 	<ul style="list-style-type: none"> P2-126 Project will install new 66kV Switchyard; Additional 66kV Line; Additional Transformer with automatic Load tap changes, new Electrical Service Center.
<ul style="list-style-type: none"> Aging Battery Chargers and Batteries 	<ul style="list-style-type: none"> XPS0061 DC Battery Monitoring and Management Solutions: Study to develop technical solution to monitor existing battery life, develop path forward for replacing aged battery and charger systems.
<ul style="list-style-type: none"> Plant No. 2 Cabling: Aging Medium Voltage Cabling Infrastructure 	<ul style="list-style-type: none"> MP-320 Service Contract in place for testing aging medium voltage cables to perform Condition Assessment and develop plan for PM.
<ul style="list-style-type: none"> Plant No. 2 Cabling: 480V (Headworks) failing cables 	<ul style="list-style-type: none"> FR2-0024 and other Maintenance Projects will address repairs of Plant No. 2 480V (Headworks) failing cables.
<ul style="list-style-type: none"> 12kV Cen Gen Switchgear obsolescence 	<ul style="list-style-type: none"> J-117B Project will replace 12kV Switchgear.

Acronym Key:

DC = Direct Current; kV = Kilovolt; PEPS = Primary Effluent Pump Station;
 PM = Preventive Maintenance; V = Volt

ASSET MANAGEMENT SYSTEM SUMMARY – AREA 28 – PLANT NO. 2 ELECTRICAL DISTRIBUTION

Current and Future Projects

Project No.	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 33/34	FY 34/35	FY 35/36
FR2-0024	P2 Headworks 480V Cable Replacement	Plant No. 2 Power Distribution/Headworks	<ul style="list-style-type: none"> Plant No. 2 Headworks 480V Cable Repairs. 														
MP-320/S-2019-1107B	On-Call Plant No. 1 and Plant No. 2 Medium Voltage Cable Testing Services	Plant No. 1 and Plant No. 2 Power Distribution and Cabling Infrastructure	<ul style="list-style-type: none"> Condition assessment and Testing of Plant No. 1 and Plant No. 2 Medium Voltage Cabling Infrastructure. 														
J-117B	Outfall Low Flow PS	Power Distribution	<ul style="list-style-type: none"> Project will replace LOFLO/PWPS 480V Switchgear, 12.47kV Switchgears (Main and Generators) at Cen Gen, OOBS/DC-C 12.47kV and 480V Switchgear, replace electromechanical relays with solid state relays for Service Center and Distribution Center B, add new SCADA Points and Load Shedding System. 														
FE19-08	Secondary Treatment VFD Replacements at Plant No. 2	Power Distribution	<ul style="list-style-type: none"> This project will replace six 125HP Return-Activated Sludge VFD's, four 50HP Waste-activated Sludge VFD's, four 300HP Primary Effluent Pump Station VFD's, and associated cables and conductors at Plant No. 2 														
SC19-06	EPSA Standby Power Generator Control Upgrades at Plant No. 2	Plant No. 2 Power Distribution	<ul style="list-style-type: none"> This project will upgrade 12.47kV EPSA Generator Switchgear and Generator controls. 														
P2-98A	A-Side Primary Basins Replacement at Plant No. 2	Plant No. 2 Primary Basins, Power Distribution System	<ul style="list-style-type: none"> This project will demolish existing electrical distribution equipment at Primary Clarifiers D,E,F,G Electrical Buildings, Power Buildings A, B, C, City Water Pump station, Plant Water Strainers, and other facilities. The Project will provide new electrical services to existing power buildings and new Distribution Center F. 														
J-124	Digesters Gas Facility Replacement	Plants No. 1 and Plant No. 2 Compressors, Flares, Power Distribution	<ul style="list-style-type: none"> This Project will build Digester Gas Compressor Building and associated electrical/control room, New Distribution Center L. 														
P2-128	TPAD Digester Facility at Plant No. 2	Plant No. 2 Digesters, Electrical and Mechanical Systems	<ul style="list-style-type: none"> This project will include 2-story Electrical Power Building consisting of electrical distribution equipment to support new TPAD Digester Facility. The Project will decommission Power Building C. 														
P2-133	Plant No. 2- B/C-Side Basins Rehabilitation	Plant No. 2 Primary Basins, Mechanical and Electrical Systems	<ul style="list-style-type: none"> New B- and C-Side Primary Scrubber Complex construction including relocating the electrical feed to new Distribution Center F and demolition of Power Building D. 														
X-103	UPS System Upgrades	Plant No. 2 Power Distribution System	<ul style="list-style-type: none"> New 150kV-ampere Regional UPS addition at Plant No. 2. 														
P2-126	Warehouse, Electrical Substation and 12kV Service Center Replacement at Plant No. 2	Power Distribution	<ul style="list-style-type: none"> This Project will add a second 66 kV feed to Plant No. 2, replace Southern California Edison Substation, replace the Electrical Service Center and Warehouse. The Project will also relocate a major power distribution duct bank to clear space for future Operations and Maintenance Building. 	Project is ON HOLD													

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP = Capital Improvements Program; FY = Fiscal Year; kV = Kilovolt; LOFLO = Low Flow; NFPA = National Fire Protection Association; OOBS = Ocean Outfall Booster Station; SCADA = Supervisory Control and Data Acquisition; TPAD = Temperature-Phased Anaerobic Digester; UPS = Uninterruptible Power Supply; V = Volt; VFD = Variable Frequency Drive

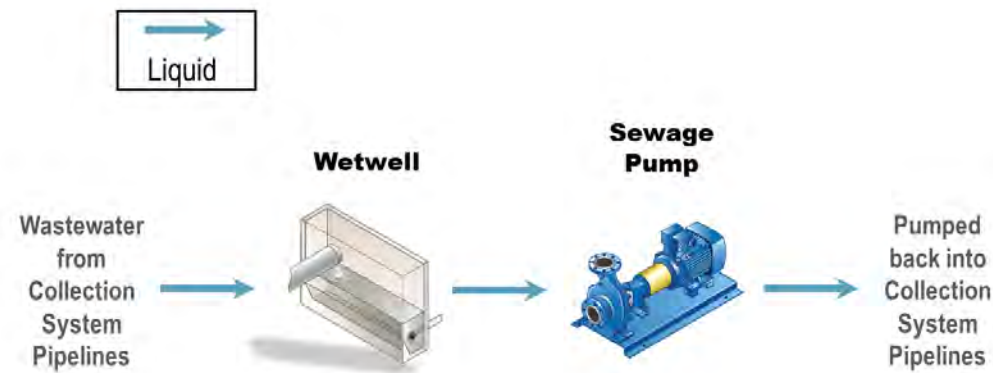
This page is intentionally left blank.

Collection System Pump Station and Forcemain Asset Management Summaries

This page is intentionally left blank.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – PUMP STATIONS

Process Schematic



Major Assets Remaining Useful Life

Asset Type	15th Street	A Street	Bay Bridge	Bitter Point	College	Crystal Cove	Edinger	Lido	MacArthur	Main Street	Rocky Point	Slater	Seal Beach	Westside	Yorba Linda	Newport Force Mains
Civil - Piping																
Force Mains	3	3	4	2	3	3	4	1	4	4	1	4	3	3	3	1
Structural																
Pump Station	4	4	3	4	1	3	3	3	5	2	4	3	4	2	4	-
Wet Well	4	4	4	1	4	3	3	4	3	4	3	4	4	3	3	-
Mechanical																
Pumps	2	3	5	5	2	4	3	3	4	4	5	5	5	4	4	-
Valves	5	5	5	2	3	5	3	5	4	5	3	5	5	3	5	-
Ventilation System	3	3	4	3	3	3	3	4	4	3	5	3	4	3	2	-
Emergency Generator	-	-	3	5	-	3	-	-	-	2	2	3	-	2	-	-
Electrical																
Motor Control Center	2	2	4	1	1	4	4	3	4	3	2	3	5	2	4	-
Variable Frequency Drive	3	3	5	2	2	-	-	4	3	4	2	3	5	2	-	-
Motors	3	3	4	2	2	3	3	4	3	3	2	3	4	3	3	-
Transformer	2	2	4	1	1	4	2	3	4	2	2	2	4	2	3	-
Instrumentation																
Programmable Logic Controller	1	1	4	2	2	2	1	5	2	2	1	2	3	3	2	-
Flowmeter	3	3	5	2	1	3	4	2	-	4	2	3	4	3	3	-

Asset RUL Legend:

- RUL < 5 years
- RUL 5-10 years
- RUL 11-15 years
- RUL 16-20 years
- RUL > 20 years

Acronym Key:

RUL = Remaining Useful Life

Pump Station	Major Assets – Quantities				
	Wet Wells	Pumps	Force Mains	Valves	Emergency Generators (Y/N)
15th Street	1	3	2	22	N
A Street	1	3	2	19	N
Bay Bridge	1	5	2	17	Y
Bitter Point	1	5	2	23	Y
College	1	3	2	18	N
Crystal Cove	1	2	2	13	Y
Edinger	1	2	1	8	N
Lido	1	3	2	17	N
MacArthur	1	2	1	8	N
Main Street	2	10	3	38	Y
Rocky Point	1	4	2	18	Y
Slater	1	5	2	17	Y
Seal Beach	2	8	2	24	N
Westside	1	4	1	16	Y
Yorba Linda	1	3	1	11	N
Newport Force Mains	--	--	2	--	--
Total	17	62	29	269	-

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – PUMP STATIONS

Key Issues	Actions and Recommendations
<ul style="list-style-type: none"> Safety – Currently, four of OC San’s older pump stations do not have atmospheric monitoring (for hydrogen sulfide gases) or standard safety indication lighting. Also, pump station infrastructure is often located in the public right of way making safe access to these facilities an ongoing issue. 	<ul style="list-style-type: none"> An ongoing planning study (PS18-06) is reviewing and interpreting electrical code and will establish OC San design standards to address this issue. Practicing ongoing safety measures and traffic control when working in the public right of way will continue to be of the utmost importance.
<ul style="list-style-type: none"> Natural Phenomenon – Edinger pump station is located immediately adjacent to an undersized flood control channel. Crystal Cove pump station is experiencing gradual site settlement. Both natural hazards present a risk to normal operation of the pump stations. 	<ul style="list-style-type: none"> A capital project (11-33) has been established to replace and relocate Edinger pump station. A planning study (XPS0049) has been established to determine the necessary mitigation measures to remediate site settlement at Crystal Cove pump station.
<ul style="list-style-type: none"> Increased Methane Gas Levels – Methane gas accumulation has become a safety concern at some pump stations. The amount of gas seems to increase during summer months and presents a unique challenge because of the short response time necessary to address the safety concerns of increased ignition risk. 	<ul style="list-style-type: none"> OC San crews respond to alarms that indicate increased levels of methane gas. A multi-division task1 force has been established to address this issue. The effort includes in-depth liquid and air sampling, installation of a two-stage unit to treat odorous air pulled from Bitter Pt. pump station, and finally establishing an operation strategy for the force main system.
<ul style="list-style-type: none"> Corrosion – Corrosion is an ongoing problem in this very harsh environment. In places where the system has been kept from venting and mixing of wastewater is prevalent, such as wet wells, the degree of corrosion has (or will soon) require the replacement/rehabilitation of the assets. 	<ul style="list-style-type: none"> Visual assessments of known corrosion issues are performed on an ongoing basis. When necessary, cameras are used to evaluate the spreading of corrosion impacts and confined space entry may be performed to gather additional information to determine when the facility needs to be rehabilitated.
<ul style="list-style-type: none"> Groundwater Intrusion – Groundwater has penetrated four of the newly constructed pump stations in the coastal region of the service area. Groundwater is notoriously corrosive and may compromise the strength of the rebar within the concrete structure walls. 	<ul style="list-style-type: none"> Execute a planning study (XPS0065) to identify possible mitigation measures.
<ul style="list-style-type: none"> Maintenance Access – In some cases, such as venting of the Newport Beach force main system, access to critical facilities is limited by safety and public impact concerns. In other cases, such as MacArthur Pump Station force main, access to critical facilities is not possible because redundancy was not considered when the pump station was designed. 	<ul style="list-style-type: none"> OC San continues to improve planned maintenance processes and inter-agency coordination that allow crews to minimize impacts to the community during necessary maintenance operations. A capital project (7-68) has been established to construct a redundant force main to serve MacArthur Pump Station.
<ul style="list-style-type: none"> Valve Operability and Reliability – In many aging pump stations, isolation valves, check valves and force main valves are starting to fail or becoming difficult to operate due to age, debris and corrosion. These valves are critical to the operability and reliability of OC San pump stations and will require replacement. 	<ul style="list-style-type: none"> Multiple valve replacement projects (PRN-00572, PRN-00734, PRN-00790, PRN-00808) have been identified and efforts are being made to prioritize these projects so they can be executed in a timely manner to ensure OC San pump stations can continue to operate reliably.
<ul style="list-style-type: none"> Property Acquisition – Many of OC San pump stations are located in tight spaces with limited access. This present challenges for crew to perform routine maintenance or execute projects. 	<ul style="list-style-type: none"> OC San continues to evaluate suitable sites to acquire properties for pump stations that will soon be rehabilitated or replaced, such as Slater and College pump stations.

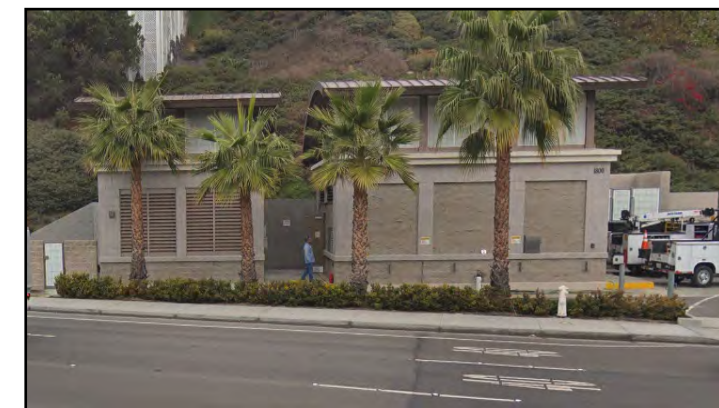
Acronym Key:
OC San=Orange County Sanitation District



College Pump Station



Main Street Pump Station



Rocky Point Pump Station

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – PUMP STATIONS

Current and Future Projects

Project No.	Location	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
5-68	Newport Beach	Newport Beach Pump Station Odor Control Improvements	15th Street, A Street, Bitter Point, Crystal Cove, Lido and Rocky Point Pump Stations	• Installation of venting equipment; phased implementation of chemical use															
FE19-01	Multiple	Portable Generator Connectors at Pump Stations	15th Street, A Street, Bay Bridge, Bitter Point, College, Crystal Cove, Edinger, MacArthur, Main Street, Rocky Point, Seal Beach, Slater and Westside Pump Stations	• Installation of standard portable generator connectors															
PS18-06	Multiple	Go/No-Go Lights and Signage	15th Street, A Street, Baybridge, Bitter Point, College, Crystal Cove, Edinger, Lido, MacArthur, Main Street, Rocky Point, Seal Beach, Slater, Westside and Yorba Linda Pump Stations	• Standardize safety lights and signage															
PRN-00527	Newport Beach	A St. and 15th St. PS Valve Replacement Project	15th Street and A Street Pump Stations	• Replacement of multiple valves at each station															
XPS0065	Newport Beach	Pump Station Groundwater Intrusion Study	15th Street, A Street, Bitter Point and Rocky Point Pump Stations	• Comprehensive study of groundwater management solutions															
XPS0066	Multiple	Force Main Condition Assessment and Bypassing	15th Street, A Street, Baybridge, Bitter Point, College, Crystal Cove, Rocky Point, Slater and Westside Pump Stations	• Comprehensive study of pump station force mains condition and bypassing															
XPS0009	Newport Beach	A Street and 15th Street Pump Station and Force Main Study	15th Street and A Street Pump Stations	• Comprehensive study of pump station condition															
X-022	Newport Beach	15th Street Pump Station and Force Main Project	15th Street Pump Station	• Comprehensive rehabilitation of pump station and force mains															
X-041	Newport Beach	A Street Pump Station and Force Main Project	A Street Pump Station	• Comprehensive rehabilitation of pump station and force mains															
5-67	Newport Beach	Bay Bridge Pump Station Replacement	Bay Bridge Pump Station	• Comprehensive rehabilitation of pump station and force mains															
FRC-0002	Newport Beach	Bay Bridge Pump Station Valve Replacement Project	Bay Bridge Pump Station	• Replacement of pump suction and discharge valves															
FRC-0013	Newport Beach	Bay Bridge Pump Station Forcemain Valve Replacement Project	Bay Bridge Pump Station	• Replacement of force main isolation valves															
PRN-00636	Newport Beach	Generator Radiator Removal and Enclosure Roof Repair at Bitter Point Pump Station	Bitter Point Pump Station	• Replace the generator radiator and repair the standby generator enclosure roof															
XPS0004	Newport Beach	Bitter Point Pump Station Rehabilitation Study	Bitter Point Pump Station	• Comprehensive study of pump station condition															
X-025	Newport Beach	Bitter Point Pump Station Rehabilitation Project	Bitter Point Pump Station	• Comprehensive rehabilitation of pump station															
PS20-07	Costa Mesa	College Pump Station Wet Well Condition Assessment Study	College Pump Station	• Perform detailed condition assessment of the pump station wet well and recommend repair strategy															

Project No.	Location	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
XPS0010	Costa Mesa	College Pump Station Rehabilitation Study	College Pump Station	• Comprehensive study of pump station condition															
X-026	Costa Mesa	College Avenue Force Main Rehabilitation Project	College Pump Station	• Comprehensive rehabilitation of force mains															
X-040	Costa Mesa	College Pump Station Replacement	College Pump Station	• Reconstruction of pump station															
PRN-00724	Newport Beach	Crystal Cove Pump Station - Conduit Wall Penetration Repair	Crystal Cove Pump Station	• Repair pipe penetration and concrete under the pipe															
XPS0049	Newport Beach	Crystal Cove Pump Station Rehabilitation Study	Crystal Cove pump station	• Comprehensive study of pump station condition and capacity															
5-66	Newport Beach	Crystal Cove Pump Station Upgrade and Rehabilitation Project	Crystal Cove Pump Station	• Comprehensive rehabilitation of pump station															
PRN-00808	Newport Beach	Crystal Cove Pump Station Valve Replacement	Crystal Cove Pump Station	• Replacement of multiple valves in the valve pit															
11-33	Huntington Beach	Edinger Pump Station Rehabilitation Project	Edinger Pump Station	• Comprehensive relocation of pump station															
PRN-00790	Newport Beach	Lido Pump Station Valve Replacement	Lido Pump Station	• Replacement of multiple valves and reconfiguration of the wet well return piping															
X-023	Newport Beach	Lido Pump Station Rehabilitation Project	Lido Pump Station	• Comprehensive rehabilitation of pump station															
XPS0017	Newport Beach	Lido Pump Station Rehabilitation Study	Lido Pump Station	• Comprehensive study of pump station condition															
7-63	Newport Beach	MacArthur Pump Station Rehabilitation Project	MacArthur Pump Station	• Comprehensive rehabilitation of pump station															
7-68	Newport Beach	MacArthur Force Main Improvements	MacArthur Pump Station	• Installation of second force main and rehabilitation of existing force main															
7-65	Irvine	Gisler-Redhill Interceptor Rehabilitation	Main Street Pump Station	• Rehabilitation of pump station force mains and replacement of pump suction, discharge and check valves															
XPS0048	Irvine	Main Street Pump Station Rehabilitation Study	Main Street Pump Station	• Comprehensive study of pump station condition															
7-64	Irvine	Main Street Pump Station Rehabilitation Project	Main Street Pump Station	• Comprehensive rehabilitation of pump station															
XPS0005	Newport Beach	Rocky Point Pump Station Rehabilitation Study	Rocky Point Pump Station	• Comprehensive study of pump station condition															
X-024	Newport Beach	Rocky Point Pump Station Rehabilitation Project	Rocky Point Pump Station	• Comprehensive rehabilitation of pump station															
11-34 ^a	Huntington Beach	Slater Pump Station Rehabilitation Project ^a	Slater Pump Station	• Comprehensive rehabilitation of pump station															
MP-207	Huntington Beach	Slater Pump Station Link Seal Repair	Slater Pump Station	• Replace leaking link seal															
PRN-00734	Huntington Beach	Slater Pump Station Valve Replacement	Slater Pump Station	• Replacement of multiple valves															
3-67	Seal Beach	Seal Beach Pump Station Replacement	Seal Beach Pump Station	• Reconstruction of pump station															

Project No.	Location	Project Title	Impacted Facilities	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
FE19-13	Seal Beach	VFD Replacement at Seal Beach pump Station	Seal Beach Pump Station	• Replacement of VFDs and feeders from the VFDs to the motors															
FRC-0004	Seal Beach	Seal Beach Pump Station Isolation Valve Replacement	Seal Beach Pump Station	• Replacement of multiple pump isolation valves															
3-62	Seal Beach	Westminster Boulevard Force Main Replacement	Seal Beach Pump Station	• Replacement of force mains, force main valves, and addition of bypass piping															
3-68	Los Alamitos	Los Alamitos Sub-trunk Extension	Westside Pump Station	• Demolition of pump station															
2-73	Fullerton	Yorba Linda Pump Station Abandonment Project	Yorba Linda Pump Station	• Abandonment of pump station and force main															
MP-474	Newport Beach	Pacific Coast Highway Force Main Manual Air Release Valve Preventive Maintenance	Newport Force Mains	• Set up regular PM to vent manual air release valves every 6 months															

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CIP=Capital Improvement Project; FY=Fiscal Year; N/A = Not Applicable; PM = Preventive Maintenance; OC San=Orange County Sanitation District; UPS = Uninterruptable Power Supply; VFD = Variable Frequency Drive

^a Pending the outcome of potential property negotiations a study may be needed to determine conceptual design of future pump station and the CIP project may be delayed; however, as of this writing Slater PS is scheduled as a rehabilitation project starting in FY21/22.

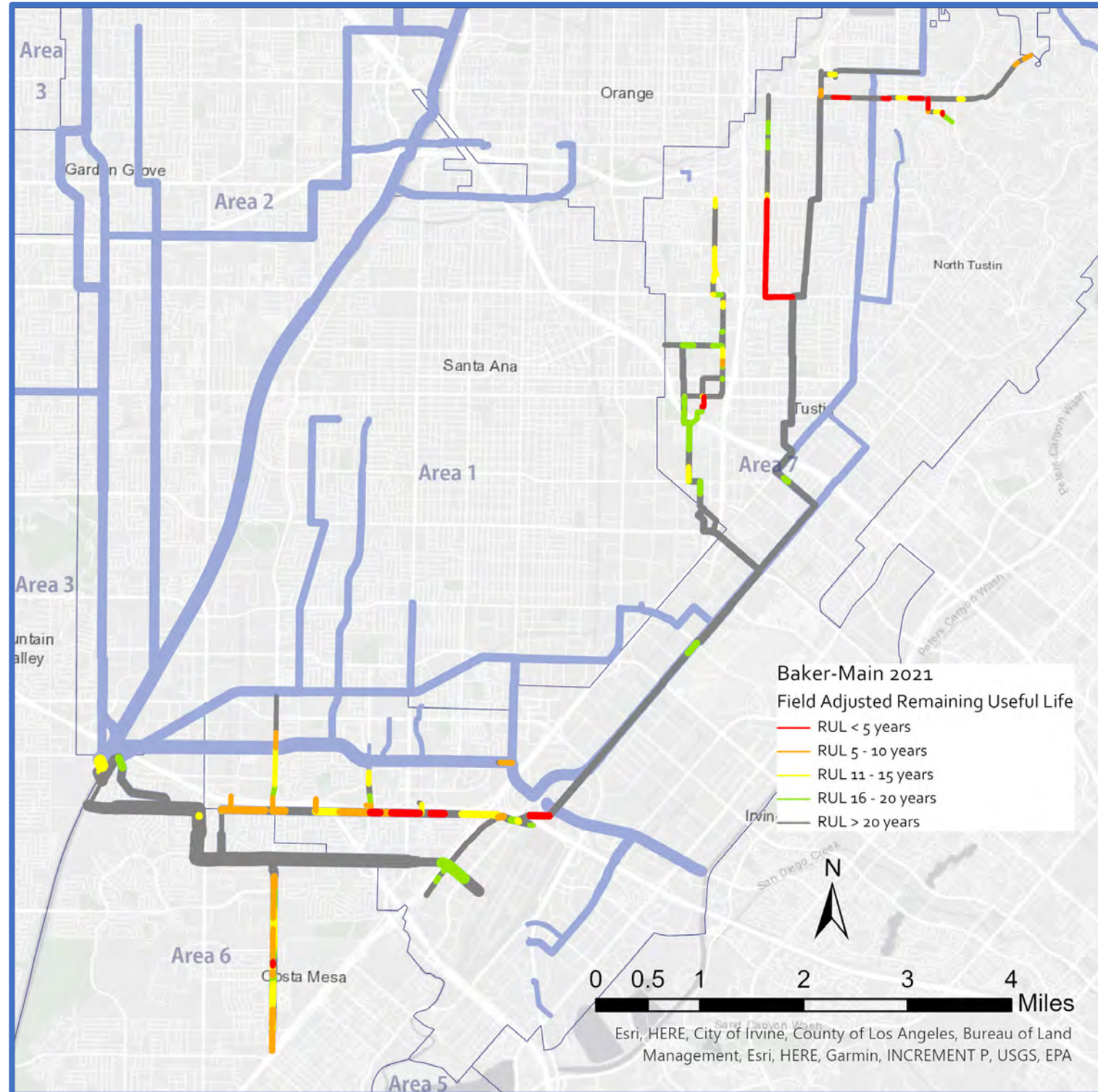
This page is intentionally left blank.

Collection System Pipeline Asset Management Summaries

This page is intentionally left blank.

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – BAKER-MAIN TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	18.8	339	54	28	25
21" - 33" Ø	15.9	246	39	4	17
Reinforced Concrete					
48" - 66" Ø	1.2	16	29	-	-
≥ 72" Ø	3.7	35	27	-	-
Ductile Iron					
42" Ø	0.5	2	30	-	-
Polyvinyl Chloride					
19" - 36" Ø	0.04	2	19	-	-
Acronym Key:					
Ø = Diameter; RUL = Remaining Useful Life					

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – BAKER-MAIN TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Capacity – The Collections Capacity Evaluation Study completed in 2019 conducted a detailed capacity analysis to identify the location of capacity deficiencies during dry and peak wet weather flows. During peak wet weather flows, capacity issues were identified in a portion of the North Trunk and Tustin Avenue sewers. 	<ul style="list-style-type: none"> Project 7-69 will upsize a portion of the North Trunk to address existing capacity issues and Project X-084 will upsize a portion of the Tustin Avenue sewer to existing capacity issues.
<ul style="list-style-type: none"> Groundwater Infiltration – CCTV identified significant areas experience significant groundwater infiltration, primarily concentrated parallel to the I-405 corridor. 	<ul style="list-style-type: none"> Project 7-65 will address all areas with significant groundwater infiltration by rehabilitating the affected pipeline segments with grout and new interior lining.
<ul style="list-style-type: none"> Pipeline Fracturing – CCTV identified several areas with significant fracturing of VCP pipelines. The largest concentration of fractures is concentrated in the Fairview Trunk. 	<ul style="list-style-type: none"> Project 6-20 will rehabilitate the entire Fairview Trunk to address pipeline fractures. Projects 3-66, 7-65, and X-068 will also address fracturing with rehabilitation work.
<ul style="list-style-type: none"> Root Intrusion – CCTV identified significant root intrusion in numerous segments of the sewer trunks in Orange and Tustin. Some blockages in OC San sewer mains may have contributed to a local sanitary sewer overflow in 2021. 	<ul style="list-style-type: none"> A hotspot PM has been created for areas with the worst root intrusion for more frequent cleaning. Additionally, OC San is evaluating the need for a blanket contract for chemical treatment for root control. Project X-068 will address the permanent rehabilitation of pipeline segments damaged by root intrusion.
<ul style="list-style-type: none"> Point Repairs – There are isolated pipe segments with structural and operational defects that are not part of a current project. Most isolated areas are north of the Project 7-65 work area and an additional spot in between the FE18-08 and X-084 project areas. 	<ul style="list-style-type: none"> OC San staff will evaluate the extent of the necessary repairs in these locations and recommend blanket contract work orders or small projects to address the most significant defects. It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in sewers upstream of the Santa Ana River siphon. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.
<ul style="list-style-type: none"> Manhole Access – OC San staff has identified specific locations where manholes are difficult to access for maintenance. Current issues exist with manholes in some OC San easement areas and along the Santa Ana River. 	<ul style="list-style-type: none"> OC San staff will track and prioritize access issues to address key concerns. High priority access improvements will be recommended as a small project or addition to an existing project.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
FE18-08	West Trunk Bypass Sewer Realignment	<ul style="list-style-type: none"> Realignment of sewer facilities in the City of Santa Ana 	■														
3-66	Interstate 405 Widening Impact on OC San Sewers	<ul style="list-style-type: none"> OC San staff support for the realignment/conflicts of District facilities as part of Orange County Transportation's proposed widening of the I-405 	■	■													
7-65	Gisler-Redhill Interceptor Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Costa Mesa 	■	■	■	■											
6-20	Fairview Trunk Sewer Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Costa Mesa 	■	■	■	■	■	■	■								
7-69	North Trunk Improvements	<ul style="list-style-type: none"> Upsizing of pipe segments to increase capacity in the City of Tustin 	■	■	■	■	■	■	■								
X-068	North Trunk/Tustin-Orange Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Orange 					■	■	■	■	■	■					
X-084	Tustin Avenue Sewer Improvements	<ul style="list-style-type: none"> Upsizing of pipe segments to increase capacity in the City of Santa Ana 							■	■	■	■	■	■	■	■	

Types of Project Legend:

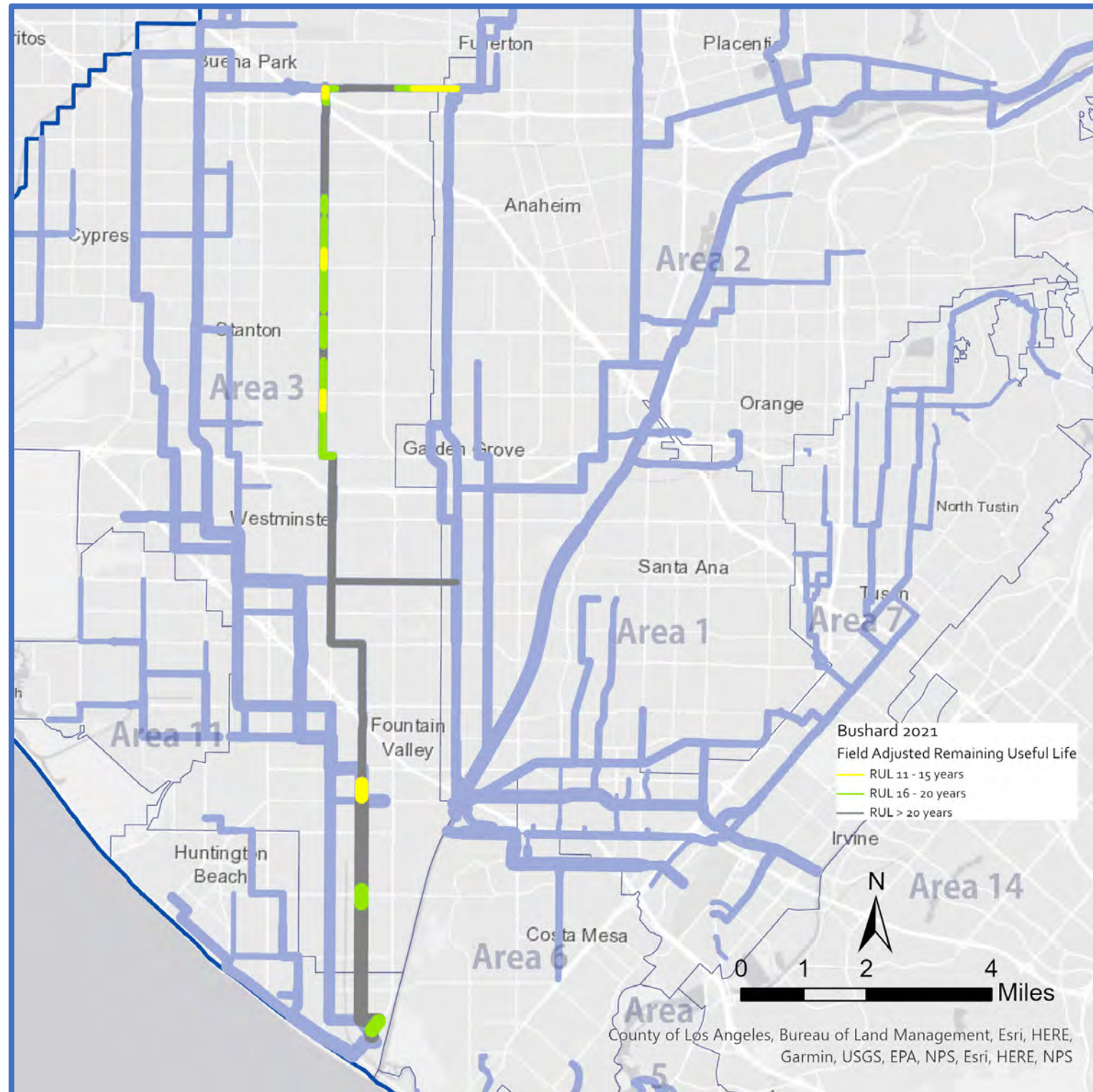
■ CIP - Planning
 ■ CIP - Design
 ■ CIP - Construction
 ■ Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; CIP = Capital Improvement Program; FY = Fiscal Year; I-405 = Interstate 405; OC San = Orange County Sanitation District; RUL = Remaining Useful Life; VCP = Vitrified Clay Pipe

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – BUSHARD TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	0.03	3	37	-	-
24" - 27" Ø	5.1	73	49	-	-
39" Ø	3.6	26	47	-	-
Reinforced Concrete					
≤ 42" Ø	2.4	14	57	-	-
60" - 66" Ø	0.2	7	19	-	-
≥ 72" Ø	4.5	33	21	-	-
Fiberglass					
36" - 42" Ø	4.4	26	56	-	-
48" Ø	0.3	1	71	-	-
Unreinforced Concrete					
42" - 48" Ø	1.0	10	38	-	-
High-Density Polyethylene					
22" Ø	0.1	2	23	-	-
Polyvinyl Chloride					
≤ 16" Ø	0.2	6	17	-	-
24" Ø	0.1	2	19	-	-
Steel					
12" Ø	0.04	3	12	-	-
26" Ø	0.02	1	12	-	-

Acronym Key:
 Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – BUSHARD TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Bushard Diversion Box - The Bushard Diversion Box is not able to operate as originally intended (flow modulation between Plant No. 1 and Plant No. 2 based on flows). 	<ul style="list-style-type: none"> A planning study was completed that recommended immediate repairs that will be completed under MP-307, as well as future improvements that are included in project X-096. MP-307 is currently under construction to restore partially functionality to the Bushard Diversion Box.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in the pipelines immediately upstream of the Bushard Diversion Box. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.
<ul style="list-style-type: none"> Manhole Access – OC San staff has identified specific locations where manholes are difficult to access for maintenance. 	<ul style="list-style-type: none"> OC San staff will track and prioritize access issues to address key concerns. High priority access improvements will be recommended as a small project or addition to an existing project.

Current and Future Projects

Project No.	Project Title	Description of Work																
			FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
MP-307	Bushard Diversion Structure Repair	<ul style="list-style-type: none"> Repair of structural assets and replacement of electrical and instrumentation and control components 																
X-096	Bushard Diversion Structure Improvements	<ul style="list-style-type: none"> Replacement of mechanical equipment 																

Types of Project Legend:

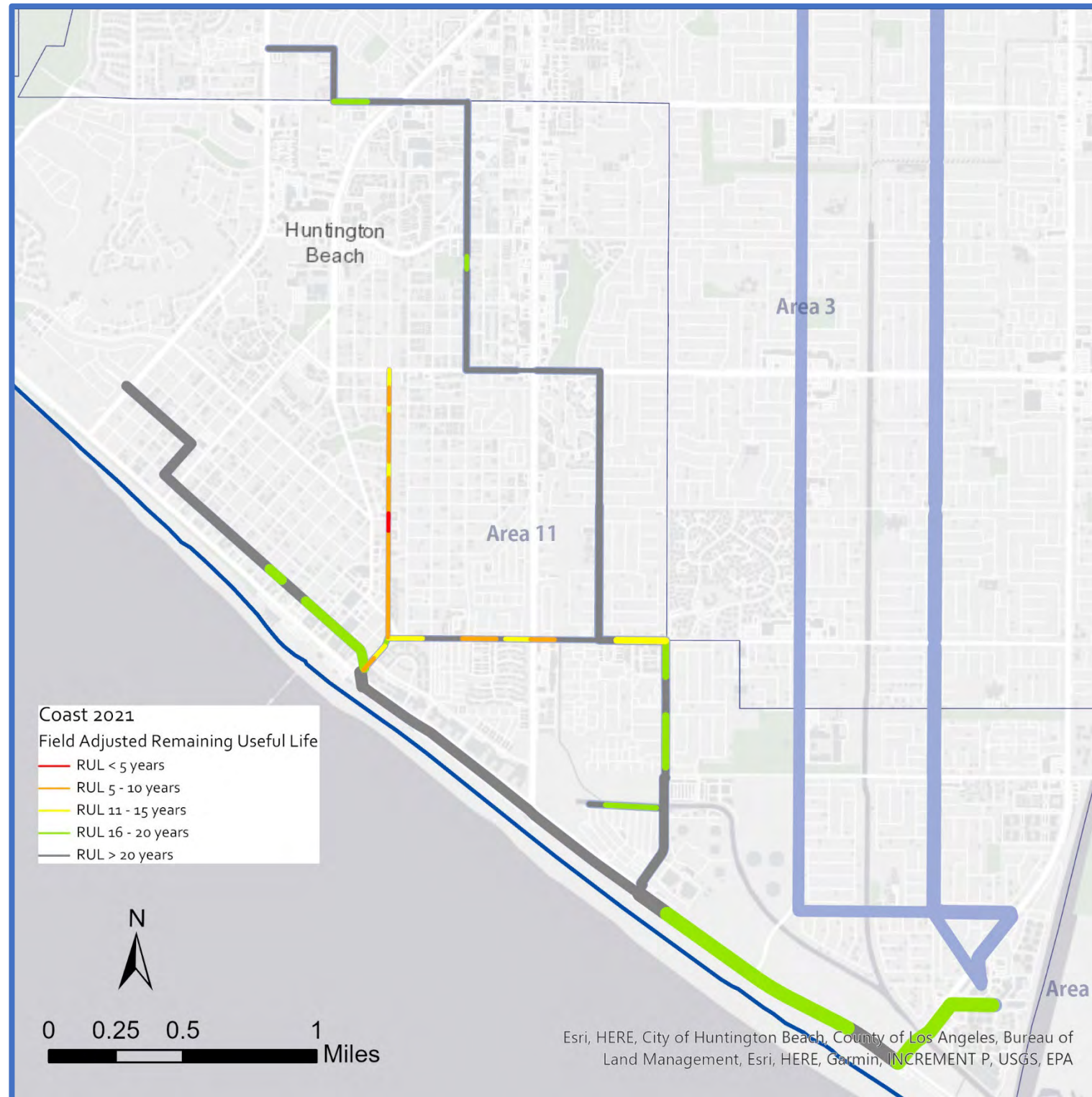
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – COAST TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	2.1	32	62	1	16
21" - 36" Ø	4.4	58	60	-	-
Reinforced Concrete					
48" - 54" Ø	3.3	43	39	-	-
≥ 72" Ø	1.6	12	38	-	-
Polyvinyl Chloride					
54" Ø	0.05	1	40	-	-

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – COAST TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Clustered Defects – There are several contiguous pipe segments with significant fracturing and some root intrusion and nearby isolated pipelines with fracturing in Huntington Beach that are not part of a current project. 	<ul style="list-style-type: none"> OC San staff will validate the creation of a new future project Lake Avenue/Atlanta Interceptor Rehabilitation to address all of these defects.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in the 84-inch pipelines immediately upstream of Plant No. 2 headworks. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
X-XXX	Lake Avenue/Atlanta Interceptor Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Huntington Beach 			■	■	■	■	■	■	■	■	■				

Types of Project Legend:

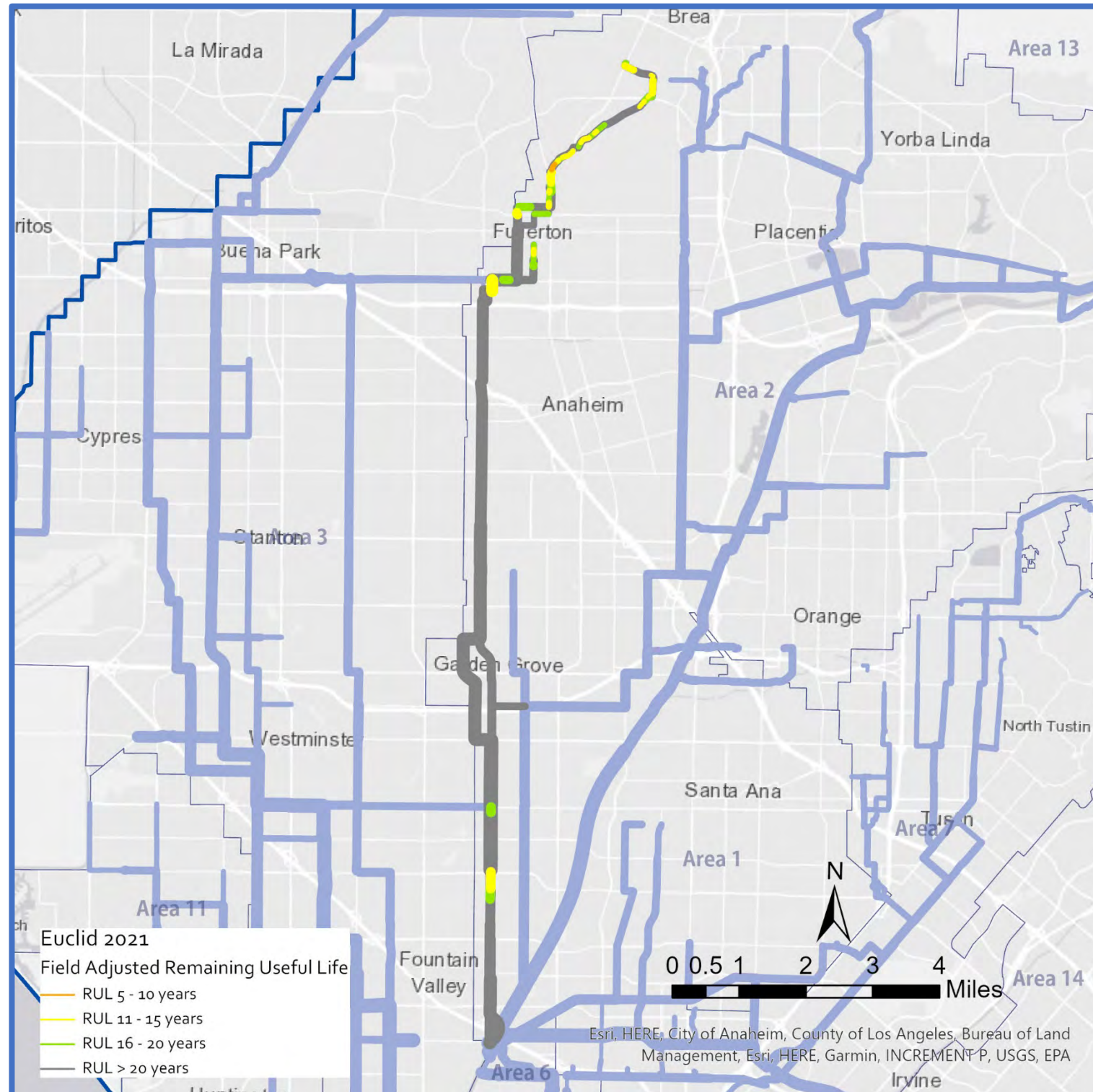
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – EUCLID TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	4.4	78	58	-	1
21" - 27" Ø	3.9	52	38	-	-
≥ 30" Ø	12.1	153	49	-	-
Reinforced Concrete					
≤ 42" Ø	2.4	16	47	-	-
45" - 60" Ø	11.6	129	32	-	-
Polyvinyl Chloride					
≤ 18" Ø	0.05	5	22	-	-
24" - 30" Ø	0.1	7	12	-	-
Steel					
10" Ø	0.01	3	12	-	-
High-Density Polyethylene					
26" Ø	0.05	1	12	-	-

Acronym Key:
 Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – EUCLID TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Clustered Defects – There are several contiguous groups of manholes in the City of Fullerton with liner detachment, surface aggregate visible, and structural reinforcement visible that are not part of a current project. The manholes with structural defects are a mix of concrete as well as brick and mortar wall manholes. Lastly, in the same vicinity there are some pipelines with fracturing and that are not part of a current project. 	<ul style="list-style-type: none"> OC San staff will validate the creation of a new future project Fullerton-Brea Interceptor/Rolling Hills Sub-Trunk Rehabilitation to address all of these defects.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42") are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in the 54-inch pipelines immediately upstream of Plant No. 1 headworks. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
X-XXX	Fullerton-Brea Interceptor/Rolling Hills Drive Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Fullerton 															

Types of Project Legend:

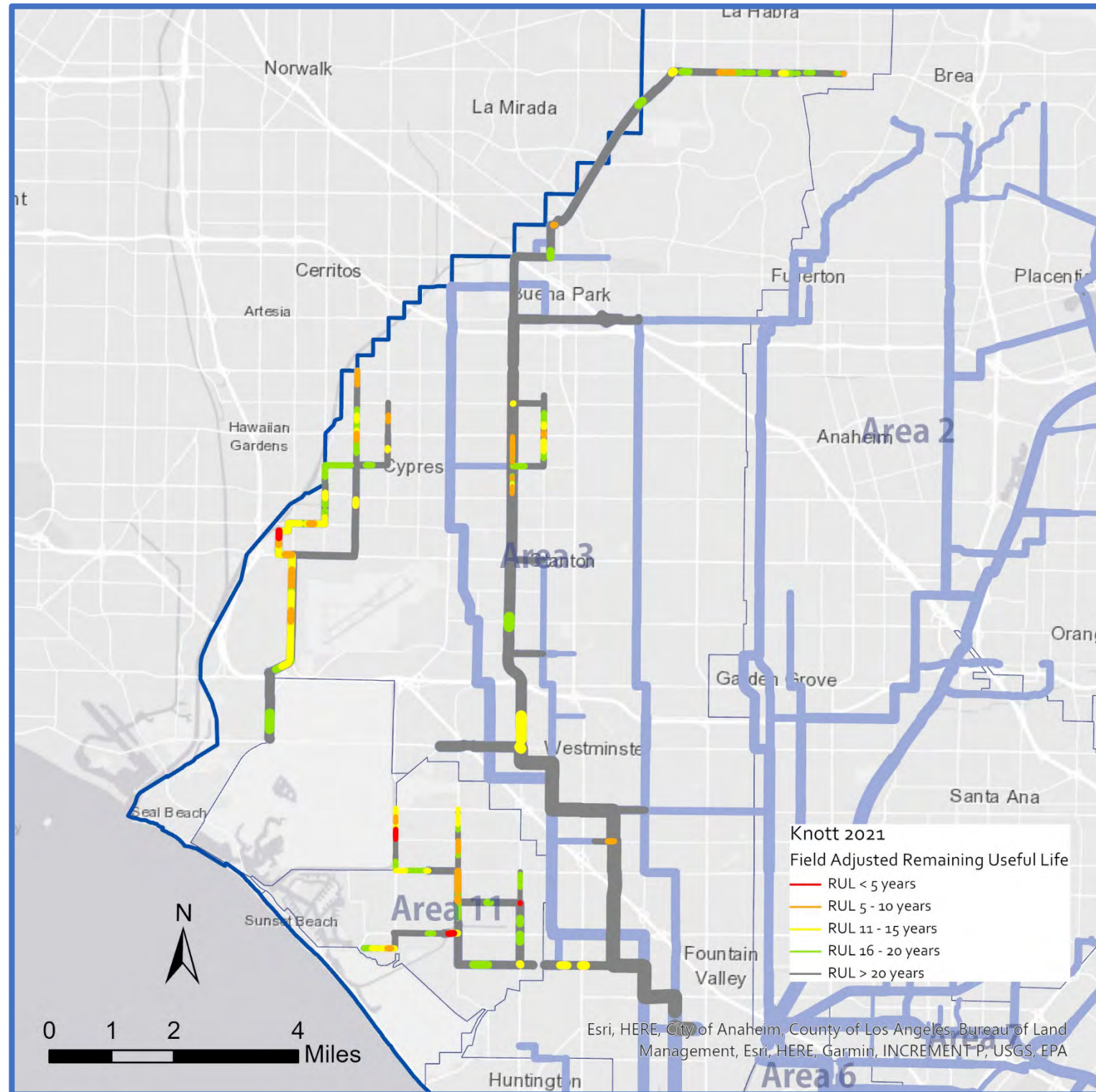
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – KNOTT TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	9.1	129	53	2	18
21" - 27" Ø	20.5	298	49	2	11
≥ 30" Ø	17.1	220	41	-	4
Reinforced Concrete					
≤ 42" Ø	2.0	23	36	-	-
45" - 66" Ø	7.8	72	44	-	-
≥ 72" Ø	9.4	66	47	-	-
Polyvinyl Chloride					
≤ 18" Ø	1.2	17	16	-	-
High-Density Polyethylene					
18" Ø	0.01	2	8	-	-
24" - 32" Ø	0.03	3	12	-	-
Fiberglass					
16" - 24" Ø	0.1	2	12	-	-
Ductile Iron					
20" Ø	0.02	1	62	-	-
4" Ø					
	0.02	1	12	-	-

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – KNOTT TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Groundwater Infiltration – CCTV identified significant areas experience significant groundwater infiltration, primarily concentrated in the western regional trunk sewers. 	<ul style="list-style-type: none"> Projects 3-64A, B, and C will address all areas with significant groundwater infiltration by rehabilitating the affected pipeline segments with grout and new interior lining. Project X-071 will address some areas with infiltration and other areas are with less severe issues are recommended for continued monitoring.
<ul style="list-style-type: none"> Pipeline Fracturing – CCTV identified several areas with significant fracturing of VCP pipelines. The largest concentration of fractures are concentrated in northern Huntington Beach, in Buena Park near the 91 and 5 freeways, and with small diameter sewers owned and operated by the City of Anaheim in the northern central area of the trunk. 	<ul style="list-style-type: none"> Projects 3-60 and X-071 will rehabilitate the pipelines in Huntington Beach and Buena Park to address major fracturing issues. Project X-061 will also rehabilitate some of the pipelines in Imperial Highway to address fracturing. OC San staff will coordinate with the City of Anaheim pertaining to operation and maintenance of the local small diameter sewers.
<ul style="list-style-type: none"> Point Repairs – There are isolated pipe segments with structural and operational defects that are not part of a current project. Most isolated areas are in northern Huntington Beach and Westminster. 	<ul style="list-style-type: none"> OC San staff will evaluate the extent of the necessary repairs in these locations and recommend blanket contract work orders or small projects to address the most significant defects. It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Vault Vibration Issues – Three sewer vaults in Warner Avenue cause local vibration/resonance issues to nearby residences when cars pass over them. 	<ul style="list-style-type: none"> Project FRC-0010 will rehabilitate each of the Warner Avenue vaults to eliminate local vibration/resonance issues.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in the pipelines immediately upstream of the Bushard Diversion Box. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
3-64A	Orange Western Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitate sewer facilities in the cities of Cypress, Anaheim, and Buena Park 															
FRC-0012	Springdale-Relief Concrete Encasement Extension at Wintersburg Channel	<ul style="list-style-type: none"> Extend existing encasement of sewer pipeline in City of Huntington Beach 															
3-64B	Los Alamitos Trunk Sewer Rehabilitation	<ul style="list-style-type: none"> Rehabilitate sewer facilities in the cities of Seal Beach, Los Alamitos, and the community of Rossmoor 															
FRC-0010	Warner Avenue Vault Cover Improvements	<ul style="list-style-type: none"> Rehabilitation of sewer vaults in the City of Huntington Beach 															
FE20-10	Adolfo Lopez Chemical Dosing Station Installation	<ul style="list-style-type: none"> Install odor control chemical dosing facility in the City of Seal Beach 															
3-64C	Cypress Trunk Sewer Rehabilitation - West	<ul style="list-style-type: none"> Rehabilitate sewer facilities in the cities of Los Alamitos, Cypress and La Palma 															
3-60	Beach Trunk/Knott Interceptor/Miller-Holder Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Buena Park 															
X-071	Bolsa Chica/Edinger/Springdale Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Huntington Beach 															
3-68	Los Alamitos Sub-Trunk Extension	<ul style="list-style-type: none"> Extension of the Los Alamitos Sub-Trunk to facilitate abandonment of Westside Pump Station 															
X-061	Imperial Relief Interceptor/Miller-Holder Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of La Habra 															

Types of Project Legend:

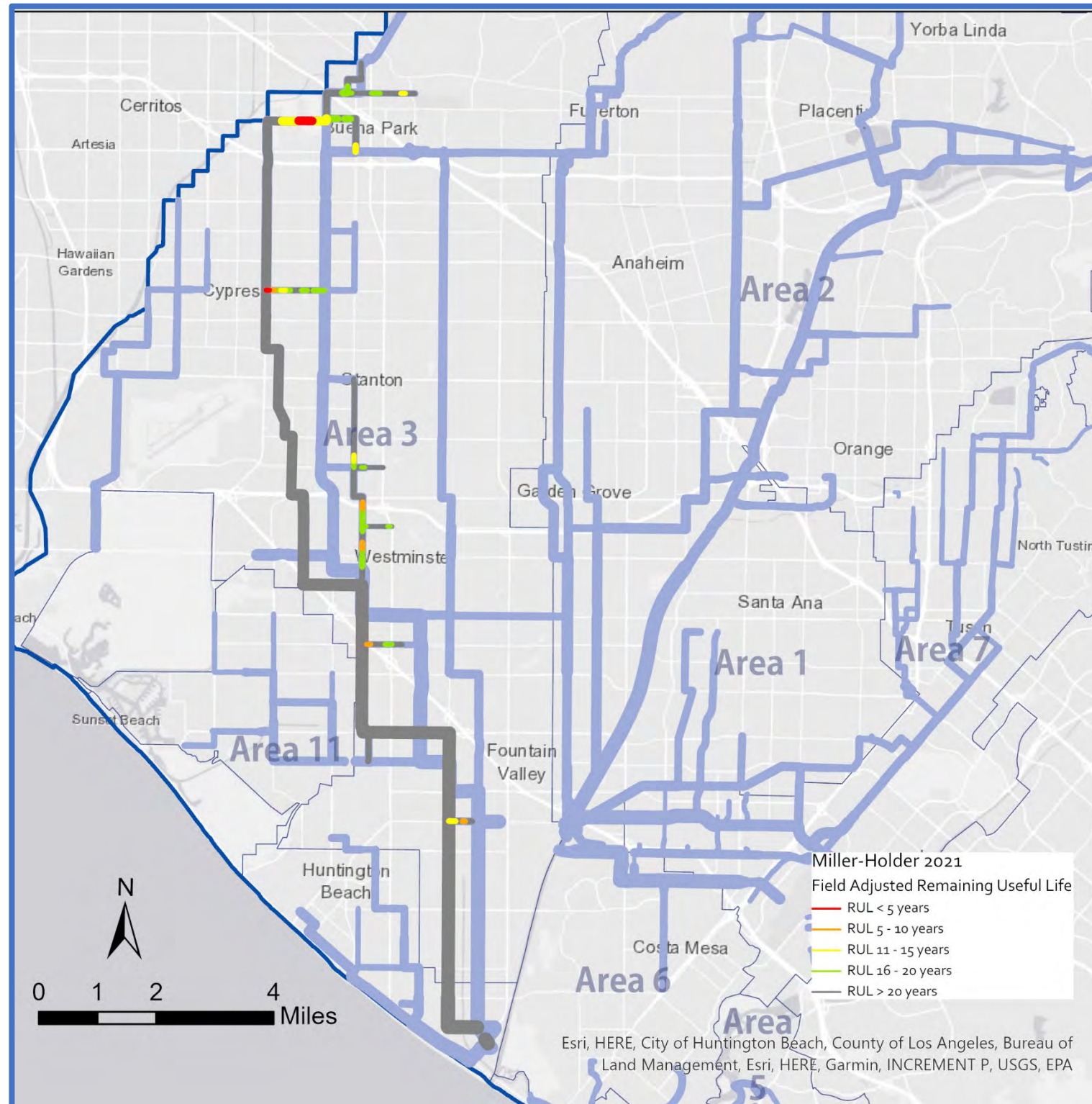
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – MILLER-HOLDER TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	2.9	50	61	-	1
21" - 27" Ø	6.9	87	60	1	4
≥ 30" Ø	2.5	27	59	1	-
Reinforced Concrete					
45" - 69" Ø	13.5	76	62	-	-
≥ 72" Ø	5.8	25	71	-	-
Ductile Iron					
≤ 18" Ø	0.1	5	39	-	-
Polyvinyl Chloride					
24" Ø	0.02	1	19	-	-
Acronym Key: Ø = Diameter; RUL = Remaining Useful Life					

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – MILLER-HOLDER TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Capacity – The Collections Capacity Evaluation Study completed in 2019 conducted a detailed capacity analysis to identify the location of capacity deficiencies during dry and peak wet weather flows. During peak wet weather flows, capacity issues were identified in a portion of the Hoover-Western Sub-Trunk. 	<ul style="list-style-type: none"> Project X-085 includes upsizing a portion of the Hoover-Western Sub-Trunk to address existing capacity issues.
<ul style="list-style-type: none"> Groundwater Infiltration – CCTV identified significant areas experience significant groundwater infiltration, primarily concentrated in the western regional trunk sewers. 	<ul style="list-style-type: none"> Projects 3-64A will address most areas with significant groundwater infiltration by rehabilitating the affected pipeline segments with grout and new interior lining. Project 3-60 and X-085 will also address some areas with infiltration.
<ul style="list-style-type: none"> Pipeline Fracturing – CCTV identified several areas with significant fracturing of VCP pipelines. Most fractures are concentrated in Buena Park near the 91 and 5 freeways. 	<ul style="list-style-type: none"> Project 3-60 will rehabilitate the pipelines in Buena Park to address major fracturing issues. Project X-061 will also rehabilitate some of the pipelines in Imperial Highway to address fracturing.
<ul style="list-style-type: none"> Point Repairs – There are isolated pipe segments with structural and operational defects that are not part of a current project. There are two isolated areas are in southern Huntington Beach and Westminster. 	<ul style="list-style-type: none"> OC San staff will evaluate the extent of the necessary repairs in these locations and recommend blanket contract work orders or small projects to address the most significant defects. It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42") are not cleaned and CCTV footage does not identify sediment or debris below the waterline. 	<ul style="list-style-type: none"> OC San staff has reviewed recent sonar inspection data that identifies amount of debris in select large diameter pipelines. No major risks were identified in the Miller-Holder Trunk large diameter pipelines.
<ul style="list-style-type: none"> Manhole Access – OC San staff has identified specific locations where manholes are difficult to access for maintenance, including access issues due to property owners encroaching into OC San's easement area near the Wintersburg Channel in Huntington Beach. 	<ul style="list-style-type: none"> OC San staff will track and prioritize access issues to address key concerns. High priority access improvements will be recommended as a small project or addition to an existing project.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
3-64A	Orange Western Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitate sewer facilities in the cities of Cypress, Anaheim, and Buena Park 															
3-60	Beach Trunk/Knott Interceptor/Miller-Holder Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Buena Park 															
X-085	Hoover-Western Sub-Trunk/Lampson Branch Improvements	<ul style="list-style-type: none"> Upsizing of sewer segments to increase capacity and rehabilitation of sewer facilities in the cities of Westminster and Garden Grove 															
X-061	Imperial Relief Interceptor/Miller-Holder Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of La Habra 															

Types of Project Legend:

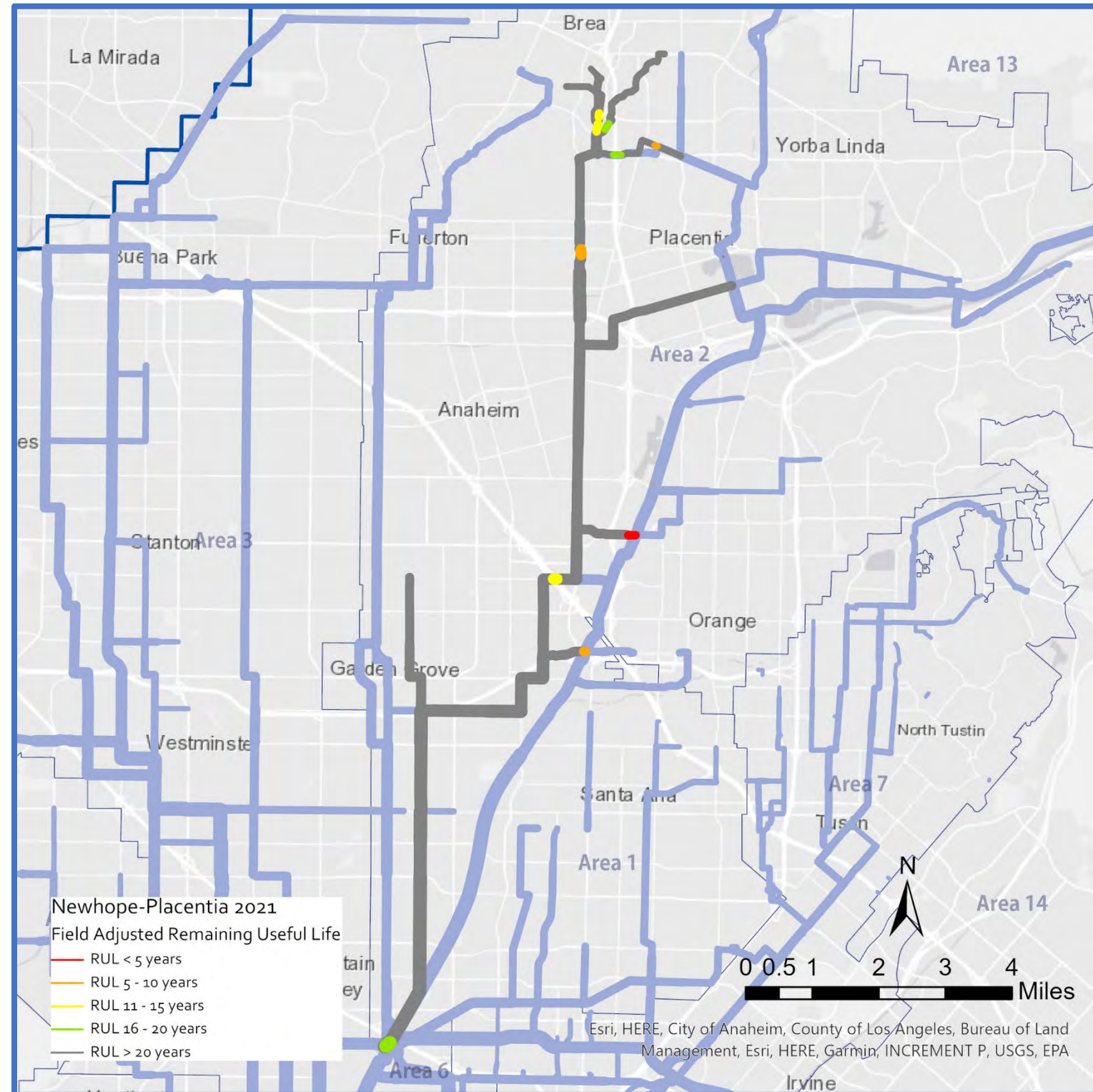
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; CIP = Capital Improvement Program; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – NEWHOPE TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	4.0	70	48	-	1
21" - 27" Ø	2.7	39	53	-	-
≥ 30" Ø	13.1	159	43	-	2
Reinforced Concrete					
42" Ø	0.01	1	29	-	-
45" - 54" Ø	8.3	49	52	-	-
Polyvinyl Chloride					
≤ 18" Ø	0.03	2	27	-	-
24" - 30" Ø	0.01	3	17	-	-
Fiberglass					
48" Ø	0.03	1	4	-	-
Ductile Iron					
≤ 18" Ø	1.0	18	28	-	-
20" - 36" Ø	0.4	7	46	1	-
Steel					
12" Ø	0.07	6	12	-	-

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – NEWHOPE TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Capacity – The Collections Capacity Evaluation Study completed in 2019 conducted a detailed capacity analysis to identify the location of capacity deficiencies during dry and peak wet weather flows. During peak wet weather flows, capacity issues were identified in the northern portion of the Newhope Trunk. 	<ul style="list-style-type: none"> Project 2-72B upsizes a portion of the Newhope Trunk Sewer to address existing capacity issues.
<ul style="list-style-type: none"> Manhole Defects – There are isolated groups of manholes with liner detachment, surface aggregate missing, and visible reinforcement in Fullerton that are not part of a current project and no future CIP project in the vicinity. 	<ul style="list-style-type: none"> OC San staff will validate the creation of a new future project Fullerton-Brea Interceptor/Rolling Hills Sub-Trunk Rehabilitation to address defects in the northern portion of the trunk. OC San staff has evaluated current condition data and recommended some manholes for replacement (PRN-00795) and others to be added to annual blanket contract work for rehabilitation.
<ul style="list-style-type: none"> Point Repairs – There are isolated pipe segments in Orange and Fullerton with fracturing that are not part of a current project. 	<ul style="list-style-type: none"> OC San staff will evaluate the extent of the necessary repairs in these locations and recommend blanket contract work orders or small projects to address the most significant defects.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. 	<ul style="list-style-type: none"> OC San staff has reviewed recent sonar inspection data that identifies amount of debris in select large diameter pipelines. No major risks were identified in the Newhope Trunk large diameter pipelines.
<ul style="list-style-type: none"> Manhole Access – OC San staff has identified specific locations where manholes are difficult to access for maintenance. Specifically, there are issues accessing various manholes in Craig Regional Park. 	<ul style="list-style-type: none"> Project FE10-21 addresses access issues to manholes in Craig Regional Park. OC San staff will track and prioritize access issues to address key concerns. High priority access improvements will be recommended as a small project or addition to an existing project.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
2-72B	Newhope Placentia Trunk Sewer Replacement	<ul style="list-style-type: none"> Upsizing of segments of sewer to increase capacity 															
FE10-21	Craig Regional Park Manhole Improvements	<ul style="list-style-type: none"> Manhole access improvements throughout Craig Regional Park 															
X-XXX	Fullerton-Brea Interceptor/Rolling Hills Drive Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Fullerton 															

Types of Project Legend:

CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; CIP = Capital Improvement Program; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – NEWPORT TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	6.0	128	44	-	9
21" - 27" Ø	4.5	102	37	-	6
≥ 30" Ø	3.8	76	34	-	-
Ductile & Cast Iron					
≤ 18" Ø	1.4	21	29	-	-
24" - 30" Ø	1.5	22	30	-	1
Polyvinyl Chloride					
≤ 18" Ø	0.1	2	7	-	-
30" - 36" Ø	2.6	36	21	-	-
Cured-in-Place					
24" Ø	1.1	13	23	-	-
High-Density Polyethylene					
≤ 20" Ø	0.8	14	28	-	-
30" - 42" Ø	0.02	2	22	1	-

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – NEWPORT TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Broken Pipeline – In the influent sewer upstream of Bitter Point Pump Station, previous repairs of fractures and breaks have failed along with heavy infiltration. 	<ul style="list-style-type: none"> Project FRC-0009 will address all issues with the influent sewer to Bitter Point Pump Station via rehabilitation.
<ul style="list-style-type: none"> Point Repairs – There are isolated pipe segments throughout the Newport Trunk collections system with fracturing and/or groundwater infiltration that are not part of a current project. 	<ul style="list-style-type: none"> OC San staff will evaluate the extent of the necessary repairs in these locations and recommend blanket contract work orders or small projects to address the most significant defects. It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
FRC-0009	Bitter Point Trunk Sewer Repair at Bitter Point Pump Station	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Newport Beach 															

Types of Project Legend:

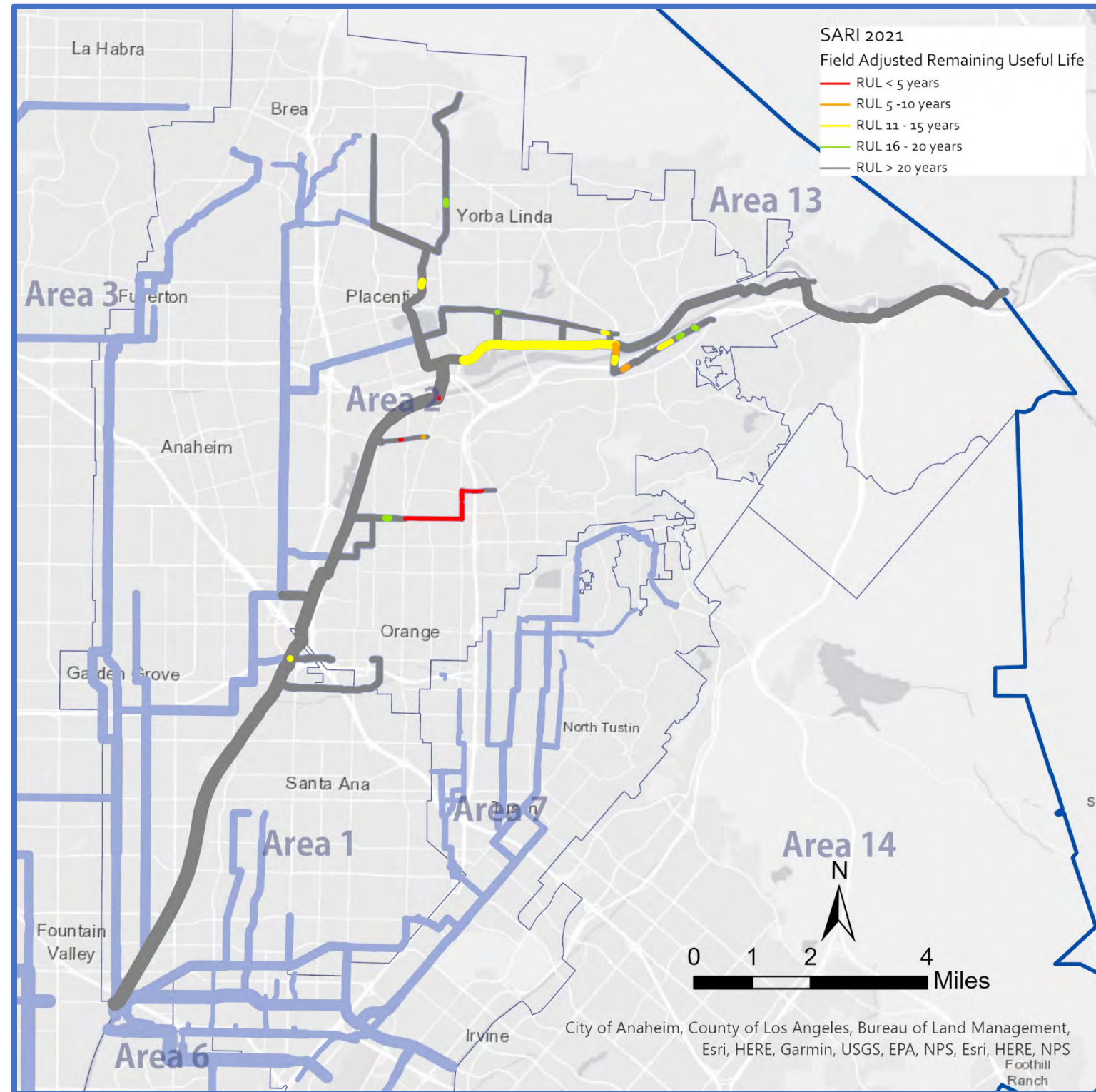
CIP - Planning
 CIP - Design
 CIP - Construction
 Maintenance Project

Acronym Key:

CCTV=Closed-Circuit Television; FY=Fiscal Year; OC San=Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – SARI TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (Years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	5.0	113	56	37	1
21" - 27" Ø	11.4	184	46	-	1
≥ 30" Ø	6.8	86	37	-	1
Reinforced Concrete					
42" Ø	1.5	20	35	-	-
45" - 66" Ø	9.0	60	43	-	-
≥ 72" Ø	10.0	50	46	-	-
Fiberglass					
36" - 54" Ø	3.9	40	10	-	-
High-Density Polyethylene					
≤ 18" Ø	0.5	4	7	-	-
30" Ø	0.7	3	10	-	-
Ductile Iron					
24" - 30" Ø	0.8	10	34	-	-
48" Ø	0.4	2	47	-	-
Steel					
30" Ø	0.03	2	10	-	-
Cured-in-Place					
33" Ø	0.3	4	12	-	-
Polyvinyl Chloride					
12" Ø	0.01	1	5	-	-

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life;

SARI=Santa Ana River Interceptor

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – SARI TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Capacity – The Collections Capacity Evaluation Study completed in 2019 conducted a detailed capacity analysis to identify the location of capacity deficiencies during dry and peak wet weather flows. During future peak wet weather flows, capacity issues were identified in the Taft Branch and a northern portion of the SARI system. 	<ul style="list-style-type: none"> Project 2-49 will address capacity issues in the Taft Branch and Project X-086 will address capacity issues in a northern portion of the SARI system.
<ul style="list-style-type: none"> Groundwater Infiltration – CCTV identified two areas experiencing significant groundwater infiltration, one in eastern Anaheim and the other in northern Orange. 	<ul style="list-style-type: none"> Project X-063 will address part of the groundwater infiltration issues in Anaheim and OC San is evaluating a blanket contract for grouting to resolve the defect in northern Orange (and other locations).
<ul style="list-style-type: none"> Pipeline Fracturing – CCTV identified a few areas with significant fracturing of VCP pipelines. Most fractures are concentrated in Anaheim near Imperial Highway. 	<ul style="list-style-type: none"> Project X-063 will address the fracturing issues near Imperial Highway and OC San is evaluating a blanket contract for point repair to resolve the defects in northern Orange (and other locations). It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Broken Siphon – In 2020, pipeline inspection discovered the Olive Sub-Trunk siphon has a hole in the pipeline. In addition, CCTV showed corrosion issues in upstream manholes due to an ineffective air jumper. 	<ul style="list-style-type: none"> Project FE20-08 will replace a portion of the Olive Sub-Trunk siphon, rehabilitate other portions, reconstruct the air jumper, and restore the siphon into service.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42”) are not cleaned and CCTV footage does not identify sediment or debris below the waterline. OC San staff has identified potential risks in a northern branch of the SARI system. 	<ul style="list-style-type: none"> OC San staff will review recent sonar inspection data that identifies amount of debris in select large diameter pipelines. Based on the results, OC San staff will recommend additional sonar inspection or large diameter cleaning where necessary.
<ul style="list-style-type: none"> Manhole Access – OC San staff has identified specific locations where manholes are difficult to access for maintenance, specifically along the southern portion of the Santa Ana River. 	<ul style="list-style-type: none"> OC San staff will track and prioritize access issues to address key concerns. High priority access improvements will be recommended as a small project or addition to an existing project.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
FRC-0011	Richfield Sub-Trunk Encasement for BNSF Railway Addition	<ul style="list-style-type: none"> Extend existing encasement of sewer pipeline in City of Anaheim 															
FE20-08	Olive Sub-Trunk Repair	<ul style="list-style-type: none"> Rehabilitation of an inverted siphon in the cities of Anaheim and Orange 															
2-49	Taft Branch Improvements	<ul style="list-style-type: none"> Upsizing of sewer segments to increase capacity in the City of Orange 															
X-063	Santa Ana River Interceptor Rehabilitation at Imperial Highway/91 Freeway	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Anaheim 															
X-086	Santa Ana River Interceptor Improvements	<ul style="list-style-type: none"> Upsizing of sewer segments to increase capacity in the City of Anaheim 															

Types of Project Legend:

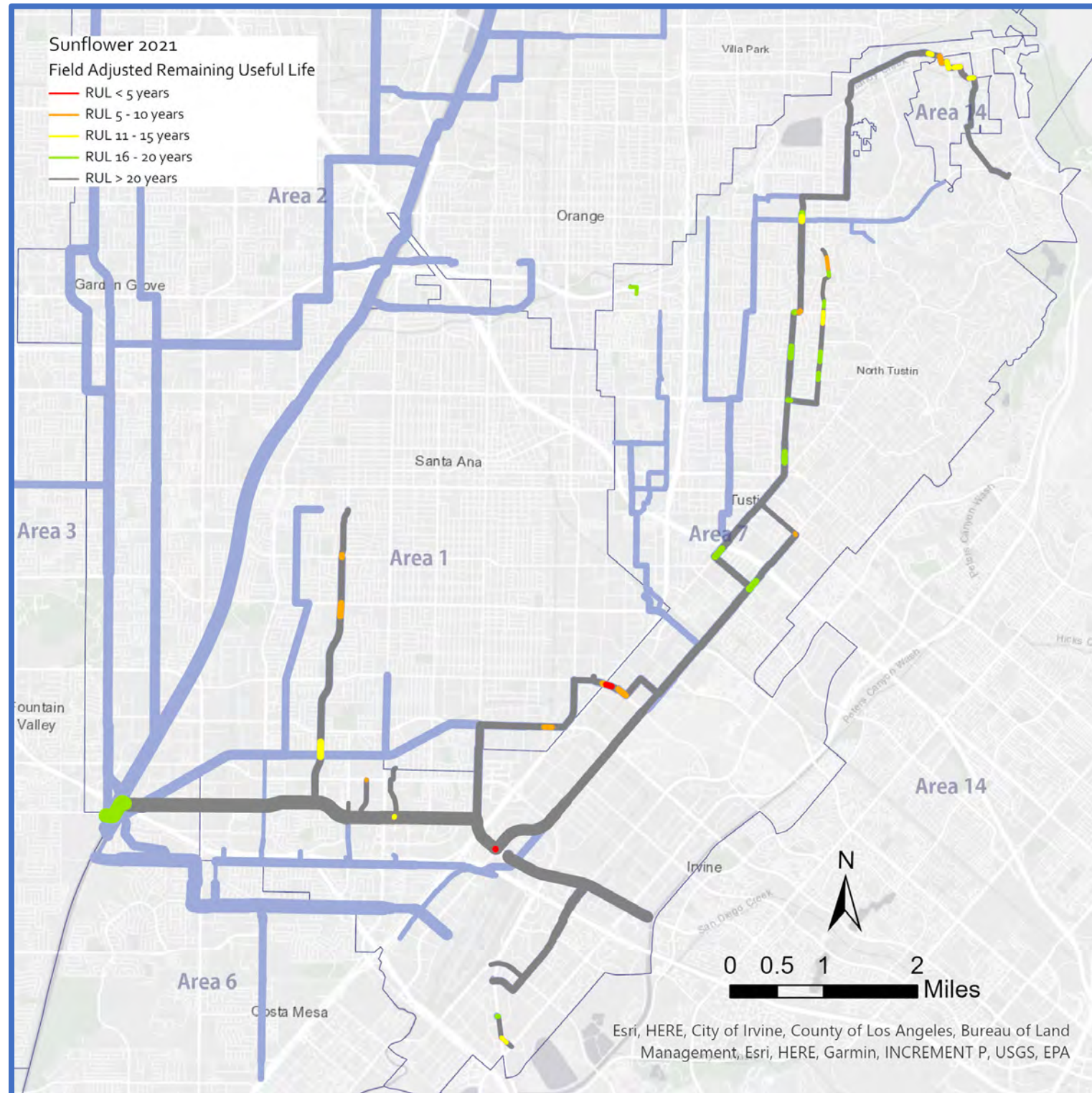
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

BNSF = Burlington Northern & Santa Fe; CCTV = Closed-Circuit Television; CIP = Capital Improvement Program; FY = Fiscal Year; OC San = Orange County Sanitation District; RUL = Remaining Useful Life; SARI = Santa Ana River Interceptor

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – SUNFLOWER TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	7.1	145	44	-	4
21" - 27" Ø	13.6	208	49	2	6
≥ 30" Ø	4.8	57	43	-	-
Reinforced Concrete					
42" Ø	1.3	9	50	-	-
48" - 66" Ø	3.4	39	39	-	-
≥ 72" Ø	3.7	25	33	-	-
Ductile Iron					
20" Ø	0.5	11	22	-	-
Polyvinyl Chloride					
30" Ø	0.05	3	13	-	-
Reinforced Plastic Mortar					
15" Ø	0.1	3	50	-	-
Asbestos Cement					
10" Ø	0.04	1	57	-	-
Acronym Key:					
Ø = Diameter; RUL = Remaining Useful Life					

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – SUNFLOWER TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Groundwater Infiltration – CCTV identified several areas experiencing significant groundwater infiltration, primarily located in Santa Ana as well as one location in Irvine. 	<ul style="list-style-type: none"> OC San is evaluating a blanket contract for point repair to resolve the defects in Santa Ana and Irvine (and other locations). It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Pipeline Fracturing and Liner Failures – CCTV identified several areas with significant fracturing of VCP pipelines and large diameter pipe with liner failures. Most fractures are concentrated in Orange in the northern portions of the trunk system. Liner failures were found north of John Wayne Airport in the large diameter trunk pipeline. 	<ul style="list-style-type: none"> Liner failures in the large diameter trunk are being addressed with Project 7-66. Project FRC-0007, X-065, X-066, and X-068 address fractured pipeline in various locations throughout the trunk system. Isolated defects in Santa Ana, Irvine, and Tustin not included or near a CIP project are being evaluated for a blanket contract for point repair. It is recommended that the frequency of monitoring of pipelines with RUL scores of 4 or 5 be increased.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42") are not cleaned and CCTV footage does not identify sediment or debris below the waterline. 	<ul style="list-style-type: none"> OC San staff has reviewed recent sonar inspection data that identifies amount of debris in select large diameter pipelines. No major risks were identified in the Sunflower Trunk large diameter pipelines.

Current and Future Projects

Project No.	Project Title	Description of Work																
			FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36	
7-66	Sunflower and Red Hill Interceptor Repairs	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the cities of Santa Ana and Costa Mesa 																
FE18-13	Redhill Relief Sewer Relocation at State Route 55	<ul style="list-style-type: none"> Relocate sewer facilities in the City of Santa Ana 																
FRC-0007	Redhill Relief Sewer Liner Repair at State Route 55	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Santa Ana 																
X-068	North Trunk/Tustin-Orange Sub-Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Orange 																
X-065	Tustin-Orange Interceptor Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Orange 																
X-066	Tustin-Orange Interceptor/Orange Park Acres Trunk Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the City of Orange 																

Types of Project Legend:

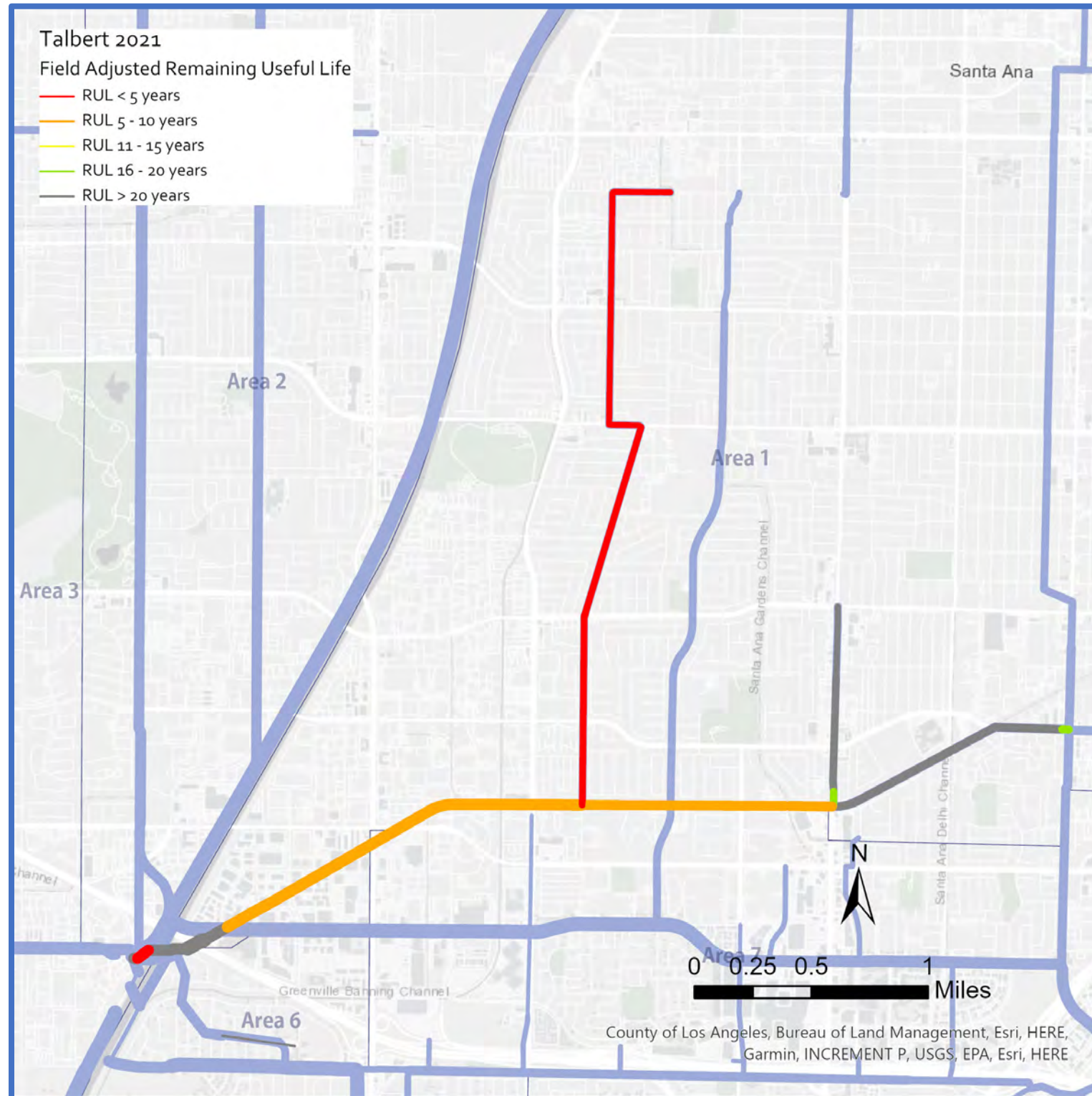
- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CCTV=Closed-Circuit Television; FY=Fiscal Year; OC San=Orange County Sanitation District; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – TALBERT TRUNK

System Overview



Major Assets and Condition Information

Asset Type	Total Length (miles)	# of Pipes	Average Age (years)	# of Pipes with RUL Score of 5	# of Pipes with RUL Score of 4
Vitrified Clay					
≤ 18" Ø	0.1	6	46	2	1
21" - 27" Ø	3.4	46	68	38	2
≥ 30" Ø	1.7	23	68	1	-
Reinforced Concrete					
42" Ø	1.1	10	52	-	10
48" - 60" Ø	2.1	29	50	1	19

Acronym Key:

Ø = Diameter; RUL = Remaining Useful Life

ASSET MANAGEMENT SYSTEM SUMMARY – COLLECTION SYSTEM – TALBERT TRUNK

Key Issues

Key Issues	Actions & Recommendations
<ul style="list-style-type: none"> Capacity – The Collections Capacity Evaluation Study completed in 2019 conducted a detailed capacity analysis to identify the location of capacity deficiencies during dry and peak wet weather flows. During future peak wet weather flows, capacity issues were identified in the entire Greenville Trunk. 	<ul style="list-style-type: none"> Project 1-24 will upsize the entire Greenville Trunk to address capacity issues.
<ul style="list-style-type: none"> Surface Aggregate Damage – Most of the RCP pipeline of the Talbert Trunk between Plant No. 1 and Bristol Street has moderate to severe surface aggregate loss in areas not rehabilitated by past project 1-17. 	<ul style="list-style-type: none"> Project FE20-07 will address the most severe segment of concrete wall damage in the Talbert Trunk by rehabilitating the segment just outside Plant No. 1. Project 1-23 will rehabilitate the remaining pipeline segments with moderate to severe surface aggregate loss.
<ul style="list-style-type: none"> Cleaning and Condition Assessment of Siphons and Large Diameter Pipelines – Siphons are regularly cleaned but are not inspected because they are inaccessible using CCTV equipment. Large diameter pipe (> 42") are not cleaned and CCTV footage does not identify sediment or debris below the waterline. 	<ul style="list-style-type: none"> OC San staff has reviewed recent sonar inspection data that identifies amount of debris in select large diameter pipelines. No major risks were identified in the Talbert Trunk large diameter pipelines.

Current and Future Projects

Project No.	Project Title	Description of Work	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30	FY 30/31	FY 31/32	FY 32/33	FY 33/34	FY 34/35	FY 35/36
FE20-07	Plant No. 1 Influent Trunk Sewer Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of influent trunk line in the City of Fountain Valley 															
1-23	Santa Ana Trunk Sewer Rehabilitation	<ul style="list-style-type: none"> Rehabilitation of sewer facilities in the cities of Santa Ana and Costa Mesa 															
1-24	Greenville Trunk Improvements	<ul style="list-style-type: none"> Upsizing of sewer segments to increase capacity in the City of Santa Ana 															

Types of Project Legend:

- CIP - Planning
- CIP - Design
- CIP - Construction
- Maintenance Project

Acronym Key:

CCTV = Closed-Circuit Television; CIP = Capital Improvement Program; FY = Fiscal Year;
 OC San = Orange County Sanitation District; RUL = Remaining Useful Life

3 Program Monitoring and Improvements

3.1 Program Monitoring

OC San is continually evaluating Asset Management Program progress and realized benefits. To support the evaluation, OC San developed metrics for monitoring. The metrics described below have been chosen to directly relate to the Asset Management Program objectives. The key objectives OC San is building into the Asset Management Program are as follows:

- 1) Take a proactive approach to repair, rehabilitation, and replacement.
- 2) Ensure assets are reliable and operating when needed.
- 3) Minimize unplanned outages and equipment downtime.
- 4) Manage risks associated with asset or service impairment through asset performance optimization.
- 5) Develop cost-effective management strategies for the long term.
- 6) Strive to implement world class asset management strategies through continual improvement in our asset management practices.

Starting last year, OC San has chosen to focus on the first three objectives and in so doing, has also met the intention of objective number six, continual improvement. The following metrics were chosen not only to demonstrate the effectiveness of the Asset Management Program but also to establish a baseline for which to gauge future performance. It is expected that the Asset Management Council will meet and after reviewing the information in this report, will discuss Asset Management Program metrics in greater length including the utility of the metrics chosen for the 2021 Asset Management Plan and the possibility of setting agency goals.

The proactive maintenance percent, the percent of PM as a total of all maintenance, demonstrates the effectiveness of the maintenance program (proactive vs. reactive). It also may reflect the condition (including age) of the assets. *Availability percent* demonstrates the average asset availability by process area and speaks to whether the assets are operating when needed. It is implied that when the assets are available, they are also reliable; however, this may or may not be the case. OC San staff tried diligently to develop a metric that measures reliability; however, current data capture processes limit how the data can be used and the nature of the chosen reliability metric was not appropriate for the level at which the data are being reported. For now, availability is our best measure of objective number two. *Break-In percent* illustrates the amount of emergency work (or reactive work) as a percent of total work in the process area. The break-in percent metric will give OC San personnel a better understanding of unplanned outages and the causes of equipment downtime. Finally, *maintenance costs and labor hours* are presented by process area to illustrate the total resources devoted to maintaining the process areas. The methods used to calculate each metric are included in Appendix F.

3.1.1 Data

The data used for the following analysis comes from two different sources. The data used for asset availability were sourced from the OC San Major Equipment Status (MES) Dashboard database. The original intent of the MES Dashboard was to provide a targeted overview of critical asset availability allowing management to gauge if the area can meet OC San level of service commitments. The MES data source provides a narrow and targeted group of major assets that are critical to the operation of the process areas. Each piece of equipment is placed “in” or “out” of service by staff.

All other metric data were sourced from the computerized maintenance management system of record, Maximo. In contrast to the availability metric, the other metrics presented include most assets in each process area, some of which are not as critical to the successful operation of the process area. A mitigation to using this larger subset of assets exists in the break-in (reactive work) metric, which includes work that is deemed “emergency” or “urgent” by staff. By implication, this population of assets includes higher risk assets. The data from each database are from FY2018-19, 2019-20, and 2020-21 and is included in Appendix F for reference.

3.2 Program Metrics

3.2.1 Proactive Maintenance Percent

The Proactive Maintenance Percent is the percent of PM as a total of all maintenance performed. An increase in proactive maintenance percent represents a shift from reactive to a proactive maintenance program. As shown in Tables 3-1 and 3-2, the proactive maintenance percent for both Reclamation Plant No. 1 and Treatment Plant No. 2 is consistent and does not show any remarkable increase or decrease for either facility. A proactive maintenance percent of 80% is considered best in class value based on manufacturing industry standards which may not be comparable to a critical facility as wastewater treatment but helpful to have as a guideline. Many of the areas at both plants were at or below 60% indicating that improvement in this area is likely over time as proactive maintenance programs are implemented and older facilities are replaced.

Table 3-1. Proactive Maintenance Percent for Reclamation Plant No. 1

Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	25%	39%	39%
Primary	29%	39%	32%
Interplant	69%	84%	82%
Activated Sludge	58%	53%	64%
Trickling Filters	55%	56%	53%
Digesters	34%	46%	46%
Solids Handling Facilities	31%	34%	42%
Central Power Generation	40%	64%	62%
Electrical Distribution	77%	68%	65%
Utilities	43%	33%	30%

Table 3-2. Proactive Maintenance Percent for Reclamation Plant No. 2

Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	55%	64%	59%
Primary	37%	25%	35%
Activated Sludge	54%	48%	53%
Trickling Filters	64%	67%	57%

Table 3-2. Proactive Maintenance Percent for Reclamation Plant No. 2

Process Area	FY 18/19	FY 19/20	FY 20/21
Effluent Disposal	61%	57%	35%
Digesters	39%	39%	55%
Solids Handling Facilities	35%	41%	53%
Central Power Generation	58%	42%	50%
Electrical Distribution	84%	70%	74%
Utilities	34%	39%	44%

At Plant No. 2, the proactive percent for the solids handling facility increased in FY20/21 when the new dewatering facility started operating, and the older belt press facility was decommissioned and demolished. The proactive percent for primaries was 25% in FY19/20 because a construction project was rehabilitating the primaries.

Although the pump stations have proactive maintenance percentages over 60% shown in Table 3-3, the amount of percent change is the defining characteristic of the data. Decreases of 20% are indicative of emergency work that was required and will be reflected in the break-in percentage illustrated later in this chapter. For instance, Bay Bridge required emergency work to replace leaking valves for contractor work and Lido had tree root intrusion that requirement immediate attention. Common CM work orders include replacing leaking valves, replacement of pump packing, de-ragging pumps, and attending to equipment that is making excessive noise when operating will also reduce the proactive percent.

Table 3-3. Proactive Maintenance Percent for Pump Stations

Pump Station	FY 18/19	FY 19/20	FY 20/21
'A' Street	84%	86%	85%
15th Street	88%	88%	85%
Lido	47%	80%	42%
Bay Bridge	69%	65%	34%
Rocky Point	76%	96%	84%
Bitter Point	84%	82%	76%
Seal Beach	58%	55%	65%
Westside	79%	75%	74%
Edinger	74%	81%	79%
Slater	63%	86%	86%
College	98%	91%	69%
Crystal Cove	82%	57%	91%
Yorba Linda	72%	30%	92%
Main Street	36%	66%	66%
MacArthur	97%	66%	88%

3.2.2 Availability Percent

Availability percent demonstrates the average asset availability by process area and speaks to whether the assets are operating when needed. In general, the major equipment was available over 88% of the time ensuring the level of service was met for all process areas. For a list of availability percent by process area for FY 20/21, refer to Table 3-4.

Table 3-4. Asset Availability for FY 20/21

Process Area	Plant No. 1	Plant No. 2
Preliminary	99%	92%
Primary	97%	88%
Activated Sludge	93%	92%
Trickling Filters	100%	91%
Effluent Disposal	94%	89%
Digesters	99%	88%
Solids Handling Facilities	99%	99%
Central Power Generation	96%	92%
Electrical Distribution	100%	95%
Utilities	98%	94%

In the primary treatment area, availability percent is reduced due to an increase in the number of major equipment components needed during the wet weather season, not because the equipment was taken out of service. Plant No. 2 shows lower availability percent in the primary and effluent disposal facilities because equipment is out of service for contractor work. The digesters at Plant No. 2 saw a decrease because Digester were intentionally removed from service for cleaning and repairs. This is an extensive effort to make the digesters more reliable with the implementation of several maintenance rehabilitation projects over the next 6 years.

Major equipment was predominately available at the pump stations with availability percent greater than 90% for FY 20/21 shown in Table 3-5.

Table 3-5. Availability Percent for the Pump Stations

Pump Station	FY 19/20	FY 20/21
'A' Street	100%	98%
15th Street	97%	98%
Lido	98%	94%
Bay Bridge	86%	94%
Rocky Point	96%	98%
Bitter Point	100%	99%
Seal Beach	90%	91%
Westside	94%	96%

Table 3-5. Availability Percent for the Pump Stations

Pump Station	FY 19/20	FY 20/21
Edinger	100%	99%
Slater	98%	96%
College	100%	100%
Crystal Cove	100%	100%
Yorba Linda	86%	94%
Main Street	95%	98%
MacArthur	99%	100%

3.2.3 Break-In Percent

Break-In Percent illustrates the amount of emergency work (or reactive work) as a percent of total work in the process area. Typically, the break-in percent metric should track closely with the inverse of the proactive maintenance percent as one is a measure of proactive maintenance program and the other a measure of unplanned outages or a reactive maintenance response. However, at Plant No. 1 – Interplant Area for FY19-20, there was an increase in both the proactive maintenance percent and the break-in percent. The data indicate that this is an anomaly due to the low number of work orders for the area. At Plant No. 2, the data show an increase in both metrics in the solids handling facilities. This is simply a reminder that CM work orders that are assigned a high priority are in fact a small percentage of total CM work orders and it is entirely possible to have an increase in both data populations. Literature for the manufacturing industry (SMRP, 2013) indicates that high performers can expect a break-in percent of less than 10%. Break-in percent for Plant No. 1 is shown in Table 3-6 and Plant No. 2 in Table 3-7. Success is measured as a consistent trend downward overtime.

Table 3-6 Break-in Percent for Reclamation Plant No. 1

Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	16%	20%	24%
Primary	30%	28%	23%
Interplant	0%	16%	7%
Activated Sludge	14%	14%	11%
Trickling Filters	4%	10%	18%
Digesters	38%	20%	27%
Solids Handling Facilities	37%	22%	24%
Central Power Generation	29%	11%	14%
Electrical Distribution	5%	5%	10%
Utilities	26%	21%	26%

Table 3-7. Break-in Percent for Reclamation Plant No. 2

Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	20%	8%	11%
Primary	17%	17%	23%
Interplant	11%	14%	10%
Activated Sludge	9%	17%	19%
Trickling Filters	18%	17%	15%
Digesters	20%	16%	13%
Solids Handling Facilities	24%	32%	21%
Central Power Generation	23%	20%	20%
Electrical Distribution	13%	7%	14%
Utilities	32%	31%	15%

The pump station break-in percent is shown in Table 3-8. Bay Bridge and Lido pump stations both saw an increase in break-in percent. This is reflected in the proactive maintenance percent decrease for those pump stations due to leaking valves, pump ragging, and check valve failures.

Table 3-8 Break-in Percent for Pump Stations

Process Area	FY 18/19	FY 19/20	FY 20/21
'A' Street	12%	4%	6%
15th Street	2%	7%	6%
Lido	36%	27%	35%
Bay Bridge	11%	18%	31%
Rocky Point	20%	4%	7%
Bitter Point	9%	14%	14%
Seal Beach	27%	14%	20%
Westside	3%	7%	3%
Edinger	12%	18%	0%
Slater	17%	7%	3%
College	0%	2%	11%
Crystal Cove	5%	32%	6%
Yorba Linda	0%	29%	10%
Main Street	60%	4%	4%
MacArthur	3%	28%	11%

Maintenance and Engineering teams work together to find solutions and resolve issues that are identified in the facilities. The teams can respond and react more effectively to resolve urgent issues. This includes a streamlined approach for equipment replacement and contractor support. Engineers work closely with mechanics and electricians to identify issues early and collaborate on solutions. The reduction in break-in or emergency call out work as shown in Figures 3-1 and 3-2 is one example of the impact the Asset Management Program has had on Maintenance and its productivity.

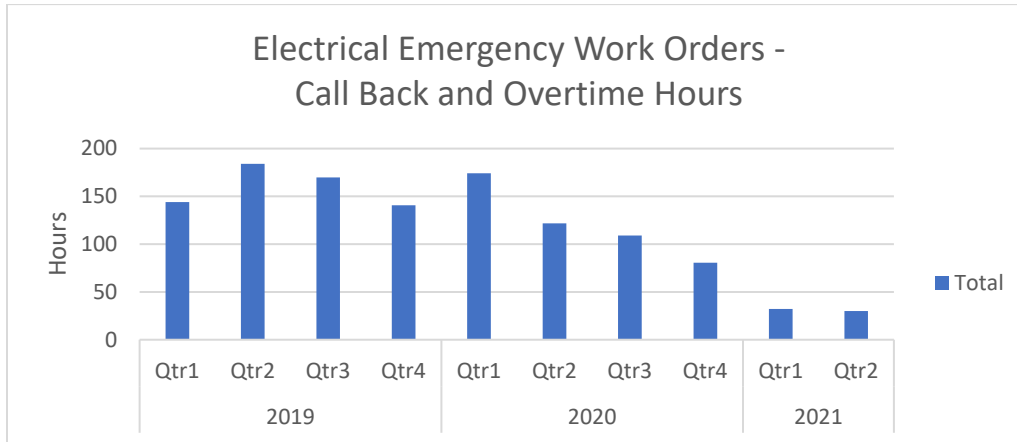


Figure 3-1. Electrical Emergency Work Orders

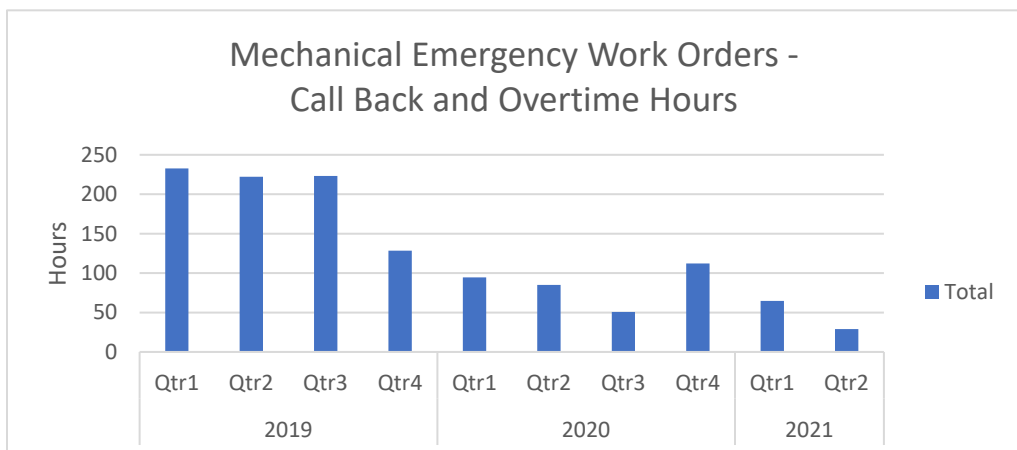


Figure 3-2. Mechanical Emergency Work Orders

The number of electrical “emergency” work orders and associated hours have reduced more than 3 times during the first 9 months in 2021 compared to the same period in 2020. The mechanical emergency work has decreased more than five times comparing the first two quarters of 2019 to the first two quarters of 2021.

3.2.4 Maintenance Costs and Labor Hours

OC San uses the maintenance costs and number of labor hours over time as trend indicators to indicate the amount of resources devoted to reliably maintaining the process areas. The data indicates that there has been a large increase in maintenance costs accompanied by a slight increase in maintenance labor hours in the Treatment Plant No. 1 Solids Handling (Figure 3-3 and Figure 3-4). This is due to high cost to maintain the equipment and contracts with manufactures of the equipment.

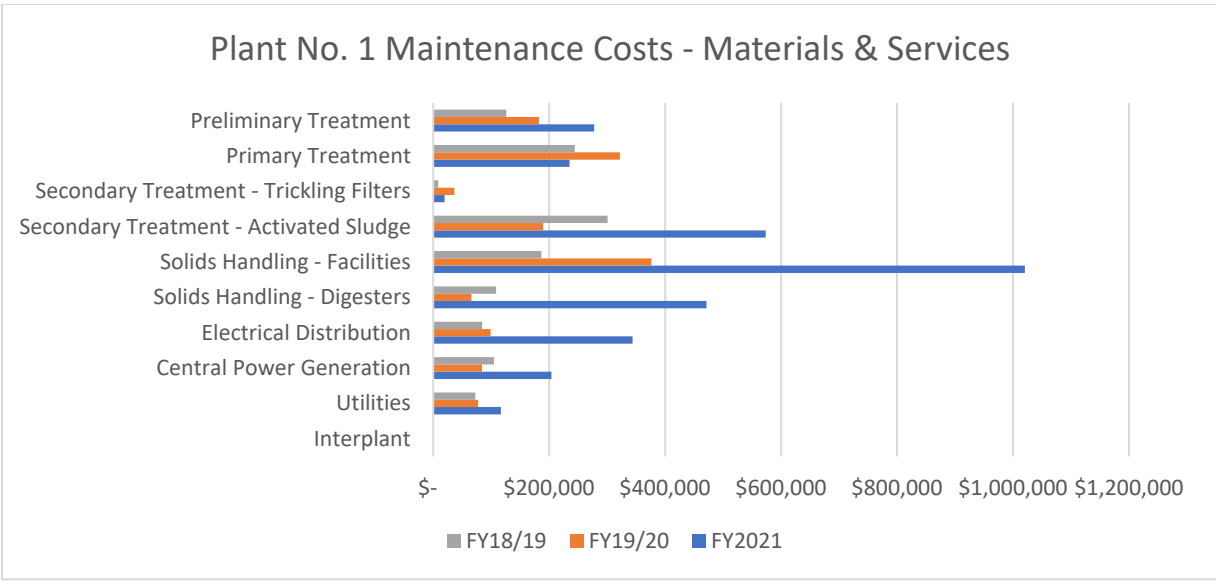


Figure 3-3. Graph of Maintenance Costs (Materials and Services) at Plant No. 1

The labor hours doubled at the Plant No.1 solids handling facility from FY 18/19 because the new thickening and dewatering facility started operating in 2019 that included a new solids thickening process with more complex equipment that requires more staff to operate and maintain.

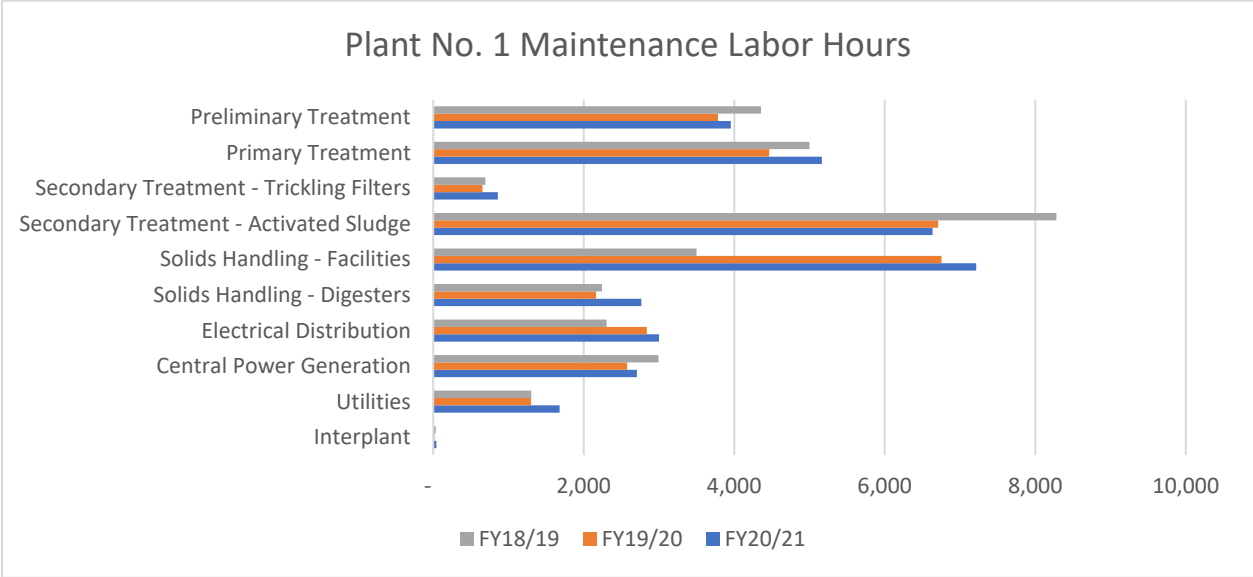


Figure 3-4. Representative Graph of Maintenance Labor Hours

The maintenance cost at Plant No. 2 were higher for FY20/21 for the central generation process because the engines are being rebuilt and higher for the trickling filters because of major equipment failures. The solids handling facility maintenance cost have decreased at Plant No. 2 with the startup of the new dewatering facility and with the demolition of the older belt press building and biosolids storage silos illustrated on Figure 3-5.

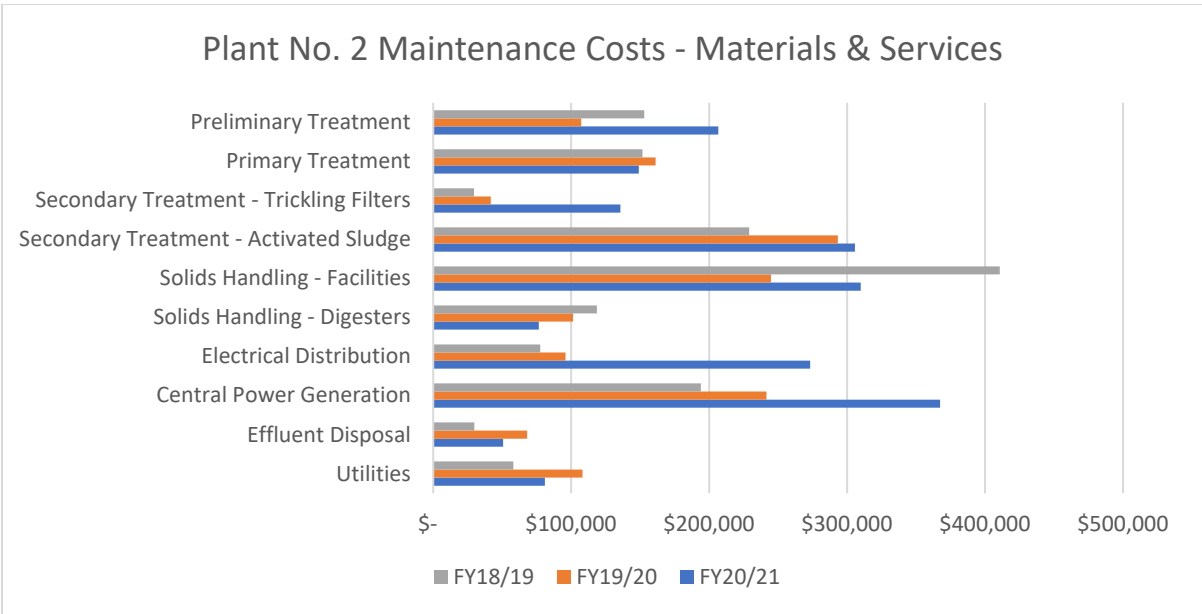


Figure 3-5. Graph of Maintenance Costs (Materials and Services) at Plant No. 2

Maintenance labor hours and costs for the pump stations are included in Appendix F. Regarding the Bay Bridge Bay Bridge pump station, there is a large increase in both maintenance costs and labor hours due to emergency replacement of critical valves. This was also noticed with the increase in break-in percent and decrease in the proactive percentage.

3.3 Maintenance Planning

OC San uses Maximo as the computerized maintenance management system. All maintenance related activities are stored in Maximo. In short, the information in Maximo makes up OC San’s Maintenance Plan. Maintenance planning primarily consists of PM and PdM work orders. Currently, OC San proactively maintains over 60,000 stored in Maximo. For the assets associated with process and treatment, there are approximately 4,282 active PM work orders. Approximately 229 of those PMs are related to predictive maintenance activities. A summary and breakdown of the PMs and PdMs are shown on Figure 3-6.

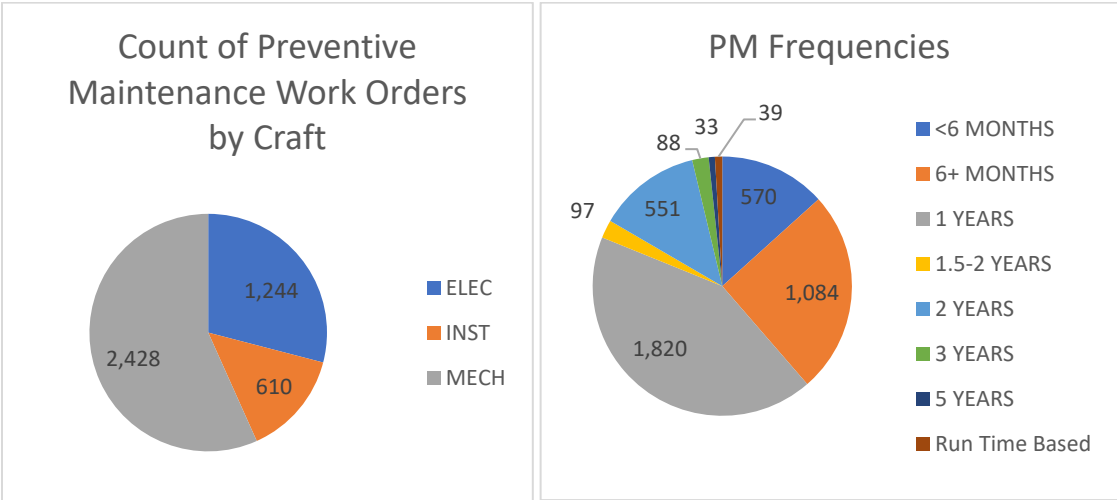


Figure 3-6. PM Workorder Broken Down by Both Craft and Frequency

OC San proactively maintains over 67,000 assets. This includes non-process related assets such as HVAC equipment, lighting, mobile equipment, etc.

3.3.1 Projected Maintenance Costs

The projected maintenance costs over the next two fiscal years is shown in Table 3-9. This accounts for materials and services only but is inclusive of both treatment plants and the collection system. For historical maintenance expenditures, please refer to Chapter 4.

Table 3-9. Projected Maintenance Costs Next 2 Fiscal Years

	FY 21/22	FY 22/23
Projected Maintenance Costs	\$26.7M	\$24.2M

3.4 Asset Management Program Accomplishments

Another way to measure Asset Management Program performance and success is by exploring the accomplishments. The accomplishments identified in the sections below are important because they focus on both long-term planning and accomplishments that helped extend the useful life of critical assets, increase reliability, reduce unexpected failures and break-ins allowing OC San to meet the key objectives of the Program.

3.4.1 Condition Assessment Program

A critical component of the program is the condition assessments performed on a regular basis. The Asset Management Group has completed approximately 50 different condition assessments last fiscal year utilizing an outside consultant and contractor. The assessments included assessing clarifiers, digesters, air and gas piping, primary influent piping, chemical storage tanks, structural assets, manholes, pumpstation wetwells, cathodic protection, and sump pumps to name a few. These assessments identify deficiencies and the general condition, but more importantly recommendations for repairs or replacement and general timing based on RUL estimations. The condition assessments have resulted in the identification of several new projects that are required to keep OC San facilities safe and reliable.

3.4.2 Collection System Assets

Our pump stations, force mains and gravity sewer system are vital asset in conveying flow to the treatment plants. The Asset Management Program is continuously evaluating ways to improve resiliency and reliability of the system while maintaining level of service in all flow conditions. Some of the collection system initiatives and accomplishments are identified below.

3.4.2.1 Manhole Inspections

In November 2020, OC San started conducting routine inspections of the regional collections system manholes. A total of 855 manholes have been inspected to date since the start of the program. Reports are provided to OC San with asset details as well as defects discovered during the inspection per National Association of Sewer Service Companies (NASSCO) standards. Similar to pipeline CCTV data, OC San has been collating all manhole CCTV inspection data into the Asset Management Program Info Asset Planner for further evaluation and to continue building a comprehensive database of CCTV inspection data.

3.4.2.2 Gravity Collections Remaining Useful Life

Over the past 2 years, OC San has aggregated all gravity sewer, siphon, air jumper, and manhole data into a single comprehensive Gravity Collections Asset Registry. Data in the asset registry include NASSCO scoring, theoretical RUL, and upcoming projects affecting an asset. In the past year, the entire Gravity Collections system was analyzed in order to convert NASSCO scoring into RUL to complete the asset registry. High risk assets were further evaluated by considering the consequence of failure. In short, the Gravity Collections Asset Registry has evolved into a very useful tool for developing, validating, and refining the Asset Management Plan and CIP for the Gravity Collections system.

3.4.2.3 Pump Station Isolation

Reliability of the pump stations are critical. In the past, emergency break-in work has been required due to failure of critical assets such as isolation valves at some of the pump stations. With Asset Management Team taking ownership of the pump stations in recent years, OC San is now taking a proactive approach to rehabilitation and repair at the pump stations. For example, approximately seven valve replacement projects have been identified to replace aging or non-functioning pump station valves. The timing of these projects considers risk and criticality to minimize the risk of emergency work.

3.4.3 Central Generation Facility Planning

The internal combustion engines at Plant No. 1 and Plant No. 2 have significant run time and need a major overhaul to maintain reliability for the next 10 years or longer. One planning study has evaluated the feasibility of maintaining the engines in the long term (about 20 years), and what work needs to be done to keep the engines reliable for the foreseeable future, while ensuring parts and major components are readily available and that reputable service contractors in the marketplace can perform the necessary overhauls. Another study in the works is an update to the OC San Energy Master Plan that will evaluate viable alternatives for energy production and digester gas management, considering emerging technologies, market conditions and potential permitting constraints with the understanding that OC San's existing engines are becoming obsolete and increasingly unreliable. The Asset Management Team and Maintenance are working together to ensure OC San has a long-term plan to manage energy use, energy production, and handling of digester gas.

3.4.4 Treatment Plant Project Delivery

A major focus of Asset Management Team is streamlining the replacement or repair of our critical plant assets. The Asset Management Team works in tandem with Maintenance to identify projects, provide construction bid documents and manage project implementation of Maintenance Projects. Here are just a few of the projects that have or are close to being completed that were driven by Asset Management and Maintenance Teams:

Reclamation Plant No. 1:

- Several maintenance projects were implemented to allow Primary Clarifiers 3 and 4 to be available for the 21/22 wet weather season. Final repairs are anticipated to be completed by mid-December 2021.
- Through a planned condition assessment of activated sludge reactors at Activated Sludge No. 1 Facility, the RAS piping was found to be severely corroded and at risk of failure. A small project is being implemented to replace corroded piping and pipe supports.
- Several of our critical pumping systems are equipped with VFDs that have become obsolete and can no longer be maintained properly. Projects are in place to replace the old VFDs.

Treatment Plant No. 2:

- The Truck Loading facility at Plant No. 2 was need of mechanical equipment replacement or refurbishment. Several Maintenance managed projects have addressed aging and failed equipment at this facility.
- The major process pumps at the Trickling Filter Solids Contact Facility at Plant No. 2 needed major refurbishment due to corrosion and reliability concerns. Over the course of a few years, a total of 18 large capacity vertical turbine pumps were refurbished.
- Eleven Plant No. 2 digesters and associated bridges were inspected over past couple years when the tanks were taken out of service for cleaning. Many urgent repairs were performed and new Maintenance projects identified. Asset Management is coordinating all the digester-related projects to assure the projects are successfully executed without disruption to O&M activities.
- Three projects were carefully phased and implemented to replace the mechanical mechanisms in all 12 secondary clarifiers at the Plant No. 2 Activated Sludge Facility.
- The main sewage pumps at Plant No. 2 required both an overhaul of the motors and a 10-year PM work on the associated VFDs. This important work was carefully sequenced to maintain plant operations and was delivered on time.
- Several of our critical pumping systems are equipped with VFDs that have come obsolete and can no longer be maintained properly. Projects are in place to replace the old VFDs.

3.5 Asset Management Program Improvement Opportunities

The Asset Management Program continues to evolve with an emphasis on continuous improvement. The foundational elements of the program have been in place for a few years now. The Asset Management Team continues to identify new projects and update the short, medium, and long-term asset management plans to keep OC San assets reliable and available when called upon. Asset Management also continues to support and validate the 20-year CIP.

Asset management involves managing lots of data and information. The Asset Engineer considers available information and stakeholder perspectives when making recommendations and estimating asset condition and RUL. The general long-term strategy for the program is to move towards a data-driven program where decisions are made are defensible and work within defined constraints and limitations. The long-term improvement opportunities discussed below must be consistent with OC San strategies and priorities and align with the vision, mission, and key objectives of the program.

3.5.1 Short-to-Medium-Term Improvement Opportunities

Condition Assessments:

- Improve the condition assessment tracking of our critical assets and have a plan to assess them on a determined frequency.
- Track future condition assessments in the Asset Registries and proactively plan ahead with Operations for assessments that require out of service assets.
- Take field measurements to better understand how our major civil and mechanical assets degrade (deteriorate) over time allowing more accurate determination of RUL.

Remaining Useful Life:

- Define RUL such that it is clear RUL typically means replacement or major rehabilitation of an asset or group of assets
- Consider the risk and consequence of failure when determining condition scores and RUL and the timing of asset replacement or rehabilitation
- Create more condition scoring categories in the 1-10 year range as RUL accuracy improves over time as asset management improves data management and condition scoring guidelines

Asset Registries

- Ensure all critical assets are being monitored and tracked in the Asset Registries.
- Standardize the format and information in the asset registries. Combine them into a single database for consistency and ease of filtering.
- Create better alignment with Maximo by ensuring critical assets are clearly defined and asset descriptions are consistent with Maximo.
- Allow the asset registries to communicate and pull information with other OC San systems including Maximo and Geographical Information Systems.

Asset Hierarchy

- Create an OC San asset hierarchy that works for both Maximo and the Asset Registries.
- Ensure the level of asset tracking in the Asset Registries is adequate and meets the needs of OC San stakeholders.

3.5.2 Longer-Term Strategy and Improvement Opportunities

The OC San Asset Management Program will look to move towards a data-driven program taking advantage of the information, tools, and technologies available to make better decisions and minimize asset life cycle costs. Utilizing available data to the fullest extent and developing a dynamic Asset Management Plan will be key in helping the program be successful in the long term. Some potential long-term strategies include:

- Automating and developing real-time dashboards of asset condition based on performance condition assessments
- Developing a dynamic risk model to better prioritize maintenance activities and project implementation
- Moving towards a dynamic Asset Management Plan where asset health and estimated remaining life are available down the asset level
- Prioritizing capital projects and associated spending using both cost and risk based modeling considering constraints and limitations
- Creating Key Performance Index (KPI) dashboards to monitor performance and trends and overall program success
- Evaluating asset failures to determine maintenance and rehabilitation improvements

Long-term strategies will be re-evaluated on a periodic basis as the asset management industry and the needs of OC San evolve. Additional or changes to the program metrics or KPIs are envisioned as we better understand the life cycle cost of our major assets and do our best to

“deliver the required level of service, at the lowest life cycle cost, with an acceptable level of risk.”

3.6 Reference

Society for Maintenance and Reliability Professionals (SMRP). 2013. *Maintenance and Reliability Best Practices*. 4th Edition.

4 Budgetary Considerations

The Asset Management Plan focuses on documenting short- to long-term planning of maintenance and capital improvement projects to support effective budget development and sustainable operations. OC San has been striving to identify more accurate medium- to long-term capital cash flow requirements. Specifically, the Planning Division has been working on developing a 20-year CIP by creating project plans for forecasted rehabilitation, replacement, improvements and expansion for the collection system and treatment plants. The CIP budget is evaluated and updated on an ongoing basis as new information becomes available.

4.1 Capital Improvement Expenditures

FY21-22 Budget Update, the second year of the 2-year budget adopted in June 2020, includes updates to the 20-year CIP outlay. Figure 4-1 shows the 20-year CIP outlay, which includes current and projected future CIP projects. FY21-22 CIP outlay is further divided into process categories shown on Figure 4-2.

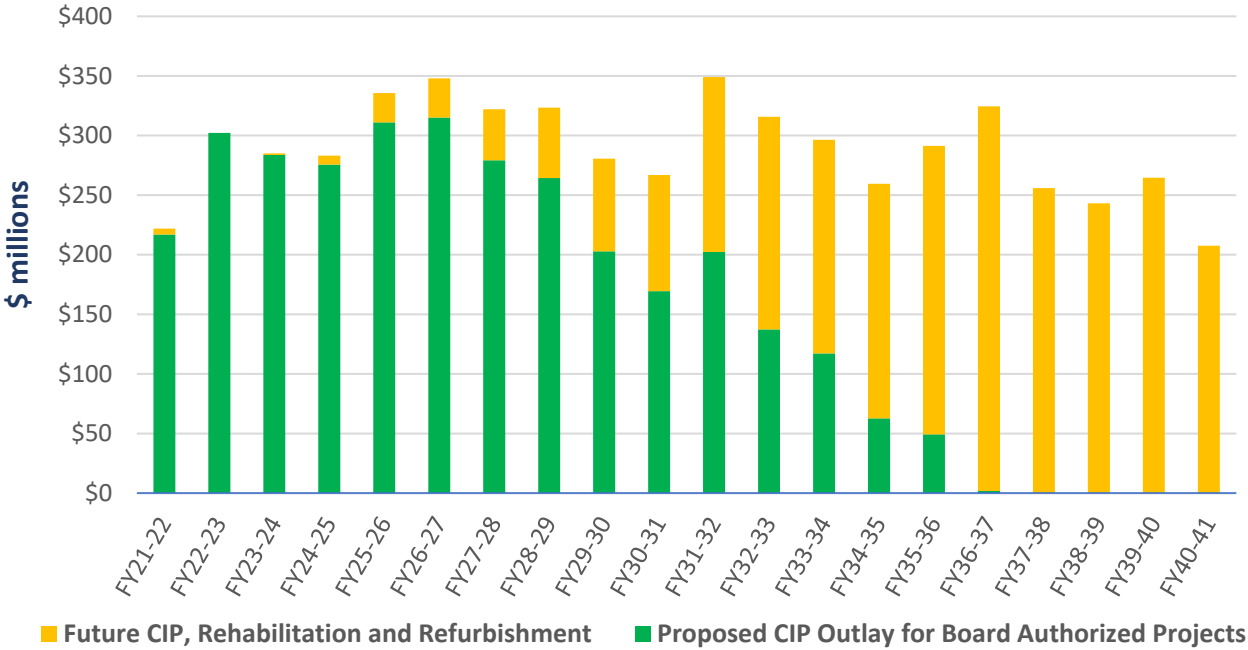


Figure 4-1. 20-Year CIP Outlay

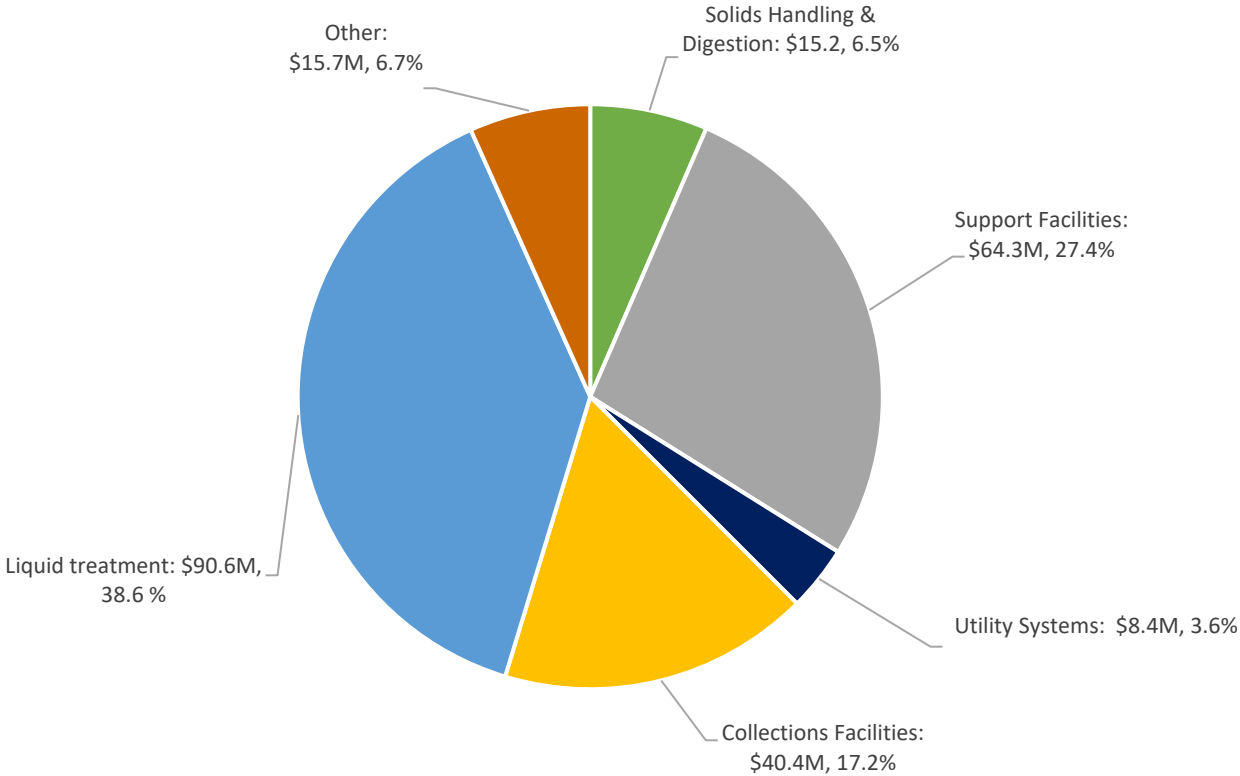


Figure 4-2. FY21-22 CIP Outlay by Process – \$234.6 Million

4.2 Maintenance Expenditures

4.2.1 Five-Year Historical Maintenance Expenditures

Figure 4-3 and Figure 4-4 show the historical actual spent versus budgeted operational and maintenance expenditures for the treatment plants and collection system, respectively.

- The treatment plant expenditures include maintenance services and materials (budget objects 54010, 54020).
- The collection system expenditures include maintenance services and materials (budget objects 54010, 54020, 53180).
- These costs represent the operations and maintenance costs of fixed assets, including operationally funded repair/replacement projects.

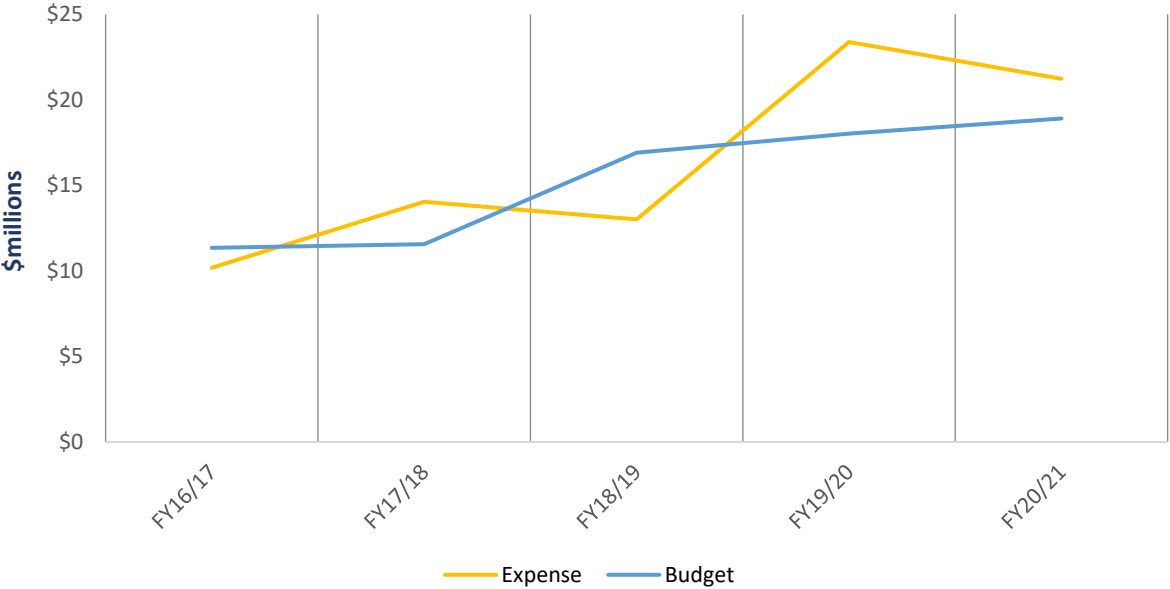


Figure 4-3. Five-Year Historical Maintenance Costs for Treatment Plants

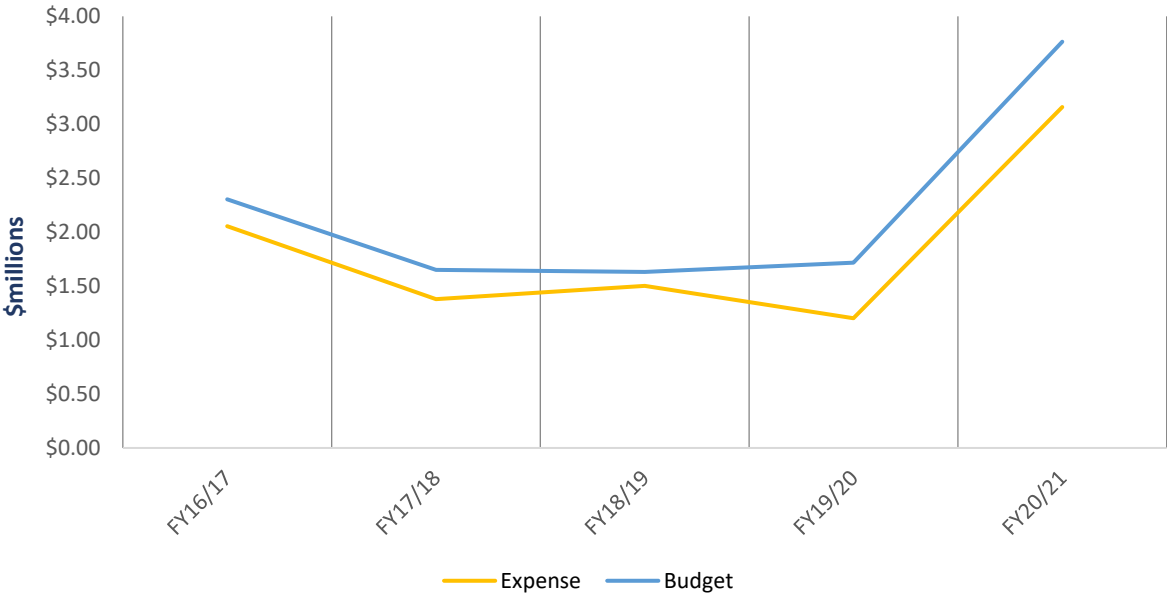


Figure 4-4. Five-Year Historical Maintenance Costs for Collection System

4.2.2 Three-Year Look-Ahead Maintenance Expenditures

Table 4-1 shows operational-funded projects identified to date and includes the projected annual expenditures. The projects are grouped by location (Plant No. 1, Plant No. 2, Joint, and Collection System), and then sorted by the project start fiscal year. The list encompasses projects identified as of August 31, 2021, with an expected construction cost exceeding \$50,000. It is likely FY21-22 and beyond will fluctuate based on the condition of assets as they age. Additionally, projects in the following list represent expenditures that are operationally funded and capital in nature.

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
Collection System Projects						
PRN-00159	MP-307	Bushard Diversion Structure Repair		\$1,421,409		\$1,421,409
PRN-00449	FRC-0002	Bay Bridge Pump Station Valve Replacement	\$803,875			\$803,875
PRN-00527		A Street and 15th Street pump station valve replacement and assessment	\$300,000	\$300,000		\$600,000
PRN-00584	FRC-0004	Seal Beach suction and isolation valve Replacement	\$470,480			\$470,480
PRN-00592	FRC-0007	Redhill Relief Sewer Liner Repair at SR-55		\$170,062		\$170,062
PRN-00677		Removal of Yorba Linda Spur Biofilter Odor Control	\$65,000			\$65,000
PRN-00713		Manhole Access Improvements on the Santa Ana River Trail	\$65,000			\$65,000
PRN-00728	FRC-0009	Repair of Incoming Sewer at Bitter Point Pump Station		\$373,491		\$373,491
PRN-00730	FRC-0010	Warner Avenue Vault Cover Replacements	\$230,000	\$180,763		\$410,763
PRN-00734		Slater Pump Station Valve Replacement Project	\$175,000			\$175,000
PRN-00766	FRC-0011	Richfield Sub-trunk Encasement at	\$64,870			\$64,870

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
		BNSF Crossing at Orangethorpe Ave. and Richfield Rd.				
PRN-00767		Lido PS - Bathroom Reconfigure	\$50,000			\$50,000
PRN-00779	FRC-0012	Springdale-Relief Concrete Encasement Extension at Wintersburg Channel	\$220,894			\$220,894
PRN-00790		Lido PS Valve Replacement	\$210,000			\$210,000
PRN-00793	FRC-013	Bay Bridge Pump Station Force Main Valve Replacement	\$433,648			\$433,648
PRN-00803		Wintersburg Channel Miller-Holder Siphon Assessment		\$120,000		\$120,000
	7-66	Sunflower Trunkline Liner Repairs	\$3,945,372	\$700,000		\$4,645,372
		Rhone and Heil Easement Restoration	\$250,000			\$250,000
Joint Projects						
PRN-00627		P1/P2 Cen Gen Engine Ignition Control System Obsolescence Repair		\$250,000		\$250,000
PRN-00630	FRJ-0003	Interplant Gas Line Blow Off Vaults		\$186,703	\$186,704	\$373,407
PRN-00699		Cen Gen (Joint) Basement Access Hatch Fall Restraint		\$50,000		\$50,000
PRN-00729		Cen Gen, Digester and DAFT Tunnels Comb. Gas Detection Systems	\$150,000	\$300,000	\$300,000	\$750,000
PRN-00754		District HVAC Assessment for	\$383,000			\$383,000

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
		Infectious Aerosol Mitigation				
Plant No. 1 Projects						
PRN-00409		P1 Trickleing Filter Low Voltage Cable Assessment		\$337,680		\$337,680
PRN-00478		P1 AS2 Clarifier #31 Catwalk - Coatings	\$81,230			\$81,230
PRN-00492	FR1-0011	P1 VFD Replacements		\$250,000	\$300,000	\$550,000
PRN-00517		PB-7 Generator Radiator Repair	\$86,400			\$86,400
PRN-00520		P1 AS1 Blower Flowmeter Replacement	\$76,500			\$76,500
PRN-00525	FR1-0005	P1 Cen Gen 125VDC and 24DC Battery System	\$100,000	\$618,464		\$718,464
PRN-00540	FR1-0013	Truckloading, Digesters 9 and 10, and Silo Cake Pumps Platform Request		\$325,604		\$325,604
PRN-00567		P1 Primary Basin Rebar Protection Blanket Contract	\$90,566			\$90,566
PRN-00569		P1 Emergency Generator Relay Upgrade	\$190,000			\$190,000
PRN-00580		An Interim Solution for Thickening Centrifuges Flow and TSS Readings		\$54,000		\$54,000
PRN-00598		Standby Generator Diesel Day Tank Improvements at Plant No.1		\$60,000		\$60,000
PRN-00618	FR1-0014	P1 Laboratory HVAC Controls Repair	\$212,830			\$212,830

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
PRN-00632	FR1-0012	Rebuild Shop Wood Floor Replacement & JIB Crane	\$75,000	\$75,393		\$150,393
PRN-00676		Digester Ferric Injection Pipe	\$65,000			\$65,000
PRN-00696		Primary Scrubber H ₂ S Analyzer Retrofits at Plant No.1	\$70,000			\$70,000
PRN-00698		AS1 Waste-activated Sludge Pump Capacity	\$0	\$500,000		\$500,000
PRN-00722		P1 Digester Mixing Pump and Piping Vibration Mitigation	\$280,000			\$280,000
PRN-00725		MSP#4 Feeder Cable Low Mega-ohm Reading to Ground on Phase B	\$245,000			\$245,000
PRN-00735		Plant 1 PEPs No. 3 Variable Speed Drive Replacement	\$113,889			\$113,889
PRN-00739		Plant No. 1 Cake Pump Water Box Improvements	\$586,400			\$586,400
PRN-00744		Plant 1 Power Building 5 Motor Control Centers Process Loads Configuration	\$550,000			\$550,000
PRN-00758	FR1-0015	P1 Waste Hauler Station Security Trailer Power	\$73,800			\$73,800
PRN-00771		P1 Bldg 6 Elevator Modernization		\$182,000		
PRN-00782		AS1 72-inch Influent Valve Coating Repair	\$45,900			\$45,900
PRN-00792		Plant 1 AS1 Blower Building Turbine Generator Controls Upgrade		\$700,000		\$700,000

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
PRN-00797		Access Ladder Replacement at the T&D Odor Control Facility	\$60,000			\$60,000
PRN-00799		P1-33/37 Primary Effluent Piping Pressure Manhole at Plant 1		\$100,000		\$100,000
PRN-00800		Trickling Filter Clarifier Drain Valve Replacement	\$125,000			\$125,000
PRN-00804		Influent Pipe Repairs of Primary Sedimentation Basins 3 and 4 at Plant No. 1		\$280,000		\$280,000
		P1 Digester Cleaning	\$1,300,426	\$300,000		\$1,600,426
		P1 Centrifuge Maintenance	\$823,000	\$100,000		\$923,000
		Med. Voltage Cable Testing SVCs	\$251,655	\$240,000		\$491,655
		On-call HVAC Services	\$150,000	\$150,000		\$300,000
Plant No. 2 Projects						
PRN-00314		P2 Cen Gen Supply Air Fan Rehabilitation	\$297,000			\$297,000
PRN-00401	FR1-0008	P2 Headworks Low Voltage Cable Assessment	\$277,000	\$315,347		\$592,347
PRN-00438	FR2-0013	Trickling Filter Waste Sludge Pump Room Exhaust Fan Relocation at Plant No. 2	\$369,700			\$369,700
PRN-00499		P2 EPSA VFD Upgrades	\$22,935	\$22,935		\$45,870
PRN-00513		P2 Truckloading Auger Replacement	\$190,000			\$190,000
PRN-00536		Plant No. 2 Cen Gen Instrument Air			\$250,000	\$250,000

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

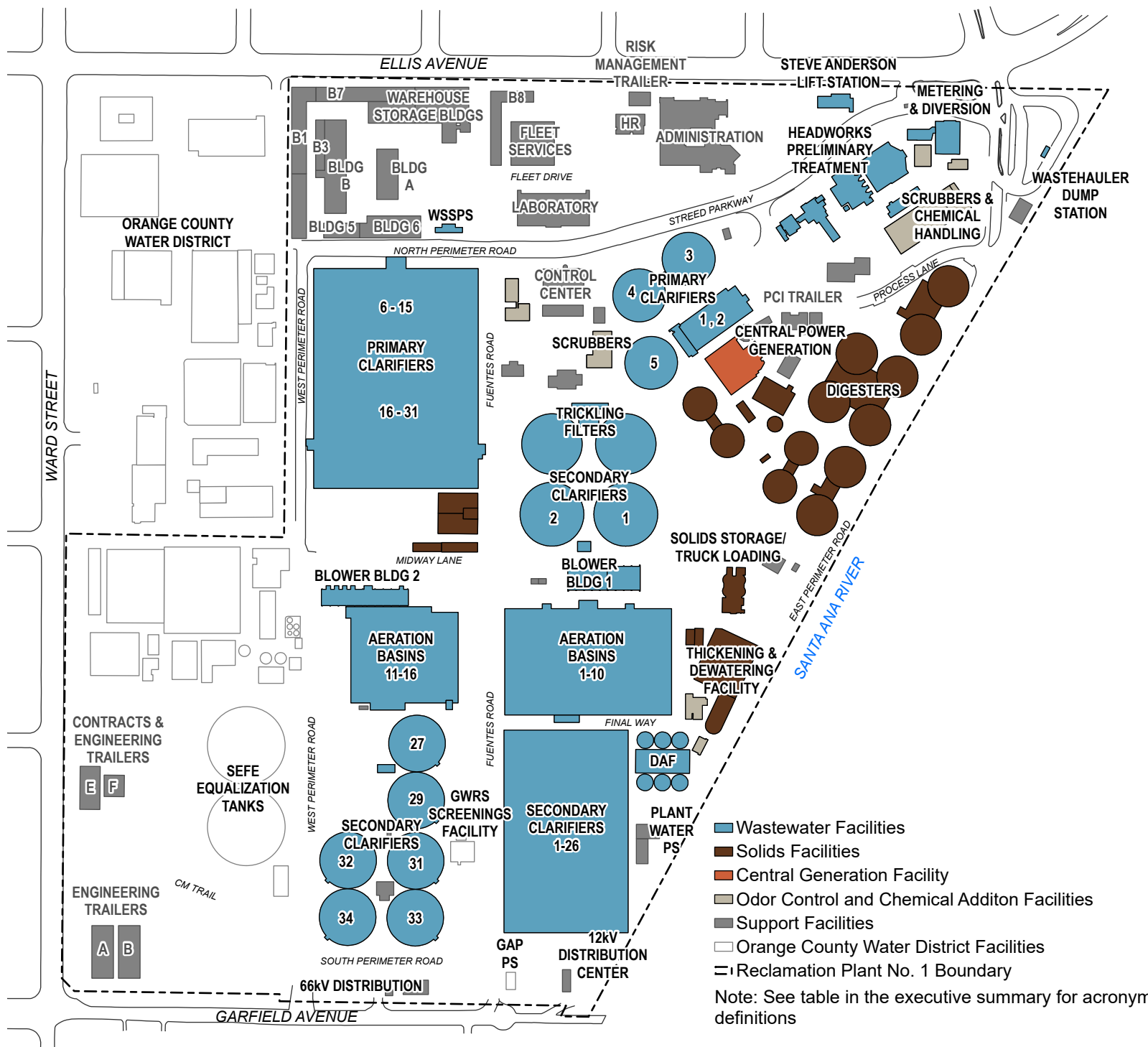
PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
		Compressor Replacement				
PRN-00571	FR2-0022	P2 Digester 'O' Structural Repairs	\$188,285			\$188,285
PRN-00572	FR2-0018	P2 AS Plant Clarifier Rehab (6) - Phase II		\$3,700,000	\$1,565,000	\$5,265,000
PRN-00616		Cen Gen Generator #5 Electrical Svc and Repair		\$85,000		\$85,000
PRN-00619		P2 Truck Loading Sliding Frame Hydraulic Cylinders Replacement	\$60,000			\$60,000
PRN-00633	FR2-0023	P2 AS Plant Secondary Clarifier Safety Entry Improvements		\$647,574		\$647,574
PRN-00634		P2 TFSC RSS Pumps Repair for Low Seal Water Flow	\$38,846			\$38,846
PRN-00643		P2 TF-A Rotary Distributor Damage Evaluation and Repair	\$100,000			\$100,000
PRN-00680		P2 Distribution Center H: 480V Switchgear Relay Replacement & Auto Transferring	\$61,500			\$61,500
PRN-00682		P2 Screenings Loading Building Catwalk Installation		\$54,000		\$54,000
PRN-00684		P2 Digester Maintenance Projects	\$1,249,441	\$793,000		\$2,042,441
PRN-00690	FR2-0024	480V Cable Replacement at P2	\$338,126			\$338,126
PRN-00731		P2 Trunkline Biotower #3 Inspection and Media Sampling	\$99,650			\$99,650

Table 4-1. Planned Operational-Funded Maintenance Projects in FY21-22 through FY23-24 (as of August 31, 2021)

PRN NO.	Alt Project No.	Project Title	FY21-22	FY22-23	FY23-24	3-Year Total Cost
PRN-00736		Men's Shower Stall Replacement at Plant No. 2	\$74,300			\$74,300
PRN-00742	FR2-0025	P2 Digester O-T, R-Q Bridge Repairs	\$80,000	\$213,406		\$293,406
PRN-00757		Primary Distribution Structure B Gates Repair at Plant No. 2	\$309,500			\$309,500
PRN-00764		EPSA Generator Set Engine Oil Leak Repair	\$70,000			\$70,000
PRN-00770		P2 PEPS Pump Condition Assessment		\$80,000		\$80,000
PRN-00780		Plant No. 2 Trickling Filter Pump Station VFD Replacement	\$234,000			\$234,000
PRN-00788		P2 Maintenance Cubicle Renovation	\$53,846			\$53,846
PRN-00801		Plant No. 2 Screening Loading Exhaust Fan 1 Feeder Cable Repair		\$56,000		\$56,000
PRN-00811		120-in Ocean Outfall Immediately Required Repairs		\$800,000		\$800,000
		P2 Digester Cleaning	\$1,000,000	\$500,000		\$1,500,000
		P2 Centrifuge Maintenance	\$78,789	\$101,000		\$179,789
		P2 Headworks and EPSA Generator Load Bank Testing	\$75,840			\$75,840

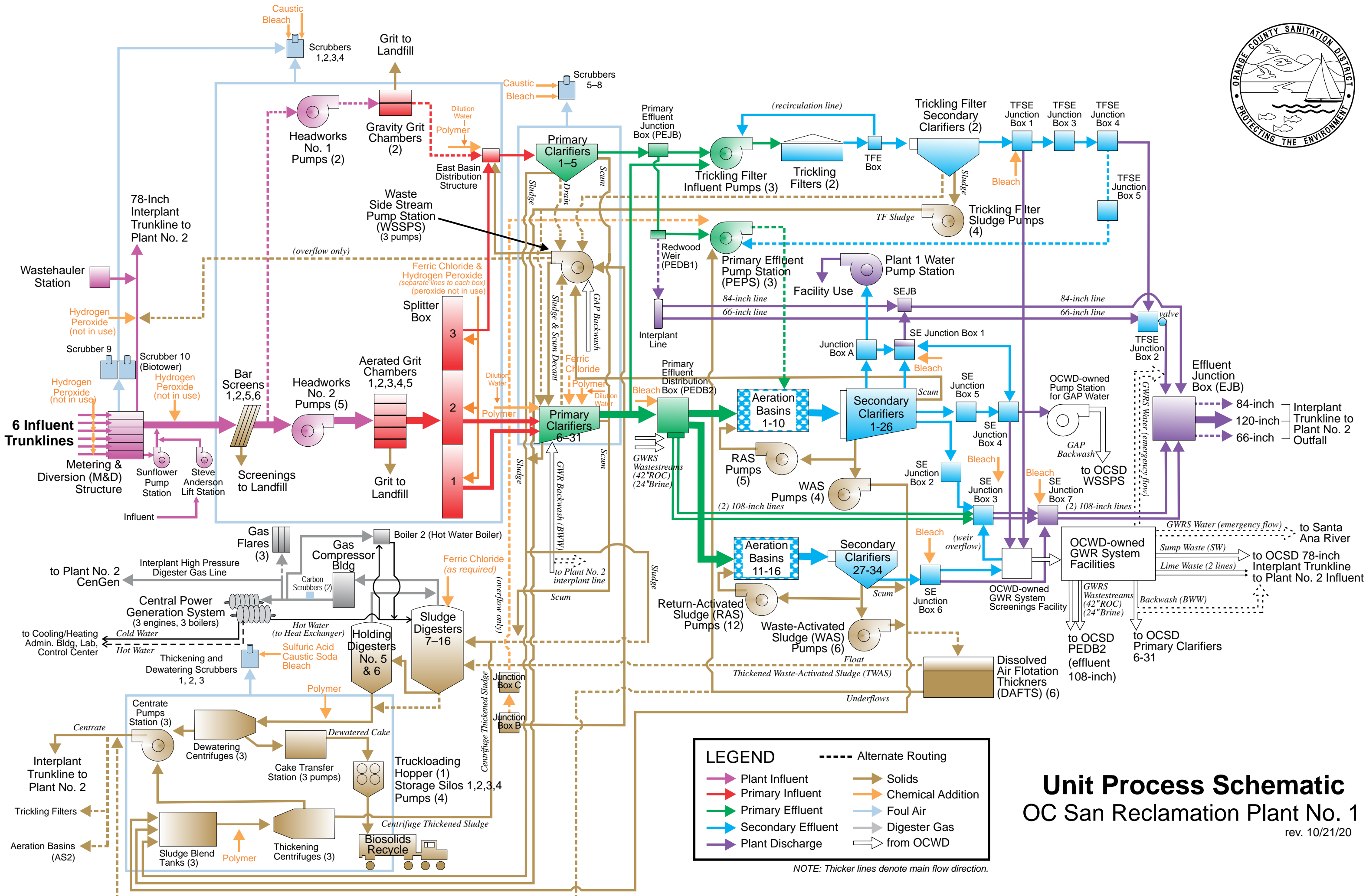
PRN = Project Request Number

APPENDIX A
RESOURCE RECOVERY PLANT NO. 1 MAP



APPENDIX B

RESOURCE RECOVERY PLANT No. 1 PROCESS DIAGRAM



LEGEND

Plant Influent	Alternate Routing
Primary Influent	Solids
Primary Effluent	Chemical Addition
Secondary Effluent	Foul Air
Plant Discharge	Digester Gas
	from OCWD

NOTE: Thicker lines denote main flow direction.

Unit Process Schematic

OC San Reclamation Plant No. 1

rev. 10/21/20

APPENDIX C
TREATMENT PLANT NO. 2 MAP



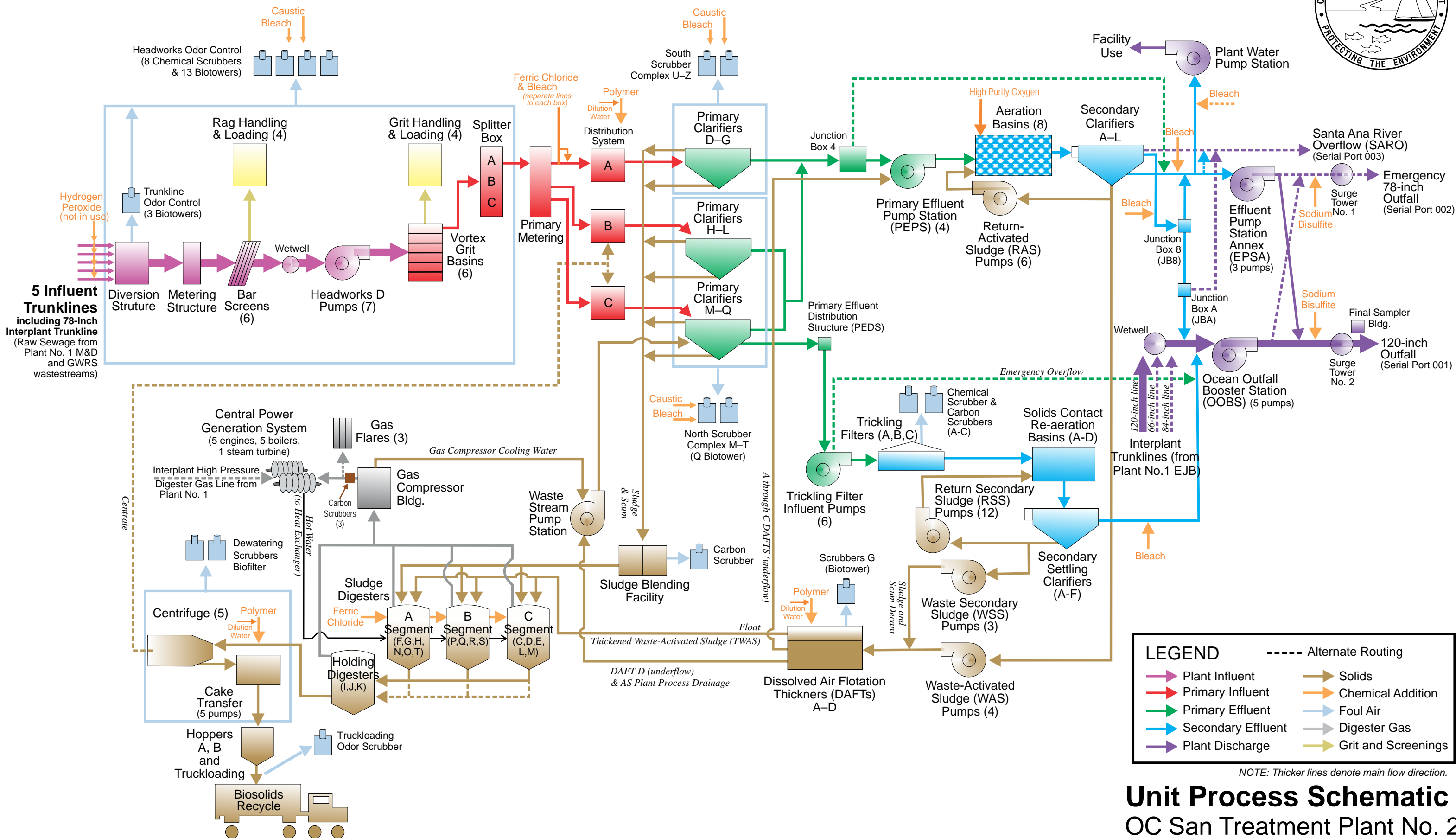
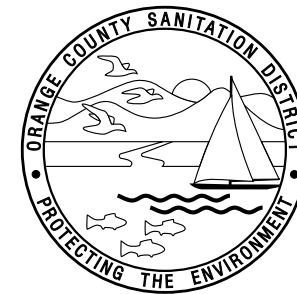
- Wastewater Facilities
- Solids Facilities
- Central Generation Facility
- Odor Control and Chemical Addition Facilities
- Effluent Disposal
- Support Facilities
- Treatment Plant No. 2 Boundary

Note: See table in the executive summary for acronym definitions

APPENDIX D

TREATMENT PLANT NO. 2 PROCESS DIAGRAM –

BEFORE GWRS EXPANSION



LEGEND

- Plant Influent
- Primary Influent
- Primary Effluent
- Secondary Effluent
- Plant Discharge
- Solids
- Chemical Addition
- Foul Air
- Digester Gas
- Grit and Screenings
- Alternate Routing

NOTE: Thicker lines denote main flow direction.

Unit Process Schematic

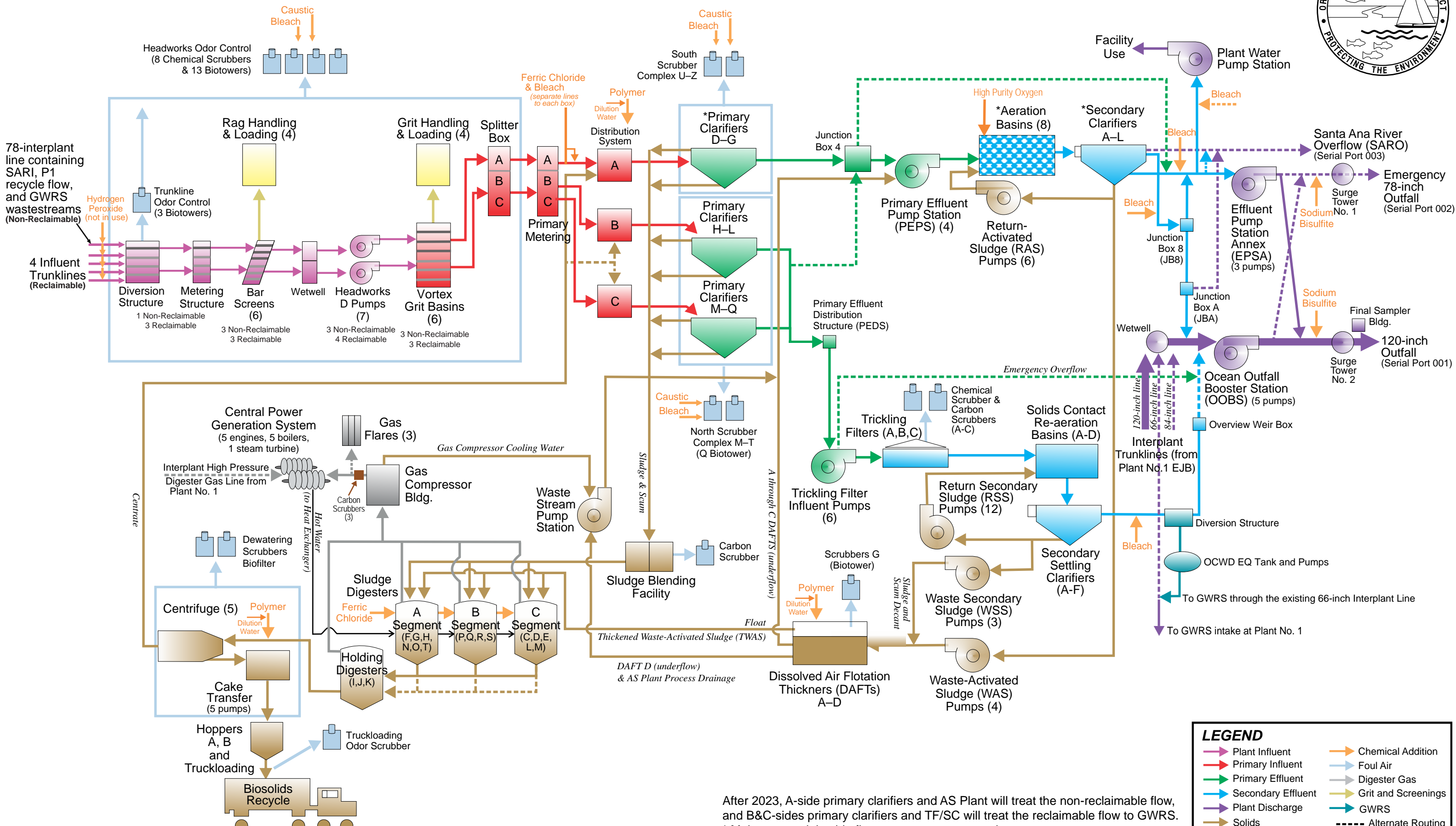
OC San Treatment Plant No. 2

rev. 12/01/20

APPENDIX E
TREATMENT PLANT NO. 2 PROCESS DIAGRAM –
AFTER GWRS EXPANSION

Unit Process Schematic — OC San Treatment Plant No. 2

Future Process after GWRs Final Expansion in 2023



LEGEND

Plant Influent	Chemical Addition
Primary Influent	Foul Air
Primary Effluent	Digester Gas
Secondary Effluent	Grit and Screenings
Plant Discharge	GWRS
Solids	Alternate Routing

After 2023, A-side primary clarifiers and AS Plant will treat the non-reclaimable flow, and B&C-sides primary clarifiers and TF/SC will treat the reclaimable flow to GWRS.
 * Major non-reclaimable flow treatment process units

NOTE: Thicker lines denote main flow direction.

APPENDIX F
AM KPI SUPPLEMENTAL INFORMATION

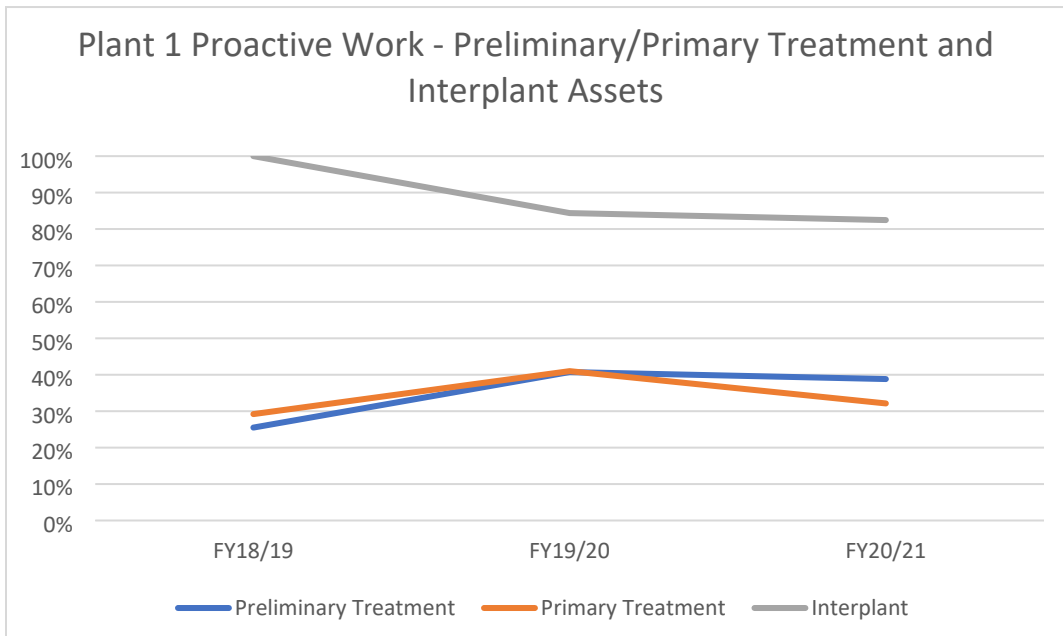
Appendix F

Tables and Graphs

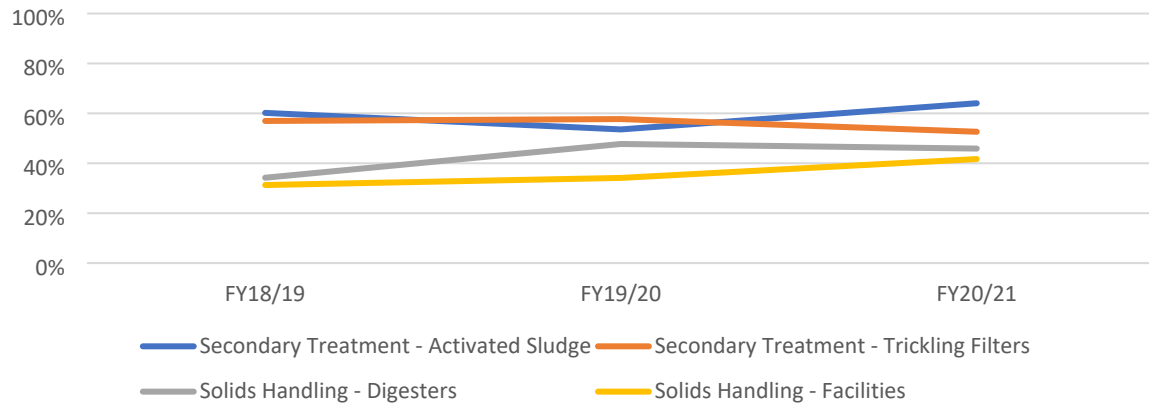
Plant No. 1

Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	25%	39%	39%
Primary	29%	39%	32%
Interplant	69%	84%	82%
Activated Sludge	58%	53%	64%
Trickling Filters	55%	56%	53%
Digesters	34%	46%	46%
Solids Handling Facilities	31%	34%	42%
Central Power Generation	40%	64%	62%
Electrical Distribution	77%	68%	65%
Utilities	43%	33%	30%

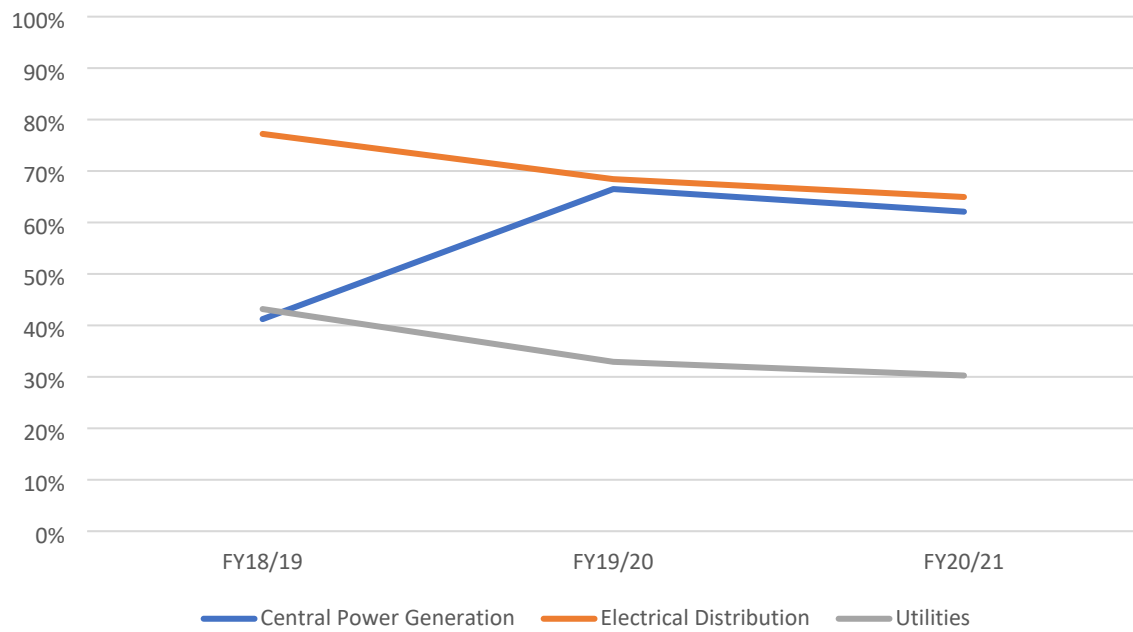
Process Area	FY 18/19	FY 19/20	FY 20/21
Activated Sludge 1	61%	47%	65%
Activated Sludge 2	51%	59%	62%
Trickling Filters	55%	56%	53%



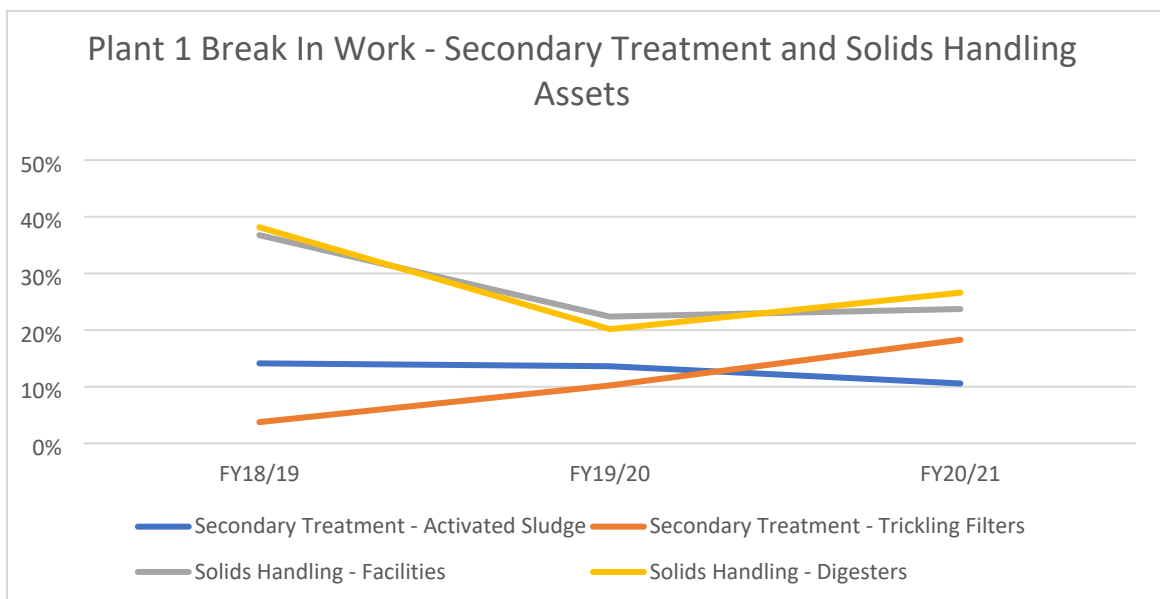
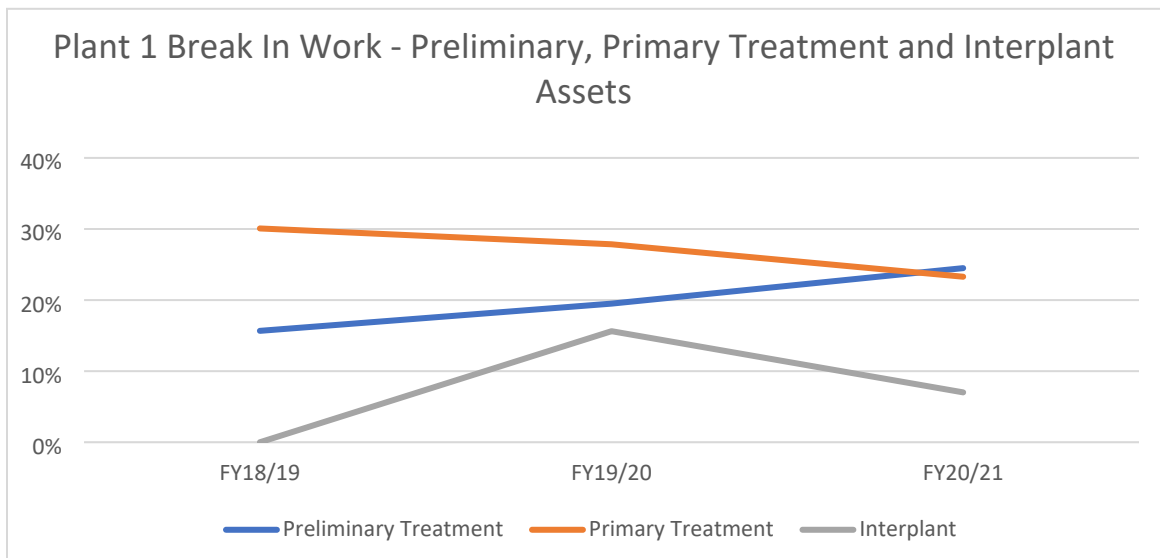
Plant 1 Proactive Work - Secondary Treatment and Solids Handling Assets



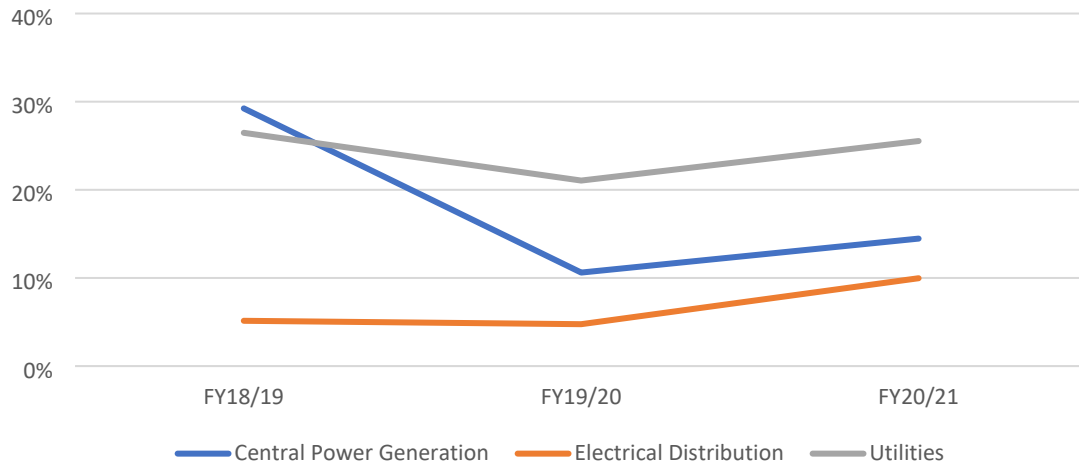
Plant 1 Proactive Work - Power Generation, Distribution and Utilities



Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	16%	20%	24%
Primary	30%	28%	23%
Interplant	0%	16%	7%
Activated Sludge	14%	14%	11%
Trickling Filters	4%	10%	18%
Digesters	38%	20%	27%
Solids Handling Facilities	37%	22%	24%
Central Power Generation	29%	11%	14%
Electrical Distribution	5%	5%	10%
Utilities	26%	21%	26%

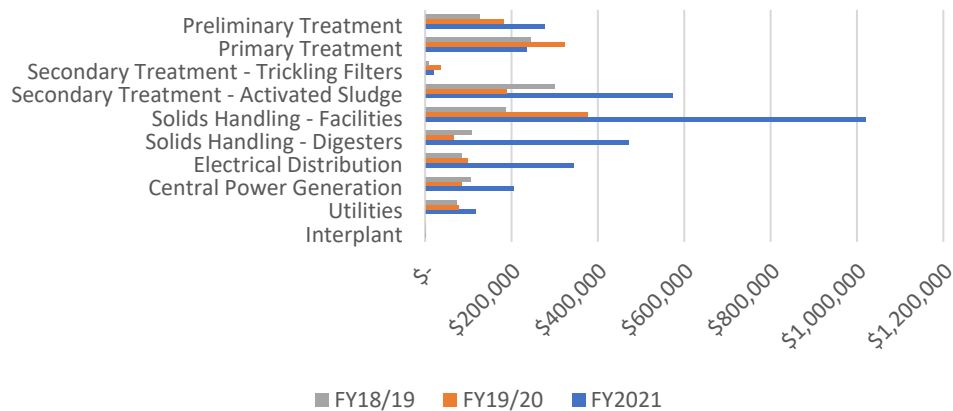


Plant 1 Break In Work - Power Generation, Distribution and Utilities

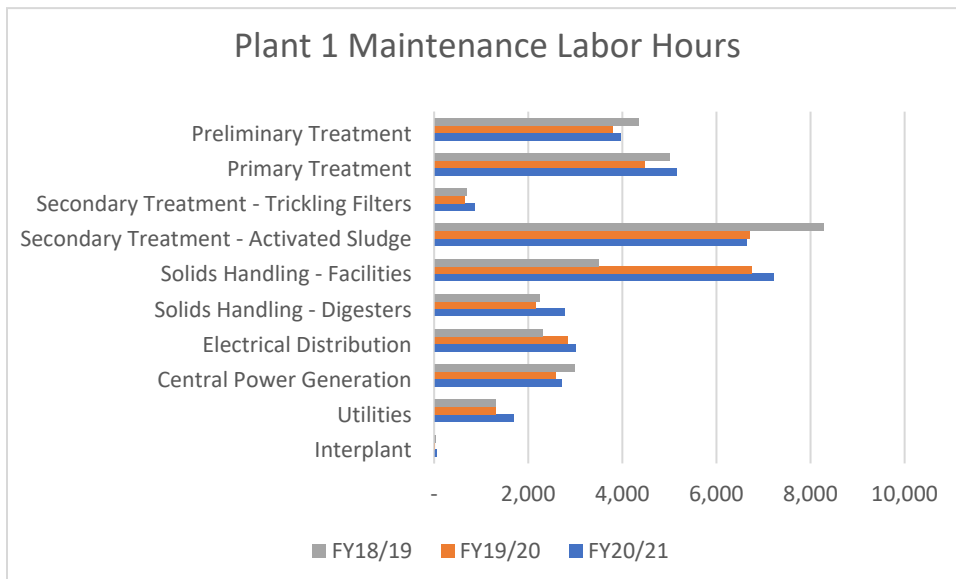


Plant 1 - Maintenance Cost			
	FY2021	FY19/20	FY18/19
Interplant	\$ 1,274	\$ 129	\$ 98
Utilities	\$ 116,792	\$ 77,631	\$ 72,507
Central Power Generation	\$ 203,897	\$ 84,162	\$ 104,694
Electrical Distribution	\$ 343,786	\$ 99,052	\$ 84,335
Solids Handling - Digesters	\$ 471,345	\$ 65,939	\$ 108,286
Solids Handling - Facilities	\$ 1,020,481	\$ 376,349	\$ 186,478
Secondary Treatment - Activated Sludge	\$ 573,375	\$ 189,689	\$ 300,845
Secondary Treatment - Tricking Filters	\$ 19,661	\$ 36,448	\$ 8,680
Primary Treatment	\$ 235,044	\$ 322,086	\$ 244,157
Preliminary Treatment	\$ 277,461	\$ 182,331	\$ 126,066

Plant 1 Maintenance Costs - Materials & Services



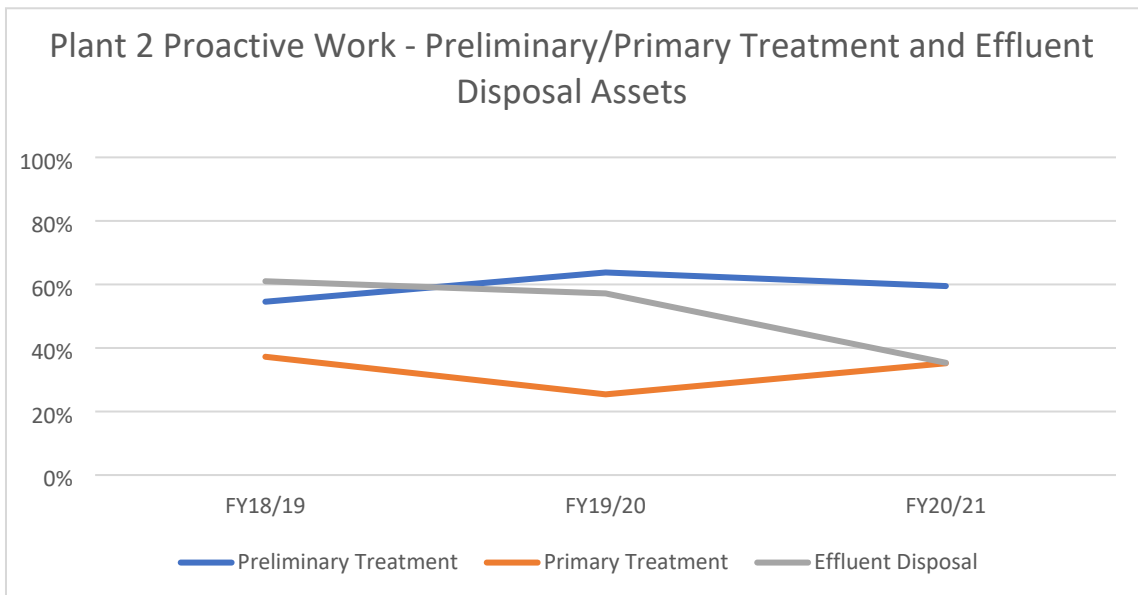
Plant 1 -Maintenance Labor Hours			
	FY20/21	FY19/20	FY18/19
Interplant	43	16	33
Utilities	1,680	1,299	1,304
Central Power Generation	2,706	2,577	2,994
Electrical Distribution	2,999	2,838	2,305
Solids Handling - Digesters	2,765	2,165	2,243
Solids Handling - Facilities	7,215	6,754	3,499
Secondary Treatment - Activated Sludge	6,634	6,709	8,281
Secondary Treatment - Trickling Filters	860	655	692
Primary Treatment	5,164	4,464	5,000
Preliminary Treatment	3,954	3,784	4,355



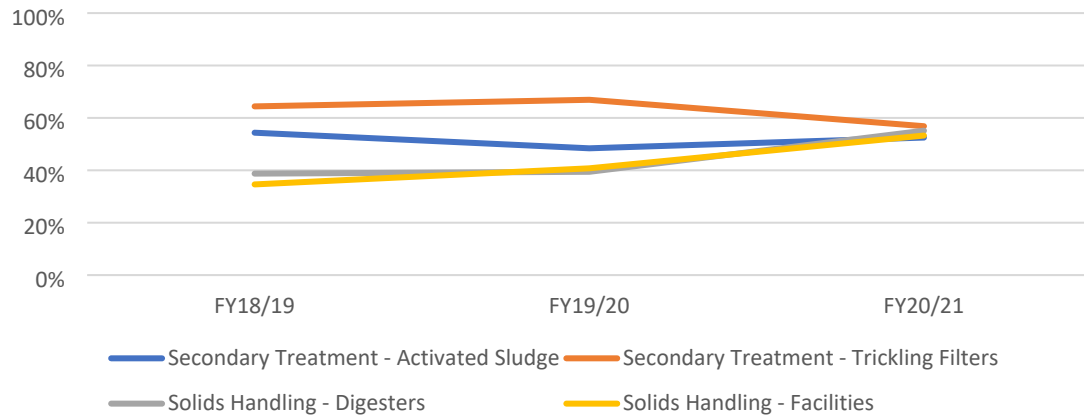
Plant 1 - Availability	Percent Availability		
	FY18/19	FY19/20	FY20/21
Preliminary Treatment	91%	95%	99%
Primary Treatment	88%	95%	97%
Interplant	100%	100%	94%
Secondary Treatment - Activated Sludge	94%	92%	93%
Secondary Treatment - Trickling Filters	97%	100%	100%
Solids Handling - Digesters	99%	98%	99%
Solids Handling - Facilities	99%	99%	99%

Plant No.2

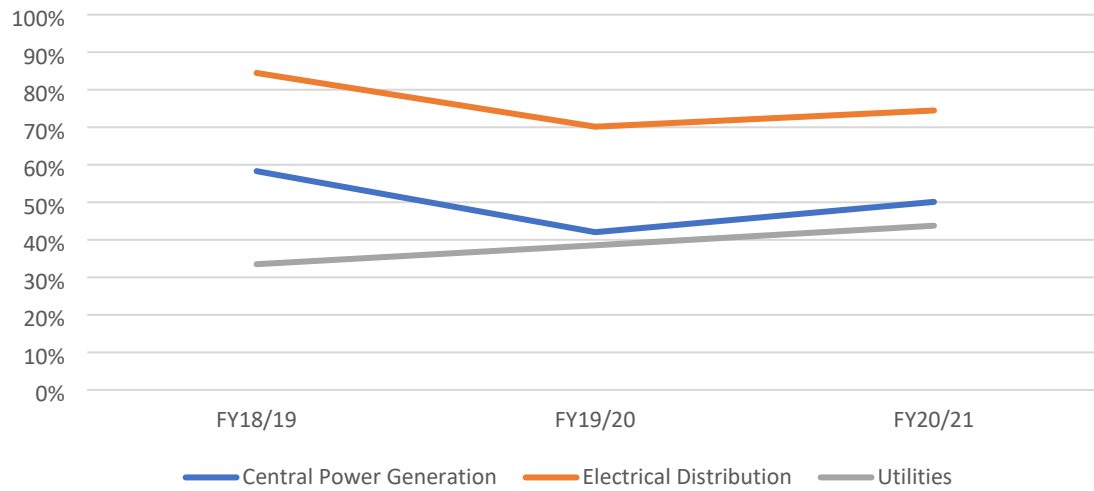
Table 3. 2 Proactive Maintenance (PM) Percent for Reclamation Plant No. 2			
Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	55%	64%	59%
Primary	37%	25%	35%
Activated Sludge	54%	48%	53%
Trickling Filters	64%	67%	57%
Effluent Disposal	61%	57%	35%
Digesters	39%	39%	55%
Solids Handling Facilities	35%	41%	53%
Central Power Generation	58%	42%	50%
Electrical Distribution	84%	70%	74%
Utilities	34%	39%	44%



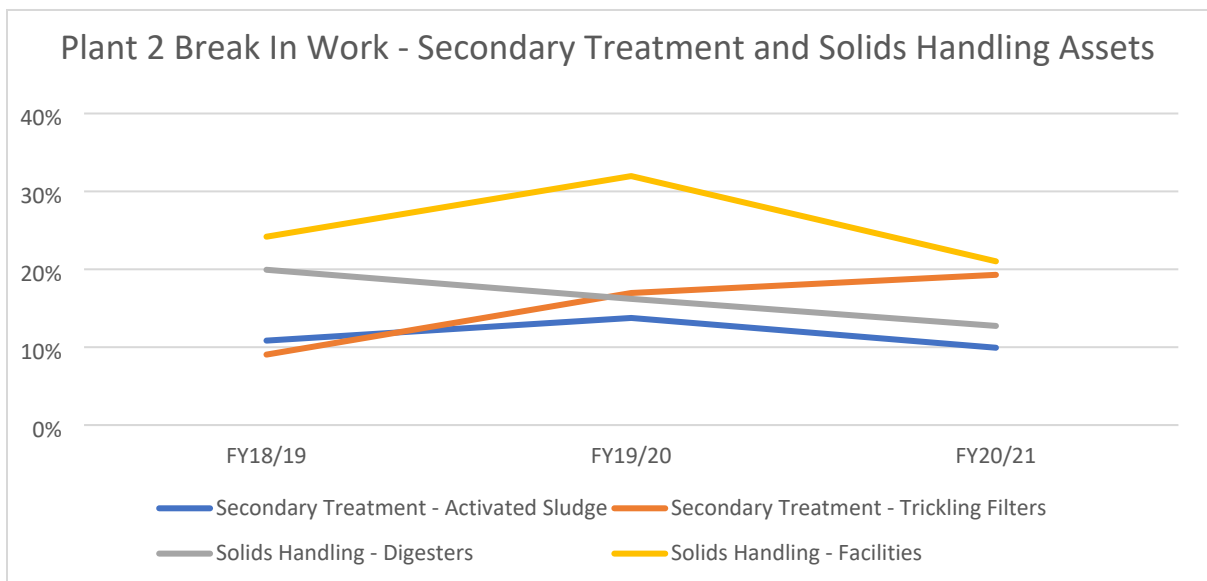
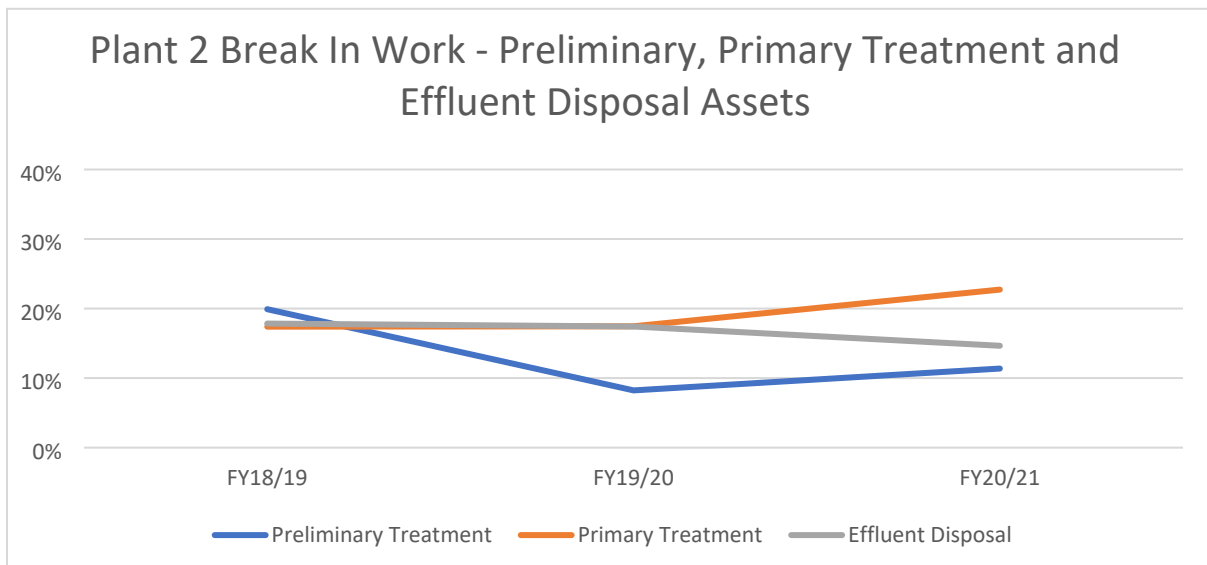
Plant 2 Proactive Work - Secondary Treatment and Solids Handling Assets



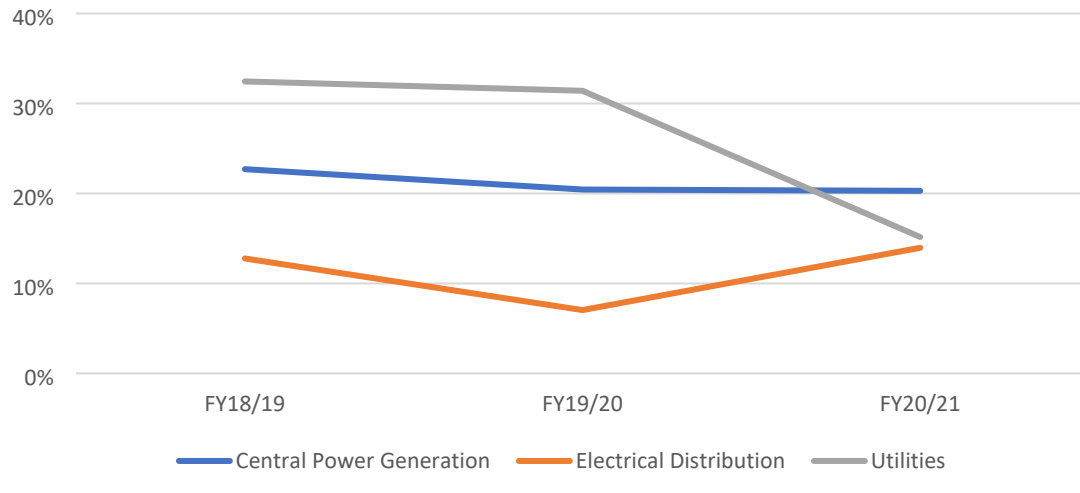
Plant 2 Proactive Work - Power Generation, Distribution and Utilities



Process Area	FY 18/19	FY 19/20	FY 20/21
Preliminary	20%	8%	11%
Primary	17%	17%	23%
Activated Sludge	11%	14%	10%
Trickling Filters	9%	17%	19%
Effluent Disposal	18%	17%	15%
Digesters	20%	16%	13%
Solids Handling Facilities	24%	32%	21%
Central Power Generation	23%	20%	20%
Electrical Distribution	13%	7%	14%
Utilities	32%	31%	15%

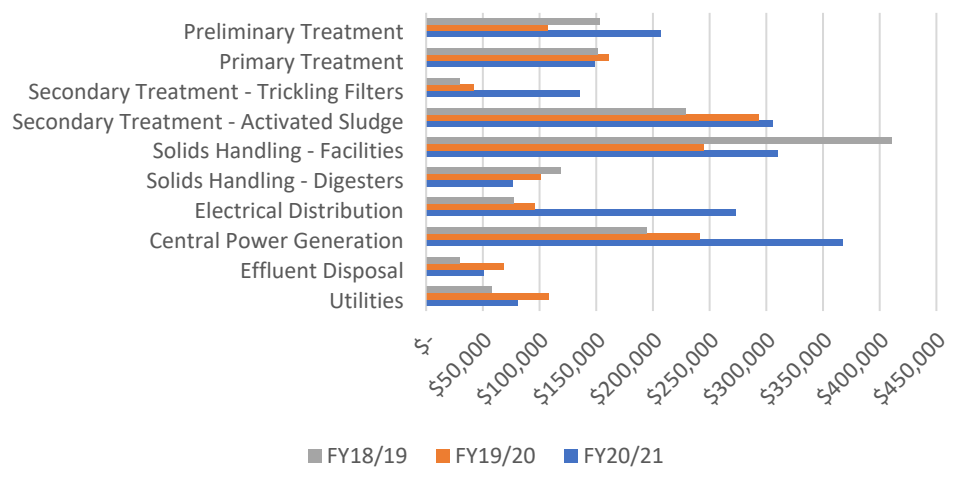


Plant 2 Break In Work - Power Generation, Distribution and Utilities

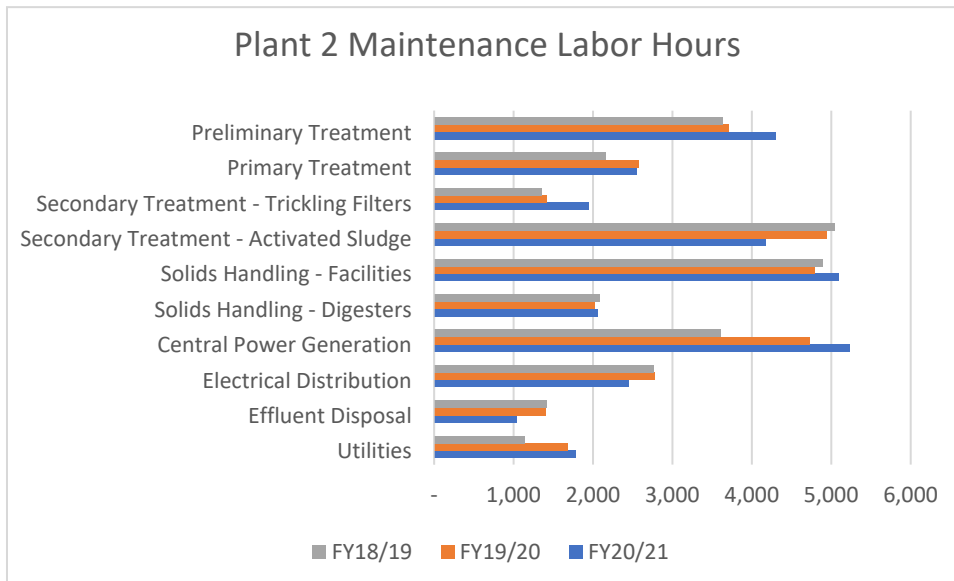


Plant 2 - Maintenance Cost			
	FY20/21	FY19/20	FY18/19
Utilities	\$ 80,937	\$ 108,149	\$ 58,099
Effluent Disposal	\$ 50,630	\$ 68,107	\$ 29,777
Central Power Generation	\$ 367,368	\$ 241,524	\$ 194,064
Electrical Distribution	\$ 273,276	\$ 95,924	\$ 77,611
Solids Handling - Digesters	\$ 76,496	\$ 101,361	\$ 118,599
Solids Handling - Facilities	\$ 309,869	\$ 244,815	\$ 410,645
Secondary Treatment - Activated Sludge	\$ 305,721	\$ 293,271	\$ 228,999
Secondary Treatment - Trickling Filters	\$ 135,668	\$ 41,765	\$ 29,523
Primary Treatment	\$ 149,015	\$ 161,145	\$ 151,689
Preliminary Treatment	\$ 206,639	\$ 107,316	\$ 153,001

Plant 2 Maintenance Costs - Materials & Services



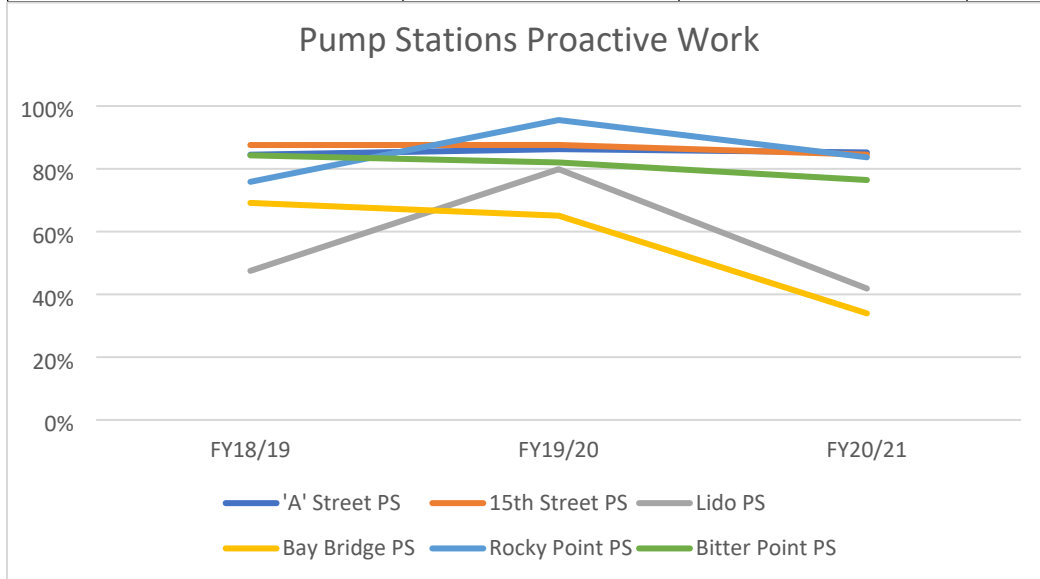
Plant 2 - Maintenance Labor Hours			
	FY20/21	FY19/20	FY18/19
Utilities	1,782	1,677	1,146
Effluent Disposal	1,038	1,401	1,418
Electrical Distribution	2,443	2,773	2,763
Central Power Generation	5,232	4,726	3,607
Solids Handling - Digesters	2,064	2,015	2,082
Solids Handling - Facilities	5,098	4,789	4,891
Secondary Treatment - Activated Sludge	4,180	4,944	5,049
Secondary Treatment - Trickling Filters	1,940	1,412	1,354
Primary Treatment	2,547	2,581	2,165
Preliminary Treatment	4,301	3,710	3,639



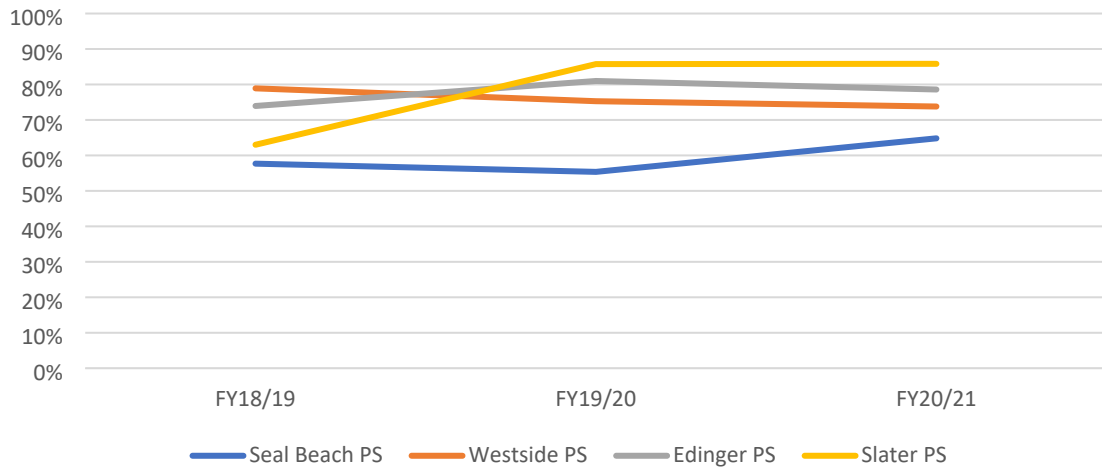
Plant 2	Percent Availability		
	FY18/19	FY19/20	FY20/21
Preliminary Treatment	92%	94%	92%
Primary Treatment	94%	84%	88%
Effluent Disposal	72%	71%	89%
Secondary Treatment - Activated Sludge	91%	86%	92%
Secondary Treatment - Trickling Filter	93%	92%	91%
Solids Handling - Digesters	98%	82%	88%
Solids Handling - Facilities	100%	98%	99%

Pump Stations

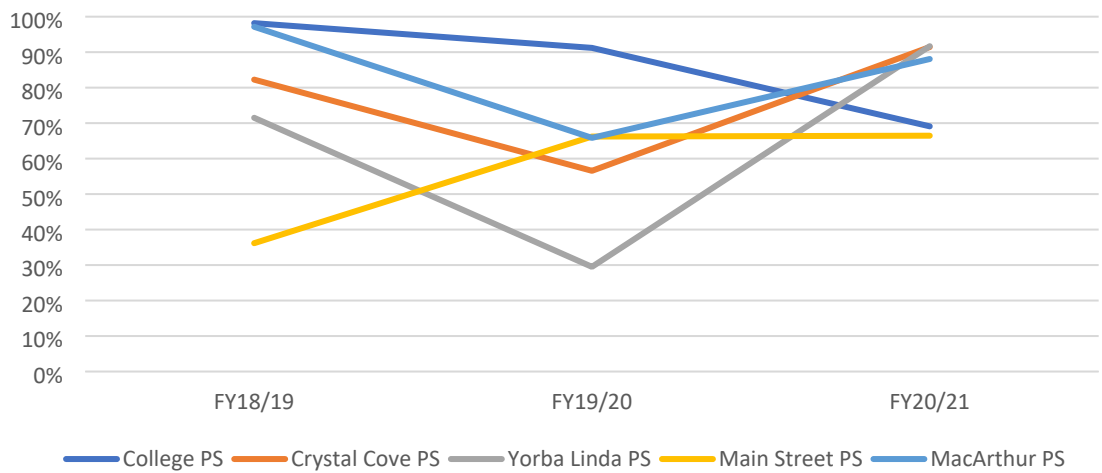
Table 3. 3 Proactive Maintenance (PM) Percent for Pump Stations			
Process Area	FY 18/19	FY 19/20	FY 20/21
'A' Street	84%	86%	85%
15 th Street	88%	88%	85%
Lido	47%	80%	42%
Bay Bridge	69%	65%	34%
Rocky Point	76%	96%	84%
Bitter Point	84%	82%	76%
Seal Beach	58%	55%	65%
Westside	79%	75%	74%
Edinger	74%	81%	79%
Slater	63%	86%	86%
College	98%	91%	69%
Crystal Cove	82%	57%	91%
Yorba Linda	72%	30%	92%
Main Street	36%	66%	66%
MacArthur	97%	66%	88%



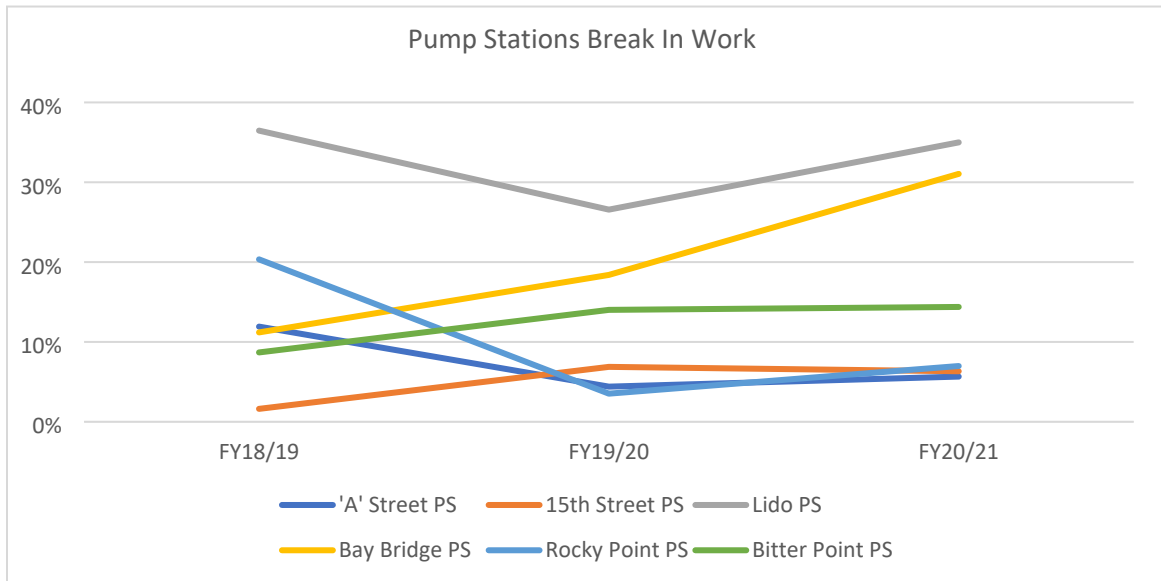
Pump Stations Proactive Work (Con't)

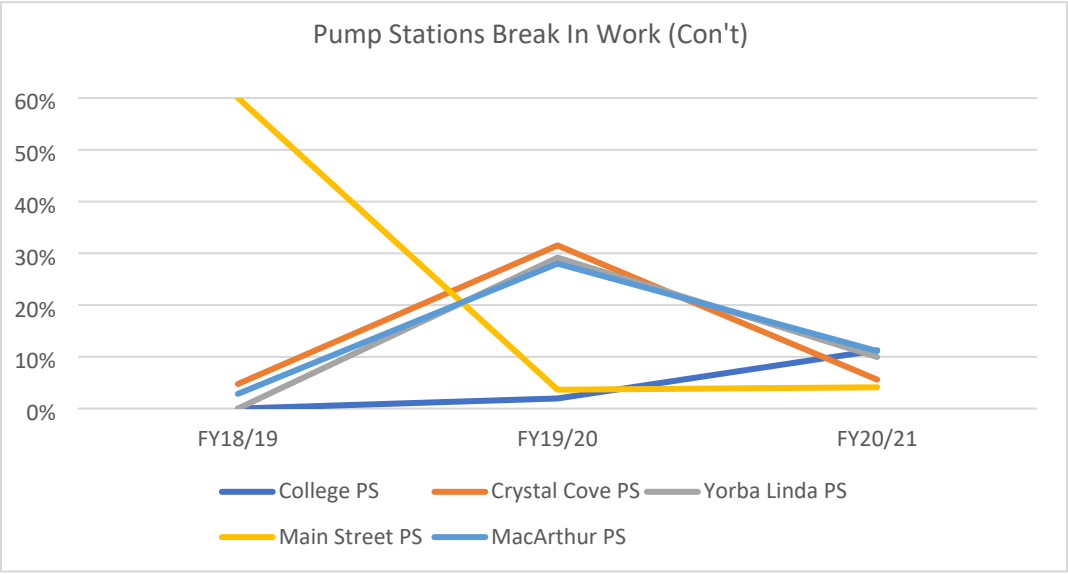
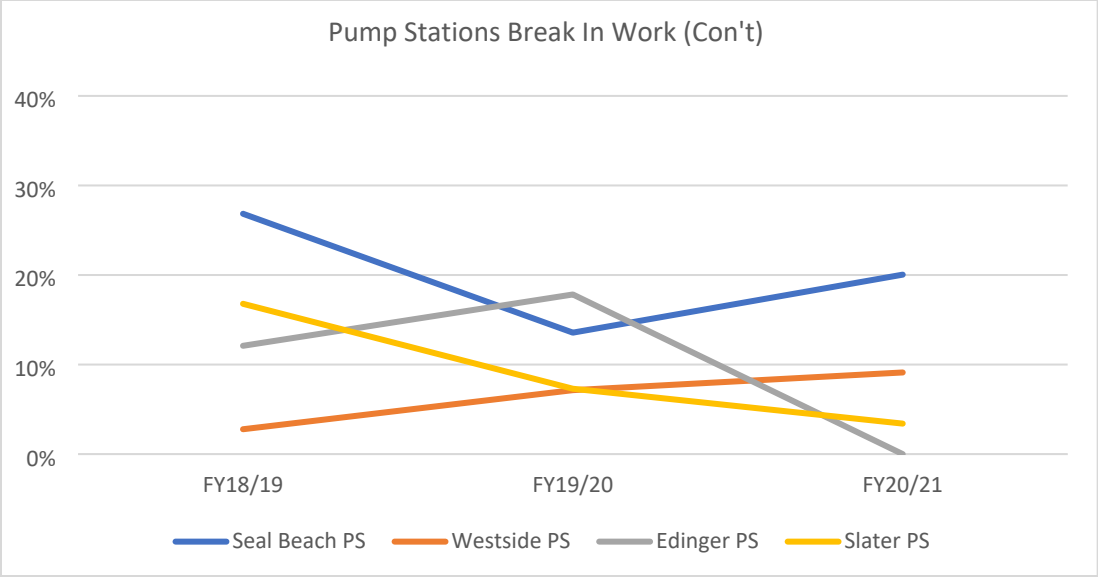


Pump Stations Proactive Work (Con't)

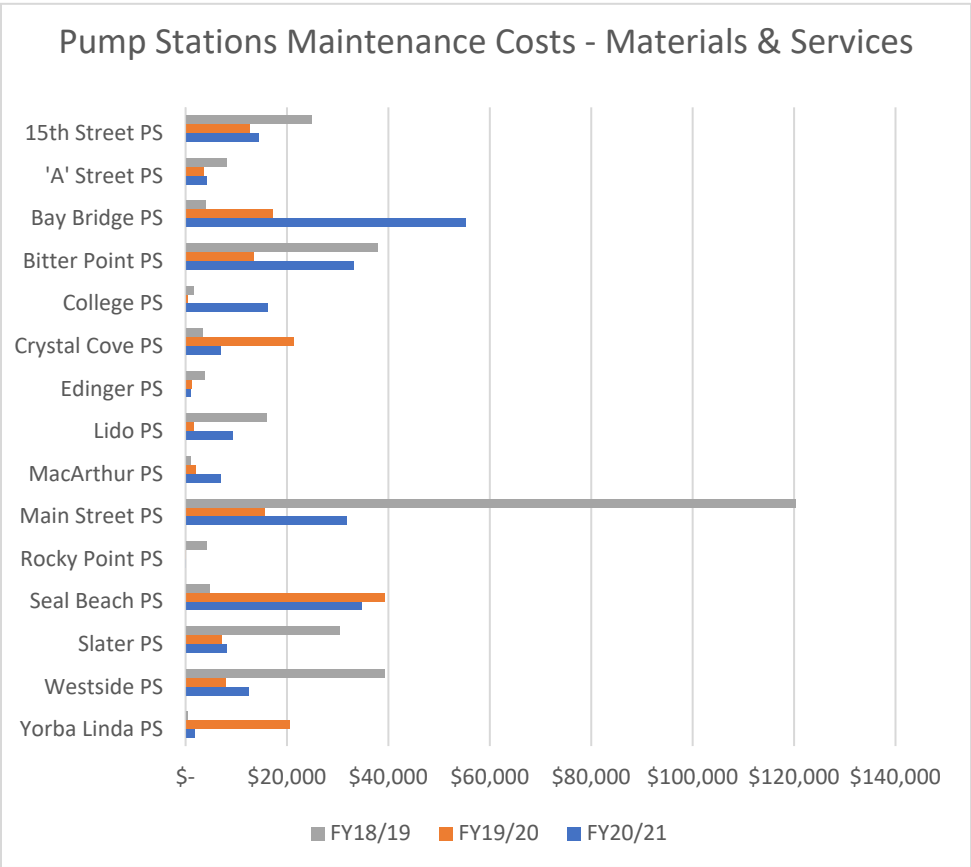


Process Area	FY 18/19	FY 19/20	FY 20/21
'A' Street	12%	4%	6%
15 th Street	2%	7%	6%
Lido	36%	27%	35%
Bay Bridge	11%	18%	31%
Rocky Point	20%	4%	7%
Bitter Point	9%	14%	14%
Seal Beach	27%	14%	20%
Westside	3%	7%	3%
Edinger	12%	18%	0%
Slater	17%	7%	3%
College	0%	2%	11%
Crystal Cove	5%	32%	6%
Yorba Linda	0%	29%	10%
Main Street	60%	4%	4%
MacArthur	3%	28%	11%





Pump Stations - Maintenance Cost			
	FY20/21	FY19/20	FY18/19
Yorba Linda PS	\$ 1,899	\$ 20,572	\$ 467
Westside PS	\$ 12,561	\$ 7,862	\$ 39,372
Slater PS	\$ 8,200	\$ 7,190	\$ 30,382
Seal Beach PS	\$ 34,840	\$ 39,357	\$ 4,877
Rocky Point PS	\$ 126	\$ 95	\$ 4,270
Main Street PS	\$ 31,724	\$ 15,705	\$ 120,387
MacArthur PS	\$ 6,951	\$ 1,974	\$ 1,144
Lido PS	\$ 9,256	\$ 1,564	\$ 16,070
Edinger PS	\$ 1,040	\$ 1,303	\$ 3,915
Crystal Cove PS	\$ 7,000	\$ 21,309	\$ 3,489
College PS	\$ 16,210	\$ 461	\$ 1,578
Bitter Point PS	\$ 33,194	\$ 13,573	\$ 37,860
Bay Bridge PS	\$ 55,315	\$ 17,214	\$ 4,052
'A' Street PS	\$ 4,188	\$ 3,683	\$ 8,184
15th Street PS	\$ 14,467	\$ 12,704	\$ 24,944



Pump Stations - Labor Hours			
	FY20/21	FY19/20	FY18/19
Yorba Linda PS	255.5	450	193
Westside PS	416.75	311.5	288
Slater PS	719.25	661	634.5
Seal Beach PS	729.75	905	550.5
Rocky Point PS	232.75	213	263
Main Street PS	837	905	1311.5
MacArthur PS	186.5	203.5	175.5
Lido PS	531.5	298.25	433.25
Edinger PS	165.75	147.25	146.75
Crystal Cove PS	321.5	676.25	410
College PS	339.75	255.75	191.75
Bitter Point PS	884.75	701	558.5
Bay Bridge PS	740.75	417.25	377.5
'A' Street PS	296	329.5	279
15th Street PS	502	516.25	448.75

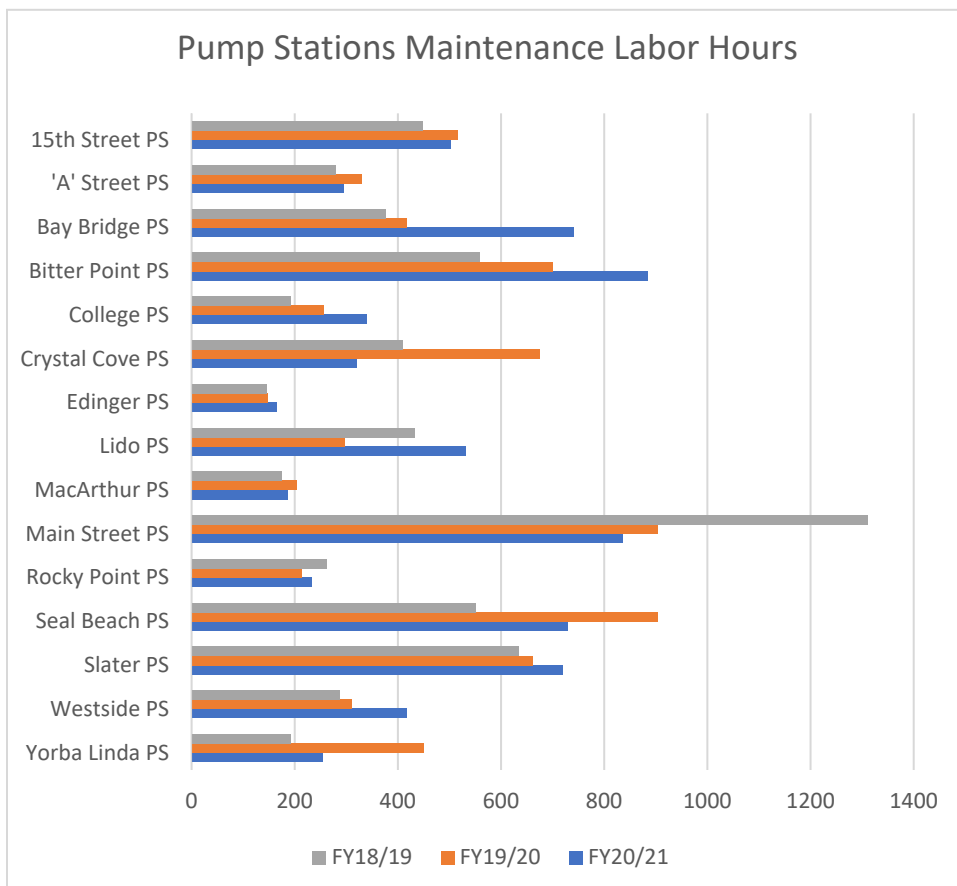


Table 3. X Availability Percent for Pump Stations			
Process Area	FY 18/19	FY 19/20	FY 20/21
'A' Street	99%	100%	99%
15th Street	100%	97%	100%
Lido	98%	98%	98%
Bay Bridge	94%	86%	100%
Rocky Point	94%	96%	98%
Bitter Point	100%	100%	100%
Seal Beach	88%	90%	97%
Westside	88%	94%	94%
Edinger	100%	100%	100%
Slater	94%	98%	96%
College	100%	100%	100%
Crystal Cove	100%	100%	100%
Yorba Linda	76%	86%	88%
Main Street	92%	95%	96%
MacArthur	100%	99%	100%

2021 Asset Management Plan

Presented by:

Brian Waite,
Engineering
Supervisor

Administration
Committee

December 8, 2021



1

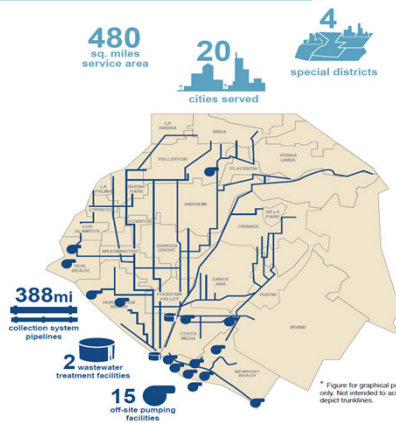
Intent and Purpose

"OC San will know the condition of assets we own and will have a plan to operate and maintain these assets to deliver the required level of service, at the lowest life cycle cost, with an acceptable level of risk."

~ James D. Herberg, OC San General Manager

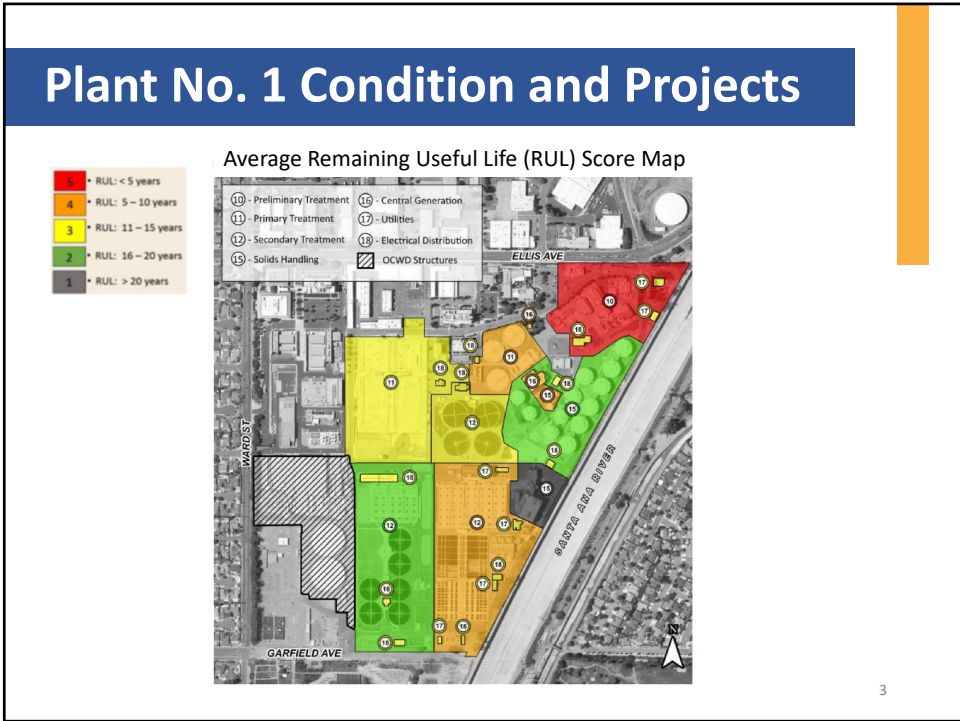
Replacement Value

\$10.7B
assets

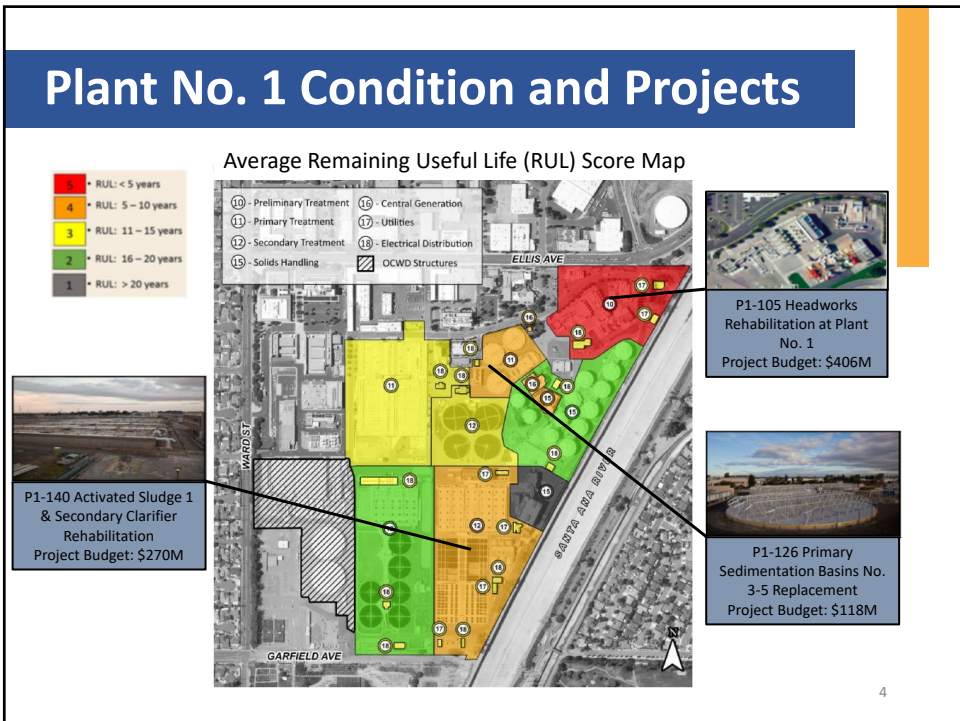


2

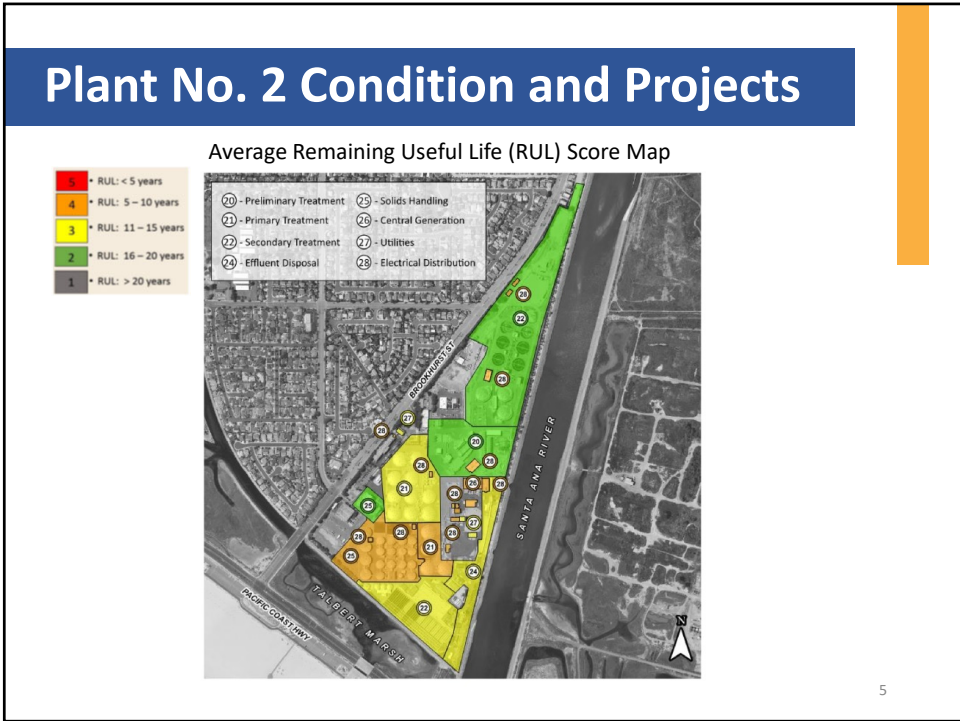
2



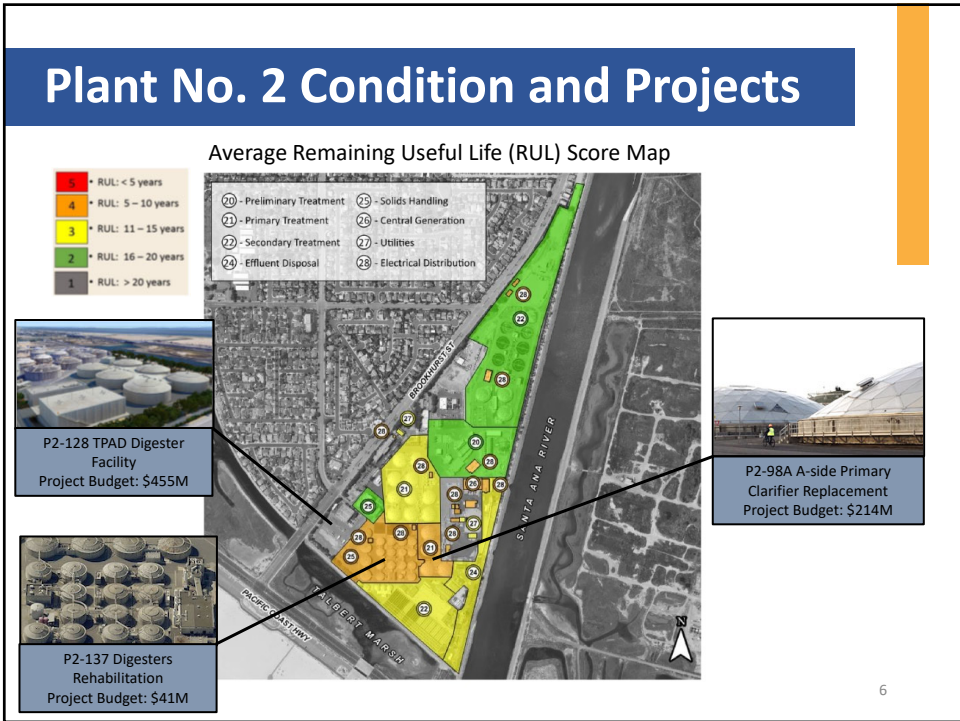
3



4



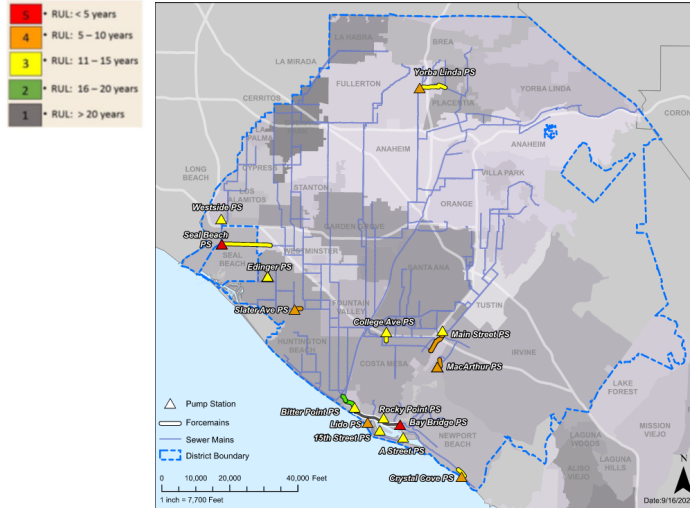
5



6

Pump Station Condition and Projects

Average Remaining Useful Life (RUL) Score Map

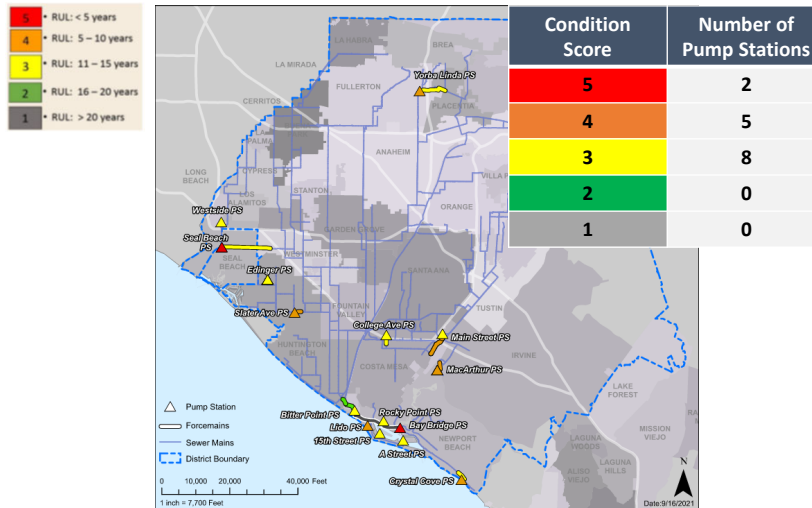


7

7

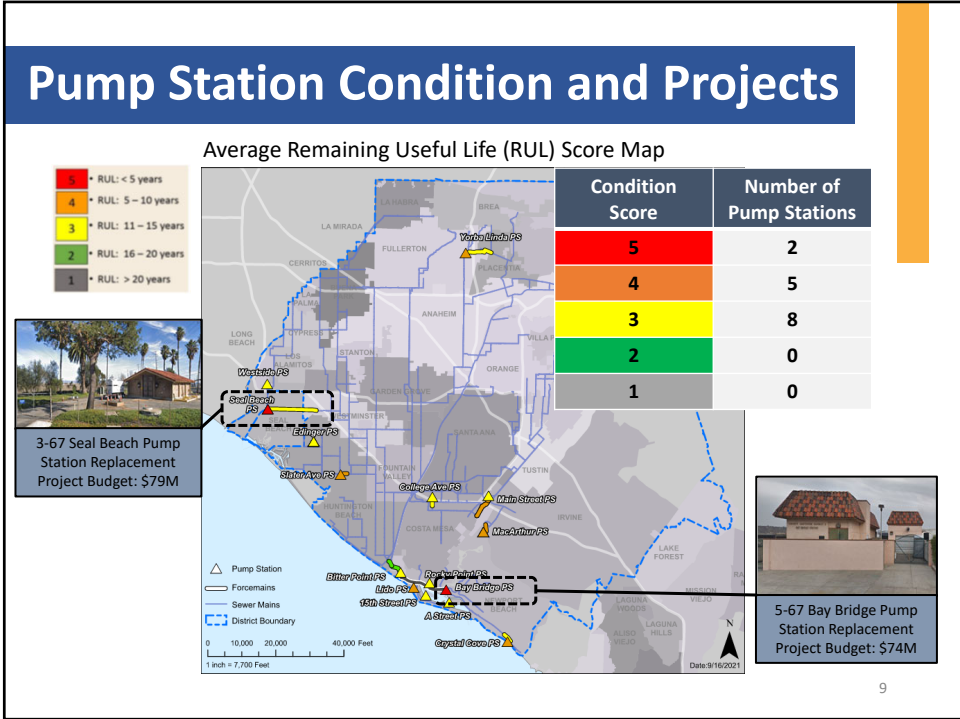
Pump Station Condition and Projects

Average Remaining Useful Life (RUL) Score Map

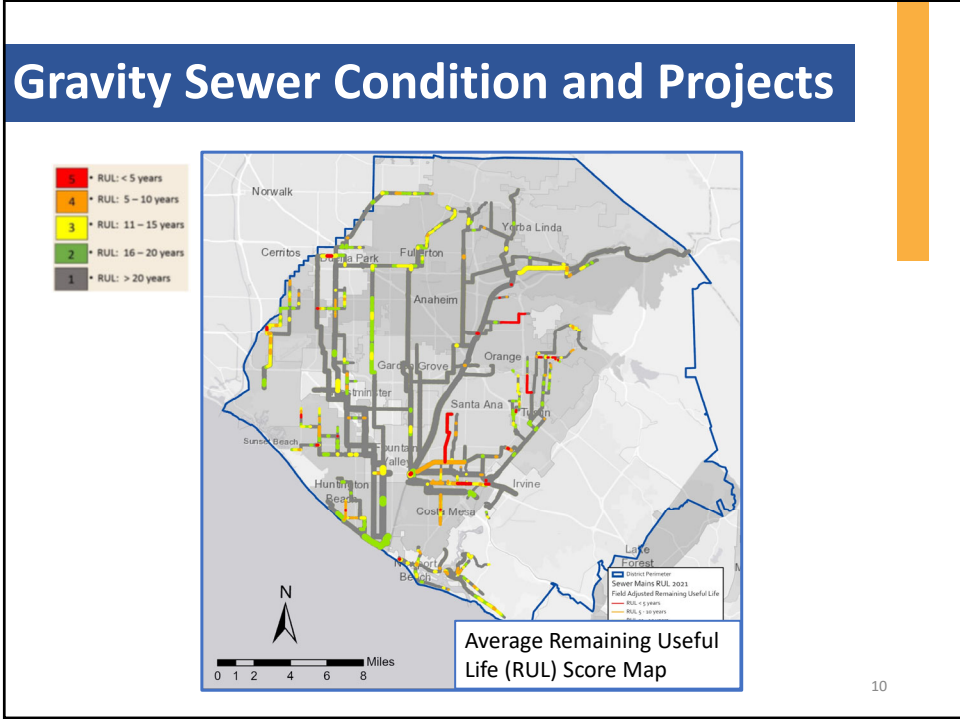


8

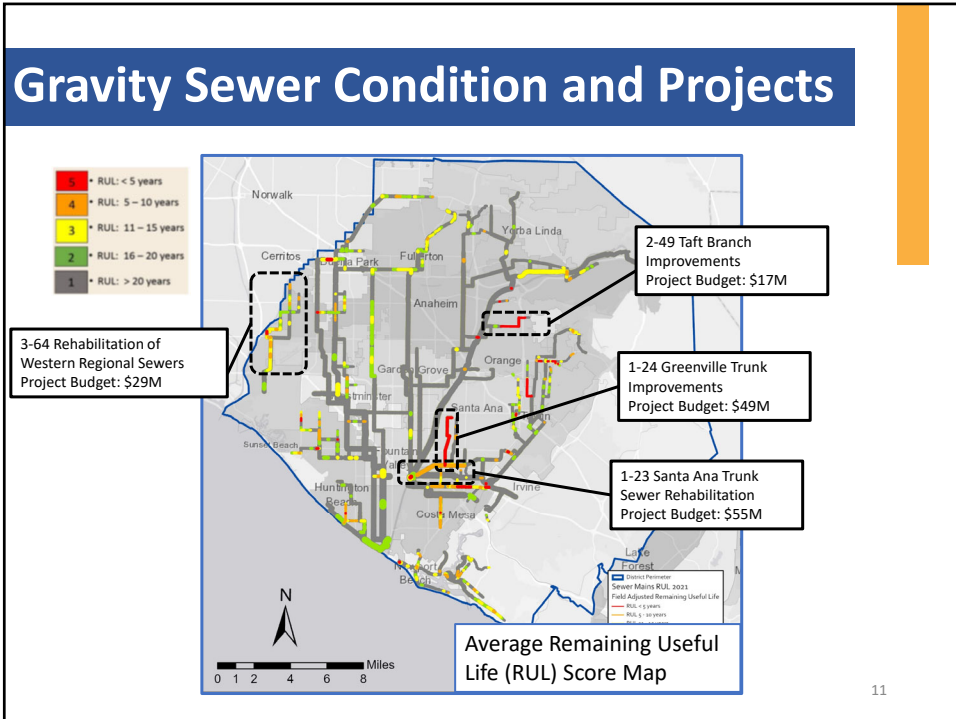
8



9



10



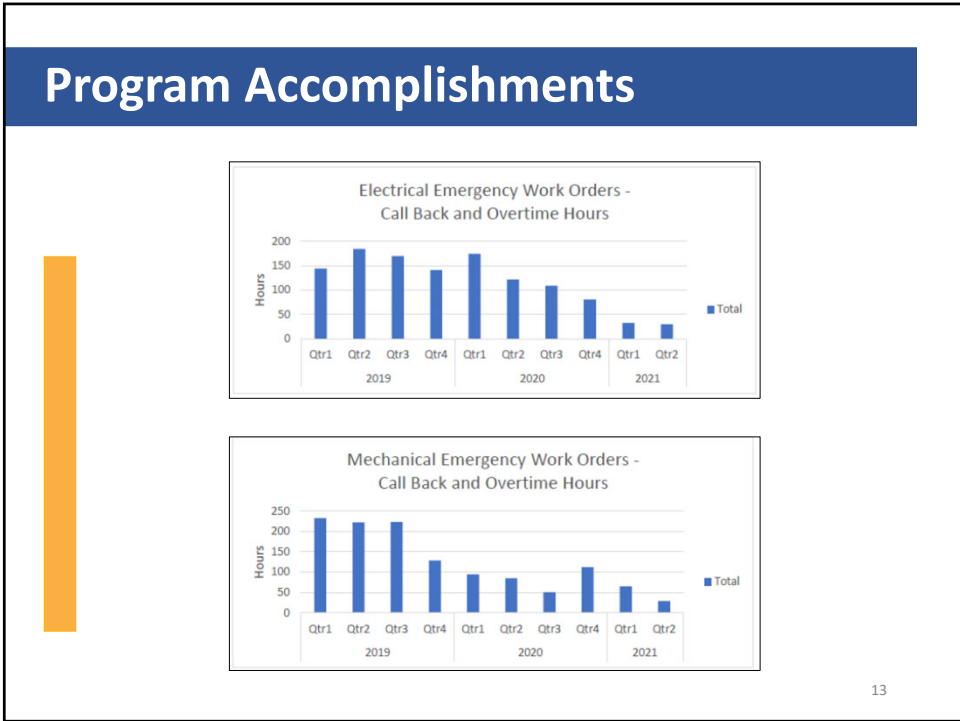
11

Measuring the Success of the Program

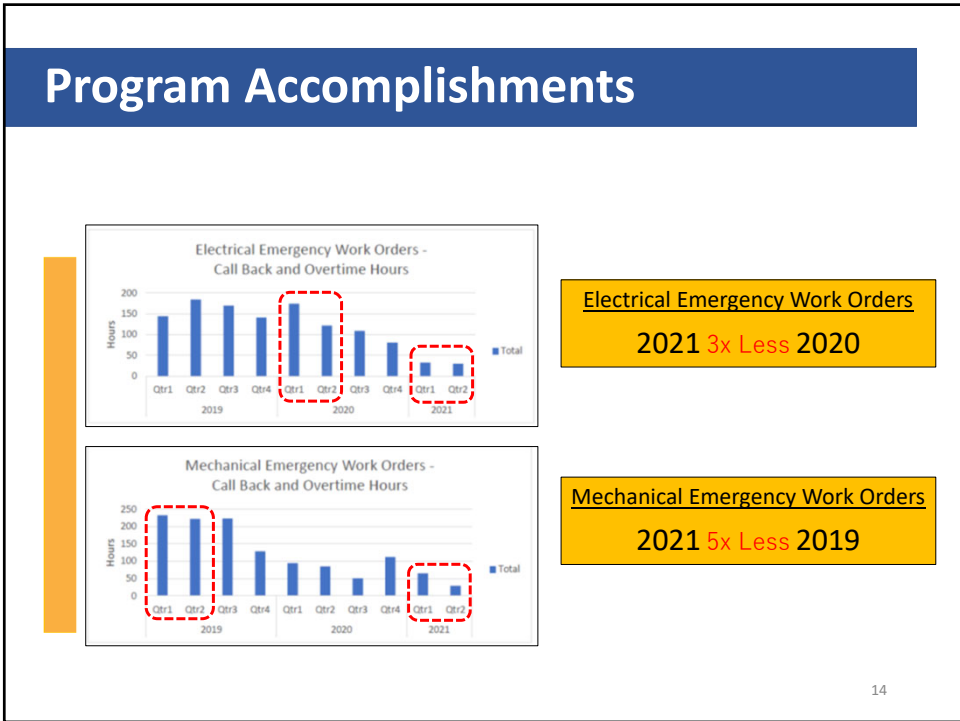




12



13



14

Program Accomplishments



50 Condition Assessments



Collection System Resiliency



Central Generation Facility Planning



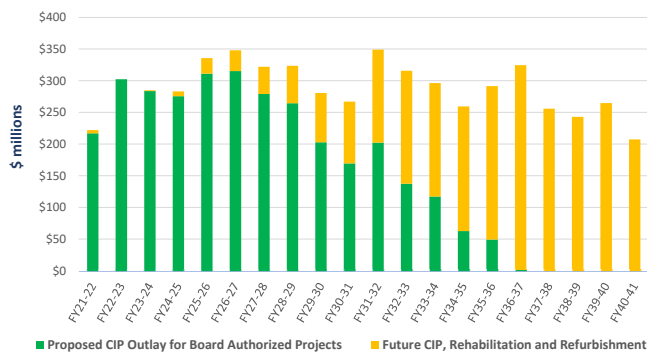
Effective Project Execution

15

15

Impact of Asset Management

- CIP: \$3.5B with 200 Active Projects
- Small Projects: \$60M with 43 Active Projects



16

16

Questions?



17

17



ADMINISTRATION COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2021-1428

Agenda Date: 12/8/2021

Agenda Item No: 10.

FROM: James D. Herberg, General Manager
Originator: Lorenzo Tyner, Assistant General Manager

SUBJECT:

PURCHASING, CONTRACTS, AND MATERIALS MANAGEMENT DEPARTMENT OVERVIEW

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Information Item.

BACKGROUND

Each month, staff provides an informational presentation on topics of interest to the Board of Directors. This month's topic: Orange County Sanitation District's procurement process, bids vs. RFPs, and sole source contracts vs. competitive contracts.

RELEVANT STANDARDS

- Ensure the public's money is wisely spent
- Participate in local, state, and national cooperative purchasing programs
- Comply with OC San Policy: Ordinance No. OC SAN-56

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

- Presentation

Rules and Regulations

- State Law
- Public Contract Code
- Mini-Brooks Act
- CA Government Code
- Federal and State Grant Requirements
- OC San Policies
- Ordinance No. OC SAN-56

3

3

Purchasing Approval Thresholds

- Ordinance No. OC SAN-56
 - Sufficient Budget Available and Authorized
 - General Manager up to \$100K
 - Standing Committees up to \$200K
 - Board Approval if over \$200K

4

4

Materials Management

```

graph TD
    MM((Materials Management)) --- SR((Shipping and receiving))
    MM --- SD((Stocking and distribution))
    MM --- IC((Inventory control))
    MM --- D((Disposal))
    MM --- UM((Uniform management))
    MM --- TC((Tool crib))
    MM --- QC((Quality control))
            
```

- 6,300 inventory items
- \$7.8 m of inventory

5

5

Contracts

Public Works Construction	\$471 m awarded last year
Professional Services	\$74 m awarded last year
Contract Administration	\$720 m construction projects in active administration
Template Updates	Continually updated to reflect evolving practices and updated regulations

6

6

Purchasing

- Equipment
- Services
- Consulting Services
- Supplies

- 70+ Annual solicitations
- \$50M Annual PO value
- 5K+ POs issued annually

7

7

Procurement Process

- 01 Identification of Need
- 02 Choosing Relevant Procurement Method
- 03 Solicitation Development
- 04 Conduct Solicitation
- 05 Evaluate Submittals
- 06 Obtain Appropriate Approvals
- 07 Finalize and Award
- 08 Contract Administration

8

8

Procurement Methods

Public Works Construction

Construction, erection, or alteration of any type of structure, building, or improvement

- Publicly advertised competitive solicitation if work is over \$35,000
- Awarded to lowest Responsive & Responsible Bidder
- No contract negotiations

9

9

Procurement Methods

Request for Proposals/ Qualifications

Services provided by professionals that involve specialized judgement, skill, and expertise

- Competitive solicitation if service is over \$10,000
- Award is based on Best Value
- Contract negotiations may occur

10

10

Procurement Methods

Goods and Services Bids

*Fixed, movable, disposable, and/or reusable products, equipment, materials, or supplies;
or
furnishing of materials, labor, time, or effort by a Contractor.*

- Competitive solicitation if goods or services are over \$10,000
- Awarded to lowest Responsive & Responsible bidder
- No contract negotiations

11

11

Exemptions

Emergency

Purchases that are required to prevent immediate interruption or cessation of necessary services or to safeguard life, property, or the public health and welfare

Sole Source

Goods and/or services are:

- 1) *Of a unique nature based on the quality, durability, availability, fitness or qualifications for a particular use; or*
- 2) *Only available from one source*

- General Manager or designee determines the urgent need or sole source
- Awarded through negotiated procurement
- Board Chairman concurrence if emergency over \$100,000
 - Board ratified at next regular meeting

12

12

Developments

PLANETBIDS

Electronic Bidding



Adobe Sign

PMWeb

Electronic Signatures

EBIX

Insurance Verification



Remote Warehousing



Vendor Outreach

13

13

Questions



14

14

ORANGE COUNTY SANITATION DISTRICT COMMON ACRONYMS

ACWA	Association of California Water Agencies	LOS	Level Of Service	RFP	Request For Proposal
APWA	American Public Works Association	MGD	Million Gallons Per Day	RWQCB	Regional Water Quality Control Board
AQMD	Air Quality Management District	MOU	Memorandum of Understanding	SARFPA	Santa Ana River Flood Protection Agency
ASCE	American Society of Civil Engineers	NACWA	National Association of Clean Water Agencies	SARI	Santa Ana River Interceptor
BOD	Biochemical Oxygen Demand	NEPA	National Environmental Policy Act	SARWQCB	Santa Ana Regional Water Quality Control Board
CARB	California Air Resources Board	NGOs	Non-Governmental Organizations	SAWPA	Santa Ana Watershed Project Authority
CASA	California Association of Sanitation Agencies	NPDES	National Pollutant Discharge Elimination System	SCADA	Supervisory Control And Data Acquisition
CCTV	Closed Circuit Television	NWRI	National Water Research Institute	SCAP	Southern California Alliance of Publicly Owned Treatment Works
CEQA	California Environmental Quality Act	O & M	Operations & Maintenance	SCAQMD	South Coast Air Quality Management District
CIP	Capital Improvement Program	OCCOG	Orange County Council of Governments	SOCWA	South Orange County Wastewater Authority
CRWQCB	California Regional Water Quality Control Board	OCHCA	Orange County Health Care Agency	SRF	Clean Water State Revolving Fund
CWA	Clean Water Act	OCSD	Orange County Sanitation District	SSMP	Sewer System Management Plan
CWEA	California Water Environment Association	OCWD	Orange County Water District	SSO	Sanitary Sewer Overflow
EIR	Environmental Impact Report	OOBS	Ocean Outfall Booster Station	SWRCB	State Water Resources Control Board
EMT	Executive Management Team	OSHA	Occupational Safety and Health Administration	TDS	Total Dissolved Solids
EPA	US Environmental Protection Agency	PCSA	Professional Consultant/Construction Services Agreement	TMDL	Total Maximum Daily Load
FOG	Fats, Oils, and Grease	PDSA	Professional Design Services Agreement	TSS	Total Suspended Solids
gpd	gallons per day	PFAS	Per- and Polyfluoroalkyl Substances	WDR	Waste Discharge Requirements
GWRS	Groundwater Replenishment System	PFOA	Perfluorooctanoic Acid	WEF	Water Environment Federation
ICS	Incident Command System	PFOS	Perfluorooctanesulfonic Acid	WERF	Water Environment & Reuse Foundation
IERP	Integrated Emergency Response Plan	POTW	Publicly Owned Treatment Works	WIFIA	Water Infrastructure Finance and Innovation Act
JPA	Joint Powers Authority	ppm	parts per million	WIIN	Water Infrastructure Improvements for the Nation Act
LAFCO	Local Agency Formation Commission	PSA	Professional Services Agreement	WRDA	Water Resources Development Act

ORANGE COUNTY SANITATION DISTRICT GLOSSARY OF TERMS

ACTIVATED SLUDGE PROCESS – A secondary biological wastewater treatment process where bacteria reproduce at a high rate with the introduction of excess air or oxygen and consume dissolved nutrients in the wastewater.

BENTHOS – The community of organisms, such as sea stars, worms, and shrimp, which live on, in, or near the seabed, also known as the benthic zone.

BIOCHEMICAL OXYGEN DEMAND (BOD) – The amount of oxygen used when organic matter undergoes decomposition by microorganisms. Testing for BOD is done to assess the amount of organic matter in water.

BIOGAS – A gas that is produced by the action of anaerobic bacteria on organic waste matter in a digester tank that can be used as a fuel.

BIOSOLIDS – Biosolids are nutrient rich organic and highly treated solid materials produced by the wastewater treatment process. This high-quality product can be recycled as a soil amendment on farmland or further processed as an earth-like product for commercial and home gardens to improve and maintain fertile soil and stimulate plant growth.

CAPITAL IMPROVEMENT PROGRAM (CIP) – Projects for repair, rehabilitation, and replacement of assets. Also includes treatment improvements, additional capacity, and projects for the support facilities.

COLIFORM BACTERIA – A group of bacteria found in the intestines of humans and other animals, but also occasionally found elsewhere, used as indicators of sewage pollution. E. coli are the most common bacteria in wastewater.

COLLECTIONS SYSTEM – In wastewater, it is the system of typically underground pipes that receive and convey sanitary wastewater or storm water.

CERTIFICATE OF PARTICIPATION (COP) – A type of financing where an investor purchases a share of the lease revenues of a program rather than the bond being secured by those revenues.

CONTAMINANTS OF POTENTIAL CONCERN (CPC) – Pharmaceuticals, hormones, and other organic wastewater contaminants.

DILUTION TO THRESHOLD (D/T) – The dilution at which the majority of people detect the odor becomes the D/T for that air sample.

GREENHOUSE GASES (GHG) – In the order of relative abundance water vapor, carbon dioxide, methane, nitrous oxide, and ozone gases that are considered the cause of global warming (“greenhouse effect”).

GROUNDWATER REPLENISHMENT SYSTEM (GWRS) – A joint water reclamation project that proactively responds to Southern California’s current and future water needs. This joint project between the Orange County Water District and OCSD provides 70 million gallons per day of drinking quality water to replenish the local groundwater supply.

LEVEL OF SERVICE (LOS) – Goals to support environmental and public expectations for performance.

N-NITROSODIMETHYLAMINE (NDMA) – A N-nitrosamine suspected cancer-causing agent. It has been found in the GWRS process and is eliminated using hydrogen peroxide with extra ultra-violet treatment.

NATIONAL BIOSOLIDS PARTNERSHIP (NBP) – An alliance of the NACWA and WEF, with advisory support from the EPA. NBP is committed to developing and advancing environmentally sound and sustainable biosolids management practices that go beyond regulatory compliance and promote public participation to enhance the credibility of local agency biosolids programs and improved communications that lead to public acceptance.

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) – A large group (over 6,000) of human-made compounds that are resistant to heat, water, and oil and used for a variety of applications including firefighting foam, stain and water-resistant clothing, cosmetics, and food packaging. Two PFAS compounds, perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) have been the focus of increasing regulatory scrutiny in drinking water and may result in adverse health effects including developmental effects to fetuses during pregnancy, cancer, liver damage, immunosuppression, thyroid effects, and other effects.

PERFLUOROCTANOIC ACID (PFOA) – An ingredient for several industrial applications including carpeting, upholstery, apparel, floor wax, textiles, sealants, food packaging, and cookware (Teflon).

PERFLUOROCTANESULFONIC ACID (PFOS) – A key ingredient in Scotchgard, a fabric protector made by 3M, and used in numerous stain repellents.

PLUME – A visible or measurable concentration of discharge from a stationary source or fixed facility.

PUBLICLY OWNED TREATMENT WORKS (POTW) – A municipal wastewater treatment plant.

SANTA ANA RIVER INTERCEPTOR (SARI) LINE – A regional brine line designed to convey 30 million gallons per day of non-reclaimable wastewater from the upper Santa Ana River basin to the ocean for disposal, after treatment.

SANITARY SEWER – Separate sewer systems specifically for the carrying of domestic and industrial wastewater.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) – Regional regulatory agency that develops plans and regulations designed to achieve public health standards by reducing emissions from business and industry.

SECONDARY TREATMENT – Biological wastewater treatment, particularly the activated sludge process, where bacteria and other microorganisms consume dissolved nutrients in wastewater.

SLUDGE – Untreated solid material created by the treatment of wastewater.

TOTAL SUSPENDED SOLIDS (TSS) – The amount of solids floating and in suspension in wastewater.

ORANGE COUNTY SANITATION DISTRICT GLOSSARY OF TERMS

TRICKLING FILTER – A biological secondary treatment process in which bacteria and other microorganisms, growing as slime on the surface of rocks or plastic media, consume nutrients in wastewater as it trickles over them.

URBAN RUNOFF – Water from city streets and domestic properties that carry pollutants into the storm drains, rivers, lakes, and oceans.

WASTEWATER – Any water that enters the sanitary sewer.

WATERSHED – A land area from which water drains to a particular water body. OCSD's service area is in the Santa Ana River Watershed.