

**AGENDA  
IRVINE RANCH WATER DISTRICT  
BOARD OF DIRECTORS  
REGULAR MEETING**

June 26, 2023

**CALL TO ORDER** 5:00 p.m.

**PLEDGE OF ALLEGIANCE**

**ROLL CALL** Directors Reinhart, Withers, Swan, LaMar, and President McLaughlin

This meeting will be held in-person at the District’s headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: <https://irwd.webex.com/irwd/j.php?MTID=me74bff8282d0a85d235a6cf119c1851f>  
Meeting Number (Access Code): 2482 350 3397  
Meeting Password: VuQtTnEb333

PLEASE NOTE: Webex observers of the meeting will be placed into the Webex lobby when the Board enters closed session. Participants who remain in the “lobby” will automatically be returned to the open session of the Board once the closed session has concluded. Observers joining the meeting while the Board is in closed session will receive a notice that the meeting has been locked. They will be able to observe the meeting once the closed session has concluded.

**PUBLIC COMMENT NOTICE**

Public comments are limited to three minutes per speaker on each subject. If you wish to address the Board of Directors on any item, you may attend the meeting in person and submit a “speaker slip” to the Secretary. Forms are provided outside of IRWD’s Board Room. If attending via Webex, please submit your request to speak, or your comment, via the “chat” feature and your remarks will be read into the record at the meeting. You may also submit a public comment in advance of the meeting by emailing [comments@irwd.com](mailto:comments@irwd.com) before 12:00 p.m. on Monday, June 26, 2023.

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**COMMUNICATIONS TO THE BOARD**

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1. Written:
2. Oral:
3. ITEMS RECEIVED TOO LATE TO BE AGENDIZED

Recommendation: Determine the need to discuss and/or take immediate action on item(s).

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**PUBLIC HEARING**

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4. PROPOSED CHANGES TO THE SCHEDULE OF RATES AND CHARGES EFFECTIVE JULY 1, 2023

Recommendation:

- a. Open the hearing.
- b. Inquire of the Secretary how the hearing was noticed.
- c. Receive and file the Affidavit of Mailing.
- d. Request legal counsel to describe the nature of the proceedings.
- e. Request the Executive Director of Finance or her designee to provide a staff report on the proposed rates and charges and inquire whether there have been any written communications.
- f. Hear any person who wishes to speak regarding the Proposed 2023-24 and 2024-25 Rates and Charges.
- g. Inquire of the Board if it has any comments or questions.
- h. That the hearing be closed and the Board adopt the Proposed 2023-24 and 2024-25 Rates and Charges.

Reso. No. 2023-9

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**CONSENT CALENDAR, Items 5 through 11**

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5. BOARD MEETING MINUTES

Recommendation: That the minutes of the May 22, 2023 Regular Board meeting be approved as presented.

6. MAY 2023 TREASURY REPORT

Recommendation: That the Board receive and file the Treasurer's Investment Summary report, the summary of fixed and variable rate debt, and the disclosure report of reimbursements to Board members and staff, approve the May 2023 summary of payroll ACH payments in the total amount of \$2,331,458, and approve the May 2023 accounts payable disbursement summary of warrants 435569 through 436185, Workers' Compensation distributions, ACH payments, virtual card payments, wire transfers, payroll withholding distributions and voided checks in the total amount of \$16,472,620.

7. ADDENDUM TO AMENDED AND RESTATED LICENSE FOR USE OF THE IRWD SAN JOAQUIN MARSH PROPERTY

Recommendation: That the Board approve Addendum No. 2 to the third Amended and Restated License between Irvine Ranch Water District and the San Joaquin Wildlife Sanctuary, Inc.

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**CONSENT CALENDAR (Continued) Items 5 through 11**

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8. ADOPTION OF REVISED IRWD SCHEDULE OF POSITIONS AND SALARY RATE RANGES FOR FISCAL YEAR 2023-24

Recommendation: That the Board approve the Schedule of Revised Positions and Salary Grades and adopt a resolution superseding Resolution No. 2022-14.

Reso. No. 2023-10

9. 2023 AMENDED AND RESTATED RETIREE HEALTH COSTS REIMBURSEMENT PLAN

Recommendation: That the Board authorize implementation of the 2023 Amended and Restated Retiree Health Costs Reimbursement Plan.

10. LUMP SUM PAYMENT OPTION FOR EMPLOYER CONTRIBUTIONS FOR FISCAL YEAR 2023-24 TO THE CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Recommendation: That the Board approve the lump sum payment for employer contributions to the California Public Employees' Retirement System (CalPERS) by making a one-time contribution of \$7,469,526 for IRWD's FY 2023-24 employer Unfunded Accrued Liability (UAL) contribution.

11. PRIMARY DISINFECTION FACILITY SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM FINAL ACCEPTANCE

Recommendation: That the Board accept construction of the Primary Disinfection Facility Sodium Hypochlorite Storage and Feed System Project, authorize the General Manager to file a Notice of Completion, and authorize the Payment of the retention 35 days after the date of recording the Notice of Completion for Project 06214.

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**OTHER BUSINESS**

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Pursuant to Government Code Section 54954.2, members of the Board of Directors or staff may ask questions for clarification, make brief announcements, and make brief reports on his/her own activities. The Board or a Board member may provide a reference to staff or other resources for factual information, request staff to report back at a subsequent meeting concerning any matter, or direct staff to place a matter of business on a future agenda. Such matters may be brought up under the General Manager's Report or Directors' Comments.

12. General Manager's Report

13. Receive oral update(s) from District liaison(s) regarding communities within IRWD's service area and provide information on relevant community events.

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**OTHER BUSINESS (Continued)**

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14. Directors' Comments

15. Adjournment


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Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Board in connection with a matter subject to discussion or consideration at an open meeting of the Board are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Board Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to [comments@irwd.com](mailto:comments@irwd.com). Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.



June 26, 2023

Prepared by: V. Li / D. Pardee / C. Smithson

Submitted by: C. Clary

Approved by: Paul A. Cook 

## PUBLIC HEARING

### PROPOSED CHANGES TO THE SCHEDULE OF RATES AND CHARGES EFFECTIVE JULY 1, 2023

#### SUMMARY:

IRWD's Fiscal Year (FY) 2023-24 and 2024-25 Operating Budgets were adopted at the April 24, 2023, IRWD Board meeting. The proposed changes to IRWD's rates and charges were publicly noticed by mail as required under Proposition 218, and protests to the implementation of those rates and charges have been tallied by the District's independent auditors.

As of June 22, 2023, six written protest letters were received by the District, which represents less than 0.005% of the total customers and substantially less than the 50% which would have been required to prevent the Board from adopting the current proposed rates and charges. Protests may be received up until the commencement of the Public Hearing. Staff will provide an updated report as part of the hearing process.

Pursuant to the requirements of Proposition 218, a Public Hearing on the rates and charges is required. Following the Public Hearing, staff recommends that the Board adopt the proposed changes to the Schedule of Rates and Charges effective July 1, 2023, required to fund budgeted operating expenses through June 30, 2024 and June 30, 2025.

#### OUTLINE OF PROCEEDINGS

President: Declare this to be the time and place for a hearing on the proposed changes to the rates and charges. Ask the Secretary how the hearing was noticed.

Secretary: The hearing was noticed by mail. Present affidavit of mailing.

Board: **RECOMMENDED MOTION: RECEIVE AND FILE THE AFFIDAVIT OF MAILING BY AN INDEPENDENT PROCESSING FIRM AS PRESENTED BY THE SECRETARY.**

President: Request Legal Counsel to describe the nature of the proceedings.

Legal

Counsel: The public hearing is held, pursuant to Proposition 218, Article XIID of the Constitution of the State of California, for all persons interested to be heard, to present objections or protests, including any written comments submitted, concerning the increase in property-related rates and charges and any proposed new property-related rates and charges.

President: Request a staff report from the Executive Director of Finance or her Designee on the proposed rates and charges and inquire whether there have been any written communications.

Executive  
Director  
of Finance or

Designee: Provide staff report and respond regarding the number of protests received to the implementation of the rates and charges.

President: Inquire whether there is anyone present who wishes to address the Board regarding the proposed changes to the rates and charges.

President: Inquire whether there are any comments or questions from members of the Board of Directors. After comments or questions, state that the hearing will be closed.

Board: RECOMMENDED MOTION: THAT THE HEARING BE CLOSED AND THAT THE FOLLOWING RESOLUTION BE ADOPTED BY TITLE:

RESOLUTION NO. 2023-9

RESOLUTION OF THE BOARD OF DIRECTORS OF  
IRVINE RANCH WATER DISTRICT  
ADOPTING CHANGES TO THE SCHEDULE OF RATES AND CHARGES  
FOR WATER, SEWER AND RECYCLED WATER SERVICE

BACKGROUND:

Proposed Rates and Charges effective July 1, 2023:

A resolution is attached as Exhibit "A" and the proposed rates and charges are attached as Exhibit "B". The proposed changes include both updates identified through the rate setting process and changes to the wording and format to better communicate the application of the District's rates to the customer. The 2021 Cost of Service and Rate Design Study includes appendices that address the rate setting process for FY 2023-24 and 2024-25 and this document is attached as Exhibit "C". A summary of the six protest letters received to date are attached as Exhibit "D". Using a PowerPoint presentation, (draft) attached as Exhibit "E", staff will summarize the rates and charges as part of the Public Hearing.

All changes from the factors identified were included in the budget and rate setting process. Staff has reviewed costs and revenues for the treated water system, the sewer system, the recycled water system, and the over-allocation and natural treatment system. As a result of this review, changes to the water and sewer rates for the District are recommended to be effective July 1, 2023. These changes include the following:

*The Potable Water System:*

- The potable water tiered rates and fixed service charges are based on cost of service and will provide the necessary funding for the water system.
- The tiered rates for FY 2023-24 and FY 2024-25 are as follows (per ccf):

<b>Tiers</b>	<b>FY 2022-23</b>	<b>Effective July 1, 2023</b>	<b>Change</b>	<b>Effective July 1, 2024</b>	<b>Change</b>
Low Volume	\$1.53	\$1.75	\$0.22	\$1.99	\$0.24
Base	\$2.42	\$2.52	\$0.10	\$2.65	\$0.13
Inefficient	\$5.15	\$6.25	\$1.10	\$6.55	\$0.30
Wasteful	\$14.64	\$15.49	\$0.85	\$16.46	\$0.97

- In FY 2023-24, the monthly fixed service charge for the treated water system increases from \$10.75 to \$11.85 for a 5/8-inch by 3/4-inch meter. The monthly service charge includes a user rate contribution of \$3.03 per month for capital infrastructure enhancements and replacements.
- In FY 2024-25, the monthly fixed service charge for the treated water system increases from \$11.85 to \$13.20 for a 5/8-inch by 3/4-inch meter. The monthly service charge includes a user rate contribution of \$3.29 per month for capital infrastructure enhancements and replacements.

*The Sewer System:*

- The sewer system rates are based on cost of service and will provide the necessary funding for the sewer system.
- In FY 2023-24, the monthly fixed service charge for a residential customer using less than 5 ccf will increase from \$20.45 to \$23.10 per month. The monthly sewer rate includes a user rate contribution of \$11.44 per month for capital infrastructure enhancements and replacements.
- In FY 2024-25, the monthly fixed service charge for a residential customer using less than 5 ccf will increase from \$23.10 to \$25.70 per month. The monthly sewer rate includes a user rate contribution of \$12.38 per month for capital infrastructure enhancements and replacements.

*The Recycled Water System:*

- The recycled water tiered and fixed service charge rates are also based on cost of service. The rates identified will provide the necessary funding for the recycled system.
- The tiered rates are as follows (per ccf):

Tiers	FY 2022-23	Effective July 1, 2023	Change	Effective July 1, 2024	Change
Low Volume	\$1.23	\$1.39	\$0.16	\$1.43	\$0.04
Base	\$2.16	\$2.36	\$0.20	\$2.47	\$0.11
Inefficient	\$4.03	\$5.25	\$1.22	\$5.27	\$0.02
Wasteful	\$7.20	\$9.20	\$2.00	\$9.27	\$1.07

- In FY 2023-24, the monthly fixed service charge for the recycled water system increases from \$10.75 to \$11.85 for a 5/8-inch by 3/4-inch meter. The monthly service charge includes a user rate contribution of \$3.03 per month for capital infrastructure enhancements and replacements.
- In FY 2024-25, the monthly fixed service charge for the recycled water system increases from \$11.85 to \$13.20 for a 5/8-inch by 3/4-inch meter. The monthly service charge includes a user rate contribution of \$3.29 per month for capital infrastructure enhancements and replacements.

*The Over-allocation and Natural Treatment System (NTS):*

- The commodity rates shown above for the Potable and Recycled System include the necessary funding for water conservation programs, urban runoff costs, and water banking. Costs are allocated among usage tiers based on each tier’s share of costs to fund these programs.

*Water Shortage Contingency Plan (WSCP) Rates:*

- The WSCP Rates are expected to provide cost of service equity for the budgeted Board-approved operating variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level.
- Implementation of WSCP rates would require additional Board action.
- The current and proposed WSCP rates are shown in the tables below.

**Current**

Level	0	1	2	3	4	5	6
Shortage	0%	5%	15%	25%	35%	45%	55%
Low Volume	\$1.53	\$1.53	\$1.53	\$1.53	\$1.55	\$1.57	\$1.60
Base	\$2.42	\$2.43	\$2.46	\$2.50	\$2.53	\$2.57	\$2.62
Inefficient	\$5.15	\$5.45	\$5.86	\$6.34	\$6.91	\$7.40	\$7.71
Wasteful	\$14.64	\$15.77	\$17.11	\$18.74	\$19.90	\$21.21	\$21.86

FY 2023-24

Level	0	1	2	3	4	5	6
Shortage	0%	10%	20%	30%	40%	50%	60%
Low Volume	\$1.75	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
Base	\$2.52	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Inefficient	\$6.25	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
Wasteful	\$15.49	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

Level	0	1	2	3	4	5	6
Shortage	0%	10%	20%	30%	40%	50%	60%
Low Volume	\$1.99	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Base	\$2.65	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Inefficient	\$6.55	\$6.66	\$6.74	\$6.82	\$6.93	\$7.43	\$8.38
Wasteful	\$16.46	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

The changes in commodity rates have no impact on the monthly fixed service water or sewer charges.

*Schedule of Rates and Charges:*

Exhibit “B” contains the proposed rates effective July 1, 2023 required to fund budgeted operating expenses through June 30, 2024 and the proposed rates effective July 1, 2024 required to fund budgeted operating expenses through June 30, 2025.

User/Replacement and Enhancement Capital Component:

Combined with the existing replacement and enhancement rate components, it is expected that the proposed rate increases will result in the following contributions to the enhancement and replacement funds by system:

For FY 2023-24:

- Potable Water: \$9.5 million;
- Sewer: \$23.3 million; and
- Recycled Water: \$1.3 million.

The expected total contribution is \$34.0 million.

For FY 2024-25:

- Potable Water: \$10.3 million;
- Sewer: \$25.7 million; and
- Recycled Water: \$1.4 million.

The expected total contribution is \$37.3 million.

Comparison to City of Orange Rates:

On August 28, 2006, IRWD and the City of Orange executed an agreement by which IRWD would provide services to the area known as the “Santiago Hills II / East Orange Area”. One of the conditions stipulated in this agreement was that the cumulative fixed and commodity charges for water service to an IRWD customer using the City of Orange median amount of water (18 ccf per month) would not exceed the same charges incurred by a City of Orange customer. Based on the rates as proposed effective July 1, 2023, a customer in IRWD using 18 ccf per month would pay an average of \$51.05 per month for fixed and commodity charges. Based on the most current water rates in the City of Orange, a customer using 18 ccf per month would pay an average of \$72.80 per month for fixed and commodity charges, or 42.6% more than a comparable ratepayer in IRWD.

Proposition 218 Notice:

Proposition 218, enacted in 1996, mandates that proposed increases in “property-related fees” must be noticed to property owners, and that such owners have an opportunity to protest prior to the enactment of the fee increases. In July 2006, the California Supreme Court issued a decision in the matter of Bighorn, which held that water delivery charges are property related. Following the Supreme Court’s logic, most interpretations of the decision are that both water and sewer charges should be noticed to comply with Proposition 218.

Under Proposition 218, the notice to customers must be sent to all property owners. As permitted by statute, the District sent its notices to all of its property owners and customers (including tenants) in the District’s service area. The Prop 218 notices are included in Exhibit “A”.

The District contracted with Davis Farr, Certified Public Accountants to collect and count the rate increase protests. They will provide management with a report prior to the Board meeting on June 26, 2023 (more than 45 days from the date of mailing the Prop 218 notices), and they will be present at the Public Hearing established for approval of the rates to answer questions on the process and final results.

As of June 22, 2023, the District received six written protests from customers or property owners in the District at a separate post office box from the rest of the District’s mail. The six written protests represent 0.005% of the 123,278 notices sent. Under Proposition 218, more than 50% of the IRWD customers would have had to protest to prevent the Board from adopting the Proposed Rates and Charges.

ENVIRONMENTAL COMPLIANCE:

The establishment, modification, structuring, restructuring or approval of rates, tolls, fares, or other charges by public agencies are exempt from the requirements of the California Environmental Quality Act (CEQA) provided that certain findings are made specifying the basis for the claim of exemption. The necessary findings are contained in the proposed resolution.

FISCAL IMPACTS:

The proposed commodity rates are expected to cover budgeted Board-approved operating variable costs for fiscal years 2023-24 and 2024-25. Proposed fixed water and sewer service charges will cover operating fixed costs for fiscal years 2023-24 and 2024-25.

For the same two fiscal years, the proposed rate increases will result in contributions to the Enhancement and Replacement Fund totaling approximately \$71.3 million. The Conservation Fund is expected to generate and use approximately \$35.5 million.

WSCP rates will only be implemented in the event of a water shortage declaration and upon approval by the Board of Directors. Rates that are not implemented have no fiscal impact.

COMMITTEE STATUS:

The proposed changes to the Schedule of Rates and Charges were reviewed by the Finance and Personnel Committee on March 6, 2023, March 22, 2023, and April 4, 2023.

LIST OF EXHIBITS:

Exhibit "A" – Resolution to Adopt Schedule of Rates and Charges

Exhibit "B" – Changes to Schedule of Rates and Charges Effective July 2023 and July 2024

Exhibit "C" – 2021 Cost of Service and Rate Design Study

Exhibit "D" – Summary of Protest Letters received as of June 22, 2023

Exhibit "E" – Draft PowerPoint Presentation

Note: This page is intentionally left blank.



RESOLUTION NO. 2023-9

RESOLUTION OF THE BOARD OF DIRECTORS OF  
IRVINE RANCH WATER DISTRICT  
ADOPTING CHANGES TO THE SCHEDULE OF RATES AND CHARGES  
FOR WATER, SEWER AND RECYCLED WATER SERVICE

Statutory Authority. The Irvine Ranch Water District (“**IRWD**”) is a California Water District organized and existing under the California Water District Law, and all of the lands within the boundaries of IRWD are located in the County of Orange, State of California. California Water Code Sections 35423, 35470 and Section 35501 empower IRWD to establish, print and distribute equitable rules and regulations and prescribe and collect rates or other charges for water and sewer service.

Prior Rate Adoption. The Board of Directors of IRWD, by adoption of Resolution No. 2019-32 approved and adopted “Rules and Regulations of Irvine Ranch Water District for Water, Sewer, Recycled Water, and Natural Treatment System Service,” effective December 16, 2019. The Rules and Regulations, last amended August 1, 2022 by Resolution 2022-2, sets forth at Exhibit B a *Schedule of Rates and Charges* that may be changed from time to time.

CEQA Exemption. Section 21080(b)(8) of the Public Resources Code provides that the establishment, modification, structuring, restructuring or approval of rates, tolls, fares, or other charges by public agencies are exempt from the requirements of the California Environmental Quality Act (“**CEQA**”) provided that certain findings are made specifying the basis for the claim of exemption.

Gann Limit. Article XIII B of the Constitution of the State of California, limiting local agencies’ appropriations of proceeds of taxes, excludes user charges or fees or regulatory fees from the definition of proceeds of taxes, as long as such fees and charges do not produce revenue exceeding the costs reasonably borne in providing the regulation, product or service, and further excludes appropriations for debt service and appropriations for qualified capital outlay projects from appropriations subject to limitation.

Rate Study/FOG/WSCP. IRWD conducted a cost of service and rate design study through its consultant, Raftelis Financial Consultants, Inc., and the Board of Directors has received the final study dated January 24, 2022 (the “**Cost of Service Study**”), a Fats, Oils, and Grease Fees Study prepared by Raftelis Financial Consultants, Inc. dated February 22, 2018 (“**FOG Study**”), and a Water Shortage Contingency Plan effective July 1, 2021, each of which are posted and available on the District’s website [www.IRWD.com](http://www.IRWD.com).

Intent to Amend Rates. The Board of Directors of IRWD deems it advisable and finds that it would be in the best interest of the District to amend or establish certain rates and charges, consistent with applicable constitutional and statutory requirements and consistent with recommendations described in the Cost of Service Study, FOG Study, and the Water Shortage Contingency Plan.

Prop. 218. Prop. 218, enacted as Article XIIIID of the Constitution of the State of California provides that, in imposing or increasing any property-related fee or charge, an agency shall provide written notice by mail (a “**Prop. 218 Notice**”) of the proposed fee or charge to the record owner of each identified parcel upon which the fee or charge is proposed for imposition, the amount, basis of calculating, and reason for such proposed fee or charge, and the date, time and location of a public hearing on the proposed fee or charge to be conducted not less than 45 days after the mailing of said notice, and Government Code Section 53755 provides for that Prop. 218 Notice to be given by mailing to the address where billing statements are customarily sent by the District.

Notices. Prop. 218 notices were duly mailed to each property owner and ratepayer in the District, setting Monday, June 26, 2023, at 5:00 p.m. in the Board of Directors Room of Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, California, as the time and place for a public hearing on the proposed establishment of or increases in property-related rates and charges, and those Prop. 218 Notices are attached as Exhibit "A" to this resolution.

Hearing. At the time set, the duly noticed public hearing was held and all persons interested were given an opportunity to be heard concerning the proposed establishment of or increases in property-related rates and charges as described in the Prop. 218 Notices.

Protests. This Board of Directors has considered all protests presented to the District by owners of identified parcels against the proposed establishment of or increases in property-related rates and charges.

Supersession. The Board of Directors previously adopted rates and charges under Resolution 2022-2, and the Board of Directors intends in adopting this Resolution to rescind, supersede, and replace Resolution 2022-2 effective July 1, 2023.

The Board of Directors of IRWD therefore resolves as follows:

Section 1. It is hereby found and determined that the number of written protests presented to the District against the proposed establishment of or increases in property-related rates and charges has been tabulated and does not constitute a majority of the number of owners of identified parcels.

Section 2. It is hereby found and determined that the proposed changes to the rates and charges as set forth in the Prop. 218 Notices are within the purposes set forth in Section 21080(b) of the Public Resources Code including but not by way of limitation, the purposes of (1) meeting operating expenses, (2) purchasing or leasing supplies, equipment or materials, (3) meeting financial reserve needs and requirements, and (4) obtaining funds for capital projects necessary to maintain service within existing areas, and therefore, that such changes are exempt from CEQA.

Section 3. It is hereby found and determined that the rates, charges and fees adopted hereby are imposed upon the request for or use of services; that the rates, charges and fees recover and allocate the costs of service in accordance with the criteria and requirements of the Constitution of the State of California; and that the water user charges satisfy the criteria and requirements of Water Code Sections 370 *et seq.* relating to allocation-based conservation water pricing. The Board of Directors further finds that the rates and charges adopted in connection with the declaration of a water shortage level under the Water Shortage Contingency Plan are consistent with state law.

Section 4. It is hereby found and determined that relative to Article XIII B of the Constitution of the State of California, the user charges and fees and regulatory fees established or increased hereby do not produce revenues exceeding the costs reasonably borne in providing the regulation, product or service and/or are used for debt service or qualified capital outlay projects and accordingly do not constitute proceeds of taxes, the appropriation of which is limited under Article XIII B, and that the documentation used in making those determinations has been on file in the office of IRWD for not less than 15 days prior to the date hereof, pursuant to Section 7910 of the Government Code of the State of California.

Section 5. The new and/or revised rates, fees and/or charges as set forth in Exhibits A and B to this resolution are hereby adopted and will take effect beginning July 1, 2023, on which date the corresponding rates, fees or charges in effect as a result of the adoption of Resolution 2022-2, are superseded. Staff is directed to incorporate the new or revised rates, fees, and charges into the Rules and Regulations at Exhibit B effective July 1, 2023.

Section 6. The Water Shortage Contingency rates are hereby adopted but will only be implemented upon the Board's separate resolution declaring a water shortage level and corresponding potable water use budget reduction.

Section 7. This Resolution becomes effective upon adoption. The Secretary is hereby ordered and directed to post a certified copy of this Resolution in a public place within the Irvine Ranch Water District.

ADOPTED, SIGNED and APPROVED this 26<sup>th</sup> day of June, 2023

\_\_\_\_\_  
President, IRVINE RANCH WATER DISTRICT

\_\_\_\_\_  
Secretary, IRVINE RANCH WATER DISTRICT

APPROVED AS TO FORM:  
Hanson Bridgett, LLP

By: \_\_\_\_\_  
District Counsel



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

Irvine Ranch Water District (IRWD) is a public agency that provides water and sewer service. Our rates are based on the actual cost to provide water and sewer service to our customers and are based on the expenses included in IRWD's budget. The IRWD Board of Directors adopted a two-year budget on April 24, 2023. The basis for the proposed rates is detailed in the Cost of Service Study, available at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). **The proposed rates for the two years, if adopted, will be effective June 26, 2023, and will be implemented on July 1, 2023, and July 1, 2024, respectively. As proposed, they are expected to increase the average residential bill by 9.9% per year.** The increase is due primarily to uncontrollable pass-through cost increases from regional agencies that supply water, regional sewage, or energy services to IRWD, as well as inflation and increases in costs associated with continuing to provide the current high level of water and sewer service our customers expect. Information on how the rates are calculated is shown below.

A critical IRWD objective is to keep costs, and therefore rates, as low as possible for our customers. Even with the proposed increase, when compared with other agencies providing similar services in Orange County, IRWD's rates are consistently among the lowest.

## Understanding basic components of your residential water bill

Your water bill has two basic components: variable water usage charges and service charges.

- **Variable water usage charges:** Variable costs — for the amount of water you use both inside and outside your home each month. These charges are based on the cost of local and imported water, and other costs of providing service that vary based on usage. Some customers may also incur a pumping surcharge to cover additional pumping costs to serve their properties.
- **Service charges:** Fixed costs — to recover the fixed expenses of operating and maintaining IRWD's infrastructure. There are separate service charges for water and sewer service. These monthly fixed costs fluctuate depending on the number of days in a billing cycle.

## Variable water usage charge

Each residence is assigned a monthly water usage budget. How much you pay for each 100 cubic feet (CCF) of water depends on whether you stay within your water budget. IRWD allocates its lowest-cost water supplies for customers' usage within their monthly water budget. Higher-cost water is used to meet demands of customers' water use above their budgets. For example, groundwater from local wells is the least expensive supply, while imported water from out of state or Northern California costs the most.

Rates are broken into four tiers. Each tier is assigned a rate based on the actual cost of serving customers within each tier. Cost of service includes both the cost of water based on the source of water and other variable costs as detailed below. The Low Volume and Base rate tiers are for water used within each customer's budget, which is sourced primarily from lower-cost groundwater and reduces the need to import expensive water. The majority of imported water costs are allocated to the Inefficient and Wasteful tiers. Expenses for districtwide conservation programs that educate and assist customers on ways to conserve water are not included in the Low Volume rate since customers who remain in this tier do not need this assistance. Additional costs associated with targeted conservation programs, urban runoff treatment, and water banking are paid only by customers with usage in the Inefficient and Wasteful tiers because their higher usage: (i) requires individualized conservation assistance, (ii) leads to urban runoff that requires costly treatment, and (iii) requires greater water reserves through water banking to provide reliable water supplies during a drought or other water shortage. Costs are allocated among those two tiers based on their share of costs to run these programs. IRWD would not need these programs if those customers remained within their individual water budgets.

Proposed variable water rates per CCF\* beginning July 1, 2023

Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.91	\$2.44	\$3.89	\$3.89
Districtwide conservation programs		\$0.11	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs			\$2.25	\$11.49
Rate Stabilization Fund	(\$0.16)	(\$0.03)		
Total cost per CCF per tier proposed beginning July 2023	\$1.75	\$2.52	\$6.25	\$15.49
Current rates	\$1.53	\$2.42	\$5.15	\$14.64
Change	\$0.22	\$0.10	\$1.10	\$0.85

\* 1 CCF = 748 gallons



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

## Proposed variable water rates per CCF beginning July 1, 2024

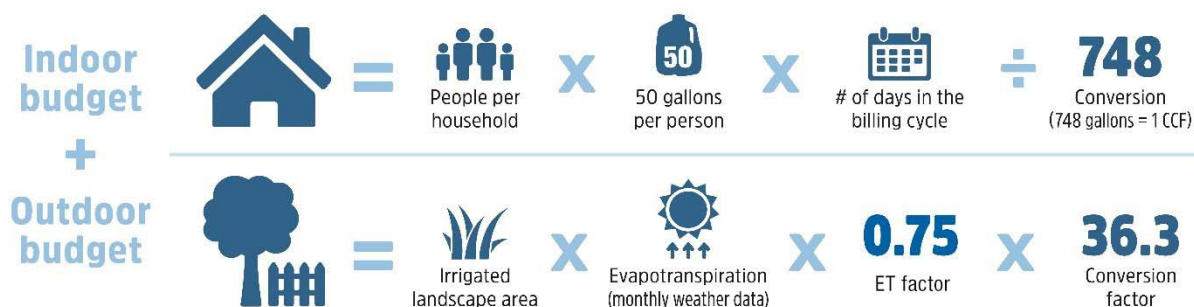
Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.99	\$2.54	\$4.13	\$4.15
Districtwide conservation programs		\$0.11	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs			\$2.31	\$12.20
Total cost per CCF per tier proposed beginning July 2024	\$1.99	\$2.65	\$6.55	\$16.46
Proposed FY 2023-24 rates	\$1.75	\$2.52	\$6.25	\$15.49
Change	\$0.24	\$0.13	\$0.30	\$0.97

### How your water budget is calculated

Your monthly household water usage budget is the sum of your **indoor + outdoor water budgets**. Together they represent an efficient volume of water to meet your individualized water needs.

- Indoor water budget:** 50 gallons per person per day (divided by 748, to convert gallons to CCF). For single-family homes, we assume a default of four people per household. For condominiums, we assume three people per household, and for apartments we assume two people per unit. If your household is larger, you may apply for a variance to increase your water budget.
- Outdoor water budget:** Is calculated for your property using actual data from local weather stations. We multiply your irrigated landscape area (in acres) x evapotranspiration x 0.75 ET factor x 36.3 conversion factor to convert acre inches of water to CCF.

- ✓ CCF is the basic measurement of water use. One CCF equals 100 cubic feet of water — about 748 gallons.
- ✓ **Evapotranspiration or ET** is a measure of actual daily plant water loss.
- ✓ **ET factor** accounts for the fact that at least 40% of your landscape should be drought-tolerant and provides 20% additional water to account for inefficiency in your irrigation system.



## Summary of proposed residential variable water rates

Tier	Percentage use of monthly water budget for residential customers	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Low Volume	0 - 40%	\$1.53	\$1.75	\$1.99
Base	41 - 100%	\$2.42	\$2.52	\$2.65
Inefficient	101 - 140%	\$5.15	\$6.25	\$6.55
Wasteful	141%+	\$14.64	\$15.49	\$16.46

### Monthly water budgets and rate calculator available on IRWD.com

For more information about the rate tiers, the types of usage that determine the monthly water budget, how the monthly water budget is calculated, and to use the IRWD budget-based-rate calculator, please visit the IRWD website at [IRWD.com/services/proposed-rates](https://www.irwd.com/services/proposed-rates). The calculator shows how staying within your monthly water budget or exceeding it will affect your monthly bill.



### Pumping surcharges

A pumping surcharge will be added to the variable water usage charge for customers in locations that cause IRWD to incur additional pumping costs to supply their water. The surcharge is based on the actual prevailing energy costs and varies depending upon the cost to pump water to the area served. If you live in an area affected by a pumping surcharge, the charge is itemized on your monthly bill. IRWD is proposing changes to the pumping surcharge areas. Please visit the IRWD website at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates) to see the proposed map and charges by area.

Proposed changes to pumping surcharges			
Component	Current rates <i>(rates vary by pumping surcharge area)</i>	Proposed rates beginning July 1, 2023 <i>(rates vary by pumping surcharge area)</i>	Proposed rates beginning July 1, 2024 <i>(rates vary by pumping surcharge area)</i>
Pumping surcharges by area	\$0.33 to \$0.79/CCF	\$0.38 to \$1.72/CCF	\$0.41 to \$1.88/CCF

### Fixed water and sewer service charges

In addition to the water usage charges that you control based on the amount of water you use, your bill contains fixed charges for water service and sewer service. Fixed water service charges are based on the size of your water meter providing water flow to your property. These charges are assessed whether or not you use water that month and may increase or decrease based on the number of days in the billing period. Monthly service charges are fixed charges that cover IRWD's cost of operations, maintenance, and infrastructure, and do not change based on the amount of a customer's monthly water or sewer use. Monthly service charges are based on a 30-day calendar month, so billing cycles that are longer or shorter than 30 days are billed based on the proportional number of days. The fixed charge includes an amount set aside for the future inevitable repair and replacement of infrastructure such as pipes, pumping stations, and treatment facilities. This way, IRWD can avoid significant one-time rate spikes when the repairs and replacements are made. These charges are not used to pay for facilities that extend service to new development.

### Fixed water service charges

The fixed monthly water service charges for the average residential customer are used to pay for operations and maintenance costs, including inevitable water infrastructure enhancements and replacements. The charge is based on the size of your meter.

Proposed changes to fixed monthly water service charges for system operation and maintenance			
Residential meter size homes, condos, apartments	Current meter rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
5/8" x 3/4" Disc	\$10.75	\$11.85	\$13.20
3/4" Disc	\$16.15	\$17.80	\$19.80
1" Disc	\$26.90	\$29.65	\$33.00
1½" Disc	\$64.50	\$71.10	\$79.20
1½" Single Jet	\$53.75	\$59.25	\$66.00
2" Disc or Single Jet	\$86.00	\$94.80	\$105.60
2" Turbo	\$134.40	\$148.15	\$165.00
3" Turbo	\$349.40	\$385.15	\$429.00
4" Turbo	\$671.90	\$740.65	\$825.00
6" Turbo	\$1,343.75	\$1,481.25	\$1,650.00
8" Turbo	\$2,526.25	\$2,073.75	\$2,310.00
6" Turbo Omni F-2	\$1,075.00	\$1,185.00	\$1,320.00
8" Turbo Omni F-2	\$2,526.25	\$2,073.75	\$2,310.00
Residential master meter (shared) apartments and condominiums 5/8" x 3/4" meter	\$10.75	\$11.85	\$13.20

Your meter size and amount appear on your bill. Customers who remain in the Low Volume tier for most of the year will have a larger percentage of their bill made up of the fixed charge. Customers who remain in the Low Volume tier for nine months of the prior calendar year will receive a \$2.00 credit per month, which will be itemized on each bill. New customers do not receive this credit unless they have been with the District for a full calendar year.

### Fixed sewer service charges

Fixed monthly sewer service charges are used to pay for operations and maintenance costs associated with providing sewer service, including inevitable sewer infrastructure enhancements and replacements of infrastructure such as pipes, pumping stations, and treatment facilities. Each customer's use of IRWD sewer service derives from the customer's use of potable water from IRWD, so each customer is billed in one of three tiers, based on the customer's lowest three-month potable water usage from the prior calendar year. Until IRWD has a new customer's full calendar year of usage history, the customer is billed at the middle tier rate.



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

## Proposed changes to fixed monthly sewer service charges for collection and treatment

Usage	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
Average water usage exceeds 10 CCFs per month	\$29.75	\$33.24	\$36.79
Average water usage falls between 5 and 10 CCFs	\$25.50	\$28.78	\$31.86
Average water usage falls below 5 CCFs	\$20.45	\$23.10	\$25.70

## Proposed changes to sewer service charges for collection or treatment only

Collection only service charge	\$9.25	\$10.95	\$11.55
Treatment only service charge	\$16.25	\$19.70	\$20.50

### Private fireline service charges

Private firelines provide water to sprinkler systems and private fire hydrants for fire suppression on private property. These include fire protection systems, such as fire protection sprinklers and private fire hydrants that are not part of, but are connected to, the public water service. Costs are billed to the customers owning the private fire protection systems and are based upon the size of the fireline.

## Proposed changes to monthly fireline service charges

Private fireline size	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
1"	\$6.20	\$7.45	\$7.65
2"	\$8.45	\$9.75	\$10.15
3"	\$13.55	\$14.95	\$15.80
4"	\$22.45	\$23.90	\$25.50
6"	\$54.15	\$56.10	\$60.35
8"	\$108.90	\$111.65	\$120.50
10"	\$191.05	\$195.15	\$210.95
11"	\$245.15	\$248.75	\$268.95
12"	\$306.70	\$310.90	\$336.30
Private fire hydrants	\$54.15	\$34.00	\$36.60

### Other charges

IRWD also charges for setting up new accounts for a property already connected to IRWD's service system and for reconnecting water service after it has been shut off.

## Proposed changes to fees to set up a service account and reconnect service after a shut-off

Component	Current rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
One-time setup fee for new accounts	\$25.00	\$25.00	\$25.00
Reconnection fees	\$50.00 - \$70.00	\$55.00 - \$75.00	\$55.00 - \$75.00
After hours reconnection fees	\$95.00	\$165.00 - \$200.00	\$165.00 - \$200.00

### Why did the cost of water and sewer service increase?

The main reasons for the change include uncontrollable cost increases to IRWD attributed to:

- Pass-through charges from Orange County Water District (OCWD) for pumping local groundwater, which is still the lowest-cost water source (15.6% increase in FY 2023-24 and 6.6% increase in FY 2024-25).
- Pass-through charges from Metropolitan Water District of Southern California (MWD) for imported water purchased through the regional wholesaler, the Municipal Water District of Orange County (MWDOC) (7.8% increase in FY 2023-24 and 4.1% increase in FY 2024-25).
- Pass-through charges from Southern California Edison (SCE) for electricity used in IRWD service operations (48.6% increase in FY 2023-24 and 9.1% increase in FY 2024-25).





# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

- Increases in costs associated with continuing to provide the current high level of water service our customers expect, including costs associated with repairs and maintenance related to maintaining the existing infrastructure (9.9% increase in FY 2023-24 and 6.5% increase in FY 2024-25).
- Inflation.

## Automatic pass-through adjustments and other surcharges

IRWD used its best available information to calculate proposed increases in the cost of imported water purchased from MWD through MWDOC, the replenishment charges paid to OCWD for pumping groundwater, the cost for regional treatment of sewage paid to the Orange County Sanitation District (OC San), and the cost of electricity charged by SCE. IRWD has no control over the charges set by regional agencies (MWD, MWDOC, OCWD, OC San, SCE, etc.) or penalties, taxes and fees assessed by the state, and must pass those costs through to IRWD customers. Should any of the regional agencies or the State of California adopt an additional increase (or decrease) in its charges, taxes, or fees ("pass-through amount"), IRWD may automatically recalculate its rates to include the pass-through amount. If this occurs, the automatic IRWD rate adjustment will not require a public hearing or any additional action by the IRWD Board of Directors. At least 30 days before the effective date of the adjustment, IRWD will provide its customers with notice of the expected adjustment(s), which will generally be calculated as the total projected cost increase divided by the projected annual water consumption or annual total sewage flow as appropriate. This calculation will vary as necessary to reflect IRWD's different service areas and service classes.

If the State Water Resources Control Board (State Board) imposes fines on IRWD because of a violation(s) of a State Board regulation adopted to prevent the waste or unreasonable use of water, or to promote water conservation, to the extent such violation(s) are due to consumption of water in excess of customers' water usage budgets, IRWD may levy a surcharge on the volume of water used of up to \$3.31 per hundred cubic feet. If IRWD is fined by the State Board, at least 30 days before implementing a surcharge, IRWD will provide its customers with notice of the surcharge amount(s), which will generally be calculated as the total projected fine divided by the total water use in the Inefficient and Wasteful tiers.

## Water Shortage Contingency Plan (WSCP)

IRWD is required by the California Water Code Section 10632 to prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan. The WSCP, adopted by IRWD on June 28, 2021, includes plans to implement locally appropriate water shortage response actions for six standard water shortage levels. The following are the rates proposed as a potential response action for each water shortage level. These rates are based on the actual cost to provide service to our customers in times of water shortage. For a detailed explanation of the District's water shortage responses, please refer to the District's WSCP at [bit.ly/wscp-2021](http://bit.ly/wscp-2021). An overview of the supply shortage response actions considered for each level of water shortage can be found on Page 33, Table 3-3 of the WSCP. Achieving the WSCP reductions for each level will require a broad approach. The table below includes the target potable water use reduction for each level, the minimum potable water budget provided at each level, and the steps necessary to meet the water shortage at each level. The District has invested in water supply reliability and is not projecting any shortages over the next two years.

Minimum potable water budgets at each level of water shortage

Water Shortage Contingency Plan level	Target reduction	Messaging and outreach	Outdoor potable water landscape plant assumption <i>(Includes residential, dedicated irrigation, non-agricultural and CII outdoor)</i>	ET factor	Indoor gallons per capita
Normal/ non-shortage water budget	0%	Water efficiency programs and outreach	40% drought-tolerant plants	.75	50
Level 1 0 - 10%	10%	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75	50
Level 2 11 - 20%	20%	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625	50
Level 3 21 - 30%	30%	Expanded messaging and targeted outreach	No turf; 25% drought-tolerant plants; 75% native plants; tree health affected	.35	40
Level 4 31 - 40%	40%	Expanded messaging and targeted outreach	No turf; 100% native plants only; tree health affected	.25	32.5





# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

Level 5 41 - 50%	50%	Expanded messaging and targeted outreach	No landscape	0	30
Level 6 51%+	60%	Expanded messaging and targeted outreach	No landscape	0	Basic needs only; 20

## How a water shortage could affect rates

If IRWD experiences a water shortage, IRWD may be required to implement water shortage response actions that would include possible water rate increases due to changes in costs to provide customers with water during a shortage. The water rates at each water shortage level are shown in the following table. The IRWD Board of Directors will consider adopting these rates concurrently with the water and sewer rates discussed above. The water shortage contingency rates would only be charged to potable customers depending on the level and duration of the water shortage as defined in the WSCP, and only when conditions declared by IRWD's Board are met. Customers will receive communication of when these conditions have been met and when the water shortage contingency rates are being charged.

### Proposed water shortage contingency rates per CCF beginning July 1, 2023

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Low Volume	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
Base	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Inefficient	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
Wasteful	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

### Proposed water shortage contingency rates per CCF beginning July 1, 2024

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Low Volume	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Base	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Inefficient	\$6.66	\$6.74	\$6.82	\$6.93	\$7.43	\$8.38
Wasteful	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

For more information regarding how the monthly water budget is calculated for each of these rates, and to use a WSCP budget-based-rate calculator, visit [IRWD.com/wscp-rates](http://IRWD.com/wscp-rates).

## Public hearing

Any customer or property owner within the IRWD service area may file a written protest for the proposed rate increases with IRWD by sending a letter to IRWD, P.O. Box 5149, Irvine, CA 92616. A valid protest letter must include your name, the address at which you receive service from IRWD, a statement of protest, and your original signature. Protest letters received by June 26, 2023, will be tabulated and presented to the Board of Directors at a public hearing regarding the rate increase to be held on June 26, 2023, at 5 p.m. in the IRWD Board Room, 15600 Sand Canyon Ave., Irvine, California. Any customer or property owner may appear at the hearing to make comments regarding the proposed rates. Protest letters may be delivered in person and must be received prior to the conclusion of the June 26, 2023, public hearing.

Pursuant to Government Code Section 53759, there is a 120-day statute of limitations for any judicial action or proceeding challenging any new, increased, or extended water and sewer fee or charge.

## Additional information

For more information about IRWD's water efficiency programs and rebates, plus tips on how you can use water more efficiently, visit [IRWD.com](http://IRWD.com). If you have questions, please contact IRWD Customer Service at 949-453-5300.



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

Irvine Ranch Water District (IRWD) is a public agency that provides water and sewer service. Our rates are based on the actual cost to provide water and sewer service to our customers and are based on the expenses included in IRWD’s budget. The IRWD Board of Directors adopted a two-year budget on April 24, 2023. The basis for the proposed rates is detailed in the Cost of Service Study, which is available at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). The proposed rates for the two years, if adopted, will be effective June 26, 2023, and will be implemented on July 1, 2023, and July 1, 2024, respectively. The increase is due primarily to uncontrollable pass-through cost increases from regional agencies that supply water, regional sewage, or energy services to IRWD, as well as inflation and increases in costs associated with continuing to provide the current high level of water and sewer service our customers expect. Information on how the rates are calculated is shown below.

A critical IRWD objective is to keep costs, and therefore rates, as low as possible for our customers. Even with the proposed increase, when compared with other agencies providing similar services in Orange County, IRWD’s rates are consistently among the lowest.

## Understanding basic components of your water bill

Your water bill has two basic components: variable water usage charges and service charges.

- **Variable water usage charges:** Variable costs — for the amount of water you use inside and outside each month. These charges are based on the cost of local and imported water, and other costs of providing service that vary based on usage. Some customers may also incur a pumping surcharge to cover additional pumping costs to serve their properties.
- **Service charges:** Fixed costs — to recover the fixed expenses of operating and maintaining IRWD’s infrastructure. There are separate service charges for water and sewer service. These monthly fixed costs fluctuate depending on the number of days in a billing cycle.

## Variable water usage charge

Each customer is assigned a monthly water usage budget. How much you pay for each 100 cubic feet (CCF) of water depends on whether you stay within your water budget. IRWD allocates its lowest-cost water supplies for customers’ usage within their monthly water budget. Higher-cost water is used to meet demands of customers’ water use above their budgets. For example, groundwater from local wells is the least expensive supply, while imported water from out of state or Northern California costs the most.

Potable rates are broken into two tiers. Each tier is assigned a rate based on the actual cost of serving customers within each tier. Cost of service includes both the cost of water based on the source of water and other variable costs as detailed below. The Base rate tier is for water used within each commercial, industrial, public authority or non-residential mixed use customer’s (CII) budget, which is sourced primarily from lower-cost groundwater and supplemented with imported water. The majority of imported water costs are allocated to the Wasteful tier. Expenses for districtwide conservation programs that educate customers on ways to conserve water and assist customers with conservation are included in both tiers. Additional costs associated with targeted conservation programs, urban runoff treatment, and water banking are paid only by customers with usage in the Wasteful tier because their higher usage: (i) requires individualized conservation assistance, (ii) leads to urban runoff that requires costly treatment, and (iii) requires greater water reserves through water banking to provide reliable water supplies during a drought or other water shortage. Costs are allocated to the Wasteful tier based on their share of costs to run these programs. IRWD would not need these programs if those customers remained within their individual water budgets.

Proposed variable potable water rates per CCF\* beginning July 1, 2023

Service	Base tier	Wasteful tier
Total water source cost	\$2.44	\$3.89
Districtwide conservation programs	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs		\$11.49
Rate Stabilization Fund	(\$0.03)	
Total cost per CCF per tier proposed beginning July 2023	\$2.52	\$15.49
Current rates	\$2.42	\$14.64
Change	\$0.10	\$0.85

\* 1 CCF = 748 gallons



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

## Proposed variable potable water rates per CCF beginning July 1, 2024

Service	Base tier	Wasteful tier
Total water source cost	\$2.54	\$4.15
Districtwide conservation programs	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs		\$12.20
Total cost per CCF per tier proposed beginning July 2024	\$2.65	\$16.46
Proposed FY 2023 – 24 rates	\$2.52	\$15.49
Change	\$0.13	\$0.97

### How your water budget is calculated

Your monthly water usage budget represents an efficient volume of water to meet your specific water use needs and uses. IRWD establishes an individualized water budget for each CII customer based on an analysis of the indoor and outdoor water use needs. This may include an on-site assessment. Usage up to 100% of the water budget is billed at the Base rate. Usage above a customer's water budget is billed at a higher Wasteful rate because IRWD must use more expensive water to meet Wasteful demands. For more information on the potable Base and Wasteful CII rates, and all other CII rates, please visit the IRWD website at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). If you would like additional information regarding the monthly water budget for your property, please contact Customer Service at 949-453-5300.

### Variable water charges

IRWD is proposing a variable water (commodity) charge increase as shown in the charts below. The Base Rate tier is for usage within the monthly water budget. The Wasteful tier is for water usage that exceeds the monthly water budget.

### Summary of proposed potable commercial commodity rates

Tier	Percentage use of monthly water budget	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Base	0 - 100%	\$2.42	\$2.52	\$2.65
Wasteful	101%+	\$14.64	\$15.49	\$16.46

### Summary of proposed recycled water commercial commodity rates

Tier	Percentage use of monthly water budget	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Base	0 - 100%	\$2.16	\$2.36	\$2.47
Wasteful	101%+	\$7.20	\$9.20	\$9.27

### Temporary (construction) commodity rates

Component	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Potable	\$2.88	\$3.08	\$3.25
Recycled	\$1.40	\$1.71	\$1.75

### Untreated water commercial commodity rate

Current rate per CCF	Proposed rate per CCF beginning July 1, 2023	Proposed rate per CCF beginning July 1, 2024
\$1.82	\$2.11	\$2.23

### Pumping surcharges

A pumping surcharge will be added to the variable water usage charge for customers in locations that cause IRWD to incur additional pumping costs to supply their water. The surcharge is based on the actual prevailing energy costs and varies depending upon the cost to pump water to the area served. If you live in an area affected by a pumping surcharge, the charge is itemized on your monthly bill. IRWD is proposing changes to the pumping surcharge areas. Please visit the IRWD website at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates) to see the proposed map and charges by area.



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

Proposed changes to pumping surcharge			
Component	Current rates <i>(rates vary by pumping surcharge area)</i>	Proposed rates beginning July 1, 2023 <i>(rates vary by pumping surcharge area)</i>	Proposed rates beginning July 1, 2024 <i>(rates vary by pumping surcharge area)</i>
Potable	\$0.33 to \$0.79/CCF	\$0.38 to \$1.72/CCF	\$0.41 to \$1.88/CCF
Recycled	\$0.14 to \$0.47/CCF	\$0.23 to \$0.53/CCF	\$0.25 to \$0.58/CCF

## Fixed water and sewer service charges

In addition to the water usage charges that you control based on the amount of water you use, your bill contains fixed charges for water service and sewer service. Fixed water service charges are based on the size of your water meter providing water flow to your property. These charges are assessed whether or not you use water that month and may increase or decrease based on the number of days in the billing period. Monthly service charges are fixed charges that cover IRWD's cost of operations, maintenance and infrastructure, and do not change based on the amount of a customer's monthly water or sewer use. Monthly service charges are based on a 30-day calendar month so billing cycles that are longer or shorter than 30 days are billed based on the proportional number of days. The fixed charge includes an amount set aside for the future inevitable repair and replacement of infrastructure such as pipes, pumping stations and treatment facilities. This way, IRWD can avoid significant one-time rate spikes when the repairs and replacements are made. These charges are not used to pay for facilities that extend service to new development.

## Fixed water service charges

The fixed monthly water service charges for CII customers are used to pay for operations and maintenance costs, including inevitable water infrastructure enhancements and replacements. The charge is based on the size of your meter.

Proposed changes to fixed monthly water service charges for system operation and maintenance			
Meter size	Current meter rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
5/8" by 3/4" Disc	\$10.75	\$11.85	\$13.20
3/4" Disc	\$16.15	\$17.80	\$19.80
1" Disc	\$26.90	\$29.65	\$33.00
1 1/2" Disc	\$64.50	\$71.10	\$79.20
2" Disc	\$86.00	\$94.80	\$105.60
2" Turbo	\$134.40	\$148.15	\$165.00
3" Turbo	\$349.40	\$385.15	\$429.00
4" Turbo	\$671.90	\$740.65	\$825.00
6" Turbo	\$1,343.75	\$1,481.25	\$1,650.00
8" Turbo	\$2,526.25	\$2,073.75	\$2,310.00
10" Turbo	\$3,762.50	\$4,147.50	\$4,620.00
6" Magnetic Meter	\$1,503.40	\$1,659.00	\$1,848.00
8" Magnetic Meter	\$2,673.55	\$2,947.10	\$3,282.85
6" Propeller	\$483.75	\$533.25	\$594.00
8" Propeller	\$645.00	\$711.00	\$792.00
10" Propeller	\$860.00	\$948.00	\$1056.00
12" or 14" Propeller	\$1,182.50	\$1,303.50	\$1,452.00
16", 18", or 20" Propeller	\$2,042.50	\$2,251.50	\$2,508.00
4" Omni F-2	\$537.50	\$740.65	\$825.00
6" Omni F-2	\$1,075.00	\$1,185.00	\$1,320.00
8" Omni F-2	\$2,526.25	\$2,073.75	\$2,310.00
1 1/2" Single Jet	\$53.75	\$59.25	\$66.00
2" Single Jet	\$86.00	\$94.80	\$105.60
6" Single Jet	\$537.50	\$592.50	\$660.00



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

## Fixed sewer service charges

Fixed monthly sewer service charges are used to pay for operations and maintenance costs associated with providing sewer service including inevitable sewer infrastructure enhancements and replacements of infrastructure such as pipes, pumping stations, and treatment facilities. Each customer's use of IRWD sewer service derives from the customer's use of water from IRWD. Additional fixed monthly charges for the operation and maintenance of the system are based on 90% of the volume of water used and treated in excess of 10 CCF per month, because historic use data shows that is the portion sent to IRWD's sewer system. The proposed fixed and variable monthly charges are presented below.

Proposed changes to fixed monthly sewer service charges for collection and treatment			
Monthly usage	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
Average water usage ≤ 10 CCF per month	\$29.75	\$33.24	\$36.79
Quantity service charge (beyond 10 CCF)	\$2.19/CCF	\$3.00/CCF	\$3.07/CCF
OC San special purpose permit discharge rate (if applicable)	Up to \$1,601.28 per million gallons	Up to \$1,676.09 per million gallons	Up to \$1,754.41 per million gallons

Proposed changes for areas receiving collection service or treatment service only			
Monthly usage	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
Collection service charge	\$9.25 per unit	\$10.95 per unit	\$11.55 per unit
Treatment service charge	\$16.25 per unit	\$19.70 per unit	\$20.50 per unit

## Private fireline service charges

Private firelines provide water to sprinkler systems and private fire hydrants for fire suppression on private property. These include fire protection systems, such as fire protection sprinklers and private fire hydrants that are not part of, but are connected to, the public water service. Costs are billed to the customers owning the private fire protection systems and are based upon the size of the fireline.

Proposed changes to monthly fireline service charges			
Private fireline size	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
1"	\$6.20	\$7.45	\$7.65
2"	\$8.45	\$9.75	\$10.15
3"	\$13.55	\$14.95	\$15.80
4"	\$22.45	\$23.90	\$25.50
6"	\$54.15	\$56.10	\$60.35
8"	\$108.90	\$111.65	\$120.50
10"	\$191.05	\$195.15	\$210.95
11"	\$245.15	\$248.75	\$268.95
12"	\$306.70	\$310.90	\$336.30
Private fire hydrants	\$54.15	\$34.00	\$36.60

## Other charges

IRWD also charges for setting up new accounts for a property already connected to IRWD's service system and for reconnecting water service after it has been shut off.

Proposed changes to fees to set up a service account and reconnect service after a shut-off			
Component	Current rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
One-time setup fee for new accounts	\$25.00	\$25.00	\$25.00
Reconnection fees	\$70.00	\$75.00	\$75.00
After hours reconnection fees	\$95.00	\$200.00	\$200.00





# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

## Why did the cost of water and sewer service increase?

The main reasons for the change include uncontrollable cost increases to IRWD attributed to:

- Pass-through charges from Orange County Water District (OCWD) for pumping local groundwater, which is still the lowest-cost water source (15.6% increase in FY 2023-24 and 6.6% increase in FY 2024-25).
- Pass-through charges from Metropolitan Water District of Southern California (MWD) for imported water purchased through the regional wholesaler, the Municipal Water District of Orange County (MWDOC) (7.8% increase in FY 2023-24 and 4.1% increase in FY 2024-25).
- Pass-through charges from Southern California Edison (SCE) for electricity used in IRWD service operations (48.6% increase in FY 2023-24 and 9.1% increase in FY 2024-25).
- Increases in costs associated with continuing to provide the current high level of water service our customers expect, including costs associated with repairs and maintenance related to maintaining the existing infrastructure (9.9% increase in FY 2023-24 and 6.5% increase in FY 2024-25).
- Inflation.

## Automatic pass-through adjustments and other surcharges

IRWD used its best available information to calculate proposed increases in the cost of imported water purchased from MWD through MWDOC, the replenishment charges paid to OCWD for pumping groundwater, the cost for regional treatment of sewage paid to the Orange County Sanitation District (OC San), and the cost of electricity charged by SCE. IRWD has no control over the charges set by regional agencies (MWD, MWDOC, OCWD, OC San, SCE, etc.) or penalties, taxes and fees assessed by the state, and must pass those costs through to IRWD customers. Should any of the regional agencies or the State of California adopt an additional increase (or decrease) in its charges, taxes, or fees ("pass-through amount"), IRWD may automatically recalculate its rates to include the pass-through amount. If this occurs, the automatic IRWD rate adjustment will not require a public hearing or any additional action by the IRWD Board of Directors. At least 30 days before the effective date of the adjustment, IRWD will provide its customers with notice of the expected adjustment(s), which will generally be calculated as the total projected cost increase divided by the projected annual water consumption or annual total sewage flow as appropriate. This calculation will vary as necessary to reflect IRWD's different service areas and service classes.

If the State Water Resources Control Board (State Board) imposes fines on IRWD because of a violation(s) of a State Board regulation adopted to prevent the waste or unreasonable use of water, or to promote water conservation, to the extent such violation(s) are due to consumption of water in excess of customers' water usage budgets, IRWD may levy a surcharge on the volume of water used of up to \$3.31 per hundred cubic feet. If IRWD is fined by the State Board, at least 30 days before implementing a surcharge, IRWD will provide its customers with notice of the surcharge amount(s), which will generally be calculated as the total projected fine divided by the total water use in the Wasteful tier.

## Water Shortage Contingency Plan (WSCP)

IRWD is required by the California Water Code Section 10632 to prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan. The WSCP, adopted by IRWD on June 28, 2021, includes plans to implement locally appropriate water shortage response actions for six standard water shortage levels. The following are the rates proposed as a potential response action for each water shortage level. These rates are based on the actual cost to provide service to our customers in times of water shortage. For a detailed explanation of the District's water shortage responses, please refer to the District's WSCP at [bit.ly/wscp-2021](http://bit.ly/wscp-2021). An overview of the supply shortage response actions considered for each level of water shortage can be found on Page 33, Table 3-3 of the WSCP. Achieving the WSCP reductions for each level will require a broad approach. The table below includes the target potable water use reduction for each level, the minimum potable water budget provided at each level and the steps necessary to meet the water shortage at each level. The District has invested in water supply reliability and is not projecting any shortages over the next two years.

Minimum potable water budgets at each level of water shortage

Water Shortage Contingency Plan level	Target reduction	Messaging and outreach	Outdoor potable water landscape plant assumption <i>(Includes residential, dedicated irrigation, non-agricultural and CII outdoor)</i>	ET factor	Potable Commercial, Industrial and Institutional (CII) percent indoor reduction
Normal water budget No shortage	0%	Water efficiency programs and outreach	40% drought-tolerant plants	.75	0%
Level 1 0 - 10%	10%	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75	0%



# Irvine Ranch Water District Notice of Proposed Water and Sewer Rate Change

COMMERCIAL / INDUSTRIAL / PUBLIC AUTHORITY / NON-RESIDENTIAL MIXED USE

Level 2 11 - 20%	20%	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625	0%
Level 3 21 - 30%	30%	Expanded messaging and targeted outreach	No turf; 25% drought-tolerant plants; 75% native plants; tree health affected	.35	0%
Level 4 31 - 40%	40%	Expanded messaging and targeted outreach	No turf; 100% native plants only; tree health affected	.25	10%
Level 5 41 - 50%	50%	Expanded messaging and targeted outreach	No landscape	0	20%
Level 6 51%+	60%	Expanded messaging and targeted outreach	No landscape	0	30%

### How a water shortage could affect rates

If IRWD experiences a water shortage, IRWD may be required to implement water shortage response actions that would include possible water rate increases due to changes in costs to provide customers with water during a shortage. The water rates at each water shortage level are shown in the following table. The IRWD Board of Directors will consider adopting these rates concurrently with the water and sewer rates discussed above. The water shortage contingency rates would only be charged to potable customers depending on the level and duration of the water shortage as defined in the WSCP, and only when conditions declared by IRWD's Board are met. Customers will receive communication of when these conditions have been met and when the water shortage contingency rates are being charged.

### Proposed potable water shortage contingency rates per CCF beginning July 1, 2023

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Base	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Wasteful	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

### Proposed potable water shortage contingency rates per CCF beginning July 1, 2024

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Base	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Wasteful	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

For more information regarding how the monthly water budget is calculated for each of these rates, please contact customer service at 949-453-5300.

### Public hearing

Any customer or property owner within the IRWD service area may file a written protest for the proposed rate increases with IRWD by sending a letter to IRWD, P.O. Box 5149, Irvine, CA 92616. A valid protest letter must include your name, the address at which you receive service from IRWD, a statement of protest, and your original signature. Protest letters received by June 26, 2023, will be tabulated and presented to the Board of Directors at a public hearing regarding the rate increase to be held on June 26, 2023, at 5 p.m. in the IRWD Board Room, 15600 Sand Canyon Ave., Irvine, California. Any customer or property owner may appear at the hearing to make comments regarding the proposed rates. Protest letters may be delivered in person and must be received prior to the conclusion of the June 26, 2023, public hearing.

Pursuant to Government Code Section 53759, there is a 120-day statute of limitations for any judicial action or proceeding challenging any new, increased, or extended water and sewer fee or charge.

### Additional information

For more information about IRWD's water efficiency programs and rebates, plus tips on how you can use water more efficiently, visit [IRWD.com](http://IRWD.com). If you have questions, please contact IRWD Customer Service at 949-453-5300.



Irvine Ranch Water District (IRWD) is a public agency that provides water and sewer service. Our rates are based on the actual cost to provide water and sewer service to our customers and are based on the expenses included in IRWD's budget. The IRWD Board of Directors adopted a two-year budget on April 24, 2023. The basis for the proposed rates is detailed in the Cost of Service Study, available at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). **The proposed rates for the two years, if adopted, will be effective June 26, 2023, and will be implemented on July 1, 2023, and July 1, 2024, respectively.** The increase is due primarily to uncontrollable pass-through cost increases from regional agencies that supply water or energy services to IRWD, as well as inflation and increases in costs associated with continuing to provide the current high level of water service our customers expect. Information on how the rates are calculated is shown below.

A critical IRWD objective is to keep costs, and therefore rates, as low as possible for our customers. Even with the proposed increase, when compared with other agencies providing similar services in Orange County, IRWD's rates are consistently among the lowest.

### Understanding basic components of your water bill

Your water bill has two basic components: variable water usage charges and service charges.

- **Variable water usage charges:** Variable costs — for the amount of water you use outdoors each month. These charges are based on the cost of local and imported water, and other costs of providing service that vary based on usage. Some customers may also incur a pumping surcharge to cover additional pumping costs to serve their properties.
- **Service charges:** Fixed costs — to recover the fixed expenses of operating and maintaining IRWD's infrastructure. These monthly fixed costs fluctuate depending on the number of days in a billing cycle.

## Landscape / non-agricultural customers

### Variable water usage charge

Each customer is assigned a monthly water usage budget. How much you pay for each 100 cubic feet (CCF) of water depends on whether you stay within your water budget. IRWD allocates its lowest-cost water supplies for customers' usage within their monthly water budget. Higher-cost water is used to meet demands of customers' water use above their budgets. For example, groundwater from local wells is the least expensive supply, while imported water from out of state or Northern California costs the most.

Rates are broken into four tiers. Each tier is assigned a rate based on the actual cost of serving customers within each tier. Cost of service includes both the cost of water based on the source of water and other variable costs as detailed below. The Low Volume and Base rate tiers are for water used within each customer's budget, which for potable water is sourced primarily from lower-cost groundwater and reduces the need to import expensive water. The majority of imported water costs are allocated to the Inefficient and Wasteful tiers. Expenses for districtwide conservation programs that educate and assist customers on ways to conserve water are not included in the Low Volume rate and recycled water Base rate since customers who remain in these tiers do not need this assistance. Additional costs associated with targeted conservation programs, urban runoff treatment, and water banking (for potable only) are paid only by customers with usage in the Inefficient and Wasteful tiers because their higher usage: (i) requires individualized conservation assistance, (ii) leads to urban runoff that requires costly treatment, and (iii) requires greater water reserves through water banking to provide reliable water supplies during a drought or other water shortage. Costs are allocated among those two tiers based on their share of costs to run these programs. IRWD would not need these programs if those customers remained within their individual water budgets.

Proposed variable potable water rates per CCF* beginning July 1, 2023				
Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.91	\$2.44	\$3.89	\$3.89
Districtwide conservation programs		\$0.11	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs			\$2.25	\$11.49
Rate Stabilization Fund	(\$0.16)	(\$0.03)		
Total cost per CCF per tier proposed beginning July 2023	\$1.75	\$2.52	\$6.25	\$15.49
Current rates	\$1.53	\$2.42	\$5.15	\$14.64
Change	\$0.22	\$0.10	\$1.10	\$0.85

\* 1 CCF = 748 gallons





Proposed variable potable water rates per CCF beginning July 1, 2024

Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.99	\$2.54	\$4.13	\$4.15
Districtwide conservation programs		\$0.11	\$0.11	\$0.11
Conservation programs targeted to over-budget customers, urban runoff costs and water banking costs			\$2.31	\$12.20
Total cost per CCF per tier proposed beginning July 2024	\$1.99	\$2.65	\$6.55	\$16.46
Proposed FY 2023 – 24 rates	\$1.75	\$2.52	\$6.25	\$15.49
Change	\$0.24	\$0.13	\$0.30	\$0.97

Proposed variable recycled water rates per CCF beginning July 1, 2023

Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.39	\$2.36	\$5.10	\$5.10
Districtwide conservation programs			\$0.11	\$0.11
Conservation programs targeted to over-budget customers, and urban runoff costs			\$0.04	\$3.99
Total cost per CCF per tier proposed beginning July 2023	\$1.39	\$2.36	\$5.25	\$9.20
Current rates	\$1.23	\$2.16	\$4.03	\$7.20
Change	\$0.16	\$0.20	\$1.22	\$2.00

Proposed variable recycled water rates per CCF beginning July 1, 2024

Service	Low Volume tier	Base tier	Inefficient tier	Wasteful tier
Total water source cost	\$1.43	\$2.47	\$5.02	\$5.02
Districtwide conservation programs			\$0.11	\$0.11
Conservation programs targeted to over-budget customers, and urban runoff costs			\$0.14	\$4.14
Total cost per CCF per tier proposed beginning July 2024	\$1.43	\$2.47	\$5.27	\$9.27
Proposed FY 2023 – 24 rates	\$1.39	\$2.36	\$5.25	\$9.20
Change	\$0.04	\$0.11	\$0.02	\$0.07

How water budgets for potable landscape and recycled water customers (non-agricultural) are calculated

Your monthly water usage budget is based on your irrigated landscape area and represents an efficient volume of water to meet your individualized water needs.

- **Potable landscape water budget:** Is calculated for your property using actual data from local weather stations. We multiply your irrigated landscape area (in acres) x evapotranspiration (ET) x 0.75 ET factor (assumes that your landscape is 60% warm-season turf and includes 20% additional water to account for inefficiency in your irrigation system) x 36.3 conversion factor to convert acre inches to CCF.

- ✓ CCF is the basic measurement of water use. One CCF equals 100 cubic feet of water – about 748 gallons.
- ✓ **Evapotranspiration or ET** is a measure of actual daily plant water loss.
- ✓ **ET factor** adjusts for the plants in your landscape and provides an allowance for inefficiency in your irrigation system.





Summary of proposed variable potable water rates

Tier	Percentage use of monthly water budget for landscape/non-ag customers	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Low Volume	0 - 40%	\$1.53	\$1.75	\$1.99
Base	41 - 100%	\$2.42	\$2.52	\$2.65
Inefficient	101 - 140%	\$5.15	\$6.25	\$6.55
Wasteful	141%+	\$14.64	\$15.49	\$16.46

- **Recycled (non-agricultural) water budget:** Is calculated for your property using actual data from local weather stations. We multiply your irrigated landscape area (in acres) x evapotranspiration x 0.87 ET factor (assumes that 100% of your landscape is warm-season turf and it includes 25% additional water to account for inefficiency in your irrigation system) x 36.3 conversion factor to convert acre inches to CCF.



Summary of proposed variable recycled water rates

Tier	Percentage use of monthly water budget for landscape/non-ag customers	Current rates per CCF	Proposed rates per CCF beginning July 1, 2023	Proposed rates per CCF beginning July 1, 2024
Low Volume	0 - 40%	\$1.23	\$1.39	\$1.43
Base	41 - 100%	\$2.16	\$2.36	\$2.47
Inefficient	101 - 140%	\$4.03	\$5.25	\$5.27
Wasteful	141%+	\$7.20	\$9.20	\$9.27

Monthly water budgets and rate calculator available on IRWD.com

For more information about the rate tiers, the types of usage that determine the monthly water budget, how the monthly water budget is calculated, and to use the IRWD budget-based-rate calculator, please visit the IRWD website at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). The calculator shows how staying within your monthly water budget or exceeding it will affect your monthly bill.

Pumping surcharges

A pumping surcharge will be added to the variable water usage charge for customers in locations that cause IRWD to incur additional pumping costs to supply their water. The surcharge is based on the actual prevailing energy costs and varies depending upon the cost to pump water to the area served. If you live in an area affected by a pumping surcharge, the charge is itemized on your monthly bill. IRWD is proposing changes to the pumping surcharge areas. Please visit the IRWD website at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates) to see the proposed map and charges by area.

Proposed changes to pumping surcharges

Component	Current rates (rates vary by pumping surcharge area)	Proposed rates beginning July 1, 2023 (rates vary by pumping surcharge area)	Proposed rates beginning July 1, 2024 (rates vary by pumping surcharge area)
Potable	\$0.33 to \$0.79/CCF	\$0.38 to \$1.72/CCF	\$0.41 to \$1.88/CCF
Recycled	\$0.14 to \$0.47/CCF	\$0.23 to \$0.53/CCF	\$0.25 to \$0.58/CCF

Fixed water service charges

In addition to the water usage charges that you control based on the amount of water you use, your bill contains fixed charges for water service. Fixed water service charges are based on the size of your water meter providing water flow to your property. These charges are assessed whether or not you use water that month and may increase or decrease based on the number of days in the billing period. The monthly fixed service charges cover IRWD's cost of operations, maintenance, and infrastructure, and do not change based on the amount of a customer's monthly water use. Monthly service charges are based on a 30-day calendar month so billing cycles that are longer or shorter than 30 days are billed based on the proportional number of days. The fixed charge includes an amount set aside for the future inevitable repair and replacement of infrastructure such as pipes, pumping stations, and treatment facilities. This way, IRWD can avoid significant one-time rate spikes when the repairs and replacements are made. These charges are not used to pay for facilities that extend service to new development. The charge is based on the size of your meter.



**Proposed fixed monthly water service charges for system operation and maintenance**

Meter size	Current meter rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
5/8" by 3/4" Disc	\$10.75	\$11.85	\$13.20
3/4" Disc	\$16.15	\$17.80	\$19.80
1" Disc	\$26.90	\$29.65	\$33.00
1 1/2" Disc	\$64.50	\$71.10	\$79.20
2" Disc	\$86.00	\$94.80	\$105.60
2" Turbo	\$134.40	\$148.15	\$165.00
3" Turbo	\$349.40	\$385.15	\$429.00
4" Turbo	\$671.90	\$740.65	\$825.00
6" Turbo	\$1,343.75	\$1,481.25	\$1,650.00
8" Turbo	\$2,526.25	\$2,073.75	\$2,310.00
10" Turbo	\$3,762.50	\$4,147.50	\$4,620.00
6" Magnetic Meter	\$1,503.40	\$1,659.00	\$1,848.00
8" Magnetic Meter	\$2,673.55	\$2,947.10	\$3,282.85
6" Propeller	\$483.75	\$533.25	\$594.00
8" Propeller	\$645.00	\$711.00	\$792.00
10" Propeller	\$860.00	\$948.00	\$1,056.00
12" or 14" Propeller	\$1,182.50	\$1,303.50	\$1,452.00
16", 18", or 20" Propeller	\$2,042.50	\$2,251.50	\$2,508.00
4" Omni F-2	\$537.50	\$740.65	\$825.00
6" Omni F-2	\$1,075.00	\$1,185.00	\$1,320.00
8" Omni F-2	\$2,526.25	\$2,073.75	\$2,310.00
1 1/2" Single Jet	\$53.75	\$59.25	\$66.00
2" Single Jet	\$86.00	\$94.80	\$105.60
6" Single Jet	\$537.50	\$592.50	\$660.00

Your meter size and amount appear on your bill. Customers who remain in the Low Volume tier for most of the year will have a larger percentage of their bill made up of the fixed charge.

**Water Charges for Agricultural customers**

Agricultural water use charges are billed monthly based on the actual volume of water used. Because agricultural water use is highly variable month-to-month and year-to-year (e.g., based on cropping patterns) it is billed based on actual usage rather than a water budget. The water rate for agricultural customers incorporates both the variable and fixed charge components. As a result, agricultural customers are not billed a separate fixed monthly charge based on their meter size.

**Proposed changes to agricultural water rates**

Tier	Current rate per CCF	Proposed rate beginning July 1, 2023	Proposed rate beginning July 1, 2024
Potable	\$3.25	\$3.48	\$3.63
Recycled	\$1.70	\$2.09	\$2.16
Untreated	\$1.91	\$2.29	\$2.41

**Other charges**

IRWD also charges for setting up new accounts for a property already connected to IRWD's service system and for reconnecting water service after it has been shut off.

**Proposed changes to fees to set up a service account and reconnect service after a shut-off**

Component	Current rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
One-time setup fee for new accounts	\$25.00	\$25.00	\$25.00
Reconnection fees	\$50.00 - \$70.00	\$55.00 - \$75.00	\$55.00 - \$75.00
After hours reconnection fees	\$95.00	\$165.00 - \$200.00	\$165.00 - \$200.00



### Why did the cost of water service increase?

The main reasons for the change include uncontrollable cost increases to IRWD attributed to:

- Pass-through charges from Orange County Water District (OCWD) for pumping local groundwater, which is still the lowest-cost water source (15.6% increase in FY 2023-24 and 6.6% increase in FY 2024-25).
- Pass-through charges from Metropolitan Water District of Southern California (MWD) for imported water purchased through the regional wholesaler, the Municipal Water District of Orange County (MWDOC) (7.8% increase in FY 2023-24 and 4.1% increase in FY 2024-25).
- Pass-through charges from Southern California Edison (SCE) for electricity used in IRWD service operations (48.6% increase in FY 2023-24 and 9.1% increase in FY 2024-25).
- Increases in costs associated with continuing to provide the current high level of water service our customers expect, including costs associated with repairs and maintenance related to maintaining the existing infrastructure (9.9% increase in FY 2023-24 and 6.5% increase in FY 2024-25).
- Inflation.

### Automatic pass-through adjustments and other surcharges

IRWD used its best available information to calculate proposed increases in the cost of imported water purchased from MWD through MWDOC, the replenishment charges paid to OCWD for pumping groundwater, the cost of electricity charged by SCE. IRWD has no control over the charges set by regional agencies (MWD, MWDOC, OCWD, SCE, etc.) or penalties, taxes and fees assessed by the state, and must pass those costs through to IRWD customers. Should any of the regional agencies or the State of California adopt an additional increase (or decrease) in its charges, taxes, or fees ("pass-through amount"), IRWD may automatically recalculate its rates to include the pass-through amount. If this occurs, the automatic IRWD rate adjustment will not require a public hearing or any additional action by the IRWD Board of Directors. At least 30 days before the effective date of the adjustment, IRWD will provide its customers with notice of the expected adjustment(s), which will generally be calculated as the total projected cost increase divided by the projected annual water consumption. This calculation will vary as necessary to reflect IRWD's different service areas and service classes.

If the State Water Resources Control Board (State Board) imposes fines on IRWD because of a violation(s) of a State Board regulation adopted to prevent the waste or unreasonable use of water, or unreasonable method of use of water or to promote water conservation, to the extent such violation(s) are due to consumption of water in excess of customers' water usage budgets, IRWD may levy a surcharge on the volume of water used of up to \$3.31 per hundred cubic feet. If IRWD is fined by the State Board, at least 30 days before implementing a surcharge, IRWD will provide its customers with notice of the surcharge amount(s), which will generally be calculated as the total projected fine divided by the total water used in the Inefficient and Wasteful tiers.

### Water Shortage Contingency Plan (WSCP)

IRWD is required by the California Water Code Section 10632 to prepare and adopt a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan. The WSCP, adopted by IRWD on June 28, 2021, includes plans to implement locally appropriate water shortage response actions for six standard water shortage levels. The following are the rates proposed as a potential response action for each water shortage level. These rates are based on the actual cost to provide service to our customers in times of water shortage. For a detailed explanation of the District's water shortage responses, please refer to the District's WSCP at [bit.ly/wscp-2021](http://bit.ly/wscp-2021). An overview of the supply shortage response actions considered for each level of water shortage can be found on Page 33, Table 3-3 of the WSCP. Achieving the WSCP reductions for each level will require a broad approach. The table below includes the target potable water use reduction for each level, the minimum potable water budget provided at each level and the steps necessary to meet the water shortage at each level. The District has invested in water supply reliability and is not projecting any shortages over the next two years.

Water Shortage Contingency Plan level	Target potable reduction	Messaging and outreach	Potable water landscape plant assumption <i>(Includes residential, dedicated irrigation, non-agricultural and CII outdoor)</i>	ET factor
Normal water budget No Shortage	0%	Water efficiency programs and outreach	40% drought-tolerant plants	.75
Level 1: 0 - 10%	10%	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75
Level 2: 11 - 20%	20%	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625



Level 3: 21 - 30%	30%	Expanded messaging and targeted outreach	No turf; 25% drought-tolerant plants; 75% native plants; tree health affected	.35
Level 4: 31 - 40%	40%	Expanded messaging and targeted outreach	No turf; 100% native plants only; tree health affected	.25
Level 5: 41 - 50%	50%	Expanded messaging and targeted outreach	No landscape	0
Level 6: 51%+	60%	Expanded messaging and targeted outreach	No landscape	0

**How a water shortage could affect potable rates**

If IRWD experiences a water shortage, IRWD may be required to implement water shortage response actions that would include possible potable water rate increases due to changes in costs to provide customers with water during a shortage. The water rates at each water shortage level are shown in the following table. The IRWD Board of Directors will consider adopting these rates concurrently with the water rates discussed above. The water shortage contingency rates would only be charged to potable customers depending on the level and duration of the water shortage as defined in the WSCP, and only when conditions declared by IRWD's Board are met. Customers will receive communication of when these conditions have been met and when the water shortage contingency rates are being charged.

**Proposed potable water shortage contingency rates per CCF beginning July 1, 2023**

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Low Volume	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
Base	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Inefficient	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
Wasteful	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

**Proposed water shortage contingency rates per CCF beginning July 1, 2024**

Rate tiers	Level 1: up to 10% water shortage	Level 2: 11% to 20% water shortage	Level 3: 21% to 30% water shortage	Level 4: 31% to 40% water shortage	Level 5: 41% to 50% water shortage	Level 6: greater than 50% water shortage
Low Volume	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Base	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Inefficient	\$6.66	\$6.74	\$6.82	\$6.93	\$7.43	\$8.38
Wasteful	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

For more information regarding how the monthly water budget is calculated for each of these rates, and to use a WSCP budget-based-rate calculator, visit [IRWD.com/wscp-rates](http://IRWD.com/wscp-rates).

**Public hearing**

Any customer or property owner within the IRWD service area may file a written protest for the proposed rate increases with IRWD by sending a letter to IRWD, P.O. Box 5149, Irvine, CA 92616. A valid protest letter must include your name, the address at which you receive service from IRWD, a statement of protest, and your original signature. Protest letters received by June 26, 2023, will be tabulated and presented to the Board of Directors at a public hearing regarding the rate increase to be held on June 26, 2023, at 5 p.m. in the IRWD Board Room, 15600 Sand Canyon Ave., Irvine, California. Any customer or property owner may appear at the hearing to make comments regarding the proposed rates. Protest letters may be delivered in person and must be received prior to the conclusion of the June 26, 2023, public hearing.

Pursuant to Government Code Section 53759, there is a 120-day statute of limitations for any judicial action or proceeding challenging any new, increased, or extended water and sewer fee or charge.

**Additional information**

For more information about IRWD's water efficiency programs and rebates, plus tips on how you can use water more efficiently, visit [IRWD.com](http://IRWD.com). If you have questions, please contact IRWD Customer Service at 949-453-5300.





Irvine Ranch Water District (IRWD) is a public agency that provides water and sewer service. IRWD provides sewer service to the Newport/North area. Our sewer rates are based on the actual cost to provide sewer service to our customers and are based on the expenses included in IRWD's budget. The basis for the proposed rates is detailed in the Cost of Service Study, which is available at [IRWD.com/services/proposed-rates](http://IRWD.com/services/proposed-rates). The IRWD Board of Directors adopted a two-year budget on April 24, 2023. **The proposed rates for the two years, if adopted, will be effective June 26, 2023, and will be implemented on July 1, 2023, and July 1, 2024, respectively.** The increase in sewer service rates is due primarily to uncontrollable pass-through cost increases from regional agencies that supply sewage or energy services to IRWD, as well as inflation and increases in costs associated with continuing to provide the current high level of sewer service our customers expect.

A critical IRWD objective is to keep costs, and therefore rates, as low as possible for our customers. Even with the proposed increase, when compared with other agencies providing similar services in Orange County, IRWD's rates are consistently among the lowest.

### Fixed sewer service charges

Monthly service charges cover IRWD's cost of operations, maintenance, and infrastructure, and do not change based on the amount of a customer's monthly sewer use. The monthly charges are billed annually and included in the property owners' annual property tax bill. The fixed charge includes an amount set aside for the future inevitable repair and replacement of infrastructure such as pipes, pumping stations, and treatment facilities. This way, IRWD can avoid significant one-time rate spikes when the repairs and replacements are made. These charges are not used to pay for facilities that extend service to new development.

Proposed changes to fixed monthly sewer service charges			
Usage	Current monthly rates	Proposed rates beginning July 1, 2023	Proposed rates beginning July 1, 2024
Single-family homes, townhouses & condominiums	\$29.75	\$33.24	\$36.79
Apartments	\$20.45	\$23.10	\$25.70

### Automatic pass-through adjustments and other surcharges

IRWD used its best available information to calculate proposed increases in the cost of regional treatment of sewage paid to the Orange County Sanitation District (OC San), and the cost of electricity charged by Southern California Edison (SCE). IRWD has no control over the amounts set by regional agencies (OC San, SCE, etc.) or penalties, taxes and fees assessed by the state, and must pass those costs through to IRWD customers. Should any of the regional agencies or the State of California adopt an additional increase (or decrease) in its charges, taxes, or fees ("pass-through amount"), IRWD may automatically recalculate its rates to include the pass-through amount. If this occurs, the automatic IRWD rate adjustment will not require a public hearing or any additional action by the IRWD Board of Directors. At least 30 days before the effective date of the adjustment, IRWD will provide its customers with notice of the expected adjustment(s), which will generally be calculated as the total projected cost increase divided by the projected annual total sewage flow. This calculation will vary as necessary to reflect IRWD's different service areas and service classes. The adjustment will be included in the following year's property tax bill.

### Public hearing

Any customer or property owner within the IRWD service area may file a written protest for the proposed rate increases with IRWD by sending a letter to IRWD, P.O. Box 5149, Irvine, CA 92616. A valid protest letter must include your name, the address at which you receive service from IRWD, a statement of protest, and your original signature. Protest letters received by June 26, 2023, will be tabulated and presented to the Board of Directors at a public hearing regarding the rate increase to be held on June 26, 2023, at 5 p.m. in the IRWD Board Room, 15600 Sand Canyon Ave., Irvine, California. Any customer or property owner may appear at the hearing to make comments regarding the proposed rates. Protest letters may be delivered in person and must be received prior to the conclusion of the June 26, 2023, public hearing.

Pursuant to Government Code Section 53759, there is a 120-day statute of limitations for any judicial action or proceeding challenging any new, increased, or extended sewer fee or charge.

### Additional information

For more information on sewer rates, please visit [IRWD.com](http://IRWD.com). If you have questions, please contact IRWD Customer Service at 949-453-5300.

Exhibit "B"

***IRVINE RANCH WATER DISTRICT  
SCHEDULE OF RATES AND CHARGES***



**Irvine Ranch  
Water District**

*Effective ~~August~~ July 1, 2023~~2~~*

## Section 1: Water System

### Monthly Water Service Charge

Residential, Commercial, Industrial, Public Authority, Landscape, and Temporary Usage Customers <sup>1</sup>		
Meter Size	Flow Range in GPM <sup>2</sup>	Meter Rates <sup>3</sup>
5/8" by 3/4" Disc	1/2-20	\$ <del>11.85</del> <u>0.75</u>
3/4" Disc	3/4-30	\$ <del>17.80</del> <u>6.15</u>
1" Disc	3-50	\$ <del>29.65</del> <u>6.90</u>
1 1/2" Disc	2-1 <del>20</del> <u>00</u>	\$ <del>71.10</del> <u>64.50</u>
2" Disc	2 1/2- <del>160</del> <u>250</u>	\$ <del>86.00</del> <u>94.80</u>
2" Turbo	1- <del>250</del> <u>190</u>	\$ <del>134.40</del> <u>148.15</u>
3" Turbo	2 1/2-650	\$ <del>349.40</del> <u>385.15</u>
4" Turbo	2-1 <del>250</del> <u>000</u>	\$ <del>671.90</del> <u>740.65</u>
6" Turbo	2 1/2- <del>2000</del> <u>2500</u>	\$ <del>1,343.75</del> <u>1,481.25</u>
8" Turbo	4-3500	\$ <del>2,526.25</del> <u>2,073.75</u>
10" Turbo	5- <del>7000</del> <u>5500</u>	\$ <del>3,762.50</del> <u>4,147.50</u>
6" Magnetic Meter	160 <del>04</del> - <del>2800</del> <u>3000</u>	\$ <del>1,503.40</del> <u>1,659.00</u>
8" Magnetic Meter	200 <del>04</del> -5000	\$ <del>2,673.55</del> <u>2,947.10</u>
6" Propeller	90-900	\$ <del>483.75</del> <u>533.25</u>
8" Propeller	100-1200	\$ <del>645.00</del> <u>711.00</u>
10" Propeller	160 <del>04</del> -2000	\$ <del>860.00</del> <u>948.00</u>
12" or 14" Propeller	200 <del>04</del> -3500	\$ <del>1,182.50</del> <u>1,303.50</u>
16", 18", or 20" Propeller	3500-5500	\$ <del>2,042.50</del> <u>2,251.50</u>
4" Omni F2*	3/4- <del>1000</del> <u>1250</u>	\$ <del>537.50</del> <u>740.65</u>
6" Omni F2*	1 1/2-2000	\$ <del>1,075.00</del> <u>1,185.00</u>
8" Omni F2*	2 1/2-3500	\$ <del>2,526.25</del> <u>2,073.75</u>
1 1/2" Single Jet	2-100	\$ <del>53.75</del> <u>59.25</u>
2" Single Jet	2 1/2- <del>160</del> <u>500</u>	\$ <del>86.00</del> <u>94.80</u>
6" Single Jet	125-1000	\$ <del>537.50</del> <u>592.50</u>

\*Fireline meters only

<sup>1</sup> Service charges are included in the commodity rate for agricultural usage customers.

<sup>2</sup> GPM is Gallons per Minute.

<sup>3</sup> Potable residential and landscape customers that have 12 calendar months of billing history and stay within the low volume tier for 9 of those 12 months of the prior calendar year will receive a \$2.00 credit per month on their water service charge.



**Service Charges – Private Fire Protection Service**

**Service-line charge**

<b>Fireline Size</b>	<b>Monthly Rate</b>	<b>Fireline Size</b>	<b>Monthly Rate</b>
1"	<del>\$6.20</del> <u>7.45</u>	8"	<del>\$108.90</del> <u>111.65</u>
2"	<del>\$8.45</del> <u>9.75</u>	10"	<del>\$191.05</del> <u>195.15</u>
3"	<del>\$13.55</del> <u>14.95</u>	11"	<del>\$245.15</del> <u>248.75</u>
4"	<del>\$22.45</del> <u>23.90</u>	12"	<del>\$306.70</del> <u>310.90</u>
6"	<del>\$54.15</del> <u>56.10</u>		

**2. Fire hydrant charge**

The monthly charge for private fire hydrant service is ~~\$54.15~~34.00 per hydrant. This charge includes water used for fire extinguishing purposes.

**3. Fire flow testing**

The District will charge \$300.00 to administer any fire flow tests.

## Commodity Charges

Irvine Ranch Water District (IRWD) establishes a water budget for each customer. The rates billed are based on use as a percentage of budget. Water budgets are based on an assumed number of residents (and units, in the case of apartments), landscape square footage and actual daily weather and evapotranspiration (ET) data for each of three microclimates within the District. Customers may apply for budget variances for larger than normal landscaped areas, more people living in the home or special medical needs. Rates are based on usage per hundred cubic feet (ccf). The budget process is described in detail in Budgets and Variances on page 10 and residential customers can apply for a variance at <https://www.irwd.com/services/request-a-water-variance>.

### Commodity Charges: Potable Water System

1. Residential detached dwelling units

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.53</del> 1.75	0-40
Base Rate	<del>\$2.42</del> 2.52	41-100
Inefficient	<del>\$5.15</del> 6.25	101-140
Wasteful	<del>\$14.64</del> 15.49	141+

2. Residential condo attached/detached dwelling units

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.75</del> 1.53	0-40
Base Rate	<del>\$2.52</del> 2.42	41-100
Inefficient	<del>\$6.25</del> 5.15	101-140
Wasteful	<del>\$15.49</del> 14.64	141+

3. Apartments

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.75</del> 1.53	0-40
Base Rate	<del>\$2.52</del> 2.42	41-100
Inefficient	<del>\$6.25</del> 5.15	101-140
Wasteful	<del>\$15.49</del> 14.64	141+

4. Commercial, industrial, public authority and non-residential mixed usage

Tier	Rate/ccf	Percent of Budget
Base Rate	<del>\$2.42</del> 2.52	0-100
Wasteful	<del>\$14.64</del> 15.49	101+

5. Landscape/Non-agricultural irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.75</del> 1.53	0-40
Base Rate	<del>\$2.52</del> 2.42	41-100
Inefficient	<del>\$6.25</del> 5.15	101-140
Wasteful	<del>\$15.49</del> 14.64	141+

6. Agricultural irrigation

Potable water supplied under this section shall be used only for the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade, or industry, of agricultural, or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, such products to be grown or raised on parcels of land having an area of not less than five acres utilized exclusively for that purpose.

Type	Rate/ccf	Per Acre Foot
Agricultural	<del>\$3.25</del> <u>3.48</u>	<del>\$1,415.70</del> <u>1,515.89</u>

Commodity Charges: Untreated Water

1. Untreated and Santiago Aqueduct Commission (SAC) water

Type	Rate/ccf	Per Acre Foot
Agricultural	<del>\$1.91</del> <u>2.29</u>	<del>\$832.00</del> <u>997.52</u>
Non-Agricultural	<del>\$1.82</del> <u>2.11</u>	<del>\$792.79</del> <u>919.12</u>

2. Landscape irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.23</del> <u>1.39</u>	0-40
Base <del>Rate</del>	<del>\$2.16</del> <u>2.36</u>	41-100
Inefficient	<del>\$4.03</del> <u>5.25</u>	101-140
Wasteful	<del>\$7.20</del> <u>9.20</u>	141+

Commodity Charges: Recycled Water System

1. Landscape irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.39</del> \$1.23	0-40
Base Rate	<del>\$2.36</del> \$2.16	41-100
Inefficient	<del>\$5.25</del> \$4.03	101-140
Wasteful	<del>\$9.20</del> \$7.20	141+

2. Landscape irrigation recycled loan customers

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.75</del> \$1.53	0-40
Base Rate	<del>\$2.52</del> \$2.42	41-100
Inefficient	<del>\$6.25</del> \$5.15	101-140
Wasteful	<del>\$15.49</del> \$14.64	141+

3. Agricultural irrigation

Type	Rate/ccf	Per Acre Foot
Recycled	<del>\$1.70</del> \$2.09	<del>\$740.52</del> \$910.40

~~10.4.~~ Commercial and industrial

Tier	Rate/ccf	Percent of Budget
Base Rate	<del>\$1.23</del> \$1.39	0-100
Wasteful	<del>\$7.20</del> \$9.20	101+

~~11.5.~~ Commercial and industrial loan customers

Tier	Rate/ccf	Percent of Budget
Base Rate	<del>\$2.42</del> \$2.52	0-100
Wasteful	<del>\$14.64</del> \$15.49	101+

## Pumping Surcharges

A pumping surcharge will be added to the variable water usage charge for customers in locations that cause the District to incur additional pumping costs to supply their water. A surcharge will be added to the commodity rate of those users who reside at higher elevations and cause the District to incur additional pumping costs to supply their water. The surcharge is based upon prevailing energy costs and varies depending upon the cost to pump water to the area served.

### 1. Potable water pumping surcharges

Area Name	Surcharge/ccf
Area 1	\$0. <del>3833</del>
Area 2	\$0. <del>6746</del>
Area 3	\$0. <del>9079</del>
<u>Area 4</u>	<u>\$1.72</u>

### 2. Recycled water pumping surcharges

Area Name	Surcharge/ccf
Area 1	\$0. <del>4423</del>
Area 2	\$0. <del>2537</del>
Area 3	\$0. <del>4753</del>

## Temporary Water Service Connection

### 1. Monthly service charge

See Chart on page 4.

### 2. Commodity charge

Wherever feasible, recycled water shall be used for temporary construction uses. The Commodity Charge shall be as follows:

Potable	<del>\$2,883.08</del> /ccf
Recycled	<del>\$1,401.71</del> /ccf

### 3. Meter deposit

A deposit equal to the replacement cost of the construction meter shall be collected at the time of service application. The deposit will be applied to the closing bill and any remaining amount refunded to the customer. Lost meters will result in forfeiture of deposit.

Size	Cost
1", 1-1/2", 2" Disc	\$ 1,000.00
3" Turbo T2 & H2	1,900.00
4" Turbo	2,600.00
6" Turbo	4,680.00
8" Turbo	7,930.00
10" Turbo	11,750.00

### 4. Materials for repairing damaged construction meters

Item	Cost
Meter	Cost by size is shown in section 3 above
Swivel Hose Coupling-Female	\$ 240.00
Register With AMR & Pulse Wire	275.00
Swivel Adapter	158.00
Fire Hose Adapter 3" MIP x 2-1/2" MFH	42.00
Lock	15.00
H2 Hydrant Meter Handle	22.00
Fire Hydrant Meter Lock - LRG	122.00
Rotor and Shaft Assembly (3")	721.00
Barrel Lock	30.00
Male Fitting	95.00
Hydrant Collar	100.00
Rotor Cap	27.00
Collar (with barrel lock)	106.00
Labor & Overhead	120.00

### 5. High-lines for redevelopment

A high-line is a temporary service connection installed by the District to an existing customer during system upgrades or repairs to the District's system. Whenever feasible, high-lines will be metered and the customers will be billed at their regular rate. The District will determine whether a high-line should be metered.

If a high-line is unmetered, the customer will be charged using a reasonable average daily consumption based on prior consumption or based on other reasonable calculations in the absence of historical data.

## Other Water System Charges

### 1. Delinquency charges

All bills and charges for water, sewer and recycled water service shall be due and payable upon presentation and shall become delinquent twenty-five (25) calendar days thereafter. If payment is not made within twenty-five (25) calendar days after presentation, a late charge will be levied upon the unpaid balance as follows:

For residential and non-residential accounts with an unpaid balance of \$10 or more, a one-time charge of 10% of the unpaid balance plus 1.5% interest will be assessed, and each month thereafter the unpaid balance will be subject to an interest charge of 1.5%.

### 2. Non-sufficient funds checks

A \$20.00 service fee will be charged for each check returned from the bank for non-sufficient funds.

### 3. Service restoration charges

When service is discontinued because of delinquency in payment of a water, sewer, or recycled water bill, the service shall not be restored until all delinquent charges, late charges and interest charges, and a trip charge as specified below, have been paid.

#### a. Trip charge during normal working hours

The trip charge applicable for work requested to be performed during normal working hours of the District will be \$~~75~~9.00. Certain exceptions may apply.

#### b. Trip charge after normal working hours

The trip charge applicable for work requested to be performed after normal working hours of the District will be \$~~200~~95.00. Certain exceptions may apply.

### 4. Tampering

If any person tampers with a District meter or District side angle stop and damages it, the customer shall pay the District for the cost of repairs, including but not limited to: parts, labor, and equipment. In addition, the customer will be liable for any charges imposed under the District's Rules and Regulations.

### 5. Non-compliance charges for illegal connections

The District may impose charges in accordance with Section 14 of the District's Rules and Regulations.

**Water Shortage Contingency Plan (WSCP) Rates:**

The IRWD Board of Directors adopted an updated Water Shortage Contingency Plan (WSCP) in June 2021. The WSCP includes a “toolbox” of potential strategies for responding to each level of water shortage. The Board approved maximum water shortage water budget adjustments associated with levels of shortage at the October 26, 2021 Board meeting. Using WSCP as a guide and following Proposition 218’s requirements, rates were developed for each shortage level. These will be referred to as “WSCP rates” and have only been developed for the potable system commodity rates. They have no impact on the monthly fixed service water or sewer charges or on the recycled system.

The rates at each level are as follows.

<i><b>Tiers</b></i>	<i><b>WSCP Levels Commodity Rates</b></i>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
	Up to 10%	11-20%	21-30%	31-40%	41-50%	Over 51%
Low Volume	<u>\$1.76</u>	<u>\$1.76</u>	<u>\$1.77</u>	<u>\$1.78</u>	<u>\$1.79</u>	<u>\$1.82</u>
	<u>\$1.53</u>	<u>\$1.53</u>	<u>\$1.53</u>	<u>\$1.55</u>	<u>\$1.57</u>	<u>\$1.60</u>
Base	<u>\$2.59</u>	<u>\$2.69</u>	<u>\$2.79</u>	<u>\$2.95</u>	<u>\$3.24</u>	<u>\$3.64</u>
	<u>\$2.43</u>	<u>\$2.46</u>	<u>\$2.50</u>	<u>\$2.53</u>	<u>\$2.57</u>	<u>\$2.62</u>
Inefficient	<u>\$6.41</u>	<u>\$6.68</u>	<u>\$6.81</u>	<u>\$6.92</u>	<u>\$7.50</u>	<u>\$8.49</u>
	<u>\$5.45</u>	<u>\$5.86</u>	<u>\$6.34</u>	<u>\$6.91</u>	<u>\$7.40</u>	<u>\$7.71</u>
Wasteful	<u>\$16.28</u>	<u>\$17.07</u>	<u>\$17.98</u>	<u>\$19.09</u>	<u>\$21.25</u>	<u>\$24.30</u>
	<u>\$15.77</u>	<u>\$17.11</u>	<u>\$18.74</u>	<u>\$19.90</u>	<u>\$21.21</u>	<u>\$21.86</u>

If the Board of Directors elect to implement any of these WSCP rates, the commodity rates are expected to provide cost of service equity for the budgeted Board-approved operating variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level. Implementation of WSCP rates would require additional Board action.



Section 2: Sewer System

**Monthly Sewer Service Charge**

**1. Residential**

<b>(a) Single Family and Multi-family Dwelling Units</b>	<u>AVERAGE MONTHLY WATER USE<sup>1, 2, 3, 4</sup></u>	<u>SEWAGE SERVICE CHARGE PER MONTH</u>
	Over 1000 cubic feet ( > 10.0 ccf)	• 100% rate = \$ <del>33.24</del> <u>29.75</u> per unit
	501-1000 cubic feet (5.01-10.0 ccf)	• 90% rate = \$ <del>28.78</del> <u>25.50</u> per unit
	0-500 cubic feet (0.0-5.0 ccf)	• 75% rate = \$ <del>23.10</del> <u>20.45</u> per unit
<p>(1) Monthly sewage service charge based upon the average of the actual lowest three months' water usage during the prior calendar year. Charges are based on a 30 day billing period.</p> <p>(2) Customers with less than a full calendar year of history are charged the 90% rate.</p> <p>(3) No credit will be granted for vacancies resulting from the normal turnover of occupants in an existing multiple dwelling unit. The price structure contained herein includes considerations of average vacancy rates.</p> <p>(4) A newly constructed multiple dwelling unit may be billed at the non-residential metered rate, with appropriate allowance for landscape irrigation, until the structure is released for occupancy.</p>		
		<u>SEWAGE SERVICE CHARGE PER MONTH</u>
<b>(b) Collection Service Charge</b> (assumes 10.0 ccf)		\$ <del>-10.95</del> <u>-9.25</u> per unit
<b>(c) Treatment Service Charge</b> (assumes 10.0 ccf)		\$ <del>16.25</del> <u>19.70</u> per unit

**2. Non-Residential (Commercial, Industrial, and Institutional)**

<p>Quantity charges are based on the assumption that 90% of non-residential water consumption returns to the sewer. Because of landscape irrigation or consumptive usage, some non-residential users may discharge substantially less of their metered water into the sewer system. Those users may, upon request to the District, be permitted to have the amount of water being discharged into the sewer determined by means acceptable to the District. Upon request by the user and at the sole discretion of the District, an alternate service charge may be applied.</p>		
<p>To qualify for the sewage service charge only, a customer usage history cannot be greater than 120 ccf in a full calendar year based on actual meter readings. Usage exceeding 10.0 ccf per month will pay a quantity charge. During construction, prior to occupancy, these rates are applicable.</p>	<th style="text-align: left;"><u>SEWAGE SERVICE /QUANTITY/COMMODITY CHARGE PER MONTH</u></th>	<u>SEWAGE SERVICE /QUANTITY/COMMODITY CHARGE PER MONTH</u>
<p>Sewage service charge</p> <p><del>Quantity charge beyond 10.0 ccf</del></p> <p><del>Quantity charge beyond 10.0 ccf</del></p>	<p>\$ <del>29.75</del><u>33.24</u></p> <p>\$ <del>3.00</del> /ccf</p> <p>\$ <del>2.19</del> /ccf</p> <p>\$ <del>2.29</del><u>7</u> /ccf</p> <p>\$ <del>0.10</del><u>7</u> /ccf</p>	
<p><del>Industrial Waste Charge if applicable</del></p>	<p>} </p>	

## Other Sewer System Charges

This section shall be applicable to non-residential customers who discharge extra-strength sewage into the sewage collection system, or discharge or have the potential to discharge constituents subject to federal or state standards and local discharge limitations.

### 1. Alternative service charges

At the sole discretion of the District, users may request the application of an alternative service charge for use. The alternative service charge shall be based on measured quantity and quality of water being discharged to the sewer from the user's facility by a means acceptable to the District. The alternative service charge for use shall be computed by the following formula:

$$\text{Charge for use} = VR_v + BR_b + SR_s$$

Where V = Total volume of flow in hundred cubic feet.

B = Total discharge of biochemical oxygen demand (BOD) in pounds.

S = Total discharge of suspended solids (SS) in pounds

R<sub>v</sub> = \$ ~~1.5992~~.077 per hundred cubic feet

R<sub>b</sub> = \$ 0.~~495443~~ per pound of BOD

R<sub>s</sub> = \$ 0.~~431386~~ per pound of SS

### 2. Charges for noncompliance with permit conditions

#### a. Minor violation

Condition where the limitation is less than the violation and the violation is less than the technical review criterion.

Fee per violation - \$350

#### b. Significant noncompliance or significant violation

Condition where the violation is greater than the technical review criterion or qualifies under the definition of significant noncompliance.

Fee per violation - \$550

#### c. Batch dump or slug load

Fee per violation - \$550

#### d. Probation orders

Enforcement Compliance Schedule Agreements and subsequent two year probation, and Regulatory Compliance Schedule Agreements.

Fee per violation - \$550

#### e. Appeals to the Board of Directors

Appeal fee - \$500

3. Fats, oils, and grease (FOG) control programs fees

All terms and requirements for the Fats, Oils, and Grease (FOG) Control Program can be found in Section 7.13 of the District's Rules and Regulations for Water, Sewer, Recycled Water, and Natural Treatment System Service.

a. FOG wastewater discharge permit fees (pursuant to Rules and Regs 7.13.6(4))  
 Food service establishments (FSE), and those FSE that are issued a conditional waiver (CW) by the District, shall pay the following FOG wastewater discharge permit fees which do not exceed the amount determined in Table 2-29 of the 2018 Fats, Oils, & Grease Fees Study:

FSE Monthly Permit Fee:	<del>\$16.407</del> <u>\$16.407.89</u> per month
CW Monthly Permit Fee:	<del>\$ 7.25</del> <u>3.54</u> per month

b. These charges shall be incorporated in the monthly sewage service charges.

c. Special services/fees

1) FOG plan check fees

The following FOG plan check fees must be paid at the time FOG plans are submitted.

Food Service Establishments (FSE) and Conditional Waivers (CW)

Initial Plan Check	<del>\$350.12</del> <u>\$575.00</u>
Permit Issuance and Initial Inspection	<del>275</del> <u>5.00</u>
Total =	<del>\$605.12</del> <u>\$850.00</u>

Limited Food Prep (LFP)

Initial Plan Check	<del>\$350.12</del> <u>\$575.00</u>
--------------------	-------------------------------------

For FSE, CW or LFP, all initial plan checks include the initial plan check and up to one revision. If more than one revision is required, the FSE, CW or LFP will be required to pay additional plan check fees in the amount of ~~\$235.00~~ \$304.92. This subsequent plan check fee includes up to two (2) more revisions.

2) Compliance follow-up inspection fee

If during an inspection the FSE is deemed to be out of compliance with the FOG Control Program and a compliance follow-up inspection is required, the FSE shall be required to pay ~~\$34~~ \$15.00 for the compliance follow-up inspection.

3) Enforcement fees

If an FSE is deemed to be out of compliance and a Notice of Violation is issued by the District to the FSE, the FSE will be charged an enforcement fee in the amount of \$1, ~~203.79~~ \$150.00 per incident.

4) Special study fee

This fee is for the District to review special studies at the request of the FSE, such as a performance study of bio-additives to a grease interceptor. The special study fee in the amount of ~~\$640.02~~ \$1000.00 will be required at the time of request by the FSE to the District.

5) FOG-related private lateral sewage discharge response fee

If District staff responds to a private lateral sewage discharge (PLSD) that after investigation by District staff is found to be FOG-related, the following fees shall be charged to the FSE, CW or LFP:

PLSD Response Fees During Working Hours

First Response Hour -	<del>\$932,573,225.00</del>
Each Additional Response Hour -	<del>484,722,700.00</del> per hour

PLSD Response Fees After Working Hours

First Response Hour -	<del>\$1,160,624,200.00</del>
Each Additional Response Hour -	<del>712,773,675.00</del> per hour

**4. Special purpose discharger service charges**

Special purpose discharge service fees apply to customers who have been required by the District to obtain a special purpose discharge permit issued jointly by the District and Orange County Sanitation District (OCSD). Sewage service charges will be based on reported and verified monthly flow to sewer.

Flow Service Charge: up to \$1, ~~545,356,76.09~~ per Million Gallons

**5. Discharge limits**

Discharge limits are included in Exhibit C of the Rules and Regulations.

**IRVINE RANCH WATER DISTRICT  
SCHEDULE OF RATES AND CHARGES**



**Irvine Ranch  
Water District**

*Effective July 1, 202~~2~~<sup>43</sup>*

## Section 1: Water System

### Monthly Water Service Charge

Residential, Commercial, Industrial, Public Authority, Landscape, and Temporary Usage Customers <sup>1</sup>		
Meter Size	Flow Range in GPM <sup>2</sup>	Meter Rates <sup>3</sup>
5/8" by 3/4" Disc	1/2-20	<del>\$13.20</del> <u>14.85</u>
3/4" Disc	3/4-30	<del>\$19.80</del> <u>17.80</u>
1" Disc	3-50	<del>\$33.00</del> <u>29.65</u>
1 1/2" Disc	2-120	<del>\$79.20</del> <u>71.10</u>
2" Disc	2 1/2-160	<del>\$94.80</del> <u>105.60</u>
2" Turbo	1-250	<del>\$148.15</del> <u>165.00</u>
3" Turbo	2 1/2-650	<del>\$385.15</del> <u>429.00</u>
4" Turbo	2-1250	<del>\$740.65</del> <u>825.00</u>
6" Turbo	2 1/2-2500	<del>\$1,481.25</del> <u>1,650.00</u>
8" Turbo	4-3500	<del>\$2,073.75</del> <u>2,310.00</u>
10" Turbo	5-7000	<del>\$4,147.50</del> <u>4,620.00</u>
6" Magnetic Meter	1600-2800	<del>\$1,659.00</del> <u>1,848.00</u>
8" Magnetic Meter	2000-5000	<del>\$2,947.10</del> <u>3,282.85</u>
6" Propeller	90-900	<del>\$533.25</del> <u>594.00</u>
8" Propeller	100-1200	<del>\$711.00</del> <u>792.00</u>
10" Propeller	1600-2000	<del>\$948.00</del> <u>1,056.00</u>
12" or 14" Propeller	2000-3500	<del>\$1,303.51</del> <u>1,452.00</u>
16", 18", or 20" Propeller	3500-5500	<del>\$2,251.50</del> <u>2,508.00</u>
4" Omni F2*	3/4-1250	<del>\$740.65</del> <u>825.00</u>
6" Omni F2*	1 1/2-2000	<del>\$1,320.00</del> <u>1,185.00</u>
8" Omni F2*	2 1/2-3500	<del>\$2,073.75</del> <u>2,310.00</u>
1 1/2" Single Jet	2-100	<del>\$59.25</del> <u>66.00</u>
2" Single Jet	2 1/2-160	<del>\$94.80</del> <u>105.60</u>
6" Single Jet	125-1000	<del>\$592.50</del> <u>660.00</u>

\*Fireline meters only

<sup>1</sup> Service charges are included in the commodity rate for agricultural usage customers.

<sup>2</sup> GPM is Gallons per Minute.

<sup>3</sup> Potable residential and landscape customers that have 12 calendar months of billing history and stay within the low volume tier for 9 of those 12 months of the prior calendar year will receive a \$2.00 credit per month on their water service charge.

**Service Charges – Private Fire Protection Service**

**Service-line charge**

<b>Fireline Size</b>	<b>Monthly Rate</b>	<b>Fireline Size</b>	<b>Monthly Rate</b>
1"	<del>\$7.45</del> <u>7.65</u>	8"	<del>\$111.65</del> <u>120.50</u>
2"	<del>\$9.75</del> <u>10.15</u>	10"	<del>\$195.15</del> <u>210.95</u>
3"	<del>\$14.95</del> <u>15.80</u>	11"	<del>\$248.75</del> <u>268.95</u>
4"	<del>\$23.90</del> <u>25.50</u>	12"	<del>\$310.90</del> <u>336.30</u>
6"	<del>\$56.10</del> <u>60.35</u>		

**2. Fire hydrant charge**

The monthly charge for private fire hydrant service is ~~\$34.00~~36.60 per hydrant. This charge includes water used for fire extinguishing purposes.

**3. Fire flow testing**

The District will charge \$300.00 to administer any fire flow tests.

## Commodity Charges

Irvine Ranch Water District (IRWD) establishes a water budget for each customer. The rates billed are based on use as a percentage of budget. Water budgets are based on an assumed number of residents (and units, in the case of apartments), landscape square footage and actual daily weather and evapotranspiration (ET) data for each of three microclimates within the District. Customers may apply for budget variances for larger than normal landscaped areas, more people living in the home or special medical needs. Rates are based on usage per hundred cubic feet (ccf). The budget process is described in detail in Budgets and Variances on page 10 and residential customers can apply for a variance at <https://www.irwd.com/services/request-a-water-variance>.

### Commodity Charges: Potable Water System

#### 1. Residential detached dwelling units

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.75</del> <u>\$1.99</u>	0-40
Base	<del>\$2.52</del> <u>\$2.65</u>	41-100
Inefficient	<del>\$6.25</del> <u>\$6.55</u>	101-140
Wasteful	<del>\$15.49</del> <u>\$16.46</u>	141+

#### 2. Residential condo attached/detached dwelling units

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.99</del> <u>\$1.75</u>	0-40
Base	<del>\$2.65</del> <u>\$2.52</u>	41-100
Inefficient	<del>\$6.55</del> <u>\$6.25</u>	101-140
Wasteful	<del>\$16.46</del> <u>\$15.49</u>	141+

#### 3. Apartments

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.99</del> <u>\$1.75</u>	0-40
Base	<del>\$2.65</del> <u>\$2.52</u>	41-100
Inefficient	<del>\$6.55</del> <u>\$6.25</u>	101-140
Wasteful	<del>\$16.46</del> <u>\$15.49</u>	141+

#### 4. Commercial, industrial, public authority and non-residential mixed usage

Tier	Rate/ccf	Percent of Budget
Base	<del>\$2.52</del> <u>\$2.65</u>	0-100
Wasteful	<del>\$15.49</del> <u>\$16.46</u>	101+

#### 5. Landscape/Non-agricultural irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.99</del> <u>\$1.75</u>	0-40
Base	<del>\$2.65</del> <u>\$2.52</u>	41-100
Inefficient	<del>\$6.55</del> <u>\$6.25</u>	101-140
Wasteful	<del>\$16.46</del> <u>\$15.49</u>	141+



6. Agricultural irrigation

Potable water supplied under this section shall be used only for the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade, or industry, of agricultural, or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, such products to be grown or raised on parcels of land having an area of not less than five acres utilized exclusively for that purpose.

Type	Rate/ccf	Per Acre Foot
Agricultural	<del>\$3.483.63</del>	<del>\$1,515.891,581.23</del>

Commodity Charges: Untreated Water

1. Untreated and Santiago Aqueduct Commission (SAC) water

Type	Rate/ccf	Per Acre Foot
Agricultural	<del>\$2.292.41</del>	<del>\$997.521,049.80</del>
Non-Agricultural	<del>\$2.11-2.23</del>	<del>\$919.12971.39</del>

2. Landscape irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.39-1.43</del>	0-40
Base	<del>\$2.362.47</del>	41-100
Inefficient	<del>\$5.255.27</del>	101-140
Wasteful	<del>\$9.209.27</del>	141+

Commodity Charges: Recycled Water System

1. Landscape irrigation

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.43</del> <u>\$1.39</u>	0-40
Base	<del>\$2.47</del> <u>\$2.36</u>	41-100
Inefficient	<del>\$5.27</del> <u>\$5.25</u>	101-140
Wasteful	<del>\$9.27</del> <u>\$9.20</u>	141+

2. Landscape irrigation recycled loan customers

Tier	Rate/ccf	Percent of Budget
Low Volume	<del>\$1.99</del> <u>\$1.75</u>	0-40
Base	<del>\$2.65</del> <u>\$2.52</u>	41-100
Inefficient	<del>\$6.55</del> <u>\$6.25</u>	101-140
Wasteful	<del>\$16.46</del> <u>\$15.49</u>	141+

3. Agricultural irrigation

Type	Rate/ccf	Per Acre Foot
Recycled	<del>\$2.09</del> <u>\$2.16</u>	<del>\$940.40</del> <u>\$940.90</u>

4. Commercial and industrial

Tier	Rate/ccf	Percent of Budget
Base	<del>\$1.39</del> <u>\$1.43</u>	0-100
Wasteful	<del>\$9.20</del> <u>\$9.27</u>	101+

5. Commercial and industrial loan customers

Tier	Rate/ccf	Percent of Budget
Base	<del>\$2.52</del> <u>\$2.65</u>	0-100
Wasteful	<del>\$15.49</del> <u>\$16.46</u>	101+

### Pumping Surcharges

A pumping surcharge will be added to the variable water usage charge for customers in locations that cause the District to incur additional pumping costs to supply their water. The surcharge is based upon prevailing energy costs and varies depending upon the cost to pump water to the area served.

1. Potable water pumping surcharges

Area Name	Surcharge/ccf
Area 1	\$0. <del>38</del> <sup>41</sup>
Area 2	\$0. <del>67</del> <sup>73</sup>
Area 3	\$0. <del>90</del> <sup>98</sup>
Area 4	\$ <del>1.72</del> <sup>1.88</sup>

2. Recycled water pumping surcharges

Area Name	Surcharge/ccf
Area 1	\$0. <del>23</del> <sup>25</sup>
Area 2	\$0. <del>37</del> <sup>40</sup>
Area 3	\$0. <del>53</del> <sup>58</sup>

## Temporary Water Service Connection

### 1. Monthly service charge

See Chart on page 4.

### 2. Commodity charge

Wherever feasible, recycled water shall be used for temporary construction uses. The Commodity Charge shall be as follows:

Potable	<del>\$3,253.08</del> /ccf
Recycled	<del>\$1,741.75</del> /ccf

### 3. Meter deposit

A deposit equal to the replacement cost of the construction meter shall be collected at the time of service application. The deposit will be applied to the closing bill and any remaining amount refunded to the customer. Lost meters will result in forfeiture of deposit.

Size	Cost
1", 1-1/2", 2" Disc	\$ 1,000.00
3" Turbo T2 & H2	1,900.00
4" Turbo	2,600.00
6" Turbo	4,680.00
8" Turbo	7,930.00
10" Turbo	11,750.00

### 4. Materials for repairing damaged construction meters

Item	Cost
Meter	Cost by size is shown in section 3 above
Swivel Hose Coupling-Female	\$ 240.00
Register With AMR & Pulse Wire	275.00
Swivel Adapter	158.00
Fire Hose Adapter 3" MIP x 2-1/2" MFH	42.00
Lock	15.00
H2 Hydrant Meter Handle	22.00
Fire Hydrant Meter Lock - LRG	122.00
Rotor and Shaft Assembly (3")	721.00
Barrel Lock	30.00
Male Fitting	95.00
Hydrant Collar	100.00
Rotor Cap	27.00
Collar (with barrel lock)	106.00
Labor & Overhead	120.00

### 5. High-lines for redevelopment

A high-line is a temporary service connection installed by the District to an existing customer during system upgrades or repairs to the District's system. Whenever feasible, high-lines will be metered and the customers will be billed at their regular rate. The District will determine whether a high-line should be metered.

If a high-line is unmetered, the customer will be charged using a reasonable average daily consumption based on prior consumption or based on other reasonable calculations in the absence of historical data.

**Water Shortage Contingency Plan (WSCP) Rates:**

The IRWD Board of Directors adopted an updated Water Shortage Contingency Plan (WSCP) in June 2021. The WSCP includes a “toolbox” of potential strategies for responding to each level of water shortage. The Board approved maximum water shortage water budget adjustments associated with levels of shortage at the October 26, 2021 Board meeting. Using WSCP as a guide and following Proposition 218’s requirements, rates were developed for each shortage level. These will be referred to as “WSCP rates” and have only been developed for the potable system commodity rates. They have no impact on the monthly fixed service water or sewer charges or on the recycled system.

The rates at each level are as follows.

<i>Tiers</i>	<i>WSCP Levels Commodity Rates</i>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
	Up to 10%	11-20%	21-30%	31-40%	41-50%	Over 51%
Low Volume	<del>\$1.76</del> <u>1.99</u>	<del>\$1.76</del> <u>2.00</u>	<del>\$1.77</del> <u>2.00</u>	<del>\$1.78</del> <u>2.01</u>	<del>\$1.79</del> <u>2.02</u>	<del>\$1.82</del> <u>2.05</u>
Base	<del>\$2.59</del> <u>2.72</u>	<del>\$2.69</del> <u>2.84</u>	<del>\$2.79</del> <u>2.94</u>	<del>\$2.95</del> <u>3.11</u>	<del>\$3.24</del> <u>3.41</u>	<del>\$3.64</del> <u>3.79</u>
Inefficient	<del>\$6.41</del> <u>6.66</u>	<del>\$6.68</del> <u>6.74</u>	<del>\$6.84</del> <u>6.82</u>	<del>\$6.92</del> <u>6.93</u>	<del>\$7.50</del> <u>7.43</u>	<del>\$8.49</del> <u>8.38</u>
Wasteful	<del>\$16.28</del> <u>17.25</u>	<del>\$17.07</del> <u>18.06</u>	<del>\$17.98</del> <u>18.97</u>	<del>\$19.09</del> <u>20.05</u>	<del>\$21.25</del> <u>22.18</u>	<del>\$24.30</del> <u>25.18</u>

If the Board of Directors elect to implement any of these WSCP rates, the commodity rates are expected to provide cost of service equity for the budgeted Board-approved operating variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level. Implementation of WSCP rates would require additional Board action.

Section 2: Sewer System

**Monthly Sewer Service Charge**

**1. Residential**

<b>(a) Single Family and Multi-family Dwelling Units</b>	
<u>AVERAGE MONTHLY WATER USE<sup>1, 2, 3, 4</sup></u>	<u>SEWAGE SERVICE CHARGE PER MONTH</u>
Over 1000 cubic feet ( > 10.0 ccf)	• 100% rate = \$ <del>33.24</del> <u>36.79</u> per unit
501-1000 cubic feet (5.01-10.0 ccf)	• 90% rate = \$ <del>28.78</del> <u>31.86</u> per unit
0-500 cubic feet (0.0-5.0 ccf)	• 75% rate = \$ <del>23.40</del> <u>25.70</u> per unit
<p>(1) Monthly sewage service charge based upon the average of the actual lowest three months' water usage during the prior calendar year. Charges are based on a 30 day billing period.</p> <p>(2) Customers with less than a full calendar year of history are charged the 90% rate.</p> <p>(3) No credit will be granted for vacancies resulting from the normal turnover of occupants in an existing multiple dwelling unit. The price structure contained herein includes considerations of average vacancy rates.</p> <p>(4) A newly constructed multiple dwelling unit may be billed at the non-residential metered rate, with appropriate allowance for landscape irrigation, until the structure is released for occupancy.</p>	
<u>SEWAGE SERVICE CHARGE PER MONTH</u>	
<b>(b) Collection Service Charge</b> (assumes 10.0 ccf)	\$ <del>40.95</del> <u>11.55</u> per unit
<b>(c) Treatment Service Charge</b> (assumes 10.0 ccf)	\$ <del>49.70</del> <u>20.50</u> per unit

**2. Non-Residential (Commercial, Industrial, and Institutional)**

<p>Quantity charges are based on the assumption that 90% of non-residential water consumption returns to the sewer. Because of landscape irrigation or consumptive usage, some non-residential users may discharge substantially less of their metered water into the sewer system. Those users may, upon request to the District, be permitted to have the amount of water being discharged into the sewer determined by means acceptable to the District. Upon request by the user and at the sole discretion of the District, an alternate service charge may be applied.</p>	
<p>To qualify for the sewage service charge only, a customer usage history cannot be greater than 120 ccf in a full calendar year based on actual meter readings. Usage exceeding 10.0 ccf per month will pay a quantity charge. During construction, prior to occupancy, these rates are applicable.</p>	<u>SEWAGE SERVICE /QUANTITY/COMMODITY CHARGE PER MONTH</u>
	<p>Sewage service charge \$ <del>33.24</del><u>36.79</u></p> <p>Quantity charge beyond 10.0 ccf \$ 3.0<u>7</u> /ccf</p>

## Other Sewer System Charges

This section shall be applicable to non-residential customers who discharge extra-strength sewage into the sewage collection system, or discharge or have the potential to discharge constituents subject to federal or state standards and local discharge limitations.

### 1. Alternative service charges

At the sole discretion of the District, users may request the application of an alternative service charge for use. The alternative service charge shall be based on measured quantity and quality of water being discharged to the sewer from the user's facility by a means acceptable to the District. The alternative service charge for use shall be computed by the following formula:

$$\text{Charge for use} = VR_v + BR_b + SR_s$$

Where V = Total volume of flow in hundred cubic feet.

B = Total discharge of biochemical oxygen demand (BOD) in pounds.

S = Total discharge of suspended solids (SS) in pounds

R<sub>v</sub> = \$ ~~2.077~~2.125 per hundred cubic feet

R<sub>b</sub> = \$ ~~0.495~~0.548 per pound of BOD

R<sub>s</sub> = \$ ~~0.434~~0.477 per pound of SS

### 2. Charges for noncompliance with permit conditions

#### a. Minor violation

Condition where the limitation is less than the violation and the violation is less than the technical review criterion.

Fee per violation - \$350

#### b. Significant noncompliance or significant violation

Condition where the violation is greater than the technical review criterion or qualifies under the definition of significant noncompliance.

Fee per violation - \$550

#### c. Batch dump or slug load

Fee per violation - \$550

#### d. Probation orders

Enforcement Compliance Schedule Agreements and subsequent two year probation, and Regulatory Compliance Schedule Agreements.

Fee per violation - \$550

#### e. Appeals to the Board of Directors

Appeal fee - \$500

5) FOG-related private lateral sewage discharge response fee

If District staff responds to a private lateral sewage discharge (PLSD) that after investigation by District staff is found to be FOG-related, the following fees shall be charged to the FSE, CW or LFP:

PLSD Response Fees During Working Hours

First Response Hour -	\$3,225.00
Each Additional Response Hour -	2,700.00 per hour

PLSD Response Fees After Working Hours

First Response Hour -	\$4,200.00
Each Additional Response Hour -	3,675.00 per hour

**4. Special purpose discharger service charges**

Special purpose discharge service fees apply to customers who have been required by the District to obtain a special purpose discharge permit issued jointly by the District and Orange County Sanitation District (OCSD). Sewage service charges will be based on reported and verified monthly flow to sewer.

Flow Service Charge: up to \$~~1,676.09~~1,754.41 per Million Gallons

**5. Discharge limits**

Discharge limits are included in Exhibit C of the Rules and Regulations.



Exhibit "C"

# IRVINE RANCH WATER DISTRICT

**2021 Cost of Service and Rate Design Study**

December 7, 2021



# Table of Contents

1.	EXECUTIVE SUMMARY .....	1
1.1.	STUDY OBJECTIVES.....	1
1.2.	STUDY METHODOLOGY .....	1
1.3.	REQUIREMENTS OF PROPOSITION 218 .....	2
1.4.	DISTRICT COMPLIANCE WITH PROPOSITION 218 .....	2
1.4.1.	Recommended Modifications to Sewer Rates .....	2
1.4.2.	Recommended Modifications to Private Fireline Rates .....	3
1.5.	POLICY OPTIONS CONSIDERED .....	3
2.	DISTRICT BACKGROUND .....	4
2.1.	HISTORY AND SERVICE TERRITORY .....	4
2.2.	BUDGETING AND RATE-SETTING PROCESS.....	4
2.3.	WATER SYSTEM DESCRIPTION .....	4
2.3.1.	Water Supply .....	4
2.3.2.	Groundwater .....	5
2.3.3.	Recycled Water.....	5
2.3.4.	Imported Water .....	5
2.3.5.	SURFACE WATER.....	5
2.3.6.	Water Banking .....	5
2.3.7.	Summary of Water Supplies.....	6
2.3.8.	Potable and Recycled Water Infrastructure .....	6
2.4.	SEWER SYSTEM DESCRIPTION .....	7
2.5.	SUMMARY OF DISTRICT INFRASTRUCTURE .....	7
3.	STUDY METHODOLOGY .....	9
4.	POTABLE WATER COST OF SERVICE.....	11
4.1.	WATER BUDGET RATE STRUCTURE.....	11
4.1.1.	Residential Water Budget Structure .....	11
4.1.2.	Single Family Residential Water Budget Calculation.....	12

4.1.3.	Single Family Residential Consumption Tiers.....	13
4.1.4.	Multi-Family Residential Consumption Tiers .....	15
4.1.5.	Water Budget Rate Structure for Landscape Customers .....	16
4.1.6.	Water Budget Rate Structure for Commercial Customers.....	17
4.2.	DISTRICT APPROACH TO COST RECOVERY .....	18
4.3.	FY 2020-21 WATER REVENUE REQUIREMENT .....	19
4.3.1.	Variable Cost Recovery - Commodity Rates .....	21
4.3.2.	Variable Cost Recovery - Agricultural Rates .....	24
4.3.3.	Fixed Cost Recovery - Monthly Meter Service Charges.....	24
4.3.4.	Monthly Private FireLine Charges .....	25
4.3.5.	Public Fire HYDRANT WATER SERVICE Costs .....	26
5.	SEWER COST OF SERVICE.....	27
5.1.	FY 2020-21 SEWER REVENUE REQUIREMENT .....	27
5.1.1.	Sewer Cost Recovery (Rate Design).....	28
6.	RECYCLED WATER COST OF SERVICE .....	31
6.1.1.	Recycled Water Budget Rate sTRUCTURE .....	31
6.1.2.	FY 2020-21 Recycled wATER Revenue Requirement.....	31
6.1.3.	Variable Cost Recovery - Commodity Rates .....	33
6.1.4.	Fixed Cost Recovery - Monthly Meter Service Charge.....	35
7.	POLICY OPTIONS .....	36
7.1.1.	Alternatives for Targeted Conservation Spending .....	36
7.1.2.	Alternatives for Capital Replacement Funding .....	37
7.1.3.	Alternative Water Residential Monthly Meter Service Charges.....	37
7.1.4.	Recovery of Pension & OPEB Costs .....	38

# List of Tables

Table 1: FY 2020 Groundwater Supply in Acre Feet.....	5
Table 2: Water Banking for the FY Ending on June 30, 2020 (Acre Feet) .....	6
Table 3: Water Supplies for the FY Ending on June 30, 2020 (Acre Feet) .....	6
Table 4: FY 2020 System Infrastructure.....	8
Table 5: FY 2020-21 Residential Water Budget Consumption Tiers.....	12
Table 6: Example Calculation of a Single Family Residential Monthly Water Budget .....	13
Table 7: Allocation Usage Between Consumption Tiers (based on a 12 ccf Budget).....	14
Table 8: Derivation of the 140% Inefficient Tier/Wasteful Tier Breakpoint .....	15
Table 9: Recommended Multi-Family Apartment Consumption Tiers .....	16
Table 10: FY 2020-21 Landscape Water Budget Rate Structure and Commodity Rates.....	17
Table 11: FY 2020-21 Commercial Water Budget Structure and Commodity Rates.....	17
Table 12: District Cost Allocation and Revenue Recovery Philosophy .....	18
Table 13: FY 2020-21 Potable Water Variable Cost Revenue Requirement.....	20
Table 14: FY 2020-21 Potable Water Fixed Cost Revenue Requirement.....	21
Table 15: Unit Cost of FY 2020-21 Water Supplies .....	22
Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs.....	22
Table 17: FY 2020-21 Conservation and Supply Reliability Unit Costs (\$/ccf).....	23
Table 18: FY 2020-21 Potable Water Commodity Rates (\$/ccf).....	23
Table 19: FY 2020-21 Agricultural Water Commodity Rates (\$/ccf).....	24
Table 20: FY 2020-21 Monthly Unit Cost of Serving a 5/8" Equivalent Meter .....	24
Table 21: FY 2020-21 Monthly Meter Service Charges.....	25
Table 22: Proposed FY 2020-21 Private Fireline Charges.....	25
Table 23: FY 2020-21 Sewer Variable Cost Revenue Requirement.....	27
Table 24: FY 2020-21 Sewer Fixed Cost Revenue Requirement .....	28
Table 25: FY 2020-21 Sewer Rate Structure and Rates.....	28
Table 26: FY 2020-21 Sewer Customer Accounts by Consumption Block.....	29
Table 27: FY 2020-21 Contributed Sewage Volumes.....	29
Table 28: FY 2020-21 Sewer Unit Cost of Service.....	29
Table 29: FY 2020-21 Sewer Discharges by Fixed Consumption Block .....	30
Table 30: FY 2020-21 Allocation of Sewer Fixed and Variable Costs .....	30
Table 31: FY 2020-21 Proposed Sewer Rates.....	30
Table 32: Raftelis Recommended FY 2020-21 Sewer Rates .....	31
Table 33: FY 2020-21 Landscape Water Budget Rate Structure and Commodity Rates.....	31
Table 34: FY 2020-21 Recycled Water Variable Cost Revenue Requirement .....	32
Table 35: FY 2020-21 Recycled Water Fixed Cost Revenue Requirement.....	33
Table 36: Unit Cost of FY 2020-21 Recycled Water Supplies .....	33
Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers ....	34
Table 38: FY 2020-21 Conservation Unit Costs (\$/ccf).....	35
Table 39: FY 2020-21 Recycled Water Commodity Rates (\$/ccf) .....	35
Table 40: Commodity Rate Impacts of Recovering Recycled Costs Through Potable Rates .....	36
Table 41: Impact of Recovering \$300K in Capital Replacement Expenditures via Commodity Rates ...	37
Table 42: Single Family Residential Monthly Meter Service Charge Consolidation.....	38
Table 43: Recommended Recovery of Pension and OPEB Costs .....	39

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# 1. Executive Summary

## 1.1. Study Objectives

The Irvine Ranch Water District (District) retained the services of Raftelis Financial Consultants, Inc. (Raftelis) to conduct a Cost of Service and Rate Design Study (Study). The overarching objective of the Study was to conduct a comprehensive review of the methods used by the District to develop the rates it charges for water, sewer, and recycled water service in order to confirm compliance with Proposition 218 and other applicable legal requirements.

A synopsis of the Study objectives, as presented to the Finance and Personnel Committee of District's Board of Directors (Board) in October 2020, included determining if the rates set by the District are:

- Consistent with Proposition 218 and applicable law.
- Cost of service based and set at a level that provides adequate funding to meet the District's revenue requirement.
- Equitable, reasonable, not discriminatory, or preferential, and proportionally allocate the cost of providing service to customer classes.
- Tiered to reflect the higher cost of water that exceeds budget.
- Appropriately using fixed and variable charges to recover costs and anticipated replacement costs for future infrastructure.
- Easy to understand and administer.

Raftelis completed the Study during the period June 2020 - December 2020. As requested by the District staff, the work focused on confirming the validity of the fiscal year (FY) 2020-21 water, sewer and recycled water rates presented in the District's Proposition 218 Notice for the two-year period FY 2019-20 and FY 2020-21.

The District deferred implementation of the increase originally noticed for FY 2020-21 rates to be effective on July 1, 2020. Instead, due to concerns regarding the impact of the COVID-19 pandemic to its customers, the District kept its existing rates for FY 2019-20 in place. Although they were deferred, for the purposes of this Study the FY 2020-21 rates provided an effective baseline to assess the District's compliance with the requirements of Proposition 218.

## 1.2. Study Methodology

The following four-stage process was used to complete the Study objectives. A more detailed discussion of the Study methodology is presented in Section 3 of this Report.

- Stage 1: Understanding/analysis of the District's current approach to developing rates:
  - Analysis of underlying customer billing data.
  - Understanding of cost allocation and rate design methodologies.
  - Detailed review and analysis.
- Stage 2: Identification of recommended changes to cost allocation and/or rate design methodologies:
  - Recommendations for incremental enhancements to the District's water budget rate structure.
  - Recommendation for specific cost allocation and rate structure changes associated with sewer and private fireline rates.
  - Recommendations of alternatives to the District's rate structure and cost recovery approaches for future policy consideration.

- Stage 3: Testing the rate and customer bill impacts of the recommendations.
- Stage 4: Presentation of the recommendations.

### 1.3. Requirements of Proposition 218

The overarching objective of the Study was to assess whether the District’s noticed FY 2020-21 rates are compliant with California Proposition 218. Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements for fairness of the fees, as they relate to public water service, are as follows:

- A property-related charge (such as water rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property-related service.
- Revenues derived by the charge shall not be used for any purpose other than that for which the charge was imposed.
- The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
- No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
- No charge may be imposed for general governmental services including, police, fire, and ambulance protection services, or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.
- A written notice of the proposed charge shall be mailed to the record owner of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

As stated in AWWA’s Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1, 7th edition (M1 Manual), “water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” Proposition 218 requires that rates cannot be arbitrary and capricious, meaning that the rate-setting methodology must be sound and that there must be a nexus between the costs of providing property-related service and the rates charged. This study follows industry standard rate-setting methodologies set forth by the M1 Manual, adhering to Proposition 218 requirements by developing rates that do not exceed the proportionate cost of providing water services.

### 1.4. District Compliance with Proposition 218

The study confirmed that the District’s water, sewer, and recycled water rate structures are compliant with the requirements of Proposition 218 in that each rate structure is designed to recover revenues from customers that are no greater than the cost incurred to provide service. This general conclusion notwithstanding, Proposition 218 does not prescribe exactly how to allocate costs among customers, and this study identifies additional modifications to the calculations used to determine the District’s sewer and private fireline rates that could further enhance the current alignment between revenue recovery and evolving costs.

#### 1.4.1. RECOMMENDED MODIFICATIONS TO SEWER RATES

No change is recommended for the District’s existing sewer rate structure. However, proposed modifications to the methodology used to generate the rates noticed for FY 2020-21 by the District could further enhance the alignment of evolving fixed and variable costs to rates between customers based on the volume of their estimated average sewer discharges. A more detailed discussion of sewer rates is presented in Section 5 of this report.



### **1.4.2. RECOMMENDED MODIFICATIONS TO PRIVATE FIRELINE RATES**

The District currently collects approximately \$4.4 million annually from customers who have their own private firelines. The current private fireline rates charged by the District have remained steady since 2007. As costs to provide water service, including to private firelines, continue to evolve, an updated methodology to develop private fireline rates is recommended to further enhance the alignment of costs to rates for private fire line customers. A discussion of fire line rates is presented in Section 4.3.4 of this report.

## **1.5. Policy Options Considered**

In addition to considering the District's compliance with Proposition 218, the following policy questions were also considered. A full discussion of these policy items is presented in Section 7 of this report.

- Alternatives for targeted water conservation spending.
- Alternatives for capital replacement funding.
- Alternative water monthly meter service charges for residential customers.
- Recovery of pension and other post-employment benefit costs.

## 2. DISTRICT BACKGROUND

### 2.1. HISTORY AND SERVICE TERRITORY

The District was established in 1961 as a California Water District under the provisions of the California Water Code. The District is an independent public agency governed by a five-member, publicly-elected Board of Directors whose members are elected for staggered four-year terms. The Board's policies are administered by the General Manager. As a special district, the District focuses on four primary services:

- Providing potable water.
- Collecting and treating sewage.
- Producing and distributing recycled water.
- Implementing urban runoff source control and treatment programs.

The District serves a 181-square-mile area that includes all of the City of Irvine and portions of the cities of Tustin, Newport Beach, Costa Mesa, Orange, and Lake Forest, as well as certain unincorporated areas of Orange County. Extending from the Pacific Coast to the foothills of Eastern Orange County, the region served by the District is semi-arid with a mild climate and an average annual rainfall of approximately 12 inches. The total estimated daytime population served is approximately 600,000 people through approximately 118,000 water and 113,000 sewer service and recycled water connections. The number of service connections has increased by 21% over the last 10 years.

The District builds and maintains capital infrastructure to serve customers. It is organized into improvement districts to allocate funding responsibility for capital facilities to the area that will benefit from such capital facilities and to separate areas based on the projected timing of development. Expenditures for growth-related capital improvements are funded by the District via ad valorem taxes (property taxes) and connection fees that are collected from the developers and property owners. Expenditures for the replacement and repair of capital facilities are funded by the rates paid by customers.

### 2.2. BUDGETING AND RATE-SETTING PROCESS

The District adopts operating expense and capital expenditure budgets on a biennial basis. The budgets for FY 2019-20 and FY 2020-21 were adopted by the District on April 22, 2019. As an outcome of the biennial budgeting process, the District determines the water, sewer, and recycled water rates that must be paid by customers for the upcoming two-year period. In May 2019, the District issued Proposition 218 notices with rates noticed to become effective on July 1, 2019 and July 1, 2020, respectively.

The District elected to defer the noticed FY 2020-21 rates that were to be effective on July 1, 2020 due to concerns regarding the financial impact of the COVID-19 pandemic on its customers. Although they were not implemented, for the purposes of this Study, the FY 2020-21 rates provided an effective baseline to assess the District's compliance with the requirements of Proposition 218.

### 2.3. WATER SYSTEM DESCRIPTION

#### 2.3.1. WATER SUPPLY

The District's water supply consists of three primary sources: groundwater originating in the Orange County Groundwater Basin via arrangements with the Orange County Water District (OCWD), recycled water produced from sewer treatment plant effluent, and imported water purchased from the Metropolitan Water District of

Southern California (MWD) through its member agency, the Metropolitan Water District of Orange County (MWDOC). In addition, The District uses surface water (runoff capture) from Irvine Lake (Santiago Creek Reservoir) as a source of untreated water. The District also has an active water banking program to store low-cost water during wet hydrological periods in order to ensure reliable supplies during dry years.

### 2.3.2. GROUNDWATER

The District's groundwater supplies are obtained from the Orange County Groundwater Basin in accordance with the policies and procedures set by the OCWD. These include the setting of replenishment assessments, basin production percentages of total water demand by agencies pumping basin groundwater, and basin equity assessments. The District also has separate contractual arrangements with OCWD to pump groundwater that is not specifically governed by OCWD's basin production percentages and equity assessments. The primary sources are the Dyer Road Well Field (up to 28,000 acre feet per year), Deep Aquifer Treatment System, and Irvine Desalter Potable Water. The District's sources of groundwater supply for the fiscal year ending June 30, 2020 are shown in Table 1.

**Table 1: FY 2020 Groundwater Supply in Acre Feet**

Groundwater Source	Acre Feet
Dyer Road Well Field	28,000
Deep Aquifer Treatment System	8,489
Irvine Desalter Project	7,054
Wells 21 and 22	2,279
Other	1,988
<b>Total</b>	<b>47,810</b>

### 2.3.3. RECYCLED WATER

The District processes and treats sewer effluent from customers to create recycled water supplies. During the fiscal year ending on June 30, 2020, the District supplied 31,119 acre feet of recycled water and 1,009 acre feet of other non-potable water to customers via its recycled water system. The District has approximately 5,400 recycled water customers who are served via 570 miles of recycled water mains. The District also has approximately 5,250 acre feet of recycled water storage.

### 2.3.4. IMPORTED WATER

The District purchases treated and untreated water from the MWD through its member agency, MWDOC. These supplies originate in the Colorado River and Northern California. During the fiscal year ending June 30, 2020, the District purchased 12,081 treated and 921 untreated acre feet of water from MWDOC.

### 2.3.5. SURFACE WATER

Native water is rainwater that is captured by Irvine Lake (Santiago Creek Reservoir) and is used by both the District and Serrano Water District to store water for the benefit of local farms and urban areas. As a source, native water is dependent upon rain. When available, the District utilizes this water for non-drinking purposes, such as agricultural irrigation, and as a source of water to be treated by the Baker Water Treatment Plant, which creates drinking water for the surrounding community. During the fiscal year ending June 30, 2020, Irvine Lake supplied the District with 6,524 acre feet of water.

### 2.3.6. WATER BANKING

In addition to developing groundwater and recycled water systems (discussed below), the District has also sought to enhance its water supply reliability by developing water banking facilities in Kern County, California. These projects allow the District to capture and store low-cost water during wet hydrological periods for use during later dry years. In March 2020, IRWD completed a Water Supply Reliability Evaluation that affirmed the need for

water banking programs to meet District demands during future droughts and major supply interruptions. Current demand projections indicate that IRWD has a long-term need to store supplemental water that could be called upon during drought conditions or major supply interruptions. IRWD has constructed a fully operational water banking program that makes it possible for IRWD and its banking partners to store excess water during “wet” hydrologic periods. The stored water is then available for use during “dry” periods to offset reduced water supplies under periods of severe drought or during periods of supply interruptions for imported water demands on the system from customers in the wasteful tier. Table 2 provides a summary of the District's water banking storage for the fiscal year ending on June 30, 2020.

**Table 2: Water Banking for the FY Ending on June 30, 2020 (Acre Feet)**

Facility	Total Capacity	Total Water in Storage	District Share of Total Water in Storage
Strand Ranch	50,000	37,460	34,492
Stockdale West	26,000	1,459	1,459
District Acquired Storage Account	50,000		
Kern	9,495	4,215	4,215
<b>Total</b>	<b>135,495</b>	<b>43,134</b>	<b>40,166</b>

### 2.3.7. SUMMARY OF WATER SUPPLIES

During the fiscal year ending June 30, 2020, the District had total water supply deliveries of 91,963 acre feet. Table 3 details these supplies.

**Table 3: Water Supplies for the FY Ending on June 30, 2020 (Acre Feet)**

Source of Supply	Acre Feet
Local Groundwater	47,810
Recycled Water	24,627
Imported Water	13,002
Runoff Capture (surface water)	6,524
<b>Total</b>	<b>91,963</b>

### 2.3.8. POTABLE AND RECYCLED WATER INFRASTRUCTURE

The District has approximately 2,525 miles of water mains in its potable and recycled water systems and storage capacity of approximately 24,000 acre feet, including the District's share of Irvine Lake, a 25,000 acre feet untreated water reservoir, and the District's Sand Canyon, Rattlesnake Canyon, Syphon, and San Joaquin Reservoirs, which are recycled water reservoirs with capacities of 800 acre feet, 1,100 acre feet, 450 acre feet, and 2,900 acre feet respectively. The District's groundwater and treatment facilities include:

**Dyer Road Well Field:** The Dyer Road Well Field (DRWF) produces groundwater from the principal aquifer of the Orange County Groundwater Basin. Generally, the water quality exceeds potable water quality standards and does not require treatment other than chlorination. The Dyer Road Well Field has a capacity of producing up to 28,000 acre feet per year.

**Deep Aquifer Treatment System:** The Deep Aquifer Treatment System (DATS) purifies drinking water from deep within the Orange County Groundwater Basin. The process removes impurities left from ancient vegetation in the bedrock and produces 24.5 acre feet of drinking water per day.

**Irvine Desalter Project:** The Irvine Desalter Project (IDP) consists of five wells located near the I-5 Freeway in Irvine in the Orange County Groundwater Basin. Salty water is pumped from these wells and sent to the IDP treatment facility. The treatment process removes salts from local groundwater. IDP's purified water provides approximately 5,100 acre feet or 1.6 billion gallons of drinking water per year, enough for 50,000 people.

**Wells 21 and 22 Project:** The Wells 21 and 22 Project recovers and treats local impaired groundwater for use in the District's potable water system. The Wells 21 and 22 Project can produce approximately 6,300 acre feet per year of potable water for the District's service area.

**El Toro Groundwater Remediation Program:** The El Toro Groundwater Remediation Program was initiated in 1985. Trichloroethylene, also known as TCE, was found in portions of the groundwater basin beneath the former El Toro Marine Corps Air Station and central Irvine. TCE is a volatile organic compound, or VOC, that was widely used as a solvent for aircraft cleaning. As a result, a one-by-three-mile plume of contamination now extends off the base. The contamination is about 150 feet deep beneath the base and 300-700 feet deep in the community area. In January 2007, the District, the OCWD, and the United States Department of the Navy began a joint operation, now called the El Toro Groundwater Remediation Program, designed to clean up the TCE plume. This operation pumps water from the plume and removes the TCE. The resulting treated water is used for non-drinking purposes only. Each year this program provides 3,990 acre feet of clean water, enough to irrigate 1,300 acres of landscaping.

**Baker Water Treatment Plant:** The Baker Water Treatment Plant is a joint regional project owned by five South Orange County water districts that provides 28.1 million gallons per day (mgd) of drinking water, which is equivalent to approximately 63,000 single family residential dwelling units. The District's share of this capacity is 24.2% or 20.9 acre feet per day.

**Michelson Water Recycling Plant:** The Michelson Water Recycling Plant with a capacity of 28 mgd, converts millions of gallons of sewage into recycled water each day. The recycled water is used for landscape irrigation, industrial uses, and toilet flushing. The plant was built in 1961, produces 21,000 acre feet, and is the District's primary source of recycled water.

**Los Alisos Water Recycling Plant.** The Los Alisos Water Recycling Plant treats an average of seven mgd and, based on demand, produces at least 2,000 acre feet of recycled water per year. The recycled water is used for landscape irrigation and other non-drinking uses. The plant was built in 1964 and, along with the Michelson Water Recycling Plant, provides the District's recycled water supply.

## 2.4. SEWER SYSTEM DESCRIPTION

The District has an extensive network of gravity sewers, force mains, and sewer lift stations that convey sewage to two District-owned treatment locations and the Orange County Sanitation District (OCSD). In FY 2019-20, approximately 84% of the District's sewage was treated at its Michelson and Los Alisos Water Recycling Plants. The remainder of the sewage collected by the District was treated by the OCSD. As noted previously in the discussion of recycled water, both the Michelson and the Los Alisos Water Recycling Plants produce significant volumes of recycled water in addition to treating sewage.

## 2.5. SUMMARY OF DISTRICT INFRASTRUCTURE

Table 4 below provides a summary of the District's potable water, sewer, and recycled/non-potable water systems as of the fiscal year ending on June 30, 2020.

**Table 4: FY 2020 System Infrastructure**

Potable Water System	
Miles of Water Line	1,955
Number of Storage Tanks	37
Maximum Storage Capacity (acre feet)	467
Number of Pumping Stations	39
Number of Wells	27
Well Production Capacity (cubic feet per second)	118
Water Banking Storage Capacity (acre feet)	126,000
Potable Treatment Plants	5
Recycled and Non-Potable Water Systems	
Miles of Recycled Line	570
Number of Storage Tanks	12
Number of Open Reservoirs	5
Maximum Storage Capacity (acre feet)	24,155
Number of Pumping Plants	19
Number of Wells	5
Well Production Capacity (cubic feet per second)	10
Sewer System	
Miles of Sewer Line	1,143
Number of Lift Stations	13
Treatment Plants	2
Tertiary Treatment Capacity (millions of gallons per day)	33.5
Sewage Flows to Michelson Plant	72%
Sewage Flows to Los Alisos Plant	12%
Sewage Flows to Orange County Sanitation District	16%

### 3. STUDY METHODOLOGY

A four-stage methodology was used to complete the Study objectives. A summary of the work process in each of these stages is presented below.

**Stage 1: Understanding/Analysis of the Current Approach to Developing Rates.** This stage consisted of understanding and analyzing the District's current approach to develop water, sewer, and recycled water rates. Stage 1 included the following primary analytical steps:

- **Analysis of Underlying Customer Billing Data.** The analysis used District-provided billing data from the customer information system (i.e., billing system) for FY 2018-19 and FY 2019-20. The billing data was configured in a Microsoft Excel format in order to analyze the water consumption characteristics of the District's residential customers, assess the appropriateness of monthly water budgets established for residential water customers in each consumption tier, and verify that actual rate revenue recovery approximately aligned with the District's underlying projected rate revenue requirements.
- **Understanding of Cost Allocation and Rate Design Methodologies.** In this step, a preliminary understanding of the District's approach to the development of water, sewer, and recycled water rates was gained. For example, the composition of the District's FY 2020-21 revenue requirement was reviewed with an emphasis on understanding how the District determines "fixed costs" that are appropriate for recovery through monthly charges versus "variable costs" that are appropriate for recovery through usage-based commodity rates. As part of this process, emphasis was placed on understanding the underlying cost-of-service rationale for the variable commodity rates charged in each tier of the District's water budget rate structure and fixed monthly charges in each block of the District's sewer rate structure.
- **Detailed Review of the Cost Allocations and Rate Design Methodologies.** In this step, a detailed review of the cost allocations used to develop the District's FY 2020-21 water, sewer, and recycled water rates as presented in its Proposition 218 Notice for the two-year period FY 2019-20 and FY 2020-21 was completed (as noted previously, the District's Board elected to defer the noticed FY 2020-21 rates). This included an audit and, as appropriate, development of potential adjustments to the cost allocation and rate design methodologies contained in the District's cost of service model.

**Stage 2: Identification of Recommended Changes to Cost Allocation and/or Rate Design Methodologies.** In Stage 2, conclusions were drawn regarding the District's compliance with Proposition 218 and a set of recommendations for consideration by the District's Board was developed. Recognizing that Proposition 218 does not detail exactly how to allocate costs, the focus in developing these recommendations was to ensure that the District's rates have a clearly identifiable correlation to underlying costs, and thus be compliant with Proposition 218 and fundamental cost-of-service equity. The resulting recommendations fell into three categories:

- Incremental enhancements to the District's water budget rate structure.
- Policy considerations for the District's future rate structure on cost recovery.
- Specific cost allocation and rate structure changes associated with sewer and private fire line rates.

**Stage 3: Testing of the Rate Impacts and Customer Bill Impacts of the Raftelis Recommendations.** For each of the specific recommendations made in Stage 2, estimates of how FY 2020-21 rates would change from those originally noticed by the District were developed and the potential impact of these rate changes on the bills of single family residential customers were determined. As part of this rate sensitivity process, bill impacts for a typical single family residential customer were estimated for each incremental recommendation and on an aggregate basis, which reflected the cumulative impact of all of the recommendations.



**Stage 4: Presentation of the Recommendations.** In this final stage of the Study, findings and recommendations were presented to the Finance and Personnel Committee on October 5, 2020, December 8, 2020 and March 2, 2021.



## 4. POTABLE WATER COST OF SERVICE

### 4.1. Water Budget Rate Structure

Proposition 218 specifies general principles governing property-related fees but does not prescribe exactly how to structure water service rates. As a result, water utilities have a wide range of options for recovering fixed and variable costs of providing service. For example, water utilities have a variety of options for the recovery of variable costs via commodity rates. Some utilities employ a simple uniform rate structure featuring a single commodity rate assessed on all customers regardless of their actual volume of usage. Other utilities develop specific commodity rates for each clearly definable customer class that use an inclining tier rate structure with specific fixed consumption tiers. Depending on the unique characteristics of the utility in question, the commodity rates charged under these and other rate-structure options can be cost-based and therefore compliant with requirements of Proposition 218.

The District uses a "budget-based" rate structure to recover the variable costs of providing potable and recycled water service to customers. Under this approach, a customized monthly budget (i.e., monthly water usage allocation) is developed for each customer. The commodity rates charged by the District in each consumption tier are designed to:

- Reflect and recover the increased cost of meeting consumption demands within each tier.
- Fund demand reduction and reliability programs.
- Mitigate for costs arising from customers' wasteful use that causes urban runoff requiring treatment by the Natural Treatment System (NTS).

#### 4.1.1. RESIDENTIAL WATER BUDGET STRUCTURE

The District recovers the annual variable cost of providing water service to residential customers through a water budget-based rate structure that features four consumption tiers. The amount of water included in each customer's monthly water budget is based on an assessment of efficient water use as determined by factors that include:

- Household occupancy per housing type (based on census data).
- Irrigated landscape area.
- Daily weather characteristics during each month of the year.
- Unique characteristics such as the presence of a pool, medical needs, or livestock.

The commodity rates (\$/ccf) paid in each consumption tier are designed to recover the District's variable cost of producing/purchasing water supplies. Customers with water usage that stays within their monthly budget allocation (the low volume and base tiers) pay commodity rates that reflect the lowest-cost sources of water supply. Customers with water usage in excess of their monthly budget allocation (the inefficient and wasteful tiers) pay commodity rates that reflect the District's higher-cost sources of water, such as potable imported water purchased from MWDOC.

Customers in the inefficient and wasteful tiers who exceed their monthly budget allocation impose higher costs on the District to meet their excess water demand. Thus, the commodity rates charged in these two upper tiers are designed to recover the cost of more expensive water supplies and to recover the additional costs of:

- Targeted conservation programs designed to reduce water use among customers in the wasteful tier.
- Water banking operational costs to enhance water supply reliability to supplement imported water supply to meet demand from customers in the wasteful tier.
- Programs designed to achieve long-term improvements in water use efficiency for customers in the inefficient and wasteful tiers.

- Natural treatment system programs used to control urban runoff sources (e.g., overspray and overwatering from landscape irrigation) due to customers who use water in the inefficient and wasteful tiers.

Table 5 shows the District's residential water budget consumption tiers and noticed FY 2020-21 commodity rates for residential customers.

**Table 5: FY 2020-21 Residential Water Budget Consumption Tiers**

Usage Tier	Single Family Residential (includes Condos)	Multi-Family Residential (Apartments)	FY 2020-21 Rates (\$/ccf) (Noticed but Not Implemented)
Tier 1: Low Volume	0 - 40% of budget	0 - 50% of budget	\$1.54
Tier 2: Base	41 - 100% of budget	51 - 100% of budget	\$2.12
Tier 3: Inefficient	101 - 140% of budget	101 - 120% of budget	\$4.91
Tier 4: Wasteful	141% + of budget	121% + of budget	\$13.65

### 4.1.2. SINGLE FAMILY RESIDENTIAL WATER BUDGET CALCULATION

The monthly water budget developed for each individual customer features an indoor usage component and an outdoor usage component. The sum of these two components reflects the District's determination of efficient monthly water usage based on the unique requirements of each customer. As shown in Table 5 above, 40% to 50% of a customer's total monthly budget is billed at the lowest commodity rate in the low volume tier. The remaining portion of a customer's total monthly budget is billed in the base tier. Usage above a customer's total water budget is billed in the inefficient and wasteful tiers at the highest commodity rates.

The general formula used to determine a customer's indoor water budget is shown below. The approach used by the District is a reasonable method for quantifying efficient indoor water usage and no modifications are recommended.

**Single Family Residential Indoor Budget (ccf) =**  
*Persons per Household (1) \* 50 gallons per person (2) \* Days in the Billing Cycle ÷ 748 Conversion Factor (3)*

(1) The default assumption used is four persons per household. Customers can request a variance to adjust this factor.  
 (2) 748 is a factor to convert gallons to one hundred cubic feet (ccf).  
 (3) Although Water Code section 10609.4 sets a current State of California standard at 55 gallons per person per day, the state standard is slated to decrease to 52.5 gallons per person per day in 2025 and to 50 gallons per person per day in 2030. The typical District customer uses approximately 50 gallons per person per day.

The fundamental metric used in the District's calculation of efficient outdoor water usage is the evapotranspiration (ET) rate of landscape plants. Evapotranspiration is the process by which water is lost to the atmosphere through evaporation and transpiration. ET rates are measured at three monitoring stations located throughout the District's service territory. Having established the ET rate for each day of the monthly billing cycle based on actual weather conditions, the District applies an adjustment factor. The District's ET Adjustment Factor (ETAF) of 0.75 is based on the typical residential landscape plant mix and the efficiency of a typical residential irrigation system. Typical residential landscapes in IRWD's service area are primarily turf (approximately 60% of the landscape) usually with borders or other landscape features that can include trees, shrubs and other plants (approximately 40%). Different plants have different watering requirements, called plant factors, which can be quantified compared to a reference crop such as cool-season turf, which requires 100% of ET. Warm season grass has a plant factor of 0.65, or requires 65% of ET, and drought tolerant and lower water use plants are assumed to have a plant factor of 0.5, or 50% of ET. A weighted average, based on 60% warm-season grass and 40% drought tolerant plants results in an average plant factor of 0.6. The irrigation system is assumed to be 80% efficient, or 0.8. ETAF = Plant Factor/Irrigation Efficiency. Dividing the plant factor by the irrigation efficiency (0.6/0.8) = 0.75. This can also

be calculated as follows using Plant Factor = 0.6 and Irrigation Efficiency = 1/0.8 = 1.25. Therefore, ETAF = 0.6 x 1.25 = 0.75.

A simplified representation of the general formula used to determine a customer's outdoor water budget is shown below. The approach used to quantify efficient outdoor water usage is based on horticultural science, is reasonable, and no modifications are recommended.

**Single Family Residential Outdoor Budget (ccf) =**  
*Irrigated Landscape Area (1) \* Evapotranspiration (ET) Rate (2) \* 0.75 ET Adjustment Factor (3) \* 36.3 Conversion Factor (4)*

(1) Area measured in acres.  
 (2) Evapotranspiration rate during each day of the monthly billing cycle based on actual temperature, humidity, and other factors.  
 (3) Adjustment factor assuming 60% efficient warm season turf, 40% drought tolerant plants and 20% irrigation system inefficiency.  
 (4) 36.3 is a factor to convert acre-inches of water to one hundred cubic feet (ccf).

The typical single family residential customer served by the District has an average monthly usage of 12 ccf. Table 6 provides an example of the calculation of the indoor, outdoor, and total monthly water budgets for this average customer.

**Table 6: Example Calculation of a Single Family Residential Monthly Water Budget**

Example Monthly Water Budget Calculation for an Average Single Family Residential Customer (Default Household Occupancy of 4 persons and 0.3 acres of Irrigated Landscape)		
<b>Line</b>	<b>Indoor Water Budget Calculation</b>	
1	Default Persons per Household	4.0
2	Required Gallons per Person per Day	50.0
3	Days in Billing Cycle	30
4	Monthly Indoor Water Budget (gallons)	6,000 (Lines 1 * 2 * 3)
5	Monthly Indoor Water Budget (ccf)	8.0 (Line 4 / 748 Conversion Factor)
	<b>Outdoor Water Budget Calculation</b>	
6	Average Daily ET Rate During the Billing Cycle Based on Measured Temperature, Humidity and other factors (Inches)	0.136986
7	Adjustment for 60% warm season turf & 40% drought tolerant landscaping	0.6
8	Adjustment for Irrigation System Efficiency	0.8
9	ET Adjustment Factor	0.75 (Line 6 / Line 8)
10	Adjusted Daily ET Rate	0.10274 (Line 6 * Line 9)
11	Customer Irrigated Landscape Area (acres)	0.03
12	Required Inches of Water per Acre	0.003082 (Line 10 * Line 11)
13	Days in Billing Cycle	30.0
14	Required Inches per Acre	0.092466 (Line 12 * Line 13)
15	Monthly Outdoor Water Budget (ccf)	3.4 (Line 14 * 36.3 Conversion Factor)
	<b>Total Water Budget</b>	
16	Total Monthly Water Budget Before Rounding (ccf)	11.4 (Line 5 + Line 15)
17	Total Monthly Water Budget Used in Customer Billing (ccf)	12.0

### 4.1.3. SINGLE FAMILY RESIDENTIAL CONSUMPTION TIERS

Water utilities that employ inclining tier rate structures develop their tiers based on the cost of the amount of water allocated for use in each consumption tier. For example, tier 1 (the lowest commodity rate) may be defined as the

winter water usage of an average single family residential customer, which typically represents interior water use because exterior irrigation needs normally are minimal during the typical winter wet season. Tier 2 may reflect the addition of estimated outdoor watering needs for single family residential customers with an average size lot. Finally, tier 3 represents additional demands from 100% warm season turf for a customer with an average sized lot and tier 4 (the highest commodity rate) may be defined as any amount of usage in excess of tier 3.

The District takes a more sophisticated approach to developing cost-justified consumption tiers. Instead of using "one-size-fits-all" fixed consumption tiers, the District calculates custom, individualized water budgets that fairly allocate the lower-cost and higher-cost components of the District's water supply across a broad spectrum of customer types. To ensure equity in the bills paid by customers, a common definition of the usage allowed in each tier is expressed on a percentage rather than a specific fixed level of consumption.

The example in Table 6 above showed the calculation of a 12 ccf monthly water budget for a hypothetical single family residential customer. Table 7 shows how this single family residential customer would be billed under the water budget tier structure if their actual water usage equaled 18 ccf and no variance was submitted.

**Table 7: Allocation Usage Between Consumption Tiers (based on a 12 ccf Budget)**

Usage Tier	Single Family Residential Consumption Tiers	Amount Billed in Each Tier Based on Usage of 18 ccf
Tier 1: Low Volume	0 - 40% of budget	5 ccf = 12 ccf total budget * 40%
Tier 2: Base	41 - 100% of budget	7 ccf = 12 ccf total budget * 60%
Tier 3: Inefficient	101 - 140% of budget	5 ccf = 12 ccf total budget * 140%
Tier 4: Wasteful	141% + of budget	1 ccf = 18 ccf actual usage - 17 ccf allocated in Tiers 1 - 3

**40% Breakpoint Between the Low Volume and Base Tiers:** The District's current basis for the 40% tier breakpoint assumes a health and safety level of use of 30 gallons per person per day with no allocation for outdoor irrigation. The breakpoint definition has been modified to represent an allocation for both indoor and outdoor demands that provides for health and safety and is fair and equitable. The District has now defined the 40% breakpoint between the low volume and base tiers as follows:

"The low volume tier, which reflects usage between 0 - 40% of each customer's total monthly water budget, is designed to provide all customers, with an amount of indoor water usage equivalent to 20 gallons per person per day in order to meet minimum health and safety requirements plus an amount of water for outdoor irrigation adequate to sustain outdoor landscaping, regardless of the size of a customer's irrigated landscaped area."

The 40% breakpoint is appropriate because it ensures that all single family residential customers, regardless of the irrigated area, receive an allocation of the lowest cost water that is adequate to sustain their basic indoor and outdoor usage requirements.

**100% Breakpoint Between the Base and Inefficient Tiers:** Under the District's water budget rate structure, 100% of a customer's total monthly water budget is allocated to the low volume and base tiers. Thus, usage in excess of the base tier is, by definition, associated with a 100% breakpoint.

**140% Breakpoint Between the Inefficient and Wasteful Tiers:** The 140% breakpoint between the inefficient and wasteful tiers is based on the customer exceeding a 40% factor that accounts for a combination of leaks and

inefficient irrigation and/or devices. Table 8 illustrates this calculation. The 40% is an average derived from various end-use studies on residential water use.<sup>1</sup> No changes are recommended to this approach.

**Table 8: Derivation of the 140% Inefficient Tier/Wasteful Tier Breakpoint**

Single Family Residential - Default Household Occupancy of 4 persons and 0.3 acres of Irrigated Landscaping Water Budget		
Water Budget Metric	Efficient Use	Inefficient Use
Indoor Water Use	8.29	11.49
Outdoor Water Use	3.68	5.15
Total Monthly Water Use Before Rounding (ccf)	11.97	16.64
Total Monthly Water Budget Used in Customer Billing (ccf)	12.0	17.0
Ratio of Efficient to Inefficient Before Rounding		139%
Ratio of Efficient to Inefficient After Rounding		140%

#### 4.1.4. MULTI-FAMILY RESIDENTIAL CONSUMPTION TIERS

Similar to the single family, the breakpoint definition represents an allocation for both indoor and outdoor demands that provides for health and safety and is fair and equitable. The District has now defined the 40% breakpoint between the low volume and base tiers as follows:

"The low volume tier, which reflects usage between 0 - 40% of each customer's total monthly water budget, is designed to provide all customers with an amount of indoor water usage equivalent to 20 gallons per person per day in order to meet minimum health and safety requirements plus an amount of water for outdoor irrigation, as applicable, adequate to sustain outdoor landscaping, regardless of the size of a customer's irrigated landscaped area."

The 40% breakpoint is appropriate because it ensures that all residential customers, regardless of the irrigated area, receive an allocation of the lowest cost water that is adequate to sustain their basic usage requirements.

##### Multi-Family Condominiums

When calculating water budgets for multi-family condominiums (condo), the District assumes a default occupancy of 3 persons per household and 435 square feet of outdoor irrigation. Assuming that a customer does not request a variance, this results in an average total monthly water budget of 8 ccf per condo. The proposed 140% breakpoint between the inefficient and wasteful tiers is based on the customer exceeding a 40% factor that accounts for a combination of leaks and inefficient irrigation and/or devices. The 40% is an average derived from various end-use studies on residential water use.

##### Multi-Family Apartments

When calculating water budgets for multi-family apartment customers, the District assumes a default occupancy of 2 persons per household with no outdoor irrigation demands. Assuming that a customer does not request a variance, this results in a total monthly water budget of 5 ccf per apartment. At present, there is a slight differential in the tier breakpoints applied to single family and multi-family apartment customers.

<sup>1</sup> *California Single Family Water Use Efficiency Study*, 2011, De Oreo et al.  
*Future Potential Water Efficiency Study*, 2019, IRWD, Prepared by EKI Environment & Water, Inc.  
*Residential End Uses of Water Version 2*, 2016, Water Research Foundation



It is recommended that the District synchronize the water budget tier breakpoints for these two types of residential customers as shown in Table 9. This proposed change will have an immaterial impact on overall revenue recovery and multi-family apartment customer bills. This will ensure a fair and equitable allocation of water supply costs to all residential customers regardless of their dwelling type. The proposed 140% breakpoint between the inefficient and wasteful tiers for multi-family apartments is based on the customer exceeding a 40 % factor that accounts for a combination of leaks and inefficient devices. The 40% is an average derived from various end-use studies on residential water use.

**Table 9: Recommended Multi-Family Apartment Consumption Tiers**

Usage Tier	Single Family Residential (includes Condos)	Multi-Family Residential (Apartments)	Proposed Multi-Family Residential
Tier 1: Low Volume	0 - 40% of budget	0 - 50% of budget	0 - 40% of budget
Tier 2: Base	41 - 100% of budget	51 - 100% of budget	41 - 100% of budget
Tier 3: Inefficient	101 - 140% of budget	101 - 120% of budget	101 - 140% of budget
Tier 4: Wasteful	141% + of budget	121%+ of budget	141% + of budget

**4.1.5. WATER BUDGET RATE STRUCTURE FOR LANDSCAPE CUSTOMERS**

Landscape customers are served by potable water or recycled water connections that are solely used for the purposes of meeting outdoor irrigation. Similar to residential customers, the District recovers the annual variable cost of providing water service to landscape customers through a water-budget-based rate structure that features four consumption tiers. However, the amount of water included in each customer's monthly water budget does not include an allowance for any indoor consumption. Instead, it is based on the District's assessment of efficient water use, based on principles of horticultural science as determined by the irrigated landscaped area.

A representation of the general formula used to determine the water budget for a landscape customer served by a potable water connection is shown below. The approach used by the District for quantifying efficient outdoor water usage is reasonable and no modifications are recommended. The low volume tier allocation for landscape customers assumes the demand necessary to sustain the landscape as defined in the table below.

<p><b><i>Landscape Customer Served by a Potable Water Connection (ccf) =</i></b>  <i>Irrigated Landscape Area (1) * Evapotranspiration (ET) Rate (2) * 0.75 ET Adjustment Factor (3) * 36.3 Conversion Factor (4)</i></p> <p>(1) Area measured in acres.                  (2) Evapotranspiration rate during each day of the monthly billing cycle based on actual temperature, humidity, and other factors.                  (3) Adjustment factor assuming 60% efficient warm season turf, 40% drought tolerant plants and 20% irrigation system inefficiency.                  (4) 36.3 is a factor that converts acre-inches of water to one hundred cubic feet (ccf).</p>
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A representation of the general formula used to determine the water budget for a landscape customer served by a recycled water connection is shown below. Note that the ET adjustment factor of 0.75 used for potable water has been modified to 0.87. This is because landscape customers served by a recycled water connection are assumed to have 100% warm season turf and 0% drought tolerant plants and would be more likely to require the use of less efficient overhead spray irrigation. The low volume tier allocation for landscape customers assumes the water necessary to sustain 100% warm season turf. Prior to 2019, the potable inefficient tier allocation was set at 160% and was based on leaks, cool season turf and inefficient landscape irrigation. The District has provided rebates for customers to transition to more water efficient landscapes since 2009. In 2019, the inefficient tier was modified to exclude the use of cool season turf and was adjusted to 140% based only on leaks and inefficient irrigation. As a result, the proposed inefficient tier does not incorporate the use of cool season turf. The proposed inefficient tier includes water use exceeding budget by 40%, or up to 140%. This is based on leaks and inefficient landscape irrigation. This change provides a fair and equitable allocation for all landscape customers.

**Landscape Customer Served by a Recycled Water Connection (ccf) =**  
**Irrigated Landscape Area (1) \* Evapotranspiration (ET) Rate (2) \* 0.87 ET Adjustment Factor (3) \* 36.3 Conversion Factor (4)**

(1) Area measured in acres.  
 (2) Evapotranspiration rate during each day of the monthly billing cycle based on actual temperature, humidity, and other factors.  
 (3) Adjustment factor assuming 100% efficient warm season turf, and 25% irrigation system inefficiency.  
 (4) 36.3 is a factor that converts acre-inches of water to one hundred cubic feet (ccf).

Table 10 shows the water budget consumption tiers and noticed FY 2020-21 commodity rates for landscape customers.

**Table 10: FY 2020-21 Landscape Water Budget Rate Structure and Commodity Rates**

Usage Tier	Potable Water		Recycled Water	
	Consumption Tiers	FY 2020-21 Rates (\$/ccf) (Noticed but Not Implemented) (1)	Consumption Tiers	FY 2020-21 Rates (\$/ccf) (Noticed but Not Implemented) (1)
Tier 1: Low Volume	0 - 40% of budget	\$1.54	0 - 40% of budget	\$1.25
Tier 2: Base	41 - 100% of budget	\$2.12	41 - 100% of budget	\$1.72
Tier 3: Inefficient	101 - 140% of budget	\$4.91	101 - 140% of budget	\$3.28
Tier 4: Wasteful	141% + of budget	\$13.65	141% + of budget	\$6.97

(1) Development of the rates is covered beginning in Section 4.3.1

#### 4.1.6. WATER BUDGET RATE STRUCTURE FOR COMMERCIAL CUSTOMERS

Given the diversity of water usage characteristics, it is virtually impossible to develop customized water budgets for commercial customers based on standardized metrics regarding efficient indoor and outdoor water use. For this reason, the District establishes an individualized water budget for each customer based on an analysis of business water use needs. This may include an on-site assessment. This allows the water budget of each commercial customer to be tailored to their specific needs and requirements.

Because the water budgets are tailored to each commercial customer, their usage is either efficient or not. Rather than using four consumption tiers, the commodity rates of commercial customers are assessed over two consumption tiers. The base consumption tier reflects 100% of the customer's total monthly water budget. The wasteful tier reflects all usage above the monthly budget allocation. Table 11 shows the FY 2020-21 commercial customer rate structure.

**Table 11: FY 2020-21 Commercial Water Budget Structure and Commodity Rates**

Usage Tier	Potable Water		Recycled Water	
	Consumption Tiers	FY 2020-21 Rates (\$/ccf) (Noticed but Not Implemented) (1)	Consumption Tiers	FY 2020-21 Rates (\$/ccf) (Noticed but Not Implemented) (1)
Tier 1: Base	0 - 100% of budget	\$2.12 (2)	0 - 100% of budget	\$1.25 (4)
Tier 2: Wasteful	100% + of budget	\$13.65 (3)	100% + of budget	\$6.97 (5)

- (1) Development of rates is covered beginning in Section 4.3.1
- (2) Reflects the Tier 2 potable rate paid by residential and landscape customers.
- (3) Reflects the Tier 4 potable rate paid by residential and landscape customers.
- (4) Reflects the Tier 1 recycled rate paid by landscape customers.
- (5) Reflects the Tier 4 recycled rate paid by landscape customers.

## 4.2. District Approach to Cost Recovery

The District separates the components of its annual revenue requirement from rates into three specific types of costs: variable costs recovered from commodity rates, fixed operating costs recovered through monthly meter charges, and replacement and enhancement costs which are also recovered from monthly meter charges. No modifications are recommended to this approach.

**Variable Operating Costs:** Variable operating costs are those operations and maintenance costs that vary with the volume of water consumed by customers. These costs are recovered through commodity rates assessed on a \$/ccf basis.

**Fixed Operating Costs:** Fixed operating costs are those operations and maintenance costs that, in the short-term, do not vary with the volume of water consumed by customers. These costs are recovered through monthly service charges.

**Replacement and Enhancement Capital Costs:** Capital costs incurred by the District to replace and repair existing infrastructure and to update existing infrastructure to meet new regulatory requirements are referred to as "Replacement and Enhancement Capital Costs." Replacement and enhancement capital costs do not increase the capacity of the water utility system to serve demand growth from new customers. The District pays for a portion of its replacement and enhancement capital costs via ad valorem property tax assessments. The remainder is funded by operational cash flows provided by rate revenues.

The District's growth-related capital costs (i.e., capital costs that increase system capacity to serve new customers) are not recovered through recurring water rates. Instead, they are recovered via ad valorem property tax assessments and connection fees. A review of the growth-related capital costs and their recovery was not included as part of this Study. Table 12 summarizes the process used to allocate and recover its annual water utility revenue requirement from water service rates including an allocation of general and administrative expense based on direct labor charges.

**Table 12: District Cost Allocation and Revenue Recovery Philosophy**

Type of Cost	Description of Cost	Cost Recovery Mechanism
<b>Variable Operating Costs</b>	Direct cost of producing/purchasing water supplies including water treatment costs that vary.  Allocated indirect general and administrative overhead costs.	Commodity rates (\$/ccf) for each applicable consumption tier.
<b>Fixed Operating Costs</b>	Direct operations and maintenance costs that do not vary based on customer consumption.  Allocated indirect general and administrative overhead costs.	Monthly meter service charge based on meter size.
<b>Replacement and Enhancement Capital Costs</b>	Direct costs incurred to replace and repair existing infrastructure and meet new regulatory requirements	Included in the monthly meter service charge based on meter size.



### **4.3. FY 2020-21 Water Revenue Requirement**

The FY 2020-21 water revenue requirement was determined to be \$92,152,238 (see tables 13 and 14). Of this amount, \$58,518,855 (63.5%) is associated with variable costs that are incurred to acquire and treat water supplies. These costs vary with the amount of water used by customers and are recovered through commodity rates. Note that the variable cost revenue requirement includes \$12,303,326 in costs for universal conservation, targeted conservation, water banking operations, and the District's natural treatment system used to control runoff from customers who use water in the inefficient and wasteful tiers. Table 13 provides detail of the FY 2020-21 variable revenue requirement.

**Table 13: FY 2020-21 Potable Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Dyer Road Wellfield	\$18,980,596
Baker Treatment Facilities	\$10,654,247
Imported Water Purchases Irvine Ranch	\$8,321,800
Deep Aquifer Treatment System	\$6,669,397
Irvine Desalter Domestic	\$4,375,645
Wells 21 & 22 Desalter Treatment Plant	\$2,601,409
Other Water Production Facilities	\$1,198,798
Irvine Desalter Plant W115	\$743,660
Orange Park Acres Well 1	\$57,633
<b>Total Gross Water Supply Costs</b>	<b>\$53,603,185</b>
<b>Revenue Requirement Offsets to Water Supply Costs</b>	
Revenue from Partners	\$4,517,655
Revenue from Sinking Fund	\$1,700,000
Revenue from Water Banking Operations	\$1,170,000
<b>Total Revenue Requirement Offsets</b>	<b>\$7,387,655</b>
<b>Net Revenue Requirement for Water Supply Costs</b>	<b>\$46,215,530</b>
<b>Conservation and Supply Reliability</b>	
Targeted Conservation	\$6,624,810
Natural Treatment System	\$3,282,150
Water Banking	\$1,539,111
Universal Conservation	\$857,254
<b>Total Conservation and Supply Reliability Costs</b>	<b>\$12,303,326</b>
<b>Net Variable Cost Revenue Requirement</b>	<b>\$58,518,855</b>

Fixed costs do not vary with the volume of water by customers. The fixed cost portion of the total FY 2020-21 revenue requirement was \$33,633,882 (36.5%) as shown in Table 14. Of these fixed costs, \$8,775,735 were associated with expenditures for replacement and enhancement capital costs that do not increase the capacity of the water utility system to serve new customer demand growth. Table 14 provides a detail of the FY 2020-21 fixed revenue requirement.

**Table 14: FY 2020-21 Potable Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Domestic Water System Maintenance	\$12,261,383
General and Administrative Expenses	\$9,817,107
Customer Service	\$4,538,091
Fleet	\$1,262,430
General Plant	\$1,016,214
Building Maintenance	\$873,488
Water System Mitigation Monitoring	\$8,000
<b>Total Fixed Operating Costs</b>	<b>\$29,776,712</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$6,540,958
Enhancement	\$2,234,777
<b>Total Capital Costs</b>	<b>\$8,775,735</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$38,552,447</b>
<b>Revenue Requirement Offsets</b>	
Fireline Revenues	\$2,872,318
Miscellaneous Revenue	\$1,259,262
Pumping Surcharge Revenue	\$787,485
<b>Total Revenue Requirement Offsets</b>	<b>\$4,919,064</b>
<b>Net Fixed Cost Revenue Requirement from Rates</b>	<b>\$33,633,383</b>

### 4.3.1. VARIABLE COST RECOVERY - COMMODITY RATES

The District recovers water supply costs through commodity rates with the lowest cost water supplies being recovered in the low volume and base consumption tiers and the highest cost water supplies being recovered in the inefficient and wasteful tiers. The District's method for recovering variable costs is compliant with Proposition 218 because of the direct linkage between the revenue recovered in each tier to the costs incurred to provide service to customers with demand in each consumption tier.

The District also recovers the cost of water conservation programs through its commodity rates with targeted costs being allocated to customers with consumption in the inefficient and wasteful tiers. This approach is reasonable because customers who exceed their monthly water budget allocation impose higher costs on the District. Thus, the commodity rates charged in these two upper tiers are designed to not only recover the cost of more expensive water supplies, but also the additional costs of:

- Targeted conservation programs designed to reduce excessive use.
- Water banking operational costs to enhance water supply reliability.
- Rebates for long-term improvements in customer water use efficiency.
- Urban runoff source control programs referred to as the NTS, which treats runoff from customers who use water in the inefficient and wasteful tiers.

In FY 2020-21, the District projected total water demand of 53,939 acre feet based on historical averages by tier, adjusted for customer account growth and other relevant factors. This reflects a 2.5% increase over the 52,624 acre feet of water demand projected in FY 2019-20. Table 15 details the FY 2020-21 unit cost of water supplies (\$/ccf) from each supply source as determined using cost and demand data provided by the District.

**Table 15: Unit Cost of FY 2020-21 Water Supplies**

Metric	Dyer Road Wellfield	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Cost and Acre Feet
Net Cost (1)	\$17,856,588	\$5,720,487	\$7,335,389	\$4,560,817	\$2,364,028	\$8,321,800	\$56,420	\$46,215,530
Demand in Acre Feet (net)	26,600	7,820	7,018	4,603	1,956	5,931	10	53,939
CCF (2)	11,595,187	3,405,052	3,056,412	2,009,170	853,440	2,584,410	4,537	
Unit Cost per ccf (1) divided by (2)	\$1.54	\$1.68	\$2.40	\$2.27	\$2.77	\$3.22	\$12.95	

(1) From Table 13

(2) Acre feet is multiplied by 435.6 to convert to CCF

The District allocates the water supply in the order of cost for each source. The higher cost water supplies are appropriately allocated to the inefficient and wasteful tiers. Table 16 details this allocation for FY 2020-21 using cost and demand data provided by the District.

**Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs**

Metric	Dyer Road Wellfield (1)	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Acre Feet	Unit Cost by Tier (\$ /ccf) (2)
Unit Cost	\$1.54	\$1.68	\$2.40	\$2.27	\$2.77	\$3.22	\$12.95		
T1: Low Volume	19,112	-	-	-	-	-	-	19,112	\$1.54
T2: Base	7,488	7,820	7,018	4,603	1,956	792	10	29,688	\$2.02
T3: Inefficient	-	-	-	-	-	2,887	-	2,887	\$3.22
T4: Wasteful	-	-	-	-	-	2,252	-	2,252	\$3.22

(1) 19,112 acre feet are used to meet projected low volume demand estimated based on historic demand as adjusted for customer account growth and other relevant factors. The remainder (7,488 acre feet) is allocated to partially meet the base demand.

(2) The Unit Cost by Tier is the blended cost of the sources. Example: T2 =  $((7,488 \times 435.6 \times 1.54) + (7,820 \times 435.6 \times 1.68) + (7,018 \times 435.6 \times 2.40) + (4,603 \times 435.6 \times 2.27) + (1,956 \times 435.6 \times 2.77) + (792 \times 435.6 \times 3.22) + (10 \times 435.6 \times 12.95)) / (29,688 \times 435.6) = \$2.02$

Having determined the unit cost of water supplies by consumption tier as shown in Table 16 above, the District then allocates the cost of conservation programs and supply reliability programs to the water budget tiers as described below:

**Universal Conservation:** Universal conservation costs are incurred to encourage customers to use water as efficiently as possible. Universal program costs are added to the commodity rate in the base, inefficient, and wasteful tiers. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

**Targeted Conservation:** Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceeds their water budgets. Therefore, these costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Based on a historical estimate of customers who have been provided assistance in these programs, approximately 75% of the customers are in the wasteful tier with the remainder of customers being in the inefficient tier. Therefore, 75% of the targeted conservation costs are allocated to the wasteful tier with the remaining 25% of the costs being allocated to the inefficient tier.

**NTS Costs:** These costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceeds their water budgets. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers because their excessive water usage creates urban water runoff. The allocation is based on an estimate

of the historic mix of urban runoff created by customers in the inefficient and wasteful tiers primarily from hosing down hardscape and excess irrigation running off the landscape into the storm drains. The District estimates 85% of NTS costs are created by customers in the wasteful tier because wasteful outdoor demand flows to NTS sites. The remaining 15% of urban runoff costs results from inefficient customers overwatering drought tolerant landscape.

**Water Banking:** Water banking costs are incurred to support the reliability of the District's water supplies. These costs are added to the commodity rates of customers in the wasteful tier because their excessive water usage creates the need for enhanced reliability of costly imported water supplies as previously discussed.

Table 17 shows the outcome of derivation of the unit costs for the District's conservation and supply reliability programs.

**Table 17: FY 2020-21 Conservation and Supply Reliability Unit Costs (\$/ccf)**

Program	FY 2020-2021	FY 2020-21	Demand	FY 2020-21	Unit Cost Included
	Revenue Requirement (1) (A)	Units of Demand (ccf) (2) (B)	Adjustment Factor for Price Elasticity (C)	Adjusted Units of Demand B x C = (D)	in FY 2020-21 Commodity Rates A ÷ D = (E)
<b>Universal Conservation</b>	\$857,254	15,170,668	100%	15,170,668	\$0.06
<b>Water Banking</b>					
Wasteful tier	\$1,539,111	980,928	90%	882,835	\$1.74
<b>Targeted Conservation</b>					
Inefficient tier (75%)	\$1,518,186	1,257,748	90%	1,131,974	\$1.34
Wasteful tier (25%)	\$5,106,625	980,928	90%	882,835	\$5.78
<b>Natural Treatment System</b>					
Inefficient tier (15%)	\$503,062	1,257,748	90%	1,131,974	\$0.44
Wasteful tier (85%)	\$2,779,088	980,928	90%	882,835	\$3.15

(1) From Table 13

(2) FY 2020-21 Units of Demand are based on the cumulative projected units of sale for the tiers. Universal Conservation includes the base, inefficient, and wasteful tiers.

Table 18 shows the FY 2020-21 commodity rates as calculated by Raftelis. The slight differences in the calculated commodity rates calculated by Raftelis and the commodity rates originally published in the District's FY 2020-21 Proposition 218 notice can be attributed to recommended minor cost allocation adjustments.

**Table 18: FY 2020-21 Potable Water Commodity Rates (\$/ccf)**

Consumption Tier	Unit Cost of Water Supplies (1)	Unit Cost of Universal Conservation (2)	Unit Cost of Water Banking (2)	Unit Cost of Targeted Conservation (2)	Unit Cost of Natural Treatment System (2)	FY 2020-21 Commodity Rates as Calculated by Raftelis**	FY 2020-21 Rates (Noticed but Not Implemented)	Difference (2)
T1: Low Volume	\$1.54					\$1.54	\$1.54	\$0.00
T2: Base	\$2.02	\$0.06				\$2.08	\$2.12	-\$0.04
T3: Inefficient	\$3.22	\$0.06		\$1.34	\$0.44	\$5.08	\$4.91	\$0.15
T4: Wasteful	\$3.22	\$0.06	\$1.74	\$5.78	\$3.15	\$13.95	\$13.65	\$0.30

(1) From Table 16

(2) From Table 17. Water used in the low volume tier is efficient and universal conservation efforts are not necessary.

(3) Rate differences are due to minor cost allocation adjustment recommendations.

### 4.3.2. VARIABLE COST RECOVERY - AGRICULTURAL RATES

Allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. DRWF provides 49% of the source of supply at a cost of \$1.54/ccf and imported water provides 11% at a cost of \$3.22/ccf. The remaining 40% is the blended cost of the other sources at \$2.02/ccf (Table 16). This results in a blended variable cost of \$1.93/ccf. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$79,692. The fixed cost applied to the agricultural commodity rate adds \$1.43 to the per ccf cost based on the estimated 55,757 CCF. Table 19 shows the Raftelis calculation of FY 2020-21 agricultural rates.

**Table 19: FY 2020-21 Agricultural Water Commodity Rates (\$/ccf)**

System	FY 2020-21 Revenue Requirement	FY 2020-21 Projected Demand (CCF)	Variable Cost (CCF)	Fixed Component Cost (CCF)	FY 2020-21 Commodity Rates as Calculated by Raftelis	FY 2020-21 Rates (Noticed but Not Implemented)	Difference
Potable Water	\$163,925	55,757	\$1.93	\$1.43	\$3.34	\$2.94	\$0.40

### 4.3.3. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGES

The District recovers fixed operating costs and replacement and enhancement capital costs through monthly meter service charges. On the District potable water system, the baseline meter size serving customers is 5/8". Thus, the first step in developing the monthly meter service charge is to estimate the total number of 5/8" meter equivalent connections (MEUs) on the potable water system in order to establish the unit cost for a 5/8" equivalent meter. Table 20 shows a summary of this calculation using the District’s fixed costs and meter count data.

**Table 20: FY 2020-21 Monthly Unit Cost of Serving a 5/8" Equivalent Meter**

System	5/8" MEU (A)	Operating Costs (B)	Capital Costs (C)	Total Fixed Cost Revenue Requirement (D) B + C=(D)	Operating Costs per 5/8" MEU B ÷ A=(E)	Capital Costs per 5/8" MEU C ÷ A=(F)	Total Unit Cost per 5/8" MEU ((2) E + F = G)
Potable Water	259,766	\$24,857,648	\$8,775,735	\$33,633,383	\$7.97	\$2.82	\$10.79

(1) From Table 14

(2) Values prior to rounding

Having established the monthly fixed charge unit cost as being \$10.79 per 5/8" meter equivalents, the final step in the process is to develop a schedule of monthly meter service charges for each meter size on the system. Table 21 presents this calculation. Note the \$10.79 calculation in the table above is rounded up to \$10.80. As shown in Table 21, there are differences in the FY 2020-21 monthly meter service charges calculated by Raftelis and the FY 2020-21 monthly meter service charges originally published by the District in its FY 2020-21 Proposition 218 notice for the rate change that IRWD did not implement due to COVID-19. These differences can be attributed to a difference in the estimation in the total number of 5/8" MEUs on the District’s potable water system and an adjustment in the meter flow equivalencies used for some meter sizes.

**Table 21: FY 2020-21 Monthly Meter Service Charges**

Meter Size and Technology	Meter Flow Rate Equivalency Ratio	Number of Accounts	FY 2020-21 Rates (Noticed but Not Implemented)	FY 2020-21 Rates Calculated by Raftelis (After Rounding)	Difference
5/8" Disc	1.00	65,542	\$10.40	\$10.80	\$0.40
3/4" Disc	1.50	11,577	\$15.65	\$16.20	\$0.55
1" Disc	2.50	26,621	\$26.05	\$27.00	\$0.95
1 1/2" Disc	6.00	3,995	\$52.00	\$64.75	\$12.75
1 1/2" Single Jet	5.00	1	\$52.00	\$53.95	\$1.95
2" Disc	8.00	5,335	\$83.20	\$86.35	\$3.15
2" Single Jet	8.00	7	\$83.20	\$86.35	\$3.15
2" Turbo	12.50	700	\$109.25	\$134.90	\$25.65
3" Turbo	32.50	239	\$249.65	\$350.70	\$101.05
4" Turbo	62.50	201	\$520.10	\$674.40	\$154.30
4" Turbo Omni F-2	50.00	1	\$520.10	\$539.50	\$19.40
6" Mag Meter	139.90	0	\$1,454.75	\$1,509.50	\$54.75
6" Turbo	125.00	31	\$1,040.25	\$1,348.75	\$308.50
6" Turbo Omni F-2	100.00	4	\$1,454.75	\$1,079.00	-\$375.75
<b>8" Turbo</b>	235.00	10	\$1,820.40	\$2,535.60	\$715.20
8" Turbo Omni F-2	235.00	1	\$1,820.40	\$2,535.60	\$715.20

#### 4.3.4. MONTHLY PRIVATE FIRELINE CHARGES

Private firelines provide water to sprinkler systems for fire suppression within private improvements such as buildings and other structures. The District, like many utilities, provides private fireline service to its customers. In FY 2020-21, the District estimated that it would collect private fire line revenues of \$4,542,610. These revenues are used as an offset to the total fixed cost revenue requirement. The District last updated its private fire line charges in 2007 and has not changed the underlying methodology.

Raftelis recommends that the District update its method to develop private fire line rates that reflect the estimated cost of serving potential fireflow demands plus an additional amount for the recovery of replacement and enhancement costs allocable to private fireline customers. The previous approach assumed a greater allocation for replacement and enhancement capital. The updated approach provides a modified allocation for funding replacement and enhancement capital and meeting fire demands. Table 22 shows the calculation of the FY 2020-21 private fireline rates based on an estimated revenue requirement of \$2,872,318 using the recommended approach. The monthly service charges are shown in Table 22.

**Table 22: Proposed FY 2020-21 Private Fireline Charges**

Private Fireline Size	Number of Lines	Potential Demand Based on Pipe Diameter (1)	Customer Related Costs (2)	Private Fire O&M Peaking Costs (3)	Capital Cost Component (4)	FY 2020-21 Rates Calculated by Raftelis	FY 2020-21 Rates (Noticed but Not Implemented)	Difference	Total Revenue
1"	43	1.00	\$4.88	\$0.09	\$0.21	\$5.18	\$13.60	-\$8.42	\$2,673
1 1/2"	-	2.90	\$4.88	\$0.25	\$0.61	\$5.75	\$20.40	-\$14.65	\$0
2"	1,046	6.19	\$4.88	\$0.53	\$1.31	\$6.72	\$27.20	-\$20.48	\$84,349
3"	31	17.98	\$4.88	\$1.55	\$3.80	\$10.23	\$40.80	-\$30.57	\$3,806
4"	996	38.32	\$4.88	\$3.29	\$8.11	\$16.28	\$54.40	-\$38.12	\$194,579
6"	3,079	111.31	\$4.88	\$9.57	\$23.55	\$38.00	\$81.60	-\$43.60	\$1,404,024
8"	1,039	237.21	\$4.88	\$20.39	\$50.19	\$75.46	\$108.80	-\$33.34	\$940,835
10"	127	426.58	\$4.88	\$36.67	\$90.26	\$131.80	\$136.00	-\$4.20	\$200,863
11"	1	548.10	\$4.88	\$47.11	\$115.97	\$167.96	\$149.60	\$18.36	\$2,016
12"	5	689.04	\$4.88	\$59.22	\$145.79	\$209.89	\$163.20	\$46.69	\$12,593



<b>Total</b>	<b>6,367</b>		<b>\$2,872,318</b>
		Fire Flow Testing Revenue	\$26,580
		<b>Total Fireline Revenue</b>	<b>\$2,871,819</b>

- (1) Potential demand based on the Hazen-Williams Equation which estimates flow based on factors such as pipe diameter, friction and the velocity of flow.
- (2) \$6,965,295 customer related operating costs/119,026 bills = \$4.88.
- (3) \$714,362 peaking costs/692,594 private fire demand units = \$0.09. For pipe diameters > 1", \$0.09 is increased by the potential demand based on pipe diameter (Hazen-Williams).
- (4) \$2.50 capital cost for a 1" meter equivalent X \$2.82 capital cost per MEU x 3.0% allocation to private firelines = \$0.21. For pipe diameters > 1", \$0.21 is increased by potential pipe diameter (Hazen-Williams).

**4.3.5. PUBLIC FIRE HYDRANT WATER SERVICE COSTS**

Fire hydrant water service is a component of water service and is one of several property-related services that aids in the provision of fire service provided to properties. To meet fire protection demands, the District must design, operate, and maintain a water system that meets peak fire demand requirements. Land developers typically install or pay for the fire hydrants and related infrastructure as part of a condition of approval imposed by a land-use agency (city or county) to ensure the availability of an adequate water supply to protect the homes and commercial or industrial facilities that will be constructed pursuant to the land-use approvals. These are property related expenses as defined by Government Code Section 53750.5 b. which says:

*“The fees or charges for property-related water service imposed or increased pursuant to Section 6 of Article XIII D of the California Constitution may include the costs to construct, maintain, repair, or replace hydrants as needed or consistent with applicable fire codes and industry standards, and may include the cost of water distributed through hydrants. In addition to any other method consistent with Section 6 of Article XIII D of the California Constitution, fees or charges for the aspects of water service related to hydrants and the water distributed through them may be fixed and collected as a separate fee or charge, or included in the other water rates and charges fixed and collected by a public agency, as provided for in Section 53069.9 of the Government Code.”*

The District recovers all its potable water fixed operating costs, including the cost of maintaining and testing public fire hydrants, through its monthly meter service charge. The recovery of public fire protection costs through the District's monthly meter service charge allocates the cost of maintaining these assets to the properties that will benefit from their availability if these resources are used. This provides a fair and equitable allocation of the associated costs and it is consistent with Proposition 218 requirements. The costs associated with fire protection are discussed in detail in the Exhibit B Technical Memo.



## 5. SEWER COST OF SERVICE

As is the case with its potable water, the District separates the components of its annual sewer revenue requirement from rates into three specific types of costs: variable operating costs, fixed operating costs, and replacement and enhancement costs. However, as described in Section 5.1.1 below, the rate structure used to recover these costs differs from that of potable water service.

Sewer growth-related capital costs (i.e., capital costs that increase system capacity to serve new customers) are not recovered through monthly sewer service rates. Instead, they are recovered via ad valorem property tax assessments and connection fees. This study did not include a review of the growth-related capital costs or their recovery.

### 5.1. FY 2020-21 Sewer Revenue Requirement

The FY 2020-21 sewer revenue requirement was determined to be \$54,768,358 (see tables 23 and 24). Of this amount, \$15,955,212 (29.1%) is associated with variable costs that are incurred to treat sewage for discharge. These costs vary with the amount of water used by customers that returns to the District's sewage treatment facilities and are recovered through IRWD's commodity rates. The District separates operational expenses between sewage treatment and recycled production with tertiary treatment and similar processes included in the cost for recycled water. Table 23 shows the FY 2020-21 sewer variable cost revenue requirement.

**Table 23: FY 2020-21 Sewer Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Variable Operating Costs</b>	
Sewer Variable Operations Costs	\$7,047,630
Variable Orange County Sanitation District Treatment Costs	\$4,122,300
General and Administrative Costs	\$5,395,129
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	\$175,359
Biosolids Disposal Michelson	\$174,210
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	\$116,378
<b>Gross Variable Cost Revenue Requirement</b>	<b>\$17,205,212</b>
<b>Revenue Requirement Offsets</b>	
Other Direct Billing Revenue	\$1,250,000
<b>Total Revenue Requirement Offsets</b>	<b>\$1,250,000</b>
<b>Net Variable Revenue Requirement from Rates</b>	<b>\$15,955,212</b>

Fixed costs do not vary with the volume of water used by customers and returned to the District's wastewater treatment facilities. The fixed cost portion of the total FY 2020-21 revenue requirement was \$38,813,146 (70.9%). Table 24 provides a detail of the FY 2020-21 sewer fixed cost revenue requirement.

**Table 24: FY 2020-21 Sewer Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Sewer Fixed Operations	\$9,922,869
General and Administrative Costs	\$4,056,547
Customer Service	\$3,025,394
Fleet	\$832,056
Building Maintenance	\$485,271
General Plant	\$358,388
Orange County Sanitation District Treatment Costs	\$1,500
<b>Total Fixed Operating Costs</b>	<b>\$18,682,025</b>
<b>Replacement and Enhancement Capital Costs</b>	
Enhancement	\$1,567,500
Replacement	\$18,864,000
<b>Total Capital Costs</b>	<b>\$20,431,500</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$39,113,525</b>
Revenue Offsets	
Miscellaneous Revenues	\$300,379
<b>Total Revenue Offsets</b>	<b>\$300,379</b>
<b>Net Fixed Revenue Requirement from Rates</b>	<b>\$38,813,146</b>

### 5.1.1. SEWER COST RECOVERY (RATE DESIGN)

The District recovers the variable and fixed components of its sewer revenue requirement through a rate structure that features three fixed consumption blocks. Unlike water, most sewer discharges to the collection system are not metered. Therefore, blocks are determined by engineering estimates of flow to the sewer system. The District uses the average of the three lowest water meter readings during the twelve month period ending December 31 to adjust for monthly anomalies in a ratepayer's water use and seasonal variations. The block breakpoints are based on a review of historical data for average usage during cooler months (November through March from 2016 through 2020) because of the limited demand for landscape during winter months. The analysis identified the average usage for all multi-family units was 5 CCF which aligns with the first block. The second block includes average usage below 10 CCF as single family residential customers averaged 10 CCF during the same low usage months. The third block, which includes all commercial, industrial, and institutional (CII) customers, exceeds 10 CCF. (The average usage for CII customers exceeds 10 CCF.) Non-residential/CII customers with billed water consumption of more than 10 ccf per month pay an additional commodity rate (\$/ccf). The Orange County Sanitation District's (OCSD) Cost of Service study (December 2017) identified a flow factor, percentage of metered water usage returning to the sewer system, of 90% for single family homes and non-residential customers (CII). Therefore, the District applies the additional charge on 90% of the billed water consumption for CII customers, consistent with the OCSD study. Table 25 illustrates the current sewer rate structure.

**Table 25: FY 2020-21 Sewer Rate Structure and Rates**

Rate/Charge	Monthly Rate	Peak Cost	FY 2020-21 Rates (Noticed but Not Implemented)
<b>Residential Sewer Rates</b>			
Block 1: Average Water Usage < 5 ccf per month	\$19.75	\$0.00	\$19.75/month
Block 2: Average Water Usage between 5 and 10 ccf per month	\$19.75	\$3.95	\$23.70/month
Block 3: Average Water Usage > 10 ccf per month	\$19.75	\$6.60	\$26.35/month
<b>Commercial Sewer Rates</b>			
Average Water Usage <= 10 ccf per month	\$19.75	\$6.60	\$26.35/month
Average Water Usage > unit cost per ccf per month			\$2.81/ccf

This rate structure is compliant with Proposition 218 because it provides a mechanism for recovering rate revenue from customers in a manner that is proportionate to the costs incurred by the District to provide service. As shown in Table 25, it includes a fixed component for all three blocks that does not change. A variable component is included that is based on the historic average of estimated sewage flow by customers within each block. This fact notwithstanding, the review of the specific cost allocation methodology used to develop the noticed FY 2020-21 sewer rates that were not implemented indicates that it can be adjusted to further align with revenue recovery costs. The proposed modifications will fine-tune allocation of the fixed and variable costs between customers based on the volume of their estimated average sewer discharges. For this reason, the following approach to the development of sewer rates is recommended.

**Step 1:** Determine the number of sewer customer accounts with usage in each consumption block as shown in Table 26.

**Table 26: FY 2020-21 Sewer Customer Accounts by Consumption Block**

Customer Class	Block 1	Block 2	Block 3	Total
Single Family Residence	27,720	25,006	13,611	66,337
Multi Family Residence	89,855	12,209	5,479	107,543
Residence Sewer Only				
Commercial			6,239	6,239
Industrial			1,019	1,019
Public Authority			372	372
Landscape				
Construction				
<b>Total</b>	<b>117,575</b>	<b>37,215</b>	<b>26,720</b>	<b>181,510</b>

**Step 2:** Estimate sewer volumes contributed by customer class as shown in Table 27.

**Table 27: FY 2020-21 Contributed Sewage Volumes**

Line No.	Metric	All Residential (Potable)	All Commercial, Industrial, Public Authority (Potable)	All Construction (Potable)	Total
1	Number of Accounts	173,880	7,630	0	181,510
2	FY 2020 Water Usage (ccf)	13,989,048	3,935,122	105,501	18,029,671
3	Return to Sewer Factor	74%	90%	2%	
4	<b>Annual Discharge (ccf) (Line 2*Line 3)</b>	<b>10,399,916</b>	<b>3,541,610</b>	<b>2,110</b>	<b>13,943,636</b>
5	Annual Discharge (MG)	7,779	2,649	2	10,219

**Step 3:** Determine the fixed and variable unit cost of service as shown in Table 28.

**Table 28: FY 2020-21 Sewer Unit Cost of Service**

Metric	Fixed Costs	Variable Costs	Total
Operating Revenue Requirement	\$18,682,025	\$17,205,212	\$35,887,237
Capital Revenue Requirement	\$20,431,500		\$20,431,500
Revenue Offset			
Miscellaneous Revenue	\$208,614	\$91,765	\$300,379
Other Direct Billing Revenue	\$868,129	\$381,871	\$1,250,000
<b>Revenue Requirement (Table 23 and 24)</b>	<b>\$38,036,782</b>	<b>\$16,731,576</b>	<b>\$54,768,358</b>
Discharge (Table 27)	181,510	13,943,636	
	accounts	ccf of sewer flow	
Unit Cost		\$1.20	
		per ccf	

**Step 4:** Determine the average and total discharges in each fixed tier as shown in Table 29.

**Table 29: FY 2020-21 Sewer Discharges by Fixed Consumption Block**

Sewer Fixed Charge Tiers	Average Monthly Discharges (ccf) (A)	Number of Accounts (B)	Annual Avg Discharges (ccf) A x B x 12= (C)
Block 1: Average Water Usage < 5 ccf per month	3.2	117,575	4,514,885
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	37,215	3,126,065
Block 3: Average Water Usage > 10 ccf per month	10.0	26,720	3,206,379
<b>Total</b>		<b>181,510</b>	<b>10,847,328</b>

**Step 5:** Determine the allocation of fixed and variable sewer costs as shown in Table 30. The total of the fixed and variable cost allocations matches the sewer revenue requirement identified at the start of this section (\$54,756,358).

**Table 30: FY 2020-21 Allocation of Sewer Fixed and Variable Costs**

Fixed Allocation	Discharge	Allocation	Cost Allocation	Unit Costs
Operating Costs Allocated to Fixed Charge (from Table 29)	10,847,328	78%	\$14,133,428	\$6.49 per account
Capital Allocated to Fixed Charge		100%	\$19,869,048	\$9.12 per account
Total Fixed Charge per Customer				\$15.61 per account (1)
Operating Costs Allocated to Discharge >10 ccf	3,096,308	22%	\$4,034,306	\$1.30 per ccf
Capital Allocated to Discharge >10 ccf			\$0	\$0.00
<b>Total (from Table 27)</b>	<b>13,943,636</b>	<b>100%</b>	<b>\$38,036,782</b>	
Variable Allocation	Discharge		Cost Allocation	Unit Cost
Discharge Block Rate – Allocated to Block Rates	13,943,636		\$16,731,576	\$1.20 per ccf
<b>Total Revenue Requirement (Tables 23 and 24)</b>			<b>\$54,768,358</b>	

(1) Rounded up to \$15.65 for rates to be on the \$0.05 increment.

**Step 6:** Calculate the sewer rates based on the allocation of fixed and variable costs shown in Table 30 above. Table 31 shows this outcome.

**Table 31: FY 2020-21 Proposed Sewer Rates**

Monthly Sewer Service Charge Per Account	Avg Monthly CCF Discharged	Variable Cost <sup>(1)</sup>	Fixed Cost <sup>(2)</sup>	FY 2020-21 Rates Calculated by Raftelis <sup>(4)</sup>
Block 1: Average Water Usage < 5 ccf per month	3.2	\$3.85	\$15.61	\$19.50
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	\$8.40	\$15.61	\$24.05
Block 3: Average Water Usage > 10 ccf per month	10.0	\$12.00	\$15.61	\$27.65
Variable Rates per ccf	Discharge	Variable Cost <sup>(3)</sup>	Fixed Cost <sup>(3)</sup>	Proposed Rate
Discharge >10 ccf	3,096,308	\$1.20	\$1.30	\$2.50

(1) \$1.20 From Table 29 \* average monthly CCF discharged

(2) Total fixed charge per customer from Table 30

(3) From Table 30

(4) Variable cost plus fixed cost rounded to nearest \$0.05

A final comparison of the FY 2020-21 sewer rates recommended by Raftelis versus the FY 2020-21 sewer rates originally noticed by the District is shown in Table 32.

**Table 32: Raftelis Recommended FY 2020-21 Sewer Rates**

Rate/Charge	FY 2020-21 Rates (Noticed but Not Implemented)	FY 2020-21 Rates (Calculated by Raftelis)	Difference (\$)
<b>Residential Sewer Rates</b>			
Block 1: Average Water Usage < 5 ccf per month	\$19.75/month	\$19.50/month	-\$0.25
Block 2: Average Water Usage between 5 and 10 ccf per month	\$23.70/month	\$24.05/month	\$0.35
Block 3: Average Water Usage > 10 ccf per month	\$26.35/month	\$27.65/month	\$1.30
<b>Commercial Sewer Rates</b>			
Average Water Usage <= 10 ccf per month	\$26.35/month	\$27.65/month	\$1.30
Average Water Usage > ccf per month	\$2.81/ccf	\$2.50/ccf	-\$0.31

## 6. RECYCLED WATER COST OF SERVICE

The method used by the District to develop recycled water rates is similar to that of potable water service (see Section 4 of this report) with one significant difference. The District does not calculate unique monthly meter service charges for recycled water. Instead, the monthly service charges for recycled water are set to the same as those charged for the potable water monthly meter service charge. The District takes this approach due to an imbalance between variable and fixed costs in the overall recycled water revenue requirement. This reallocation of fixed costs to variable revenue recovery through commodity rates is discussed in Section 6.1.2 below.

### 6.1.1. RECYCLED WATER BUDGET RATE STRUCTURE

Section 4.5.1 of this report provides a detailed discussion of the derivation of the District's water budget rate structure for landscape customers who purchase recycled water. Table 33 shows the consumption tier breakpoints employed to recover the variable costs incurred to provide service.

**Table 33: FY 2020-21 Landscape Water Budget Rate Structure and Commodity Rates**

Usage Tier	Consumption Tiers	FY 2020-21 Rates (\$ccf) (Noticed but Not Implemented)
Tier 1: Low Volume	0 - 40% of budget	\$1.25
Tier 2: Base	41 - 100% of budget	\$1.72
Tier 3: Inefficient	101 - 160% of budget	\$3.28
Tier 4: Wasteful	161% + of budget	\$6.97

Section 4.6.1 of this report provides a detailed discussion of the derivation of the District's water budget rate structure for commercial customers who purchase recycled water. The base rate for these customers is the cost to produce recycled water. These customers are charged the wasteful tier rate when they exceed their budget.

### 6.1.2. FY 2020-21 RECYCLED WATER REVENUE REQUIREMENT

The District's recycled water revenue requirement from rates is \$30,005,494. Prior to any adjustments, the composition of this revenue requirement is variable costs of \$17,417,457 (58.0%) and fixed costs of \$12,588,037 (42.0%). The District established the monthly fixed charge unit cost as being \$10.79 per 5/8" meter equivalents in the potable process (see Table 21 in Section 4.3.3). Due to the high percentage of fixed costs identified in the recycled water revenue requirement (Table 35), the District reallocates a portion of fixed costs not recovered by monthly meter service charges (\$4,397,395) into the variable cost revenue requirement. The total fixed costs include costs that can be included with variable expenses such as the cost for transporting recycled production to reservoirs (\$1,971,380). These costs are included in the recycled system and recycled revenue provides the funding which is consistent with Proposition 218 requirements. This strategy provides a fair and equitable application of these costs without deterring usage.

Raftelis concludes that the District's recycled water rates are compliant with Proposition 218 as the overall level of revenue recovery from recycled water customers remains proportionate to the total cost of providing service. Tables 34 and 35 detail the FY 2020-21 variable and fixed recycled water revenue requirement before and after this reallocation.

**Table 34: FY 2020-21 Recycled Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Untreated Water Purchases	\$4,084,400
Recycled Water Tertiary Treatment Michelson	\$3,305,378
El Toro Remediation Principal Aquifer Plant	\$2,858,640
Recycled Water Tertiary Treatment Pumping Michelson	\$1,415,486
El Toro Remediation Shallow Groundwater	\$797,980
Recycled Water Tertiary Membrane Bio Reactor (MBR) Treatment Michelson	\$789,058
Native Water	\$463,500
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	\$321,581
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	\$220,377
Untreated Water System Maintenance	\$219,922
Santiago Aqueduct Commission	\$155,626
Irvine Lake	\$115,888
Recycled Water Tertiary Ultraviolet (UV) Disinfection Treatment Michelson	\$94,912
<b>Total Cost of Water Supplies</b>	<b>\$15,713,369</b>
<b>Conservation Programs</b>	
Natural Treatment System	\$996,117
Universal Conservation	\$431,937
Targeted Conservation	\$276,034
<b>Total Conservation Program Costs</b>	<b>\$1,704,088</b>
<b>Total Variable Cost Revenue Requirement Before Adjustment</b>	<b>\$17,417,457</b>
Adjustment to Reflect Reallocated Fixed Costs	\$5,550,995
<b>Total Variable Cost Revenue Requirement After Adjustment</b>	<b>\$22,968,451</b>

**Table 35: FY 2020-21 Recycled Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Recycled Water System Maintenance	\$5,925,061
Recycled Water Mitigation Monitoring	\$11,000
General and Administrative	\$3,624,032
Customer Service	\$1,512,697
Recycled Water Site Inspection and Testing-Field	\$406,208
Building Maintenance	\$388,217
General Plant	\$304,599
Recycled Water Site Inspection and Testing-Office	\$692
<b>Total Fixed Operating Costs</b>	<b>\$12,172,506</b>
<b>Replacement and Enhancement Capital Costs</b>	
Enhancement	\$360,500
Replacement	\$793,100
<b>Total Capital Costs</b>	<b>\$1,153,600</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$13,326,106</b>
<b>Revenue Requirement Offsets</b>	
Pumping	\$217,922
Miscellaneous Revenues	\$520,146
<b>Total Revenue Requirement Offsets</b>	<b>\$738,069</b>
<b>Total Fixed Cost Revenue Requirement Before Adjustment</b>	<b>\$12,588,037</b>
Adjustment to Reflect Reallocated Fixed Costs	-\$5,550,995
<b>Net Fixed Revenue Requirement from Rates After Adjustment</b>	<b>\$7,037,042</b>

### 6.1.3. VARIABLE COST RECOVERY - COMMODITY RATES

The method used to determine recycled water commodity rates is similar to that used for potable water. In FY 2020-21, the District's projected total recycled water demand was 32,495 acre feet based on historical demand, customer growth factors and other relevant factors. In FY 2019-20, recycled water demand was projected to be 32,493 acre feet. Table 36 provides a detail of the FY 2020-21 unit cost of water supplies (\$/ccf) from each supply source using the District's cost and demand data. Note that the net cost shown in each column includes the reallocation of fixed costs of \$5,550,995 discussed above.

**Table 36: Unit Cost of FY 2020-21 Recycled Water Supplies**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total
Net Cost	\$10,568,425	\$4,376,824	\$6,319,109	21,264,358
Acre Feet	22,204	4,503	5,787	32,495
Unit Cost per ccf (1)	\$1.09	\$2.23	\$2.51	

(1) Acre feet is multiplied by 435.6 to convert to CCF.

The District allocates the lower cost water supplies to the low volume and base consumption tiers with higher cost water supplies being allocated to the inefficient and wasteful tiers. Table 37 details this allocation for FY 2020-21 using cost and demand data provided by the District.

The general formula used to determine the water budget for a landscape customer served by a recycled water connection is discussed in detail in 4.1.5.



**Landscape Customer Served by a Recycled Water Connection (ccf) =**  
**Irrigated Landscape Area (1) \* Evapotranspiration (ET) Rate (2) \* 0.87 ET Adjustment Factor (3) \* 36.3 Conversion Factor (4)**

(1) Area measured in acres.  
 (2) Evapotranspiration rate during each day of the monthly billing cycle based on actual temperature, humidity, and other factors.  
 (3) Adjustment factor assuming 100% efficient warm season turf, and 25% irrigation system inefficiency.  
 (4) 36.3 is a factor that converts acre-inches of water to one hundred cubic feet (ccf).

**Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers**

Metric	Processed from			Total Acre Feet	Unit Cost per \$/ccf by Tier (1)
	Produced from Treatment Plant	El Toro Remediation	Imported		
Unit Cost (Table 36)	\$1.09	\$2.23	\$2.51		
T1: Low Volume	14,947			14,947	\$1.09
T2: Base	7,257	4,503	4,162	15,923	\$1.78
T3: Inefficient			975	975	\$2.51
T4: Wasteful			650	650	\$2.51
<b>Total</b>	<b>22,204</b>	<b>4,503</b>	<b>5,787</b>	<b>32,495</b>	

(1) The Unit Cost per \$/ccf by TIER is the blended cost of the sources. Example: T2  
 =((7,457\*435.6\*\$1.09)+(4,503\*435.6\*\$2.23)+(4,162\*435.6\*\$2.51))/(15,923\*435.6) = \$1.78

Having determined the unit cost of recycled water supplies by consumption tier for landscape customers as shown in Table 37 above, the District then allocates the cost of conservation programs, as shown in table 34, to the appropriate water budget tiers.

Universal conservation costs are added to the commodity rate in the base, inefficient, and wasteful tiers to pay for conservation program costs that help customers in each of these tiers achieve efficient use of recycled water. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage reaches the wasteful tier. Costs are allocated to the wasteful tier based on expected usage.

Natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceed their water budgets. The costs include prevention, control and treatment of the runoff of water from irrigation and other uses. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Costs are allocated based on the expected usage in each tier.

Table 38 shows the outcome of derivation of the unit costs for the District's conservation programs.



**Table 38: FY 2020-21 Conservation Unit Costs (\$/ccf)**

Program	FY 2020-2021 Revenue Requirement (A)*	FY 2020-21 Units of Demand (ccf) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2020-21 Adjusted Units of Demand B x C = (D)	Unit Cost Included in FY 2020-21 Commodity Rates A ÷ D = (E)
Universal Conservation	\$431,937	7,643,909	100%	7,643,909	\$0.06
Targeted Conservation					
Wasteful tier	\$276,034	283,140	90%	254,826	\$1.08
Natural Treatment System					
Inefficient tier	\$174,079	424,710	90%	382,239	\$0.46
Wasteful tier	\$822,038	283,140	90%	254,826	\$3.23

\*See Table 34

Having determined the unit cost of recycled water supplies by consumption tier as shown in Table 37 and the unit cost of conservation programs in Table 38, the District must then allocate the cost of conservation programs to each consumption tier. Table 39 shows the outcome of this process as determined by Raftelis using the District's cost and demand data. As can be seen in Table 39, there are differences in the FY 2020-21 commodity rates calculated by Raftelis and the FY 2020-21 commodity rates originally published by the District in its Proposition 218 notice. These differences can be attributed to recommended minor cost allocation adjustments.

**Table 39: FY 2020-21 Recycled Water Commodity Rates (\$/ccf)**

Consumption Tier	Unit Cost of Water Supplies (Table 37)	Unit Cost of Universal Conservation (Table 38)	Unit Cost of Targeted Conservation (Table 38)	Unit Cost of Natural Treatment System (Table 38)	FY 2020-21 Commodity Rates as Calculated by Raftelis	FY 2020-21 Rates (Noticed but Not Implemented)	Difference
T1: Low Volume	\$1.09				\$1.09	\$1.25	-\$0.16
T2: Base	\$1.78	\$0.06			\$1.84	\$1.72	\$0.12
T3: Inefficient	\$2.51	\$0.06		\$0.46	\$3.02	\$3.28	-\$0.26
T4: Wasteful	\$2.51	\$0.06	\$1.08	\$3.23	\$6.87	\$6.97	-\$0.10

#### 6.1.4. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGE

Recycled water fixed charges are the same as potable water fixed charges (see Table 21 in Section 4.3.3).

## 7. POLICY OPTIONS

As part of the study, Raftelis considered several policy options related to the District's current water rate structure. Proposition 218 establishes general rate-setting principles but does not detail exactly how costs should be calculated or how they should be allocated among customers. The policy options considered here come within the District's zone of discretion in how to reasonably structure rates within Proposition 218's parameters and are presented as potential alternatives for future consideration. These alternatives were discussed with the District's Finance and Personnel (F&P) Committee. None of the options discussed were included in the rate generation in the Cost of Service document used to assess rates for FY 2020-21. The Recovery of OPEB and Pension costs will be included in the next rate generation process. A summary of the alternatives discussed is presented below.

### 7.1.1. ALTERNATIVES FOR TARGETED CONSERVATION SPENDING

The District's commodity rates for the inefficient (101 - 140% of budget) and wasteful tiers (140%+ of budget) include costs incurred for special targeted conservation programs designed to avoid water waste and to promote wise water use. They also include the cost of the natural treatment systems required to capture the water runoff created by excessive irrigation and include water banking that provides supply reliability to District customers. Over the long term, the District's spending for targeted conservation programs is expected to decline.

To offset the long-term decline in targeted conservation expenditures, Raftelis suggests an alternative which would transfer a portion of the recycled water costs to the potable commodity rates paid by customers with usage greater than their budget. The conceptual justification for this approach is that the District's recycled water system reduces the need to purchase expensive imported water supplies. Thus, recycled water serves as a direct substitute for the potable water used for outdoor irrigation by customers with usage in the inefficient and wasteful tiers. An incidental byproduct of recovering some portion of recycled water costs via potable water rates paid by customers whose usage exceed their budget is a lowering of recycled water commodity rates that could result in increased recycled water usage.

In order to provide the F&P Committee with an example of the commodity rate impacts of this approach, Raftelis identified \$1.7 million in electric power costs associated with the transmission of recycled water. As shown in Table 40 below, the potable water commodity rates in the inefficient and wasteful tiers would increase by an estimated \$0.78. In contrast, recycled water commodity rates would be reduced by approximately \$0.13 across all consumption tiers.

**Table 40: Commodity Rate Impacts of Recovering Recycled Costs Through Potable Rates**

Potable Water			
Potable Tiers	Noticed FY 2020-21 Rates Not Implemented (per ccf)	Adjustment for Recycled Water (per ccf)	Adjusted Potable Water Rates (per ccf)
Low Volume	\$1.54		\$1.54
Base	\$2.12		\$2.12
Inefficient	\$4.91	\$0.78	\$5.69
Wasteful	\$13.65	\$0.78	\$14.43
Recycled Tiers	Noticed FY 2020-21 Rates Not Implemented (per ccf)	Adjustment for Recycled Water (per ccf)	Adjusted Potable Water Rates (per ccf)
Low Volume	\$1.25	-\$0.13	\$1.12
Base	\$1.72	-\$0.13	\$1.59
Inefficient	\$3.28	-\$0.12	\$3.16
Wasteful	\$6.97	-\$0.12	\$6.85

### 7.1.2. ALTERNATIVES FOR CAPITAL REPLACEMENT FUNDING

The District currently recovers the cost of expenditures for replacement and enhancement capital through monthly service charges paid by water, sewer, and recycled customers. As the District infrastructure ages, the cost for replacement and enhancement capital is likely to drive the fixed service charge portion of a customer's bill to a disproportionately high percentage to the total bill. This raises the concern that monthly service charges will become unaffordable and have inequitably large customer bill impacts, especially for customers with low water consumption and associated sewer discharge characteristics.

In order to mitigate the potentially large increases to the monthly meter service charges, Raftelis recommends that the District consider recovering a portion of the annual capital replacement and enhancement costs to commodity rates in the future. Although this approach is different from the District's long standing cost recovery policy, Raftelis believes the recovery of capital replacement costs via commodity rates is consistent with Proposition 218.

In order to provide the F&P Committee with an example of the potable water commodity rate impacts under this approach, Raftelis identified \$300,000 in valve replacement costs in the District's FY 2020-21 water capital replacement budget. If these costs were recovered through commodity rates rather than through monthly service charges, Raftelis estimates that potable water commodity rates in each consumption tier would increase by \$0.01. In contrast, the required increase in the monthly meter service for a customer served by a 5/8" water meter would decrease by \$0.10. Table 41 shows the estimated rate impacts.

**Table 41: Impact of Recovering \$300K in Capital Replacement Expenditures via Commodity Rates**

Potable Charges and Rates	Noticed FY 2020-21 Rates Not Implemented (per ccf)	Adjustment for the Recovery of Capital Replacement Costs	Adjusted Potable Water Rates (per ccf)
<b>Monthly Meter Service Charge</b>			
5/8" Meter	\$10.40	-\$0.10	\$10.30
<b>Commodity Rates (\$/ccf)</b>			
Low Volume	\$1.54	\$0.01	\$1.55
Base	\$2.12	\$0.01	\$2.13
Inefficient	\$4.91	\$0.01	\$5.70
Wasteful	\$13.65	\$0.01	\$14.44

### 7.1.3. ALTERNATIVE WATER RESIDENTIAL MONTHLY METER SERVICE CHARGES

The District currently charges monthly meter service charges based on a customer's meter size. This results in a single family residential customer with a 1" meter paying more than a customer with a 5/8" meter even though they may have the same monthly water consumption. The customer has no choice over the size of their meter and new construction building codes in most cities served by the District require a 1" meter for residential properties. IRWD staff asked Raftelis to analyze whether it would be appropriate to develop one monthly service charge rate for both a 5/8", 3/4" and 1" meter. The analysis as shown in Table 42 below indicates that it would create an increase of 43% to customers with a 5/8" meter, when over 60% of residential customers within the District have a 5/8" meter. This is inappropriate because a 1" meter has significantly more capacity to impose instantaneous demand on the system. As a result, Raftelis recommends no change.

**Table 42: Single Family Residential Monthly Meter Service Charge Consolidation**

Meter Size	FY 2020-21 (Noticed but not Implemented)	FY 2020-21 With Consolidation	Difference (\$)	Difference (%)
5/8" Disc	\$10.40	\$14.90	\$4.50	43%
3/4" Disc	\$15.65	\$14.90	-\$0.75	-5%
1" Disc	\$26.05	\$14.90	-\$11.15	-43%

#### 7.1.4. RECOVERY OF PENSION & OPEB COSTS

IRWD includes the cost of pensions and other post-employment benefits (OPEB) in its annual revenue requirement from rates. The current methodology for the District is to include in rates the employer portion of the annual required defined benefit pension plan contribution (ARC) administered by CalPERS plus any additional discretionary contribution in excess of ARC. The District established a Pension Benefits Trust Fund (Trust Fund) as an alternative to additional CalPERS contributions to fund a portion of its pension liability. The discretionary contribution is a payback to another District Fund which loaned money to establish the Trust Fund and is to be paid back over a specified number of years.

Changes in pension accounting rules over the past several years prompted the District to ask Raftelis to review alternatives for development of its annual rate requirement related to pensions. Alternatives considered include:

- Use the actuarial determined pension expense as calculated by CalPERS, minus investment earnings from the Trust Fund.
- Use ARC plus the discretionary ARC contributions minus a portion of the investment earnings from the Trust Fund plus the discretionary ARC contributions.
- Use the actuarial determined pension expense as calculated by CalPERS plus the discretionary ARC contributions.

Raftelis considered all alternatives and although all alternatives would be compliant with Proposition 218, utilizing the actuarially determined pension expense can have a high degree of volatility year-to-year based on projected and actual rates of return in the capital markets and therefore we do not recommend that approach. Raftelis believes the ARC provides a more stable amount that is better suited for developing rates.

Raftelis recommends that amounts contributed to CalPERS and the Trust Fund should both be recognized as payments toward the pension liability and be included in the development of rates. The Trust Fund was initially funded by a borrowing from another District fund and Raftelis agrees with the Committee that the borrowing should be paid back plus interest over a reasonable timeframe, suggested at 20 years straight line amortization. In addition, the Trust Fund earns interest on its investments and Raftelis recommends that customers be given credit for a portion of that interest earned. This was discussed with the F&P Committee and the recommendation was to provide a credit for the proportionate share the Trust Fund provides to the total funded percentage. For example, if the District's funding ratio with CalPERS is 75% and the overall funding including the Trust fund is 100%, then 25% (100%- 75%) of the investment earnings would be credited for purposes of determining the pension revenue requirement. The Committee recommended and Raftelis concurs with basing the proportionate share of Trust Fund investment earnings from the 3 prior years.

Table 43 summarizes the results which would result in pension and OPEB costs of \$11.1 million being collected from customers through their water, sewer, and recycled water rates.

**Table 43: Recommended Recovery of Pension and OPEB Costs**

FY 2020-21 Expense	Current Cost Recovery	Raftelis Recommended
CalPERS Expense		
CalPERS Contribution	\$9,100,000	\$9,100,000
Trust Earnings		-\$1,200,000
Current Replacement Fund Payback	\$1,400,000	
Replacement Fund 20 Year Payback		\$3,200,000
<b>Total</b>	<b>\$10,500,000</b>	<b>\$11,100,000</b>
Additional Cost vs Current Methodology		\$600,000

## Exhibit A

### Technical Memo

# Legal Basis for Including Fire Hydrant Water Service Costs in Water Service Fees

## I: Supplying water through fire hydrants is a property-related service

California Constitution article XIII D, approved by the voters in 1996 as part of Proposition 218, includes the following definitions relating to certain fees charged by government agencies for services:

Section 2(e): “Fee” or “charge” means any levy other than an *ad valorem* tax, a special tax, or an assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property related service.

Section 2(h): “Property-related service” means a public service having a direct relationship to property ownership.

Article XIII D, section 6, then sets out a series of substantive and procedural rules restricting the use of fees levied on property or on a person because of the person’s ownership of property.

The California Supreme Court determined in Bighorn-Desert View Water Agency v. Verjil (Kelley) (2006) 39 Cal.4th 205 that supplying water for domestic<sup>1</sup> use is a property-related service and, therefore, that the fees charged by a local agency for such water service are subject to the rules of California Constitution article XIII D, section 6.

The Court in Bighorn, quoting at length from its opinion in Richmond v. Shasta Community Services District (2004) 32 Cal. 4th 409, cited the Legislative Analyst’s impartial

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<sup>1</sup> The court in Bighorn did not define “domestic” use. The Legislative Analyst did not use the term in the voter information pamphlet for the election at which Proposition 218 was approved; and the court did not use the term in Richmond. The U.S. Geological Survey defines it as including “indoor and outdoor uses at residences, and includes uses such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, watering lawns and gardens, and maintaining pools.” California Department of Water Resource’s glossary distinguishes it from fire hydrant water supply: “Categories of beneficial uses recognized in California include aquaculture, domestic, **fire protection**, fish and wildlife, frost protection, heat control, industrial use, mining, municipal, power, recreation, stock watering, and water quality control.” (Emphasis added.) But the DWR glossary also recognizes the integration of the two in water service provided to: “A drinking water distribution system is an interconnected series of pipes, storage facilities, and components that convey drinking water and meet the fire protection needs of customers.”

analysis included in the voter information pamphlet for the election at which article XIII D was approved. That voter information pamphlet identified three characteristics of water service that lead to the conclusion that it is a service that has a direct relationship to property ownership. Each of these three characteristics also applies to providing fire hydrant water service.

First, water service has a direct relationship to property ownership, because it is indispensable to most uses of real property. For example, dwellings in urbanized areas cannot receive a certificate of occupancy without a functioning water supply. Water immediately available to real property for fire protection is also indispensable for the use of property. In particular, local land use control agencies will not permit construction of residences and commercial/industrial buildings without it. The California Fire Code requires infrastructure to provide sufficient flow to fight structure fires on particular property. (Cal. Code Regs., title 24, § 507.1) The City of Irvine, by its Ordinance No. 19-14, adopted November 12, 2019, adopted the California Fire Code as its municipal fire code. The County of Orange, by its Ordinance No. 19-010, adopted November 5, 2019, adopted the California Fire Code as its fire code. While there is no State law requiring homeowners to have fire insurance, most mortgage lenders do require it as a condition of the loan; fire insurance is generally not available without proximate fire hydrant water service or in-structure sprinklers.

Second, water service is provided through pipes that are physically connected to the property. Fire hydrant water is also supplied through pipes and is delivered to locations that are physically proximate to the properties and structures that they serve. It is a matter of logistics (accessibility to the fire engines) that the hydrants are located next to the street. It is a matter of economy that there is not one hydrant for each structure.

Third, a water provider may, by recording a certificate, obtain a lien on the property for the amount of any delinquent service charges. In Health and Safety Code section 5473.11(b), the Legislature has provided this power to every public agency that levies sewer or water charges. As discussed below, providers of domestic water service in California have long also provided water for fire protection through hydrants and charged their customers for it. The lien provisions in Section 5473.11(b) make no distinction between different components of water service (residential, commercial, agricultural, or fire flows).

Accordingly, merely by owning the property, without actually using the service, if the service is immediately available, the property owner must pay for the service. The service is, thus, an incident of property ownership.

**II. Supplying water through fire hydrants is not a general governmental service that is available to the public at large in substantially the same manner as it is to property owners**

Article XIII D, section 6(b)(5), provides that:

No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.

This provision appears tautological. Article XIII D, section 2(h), defines “property-related service” as “a public service having a direct relationship to property ownership.” Logically, if a service is available to the public at large in substantially the same manner as it is to property owners, then it does not have a direct relationship to property ownership.

The purpose of including Section 6(b)(5) in Article XIII D appears to have been to identify specific kinds of services that the proponent of Proposition 218, the Howard Jarvis Taxpayers Association (HJTA), believed were traditionally, and should continue to be, funded from property taxes rather than fees.

A. The Legislative History of Proposition 218 Indicates that Fire Hydrant Water Service is not a General Governmental Service

1. Article XIII D, section 6(b)(5): A charge for supplying water to property through fire hydrants is not the kind of fee that Proposition 218 was intended to prohibit from being charged to customers of a government water utility as a fee for a property-related service. The prohibition contained in Article XIII D, section 6(b)(5), was intended by HJTA to protect the property tax reductions made by Proposition 13 from subversion by local governments, which HJTA accused of replacing taxes with fees. Because government water utilities charged fees (rather than levying taxes) for these costs before the adoption of Proposition 13 in 1978, such fees do not circumvent Proposition 13.

The purpose of Proposition 13, which was adopted in 1978, was to provide real property tax relief. (Amador Valley Joint Union High School District v. State Board of Equalization (1978) 22 Cal.3d 208, 230.) Following the adoption of Proposition 13, local governments increased their use of non-property taxes, special benefit assessments, and fees to replace some of the lost tax revenue. In an annotated version of the text of Proposition 218 prepared by HJTA dated September 5, 1996 (before the 1996 election at which it was approved), HJTA articulated that the purpose of Proposition 218 was to prevent what it saw as “end-runs” around Proposition 13 by the use of some of these other revenue measures. Section 6(b)(5) is one expression of that purpose – a rule that general governmental services should be funded by taxes rather than fees.

2. Article XIII D, section 6(c): Another portion of Article XIII D, section 6, indirectly touches on the issue of “end-runs.” Section 6 imposes both procedural requirements in subsection (a) (e.g., notice and hearing) and substantive requirements in subsection (b) (e.g., proportionality of fees to costs) on property-related fees. Except for water, sewer, and refuse collection fees, Section 6(c) requires property-related fees, like taxes, to be approved by voters. The HJTA pre-election annotation to Article XIII D, section 6(c), explains the rationale for exempting those three types of fees from voter approval as follows:

Exemption for sewer, water and refuse collection is for voter approval only. Such fees still must meet all of the five substantive requirements of paragraph (b). Exemption is based on philosophy of attempting to reverse the end-runs around Proposition 13. Since water, sewer and refuse collection fees pre-date Proposition 13, they were exempted from voter approval.



Charging property owners for water supplied through fire hydrants also pre-dates Proposition 13. Several statutes for various kinds of water districts specifically authorize the district to deliver water for fire protection purposes. For example, Water Code section 22077 (relating to irrigation districts), in the form of that section originally adopted in 1943, provides that: “A district may deliver water for fire protection purposes.” Likewise, Water Code section 55330 (relating to county waterworks districts), in the form adopted in 1959, provides that: “A district may provide for the supplying of the inhabitants of the district with water for irrigation, domestic, industrial, or fire protection purposes ....”

These statutes further provide that the districts may impose exactions on its customers for the water by means of charges rather than property assessments (which are akin to taxes). For example, in the case of irrigation districts, Water Code section 22280, in the form adopted in 1943, provides: “Any district may in lieu in whole or in part of levying assessments fix and collect charges for any service furnished by the district, including, but not limited to, all of the following: ... use, sale, or lease of water, which may include a standby charge whether the water is actually used or not.” Likewise, in the case of county waterworks districts, Water Code section 55501 provides: “The board may fix and collect rates or charges for the use and supply of water furnished by the system, and to apply the receipts from the rates or charges to the expenses of the administration and government of the district and the use, operation and extension of the waterworks and water supply.”

An even broader indication of how the Legislature, pre-Proposition 13, viewed imposition of charges for fire protection services by water agencies is found in legislation adopted in 1973. Chapter 149 of the Statutes of 1973, which added Section 53069.9 to the Government Code, authorized all California public agencies to charge property owners for the costs of installing and operating fire hydrants and to collect such charges along with “other water rates or water charges collected by the public agency.” Section 3 of Chapter 149 provides this:

The Legislature hereby finds and declares that it is the intention of the Legislature that this act shall not constitute a limitation upon the right of any public agency providing retail water service to impose additional charges for costs attributable to other water services necessary to maintain and provide for an adequate system of fire protection. (Emphasis added.)

The reason to include such a declaration of intent was to avoid any possible effects (by negative implication) on then-current public agency practice of collecting fire hydrant water service costs from water service customers/property owners. Charging fees to property owners for the cost of installing, operating and maintaining fire hydrants, for the infrastructure supporting the fire hydrants (such as larger pipelines, pumps, and reservoirs), and for the water provided through fire hydrants pre-dated Proposition 13, so it cannot be construed as a circumvention of Proposition 13 (converting property taxes into fees) that Section 6 was designed to prevent.

Regarding the financing of hydrants, an amendment to Section 53069.9 adopted by Chapter 538 of the Statutes of 1977 prohibited public agencies from charging fire protection agencies for fire hydrant costs, except by agreement. Fire protection agencies are funded by *ad*

*valorem* property taxes. Allowing water agencies to charge fire agencies for hydrants and the infrastructure and water required for hydrants to function as intended would have resulted in funding this fire protection cost from taxes. The prohibition established in Section 53069.9 shows that the Legislature did not think these charges were only legitimately funded from taxes.

3. Article XIII D, section 4: The provisions of Proposition 218 regarding special benefit assessments also address the issue of “end-runs” around Proposition 13. Article XIII D, section 4, requires that such assessments be levied only for special benefits provided to a property and not for general benefits. Section 2(i) defines special benefit as “a particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large.”

In another pre-election publication, “Myths about Proposition 218,” HJTA addressed funding public safety services. Under the heading Myth #3, they state that “‘fees’ for general governmental services are thinly disguised taxes.” But they then make a distinction regarding assessments for a particular governmental service:

Opponents have also wrongfully claimed that all fire suppression assessments would end. Nothing in Proposition 218 expressly prohibits fire suppression assessments. If a fire suppression assessment district can be shown to provide special benefits to property within close proximity of a fire facility, then it may in fact meet the requirements of the act.

The objection made by opponents was that the description of fire protection as a general governmental service in Section 6(b)(5) implied that such fire protection could not be found to provide a special benefit under Section 4. HJTA said that fire protection could be shown to provide special benefits to property “within close proximity to a fire facility,” like a local fire house. By analogy, even if the provision of water through hydrants were part of fire service, because it is delivered proximate to the property charged, it would be “property-related” and “not available to the public at large in substantially the same manner as it is to property owners.” Moreover, as detailed below, general public use of fire hydrants is legally prohibited.

B. The Characteristics of Fire Protection Water Service Indicate that it is Not Available to the General Public in Substantially the Same Manner as to Property Owners

Water supplied through hydrants for firefighting is not available to the general public in substantially the same manner as it is to property owners. As discussed above in Part I, fire hydrants are located in proximity to homes and other buildings and are designed to immediately provide the water flows prescribed to extinguish structure fires.

In SB 1386, the Legislature found that: “Hydrants and the water distributed through them are not available to the public at large in substantially the same manner as they are to property owners served by a water service provider because hydrants are designed, installed, and used to serve properties receiving water service, and the public at large does not generally have access to water through those hydrants. Incidental or other de minimis use of hydrants and the water distributed through them for other purposes does not change their essential character as a property-related service.” (Gov’t Code § 53750.5(a)(5).)

Specifically:

1. Hydrants are located in proximity to buildings

In SB 1386, the Legislature found that: “Hydrants are generally located in proximity to properties served by a water service provider to facilitate water service to those properties.” (Gov’t Code § 53750.5(a)(4).)

The California Fire Code (Title 24, Part 9, of the California Code of Regulations) Section C 102.1 specifies the number of hydrants required to be installed in the vicinity of various types of buildings in terms of the characteristics of the buildings served by those hydrants. All of the hydrants in the District are installed in proximity to buildings that they serve.

2. Fire flows are calculated with respect to buildings

In SB 1386, the Legislature found that: “Hydrants and the water distributed through them have a direct relationship to property ownership because hydrants are generally sized based upon property use and then are installed when parcels are developed or connected to a water system.” and that “Hydrants are generally designed, installed, and used to provide an immediately available water service to aid in extinguishing fires that threaten property served by a water service provider, and are generally not designed or installed to provide water service to aid in extinguishing fires that threaten property not served by a water service provider or wildfires.” (Gov’t Code § 53750.5(a)(4), (3).)

Section B105.1 of the California Fire Code (Title 24, Part 9, of the California Code of Regulations) specifies minimum fire-flow (required gallons per minute and pressure of water) and flow duration requirements through hydrants with reference to buildings of different types and sizes. The capacity of each hydrant in the District is directly related to the characteristics of the buildings served and is not based on any other possible use.

3. Access to fire hydrants for purposes other than firefighting is strictly limited

Use of fire hydrants is restricted by regulation to use for fighting fires, unless otherwise permitted by the District, and then only upon payment for the water. Section 4.9.1 of the District’s Rules and Regulations for Water, Sewer, Recycled Water, and Natural Treatment System Service provides:

4.9.1 Fire hydrants connected to the District’s mains and fire hydrants that are served by an applicant, owner, or customer fire line are provided for the sole purpose of furnishing water to fight fires and shall be opened and used only by persons authorized by the District. If the District permits the use of hydrants for purposes other than extinguishing fire, that permit will be granted only through the procedures and provisions contained in Section 4.1 of these Rules and Regulations. Rates to be charged for water extracted from a hydrant for temporary construction use or other purposes will be in accordance with the applicable schedule contained in Exhibit B, Schedule of Rates and Charges.

Likewise, Section 105.6.15 of the California Fire Code (Title 24, Part 9, of the California Code of Regulations) requires a permit for the use of fire hydrants.

4. Fire Hydrant Water Service is not Typologically Related to the Examples of General Government Services Given in Section 6(b)(5)

While fire hydrants might be used on occasion for other firefighting purposes (e.g., grass fires), such incidental use does not lead to a conclusion that fire hydrant water service is a general governmental service available to the public at large in substantially the same manner as it is to property owners.

Section 6(b)(5) lists four examples of services that are general governmental services – police, fire, ambulance, and library services. The four examples fall into two broad types of service. The first typological group contains services that are essentially mobile. Police cars, fire trucks, and ambulances take their services to where they are needed. To the list of police, fire, and ambulance service could be added vector control and animal control. Since the services are mobile, they are not necessarily related to property ownership. The second typological group contains services that are made available at some central location. Section 6(b)(5) gives only one example of this type – library services. Based on HJTA’s hostility to the regional park assessments that are the subject of Knox v. Orland (1992) 4 Cal.4<sup>th</sup> 132, this category likely also includes recreational services provided by parks. In each case, the service is accessed by persons going to it, so it is available to property owners and others in substantially the same manner.

Fire hydrants are fixed in place in regulated and prescribed proximity to structures that cannot be built and occupied without them. The service they provide is immediately available to the owners of the adjacent property in a way that is substantially different from how it might incidentally be used for purposes other than fighting proximate structure fires.

Typologically, fire hydrants are in the class of services such as domestic water, sewer, and refuse collection that are recognized in Article XIII D, Section 6(c), as classic property-related services.

That third service listed as a property-related service in Proposition 218, refuse collection, has a mobile component – the collection truck comes to the property to provide the service. But the nature of the service that is provided is one that is provided to particular properties and not to members of the general public. In the case of fire suppression, the fire truck and the firefighters are mobile, and they serve both property and the public for other fires. The water made available through fire hydrants for structure fires, however, is supplied through fixed locations. Or, as the Legislature found in SB 1386: “Fire service is a different and distinct service from water service, which is one of several other property-related services that aids in the provision of fire service provided to properties.” (Gov’t Code § 53750.5(a)(1).)

In conclusion, fire hydrants are not located, designed, or intended for all fires that might occur in public places. They are located in **proximity** to property that is intended to be protected, which is then charged for the operation and maintenance of the hydrants and the water system capacity to operate them.

### **III: Water provided through hydrants for fire protection is immediately available to property owners**

Charging property owners the cost of making water available for fire hydrant water service is consistent with California Constitution article XIII D, section 6(b)(4), which provides:

No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted. Standby charges, whether characterized as charges or assessments, shall be classified as assessments and shall not be imposed without compliance with Section 4.

The subject matter of this provision of Proposition 218 is the distinction between standby charges, which must be levied pursuant to the rules on special benefit assessments, and property-related fees, which may be levied as such only if the financed service is actually used or is immediately available to the property.

In their “Proposition 218 Right to Vote on Taxes Act: Statement of Drafters’ Intent,” dated January 2, 1997, HJTA commented on this section, writing:

Standby charges are usually nothing more than flat rate parcel taxes imposed on the theory that water or sewer service may, at some point in the indefinite future, be available to the property being charged. This provision is a flat prohibition of such levies.

The California Legislative Analyst’s statement included in the 1996 voter information pamphlet explained:

Some local governments also levy “standby charges,” which are similar to assessments. Standby charges commonly finance water and sewer service expansions to new households and businesses. (The measure treats standby charges as assessments.)

In an early case addressing this provision, Keller v. Chowchilla Water District (2000) 80 Cal.App.4th 1006, the court wrote:

The term “standby” charge is not defined in article XIII D. Nor do the parties point out any statutory or other definition of that term. It does not appear in Black’s Law Dictionary (7th ed.1999) or in Webster’s New International Dictionary (3d ed.1986). Amicus curiae Howard Jarvis Taxpayers Association asserts that “standby charges are generally understood to be some sort of property levy, often based on acreage, imposed on the mere availability of a service, whether the service is used or not.[5]

[5] The Uniform Standby Charge Procedures Act (Gov.Code, §§ 54984-54984.9), while not defining the term “standby charge,” authorizes local agencies to fix such a charge each year for making water available to

property “whether the water ... services are actually used or not.” (*Id.* at § 54984.2; see 82 Ops. Cal.Atty.Gen. 35 (1999).)

Paland v. Brooktrails Township Community Services District Board of Directors (2009) 179 Cal.App.4th 1358, provides the most useful analysis of Section 6(b)(4):

As far as we are aware, no published decision has yet directly addressed the precise question before us: how to distinguish between charges for services that are “immediately available” to property owners though not actually used, which are fees under the initiative, and standby charges for “potential or future use of a service,” which are defined as assessments.

Although Section 6(b)(4) has three sentences, the court analyzed it as addressing only two categories: (1) services actually used or immediately available and (2) standby charges for potential or future use (essentially defining a standby charge as one for potential or future use). **This analytic division also means that, if the service is immediately available, it is not a standby charge or for future or potential use.**

Paland held local governments may impose a minimum charge on parcels connected to utility systems for the basic cost of providing service, regardless of actual use:

As long as the local government has provided the necessary service connections at the charged parcel and it is only the unilateral act of the property owner (either in requesting termination of service or failing to pay for service) that causes the service not to be actually used, the service is ‘immediately available’ and a charge for the service is a fee rather than an assessment (assuming the other substantive requirements of a fee are satisfied).

(Paland, *supra*, 179 Cal.App.4th at 1370.)

In the case of fire hydrants, the District charges customers where the hydrants have been installed (i.e., the service connection is in place) and the water is currently available. The parenthetical in the quotation from Paland above only identifies two kinds of unilateral acts of property owners that cause the service not to be used. Paland does not mention the other circumstance where a property owner unilaterally chooses not to use an immediately available service – when the occasion for its use has not arisen. Fire hydrant water will be used only when a fire breaks out.<sup>2</sup>

“Potential” Service? Another example of an immediately available service for which a utility may validly charge is domestic water service. A standard component of charges levied by water utilities is a fixed charge that is unrelated to the volume of water consumed. Such fixed

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<sup>2</sup> It is not significant that it is the fire department’s personnel who physically access the water and apply it to extinguish the fire engulfing the property owner’s property. The firefighters may have been summoned by the property owner, but, in any event, they are acting as the agents of the property owner to apply the water made available through the adjacent service connection, the fire hydrant.

charges are payable even if customer takes no water. One might describe the fixed charge as a charge for potential service. As stated by the California Supreme Court, however, in Bighorn-Desert View Water Agency v. Verjil (Kelley) (2006) 39 Cal.4th 205, 217:

Accordingly, once a property owner or resident has paid the connection charges and has become a customer of a public water agency, all charges for water delivery incurred thereafter are charges for a property-related service, whether the charge is calculated on the basis of consumption or is imposed as a fixed monthly fee.

“Future” Service? In Griffith v. Pajaro Valley Water Management Agency (2014) 220 Cal.App.4th 586, the plaintiffs claimed that groundwater augmentation charges were being used to fund a service that is not “immediately available” to property owners, because the ordinance adopting the fees provided the charge could fund efforts to identify and design future supplemental water projects. That might be referred to as future services. However, the court dismissed this argument and held that identifying and determining the future needs of the agency is part of the agency’s present-day services. The costs of planning for such future needs therefore may be recovered from charges imposed on current users. (Griffith, 220 Cal.App.4th at 602.) By analogy, making water for firefighting immediately available for use upon the occasion of a fire is a present-day service.

Exhibit B  
**Technical Memo**  
**Determination of Costs of Public Fire Hydrant Water Service**  
**For**  
**Irvine Ranch Water District**

**Executive Summary**

As discussed in Exhibit A, public fire hydrant water service is a property-related service and as stated in the California Government Code Section 53750.5(b) explicitly authorizes this:

*The fees or charges for property-related water service imposed or increased pursuant to Section 6 of Article XIII D of the California Constitution may include the costs to construct, maintain, repair, or replace hydrants as needed or consistent with applicable fire codes and industry standards, and may include the cost of water distributed through hydrants. In addition to any other method consistent with Section 6 of Article XIII D of the California Constitution, fees or charges for the aspects of water service related to hydrants and the water distributed through them may be fixed and collected as a separate fee or charge, or included in the other water rates and charges fixed and collected by a public agency, as provided for in Section 53069.9 of the Government Code.*

The purpose of this memo is to identify the costs for public fire hydrant water service for Irvine Ranch Water District (“IRWD” or the “District”) customers and to describe how the District allocates these costs among all customers who receive fire hydrant water service.

There are two cost components associated with public fire hydrant water service: direct costs and indirect costs. The budgeted costs for FY 2021-22 are:

Direct costs	\$ 457,000
<u>Indirect costs</u>	<u>2,586,000</u>
Total Public Fire Hydrant Water Service Costs	\$3,043,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Table J below. The annual costs to provide that fire flow capacity are the indirect costs.

Details as to how these costs are calculated are described in this memo. Both direct and indirect costs are incurred by IRWD to ensure that fire hydrants can immediately provide the prescribed water flows to fight structure fires on adjacent and proximate real property served by IRWD. IRWD's rate structure, including public fire hydrant water service, complies with Proposition 218’s cost-of-service and proportionality principles.



## **Calculation of Public Fire Hydrant Water Service Costs**

As discussed in the Cost of Service Design Study (the “Study”), IRWD’s existing rate structure allocates fire hydrant water service costs among customers through a monthly fixed water meter service charge (see Sections 4.3.3 and 4.3.5 in the Study for further discussion). The monthly charges are for fixed expenditures that relate to the overall asset maintenance and operational activities of the District, including operational support activities such as accounting, billing, customer service, and administrative and technical support. These expenditures are common to all customers and are reasonably uniform across the different customer classes. The service charges also include meter- and capacity-related costs, such as meter maintenance and peaking charges, to meet peak fire hydrant water demand requirements that are included based on the meter’s hydraulic capacity (measured in gallons per minute [gpm]). The total cost for public fire hydrant water service is allocated to all customers - residential, commercial, industrial, institutional, irrigation, and agricultural.

There are two cost components associated with public fire hydrant water service: direct costs and indirect costs.

**Direct Costs:** Direct costs of fire hydrant water service include triennial fire hydrant maintenance. This is based on inspections and services to all District fire hydrants, of which approximately one-third are serviced or inspected annually on a rotating basis. The direct cost component also includes the amount of water used for flushing or other related purposes. The budget for direct costs for FY 2020-21 is \$457,000. Budgeted costs are based on historical unit costs, inflation factors, and projected maintenance activity.

**Indirect Costs:** The second component of public fire hydrant water service costs is indirect costs. Indirect costs are those associated with designing and sizing the infrastructure to support the fire flow necessary to meet peak fire flow demand requirements (called "peaking factors"), which are set generally by the relevant land use agency as a condition for subdivision or construction permitting. These costs are included in IRWD's normal operating expenses and allocated to District customers through the monthly meter service charge. Indirect costs for FY 2020-21 are budgeted at \$2,586,000.

The District uses a detailed method to calculate the annual indirect costs of fire hydrant water service. There are two primary components of indirect fire hydrant water service costs: asset maintenance and operating expense. For the first component, the District categorizes its assets by function and calculates the costs of asset maintenance allocated to fire hydrant water service. For the second component, the District breaks down system operating costs and determines allocations to fire hydrant water service based on demand categories.

The following steps are used to calculate indirect fire hydrant water service costs:

- a. Identify total system peaking factors allocated to Base, Max Day, and Max Hour demands;
- b. Apply functional allocation percentages to the asset categories;
- c. Allocate asset values by function;
- d. Allocate functions to peaking factors;
- e. Determine asset value by peaking factor;
- f. Allocate operating costs by their demands on the system;
- g. Summarize peaking factor percentages for all operating costs by demand category;
- h. Identify operating costs by demand category;
- i. Calculate the cost of service by peaking factor;
- j. Determine capacity requirements for fire flow and the allocation to public fire hydrant water supply capacity; and
- k. Compute the public fire hydrant water supply cost-of-service.

The result is the cost estimate for the indirect component related to public fire hydrant water service. Each of these steps is discussed in more detail below:

- a. **Identify total system peaking factors** – Peak water system demand factors, or "peaking factors," are based on the District's Master Plan, which uses the requirements of the city or other land use agency in which the hydrants are located. The factors are calculated based on the following demands on the system:
1. Base demand, which is equivalent to the average daily demand on the water system within a given year;
  2. Maximum day or Max Day demand, which represents the maximum volume of water used during a 24 hour period within a year. Based on historical experience, the Master Plan sets Max Day demand equal to 1.8 times the Base demand. The Base demand component of Max Day (1.0/1.8) is 55.6%, while the incremental Max Day demand (the portion in excess of the Base demand component) is (0.8/1.8) is 44.4%; and
  3. Maximum hour or Max Hour demand, which represents the maximum volume of water used within a one hour period within a year. Based on historical experience, the Master Plan sets Max Hour demand equal to 2.5 times the Base demand. The Base demand component of Max Hour (1.0/2.5) is 40%, while the Max Day component (0.8/2.5) is 32% and the incremental Max Hour demand (0.7/2.5) is 28%.

**Table A: Identify Peaking Factors**

Allocation Factor	System Peaking Factor	Base	Max Day	Max Hour	Total
Base	1.00	100%	0%	0%	100%
Max Day	1.80	56%	44%	0%	100%
Max Hour	2.50	40%	32%	28%	100%

First Component – asset maintenance: To allocate annual asset maintenance costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates the value of its assets to functional categories (Tables B and C below), then assigns the functionalized assets to the several peaking factors (Table D below), and then calculates the values per peaking factor (Table E below).

- b. **Apply functional allocation percentages to the asset categories** - The asset categories are based on the District's historic asset groupings as identified in the District's accounting system. Raftelis Financial Consultants (Raftelis) has identified the several functions performed by District assets. Based on their professional judgement and experience, Raftelis has assigned the percentage of each asset type allocable to each function.

**Table B: Functional Allocation Percentages**

Asset Type	Asset Functions							Total
	Supply	Storage	Pumping	Transmis- sion	Distrib- ution	Meters	Fire	
Pipes				30%	70%			100%
Reservoirs	80%	20%						100%
Hydrants							100%	100%
System Valves				30%	70%			100%
Pump Stations			100%					100%
Meters						100%		100%
Pressure Regulating Stations					100%			100%
Wells	100%							100%

- c. **Allocate asset values by function** – The total value of each asset category, as shown in the District's fiscal year end 2019-20 accounting records, is allocated to the several asset functions according to the percentages identified in Table B.

**Table C: Allocation of Asset Values to Functions**

Asset Type	Asset Functions (dollars in millions)							Total
	Supply	Storage	Pumping	Transmission	Distribution	Meters	Fire	
Pipes	\$ -	\$ -	\$ -	\$ 688.4	\$ 1,606.3	\$ -	\$ -	\$ 2,294.7
Reservoirs	282.1	70.5	-	-	-	-	-	352.6
Hydrants	-	-	-	-	-	-	228.7	228.7
System Valves	-	-	-	51.3	119.8	-	-	171.1
Pump Stations	-	-	92.8	-	-	-	-	92.8
Meters	-	-	-	-	-	40.9	-	40.9
Pressure Regulating Stati	-	-	-	-	7.8	-	-	7.8
Wells	3.6	-	-	-	-	-	-	3.6
<b>Total Allocation</b>	<b>\$ 285.7</b>	<b>\$ 70.5</b>	<b>\$ 92.8</b>	<b>\$ 739.7</b>	<b>\$ 1,733.9</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>

- d. **Allocate functions to peaking factors** - Peaking factor allocation percentages in Table A are assigned to the functions in Table B. These assignments are based on the professional judgement and experience of Raftelis. Meter and direct fire hydrant maintenance expenses do not change with peaking factors and are allocated separately to become a component in the customer's fixed meter service charge.

**Table D: Peaking Factor Percentages Allocated to Asset Functions**

Asset Functions	Allocation Basis	Base	Max Day	Max Hour	Customer	Fire	Total
Supply	Base	100%	0%	0%			100%
Storage	Max Hour	40%	32%	28%			100%
Pumping	Max Hour	40%	32%	28%			100%
Transmission	Max Day	56%	44%	0%			100%
Distribution	Max Hour	40%	32%	28%			100%
Meters					100%		100%
Fire						100%	100%

- e. **Determine asset value by peaking factor** - The asset values in Table C are multiplied by the percentages identified in Table D. The assets that are assigned directly to fire hydrant water supply (i.e., the hydrants) are then reallocated to peaking factors based on the total allocation value component percentages. The percentage of annual maintenance costs allocated to each demand factor is then determined based on the reallocated values.

**Table E: Asset Values Allocated by Peaking Factor Percentages**

Functionalized Expenses (millions)	Allocation Basis	Base	Max Day	Max Hour	Customer	Fire	Total
Supply	Base	\$ 285.7	\$ -	\$ -	\$ -	\$ -	\$ 285.7
Storage	Max Hour	28.2	22.6	19.7	-	-	70.5
Pumping	Max Hour	37.1	29.7	26.0	-	-	92.8
Transmission	Max Day	411.0	328.7	-	-	-	739.7
Distribution	Max Hour	693.6	554.8	485.5	-	-	1,733.9
Meters		-	-	-	40.9	-	40.9
Fire		-	-	-	-	228.7	228.7
<b>Total Allocation</b>		<b>\$ 1,455.6</b>	<b>\$ 935.8</b>	<b>\$ 531.2</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>
Reallocation of Fire		\$ 112.3	\$ 72.2	\$ 41.0	\$ 3.2	\$(228.7)	\$ -
<b>Revised Allocation</b>		<b>\$ 1,567.9</b>	<b>\$ 1,008.0</b>	<b>\$ 572.2</b>	<b>\$ 44.1</b>	<b>\$ -</b>	<b>\$ 3,192.2</b>
<b>Asset Maintenance</b>		<b>49.1%</b>	<b>31.6%</b>	<b>17.9%</b>	<b>1.4%</b>	<b>0.0%</b>	<b>100%</b>

Second component – operating costs: To allocate annual operating costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates each of the nine demand categories of operating costs (see list and Table G below) to the three demand factors. The District then assigns costs to each of the demand categories (Table H below). Finally, the District calculates the costs per peaking factor (Exhibit I below).

- f. **Categorize operating costs by their demands on the system** – The strategy for allocating operating expenses is based on demands on the system. Table F below shows the nine operating cost demand categories and the asset maintenance cost demand category, assigned to variable and fixed revenue requirement groups. The net costs include all potable operating costs, capital contributions, and offsets. (See Table 13 [variable revenue requirement] and Table 14 [fixed revenue requirement] in the Study for the identification of the demand categories and the costs assigned to each one).

**Table F: Operating and Asset Maintenance Cost System Demand Categories**

Cost Group	Demand Category	Cost (thousands)
<b>Variable:</b>	Water Supplies	Base Supply
	Water Supplies	Excess Supply
	Conservation and Supply Reliability	Water Banking
	Conservation and Supply Reliability	Conservation and NTS
	Conservation and Supply Reliability	Universal Conservation
<b>Fixed:</b>	Fixed Operating Costs	Customer Service
	Fixed Operating Costs	System Maintenance
	Fixed Operating Costs	G&A and Administrative
	Fixed Operating Costs	G&A Plant
	Fixed Operating Costs	Asset Maintenance <sup>(1)</sup>

(1) Includes fleet, building maintenance, and capital contribution.

The demands for each operating expense category on the system, based on the professional judgment and experience of Raftelis, are as follows:

1. Base Supply – Primary water supply sources meeting low volume and most base rate demands. This is included as 100% Base demand.
2. Excess Supply – Imported water is used to meet a portion of the base and all over-allocation demands. The distribution between Base, Max Day, and Max Hour is based on allocated use of imported water between the base, inefficient, and wasteful.
3. Water Banking – Similarly, water banking is a source of supply that is only necessary during severe water limitations. This is allocated entirely to Max Hour.
4. Targeted Conservation and NTS – These expenses are used to manage and reduce water overuse. Targeted conservation is outreach to customers exceeding budget use while NTS provides for treatment of overuse flows prior to flowing to the ocean. These costs are allocated to Max Day and Max Hour based on demands.
5. Universal Conservation – These costs include District efforts to educate customers on ways to conserve water. This is allocated to all sales except low volume. Low volume sales are excluded because remaining within low volume usage provides a high level of conservation. These costs are allocated to Base, Max Day, and Max Hour based on the respective percentage of sales to the base, inefficient and wasteful tiers.

6. Customer Service – This is primarily costs associated with providing communication to District customers. It includes responding to bill payment questions, requests for service, reading meters, etc. This has no impact on peaking factors and is included in the fixed charges allocated to meters.
  7. System Maintenance – This includes costs related to the overall maintenance and operational activities of the District. It is a Base cost and excludes the direct cost of fire hydrant maintenance.
  8. General and Administrative (G&A) – This includes indirect operating costs that are not directly allocable to a system but provide a benefit for all systems. This is allocated to Base, Max Day, Max Hour, customer, and direct fire hydrant maintenance based on their respective portion of total costs.
  9. General Plant - This includes costs associated with the purchase of assets used within the office, District fleet, etc. They are allocated between Base and Max Day using the Max Day peaking factor percentage.
- g. Summarize peaking factor percentages for all operating costs by demand category -** Peaking factor percentages for operating expenses by demand category are summarized in the table below. These are assigned based on the professional judgment and experience of Raftelis.

**Table G: Summarized Peaking Factor Percentages for all Operating Costs**

Functional Group	Base	Max Day	Max Hour	Customer	Fire	General	Total
Base Supply	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Excess Supply	21.5%	43.2%	35.2%	0.0%	0.0%	0.0%	100%
Water Banking	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100%
NTS & Conservation	0.0%	55.1%	44.9%	0.0%	0.0%	0.0%	100%
Universal Conservation	84.5%	8.5%	6.9%	0.0%	0.0%	0.0%	100%
Customer Service	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
System Maintenance	94.4%	0.0%	0.0%	0.0%	5.6%	0.0%	100%
Asset Maintenance (Table E)	49.1%	31.6%	17.9%	1.4%	0.0%	0.0%	100%
G & A	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
GP	55.6%	44.4%	0.0%	0.0%	0.0%	0.0%	100%

- h. Identify operating costs by demand category** – Amounts are assigned to demand categories shown in Table F. The net costs are explained in further detail in section 4.3 in the Study and as stated above, are shown in Table 13 (variable revenue requirement) and Table 14 (fixed revenue requirement).

**Table H: Operating and Asset Maintenance Costs by System Demands**

Cost Group		Demand Category	Cost (thousands)	Totals	
<b>Variable:</b>	Water Supplies	Base Supply	\$37,894	58,519	
	Water Supplies	Excess Supply	8,322		
	Conservation and Supply Reliability	Water Banking	1,539		
	Conservation and Supply Reliability	Conservation and NTS	9,907		
	Conservation and Supply Reliability	Universal Conservation	857		
	<b>Fixed:</b>	Fixed Operating Costs	Customer Service		\$4,538
	Fixed Operating Costs	System Maintenance	7,350		
	Fixed Operating Costs	General and Administrative	9,817		
	Fixed Operating Costs	General Plant	1,016		
	Fixed Operating Costs	Asset Maintenance	10,912		
			Net allocated Costs	\$ 92,152	\$92,152

- i. Calculate cost-of-service by peaking factor** - The allocated percentages identified in Table G are applied to the operating costs identified in Table H to calculate the cost by peaking factor. General and Administrative (G&A) is reallocated based on the total cost of service.

**Table I: Calculate Cost-of-Service by Peaking Factor**

Demand Category	Cost Allocation (thousands)						
	Base	Max Day	Max Hour	Customer	Fire	G&A	Total
Base Supply	\$37,894	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,894
Excess Supply	1,791	3,599	2,932	-	-	-	8,322
Water Banking	-	-	1,874	-	-	-	1,874
NTS & Conservation	-	5,286	4,306	-	-	-	9,593
Universal Conservation	708	71	58	-	-	-	837
Customer Service	-	-	-	4,538	-	-	4,538
System Maintenance	6,942	-	-	-	408	-	7,350
Capital & Asset Mangement	5,359	3,446	1,956	150	-	-	10,911
G & A	-	-	-	-	-	9,817	9,817
GP	565	452	-	-	-	-	1,016
<b>Total Cost of Service</b>	<b>53,259</b>	<b>12,854</b>	<b>11,126</b>	<b>4,688</b>	<b>408</b>	<b>9,817</b>	<b>92,152</b>
<b>Allocation of G&amp;A</b>	<b>6,350</b>	<b>1,532</b>	<b>1,327</b>	<b>559</b>	<b>49</b>	<b>(9,817)</b>	<b>-</b>
<b>Sub-total Cost Allocation</b>	<b>\$59,609</b>	<b>\$14,386</b>	<b>\$12,453</b>	<b>\$5,247</b>	<b>\$457</b>	<b>\$ -</b>	<b>92,152</b>

- j. Determine capacity requirements for fire flow and the allocation to public fire hydrant water supply capacity** - To estimate the costs associated with (and to provide capacity for) public fire hydrant water service, the methodology put forth in the AWWA M1 Manual was used.

To determine the capacity requirements for fire flow, the District uses two hypothetical fires with varying fire flow. The first fire requires flows of 2,500 gallons per minute for a minimum of 4 hours, and the second requires 8,000 gallons per minute for a minimum of 8 hours as shown below. These hypothetical fires were chosen based on the professional judgement and experience of Raftelis.

Fire flows as a percentage of total capacity is converted to a percentage and used to identify the indirect cost allocated to water supply for public and private fire protection. The water supply demand capacity for public and private fire hydrant water service are based on firelines and hydrant capacity.

Water is supplied for private fire service through pipes and appurtenances on private property. These include all water-based fire protection systems, such as fire protection sprinklers and fire hydrants that are not part of, but are connected to, the public water service. Costs are allocated to these systems in a similar fashion and billed separately to the individual customers owning the private fire protection systems.

Max Day capacity is the amount of water needed for the duration of a fire in one day (fire flow gallons per minute multiplied by the duration of fire in minutes).

Max Hour capacity is the amount of water needed if a similar fire lasted an entire day (fire flow gallons per minute multiplied by the number of minutes in a day), less the capacity already allocated to Max Day. Capacity amounts in gallons are converted to ccf in the table below. (One ccf = 748.05 gallons.)

**Table J: Capacity Requirements for Fire Flow and Public Fire Water Allocation**

Fire Flow Estimate	Fire #1		Fire #2		Total	
	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day	Max Hour
Duration of Fire (Hours)	4.00		4.00		8.00	
Fire Flow (gpm)	2,500	2,500	8,000	8,000	10,500	10,500
Capacity Demanded for Fire (ccf)	802	4,010	2,567	12,833	3,369	16,844
Public Fire Water Capacity 74.9% (ccf) <sup>(3)</sup>	601	3,004	1,922	9,612	2,523	12,616
Private Fire Capacity 25.1% (ccf) <sup>(4)</sup>	201	1,007	644	3,221	846	4,228
Total Potable Capacity					84,624	72,789
<b>Public Fire Water Allocation (Max Day: 2,523/84,624; Max Hour 12,616/72,789)</b>					<b>3.0%</b>	<b>17.3%</b>
Private Fire Allocation (Max Day: 846/84,624; Max Hour 4,228/72,789)					1.0%	5.8%

- (2) Max Day Capacity demanded for fire = (hours\*minutes\*gallons)/748.05.  
 (3) Max Hour Capacity demanded for fire = (hours\*minutes\*gallons)/748.05 – Max Day Capacity.  
 (4) Split is based on total system hydrant/fireline meter capacity = 2,086,635/2,784,809 = 74.9%.  
 Private Fire = Remaining capacity (25.1%)  
 (5) Total potable capacity is max day and max hour demands for all customer classes.

**k. Compute the public fire hydrant water service cost –**

The Max Day and Max Hour percentages identified in Table J for public fire hydrant water service are applied to the total cost-of-service by peaking factor to reallocate expenses included in Max Day and Max Hour fire protection water service costs to customer costs:

Max Day Public Fire Hydrant Water Service costs: 3.0% \* \$14,386K = \$ 432k

Max Hour Public Fire Hydrant Water Service costs: 17.3% \* \$12,453K = \$2,154k

Total indirect costs of Public Fire Hydrant Water Service: \$2,586k

**Table K: Public Fire Hydrant Water Service Cost-of-Service**

Cost Allocation (thousands)	Base	Max Day	Max Hour	Customer	Direct Fire	Private Fire	Total
Total Operating Costs	\$ 59,609	\$ 14,386	\$ 12,453	\$ 5,247	\$ 457	\$ -	\$ 92,152
Allocation of Direct Public Fire Water to Customer				457	(457)		-
Allocation of Indirect Public Fire Water to Customer <sup>(1)</sup>		(432)	(2,154)	2,586			-
Allocation to Private Fire		144	722	-		(866)	-
<b>Adjusted Cost of Service</b>	<b>\$ 59,609</b>	<b>\$ 14,098</b>	<b>\$ 11,021</b>	<b>\$ 8,290</b>	<b>\$ -</b>	<b>\$ (866)</b>	<b>\$ 92,152</b>
<b>Total Cost of Public Fire Water Included in "Customer"</b>				<b>\$ 3,043</b>			

(1) As described above, public fire water is calculated as follows:

Max day - \$14,386K (Table I) \* 3.0% = \$ 432K

Max Hour - \$12,453K (Table I) \* 17.3% = 2,154K

As identified in Table K, there are two cost components associated with public fire hydrant water service: direct and indirect. The total cost of public fire hydrant water service is \$3,043,000 including the direct cost of \$457,000 and the indirect cost of \$2,586,000.

Total public fire hydrant water service costs are allocated to all customers through the fixed meter charge through the IRWD's rate structure, including public fire hydrant water service. This complies with Proposition 218's cost-of-service and proportionality principles because meter charges are proportional to a given property's water demand, which is proportional to the property's structures that are being protected by the fire hydrant water service.



# 1. Executive Summary

This is an update to the 2021 Cost of Service (COS) Study related to Fiscal Years (FY) 2021-22 and FY 2022-23.

The appendix attachments listed in Section 3 below, are a supplement to provide the support for the development of rates for FY 2021-22 through FY 2022-23. The methodology and assumptions in the 2021 COS study remain the same, however the tables are updated with the details from the FY 2021-22 and FY 2022-23 budgets that were adopted by the IRWD Board of Directors on April 26, 2021.

## 2. Background

The approved Fiscal Year (FY) 2021-22 Operating Budget for IRWD is \$180.2 million, representing an increase of \$6.6 million, or 3.8%, compared to the Operating Budget for FY 2020-21. The proposed FY 2022-23 Operating Budget for IRWD is \$187.7 million, representing an increase of \$7.6 million, or 4.2%, compared to the proposed Operating Budget for FY 2021-22. These budgets were adopted by the IRWD Board of Directors on April 26, 2021.

Increases to the IRWD rates and charges for services are necessary to provide for cost-of-service equity. However, due to the continued economic impact of COVID-19 to IRWD's customers, the District deferred a rate increase until after December 31, 2021. Staff anticipates resuming the normal two-year rate review cycle consistent with the adoption of the next two-year budget.

Staff and Raftelis updated IRWD's 2020 rate model based on Raftelis' findings and Committee recommendations. The same methodology was used to develop cost-of-service based rates for FY 2021-22 and FY 2022-23. Using this information, staff completed additional analysis to develop rate recommendations that will provide cost equity for both fiscal years.

The 2021 COS Study includes the following:

- Raftelis COS Study for FY 2020-21;
- Exhibit A - Tech Memo re: Legal Basis for Fire Water in Service Charge;
- Exhibit B - Tech Memo re: Determination of Costs of Fire Water;

## 3. Appendices to the 2021 COS Study

The 2021 COS Study is the basis for rate setting. The following list are appendices provided to support rates for years after 2021.

**Appendix 1:** Appendices to 2021 COS Study

**Appendix 2:** Rate Development for FY 2021-22

**Appendix 3:** Rate Development for FY 2022-23

**Appendix 4:** Rate Development for 16-month Period from February 2022 to June 2023

**Appendix 5:** Costs for Public Fire Water for FY 2021-22

**Appendix 6:** Costs for Public Fire Water for FY 2022-23

**Appendix 7:** Rate Development for Water Shortage Contingency Plan

**Appendix 8:** Rate Development for Surcharge

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2021-22 and FY 2022-23.

The IRWD Board of Directors adopted a two year operating budget for FY 2021-22 and 2022-23 on April 26, 2021. Generally, rates are adopted and implemented to cover operating costs for each FY adopted budget. Rate increases for the full year FY 2021-22 were not implemented as the Board elected to defer rate increases part of the year due to continued customer hardships resulting from COVID-19. It is anticipated that the Board will adopt rate increases covering operating costs for both fiscal years (FY 2021-22 and FY 2022-23) in January 2022.

Appendix 2 provides the support for the development of rates to cover operating costs for FY 2021-22 assuming the Board had elected to implement new rates for the full FY 2021-22. Appendix 3 provides the support for the development of rates to cover operating costs for the full FY 2022-23.

As discussed above, rates increases were deferred for part of the FY 2021-22 and it is anticipated that the Board will adopt rate increases covering operating costs for both fiscal years (FY 2021-22 and FY 2022-23) in January 2022. Rate increases would be reflected on customer bills beginning March 1, 2022. Rates were developed to recover budgeted operating costs for both fiscal years over the remaining 16 month period (March 2022-June 30,2023). The support for the development of these rates is shown in Appendix 4 and provides the basis for the January 2022 recommended rate increases. The proposed rates in Appendix 4 are anticipated to generate sufficient revenues to recover operating costs for both fiscal years over the 16 month period.

The tables are updated with the details from the FY 2021-22 operating budget. The methodology and assumptions from the 2021 Cost of Service (COS) study remain the same and the tables included in this appendix use the same numbering scheme as those in the 2021 COS. Section 8 has been added to address rates for untreated water.

The District anticipates resuming the normal two-year rate cycle consistent with the adoption of the two-year budget for FY 2023-24 and FY 2024-25.

## Potable Water Cost of Service FY 2021-22

See section 4 of the Cost of Service Report for a complete discussion on the District's potable water cost of service.

The FY 2021-22 water revenue requirement was determined to be \$93,129,524 (see sum of tables 13 and 14 below). Of this amount, \$58,898,954 (63.6%) is associated with variable costs that are incurred to acquire and treat water supplies. These costs vary with the amount of water used by customers and are recovered through commodity rates. Note that the variable cost revenue requirement includes \$13,095,132 in costs for universal conservation, targeted conservation, water banking operations, and the District's natural treatment system used to control runoff from customers who use water in the inefficient and wasteful tiers. Table 13 provides detail of the FY 2021-22 variable revenue requirement.

### 4.3. FY 2021-22 POTABLE WATER REVENUE REQUIREMENT

**Table 13: FY 2021-22 Potable Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Dyer Road Wellfield	\$18,688,185
Baker Treatment Facilities	12,755,729
Imported Water Purchases Irvine Ranch	8,982,508
Deep Aquifer Treatment System	6,711,209
Irvine Desalter Domestic	3,816,374
Wells 21 & 22 Desalter Treatment Plant	2,630,667
Irvine Desalter Plant W115	606,558
Orange Park Acres Well 1	65,551
<b>Total Gross Potable Water Supply Costs</b>	<b>\$ 54,256,781</b>
<b>Revenue Requirement Offsets to Water Supply Costs</b>	
Revenue from Partners	\$4,652,959
Revenue from Sinking Fund	1,700,000
Revenue from Water Banking Operations	2,100,000
<b>Total Revenue Requirement Offsets</b>	<b>\$ 8,452,959</b>
<b>Net Revenue Requirement for Water Supply Costs</b>	<b>\$ 45,803,822</b>
<b>Conservation and Supply Reliability</b>	
Targeted Conservation	\$5,802,874
Natural Treatment System	4,374,225
Water Banking	1,888,510
Universal Conservation	1,029,523
<b>Total Conservation and Supply Reliability Costs</b>	<b>\$ 13,095,132</b>
<b>Net Potable Variable Cost Revenue Requirement</b>	<b>\$ 58,898,954</b>
<b>Untreated Water Supplies</b>	
Untreated Water Purchases	(\$661,816)
Santiago Aqueduct Commission	135,650
Untreated Water System Maintenance	235,154
Irvine Lake	130,824
Native Water	670,000
<b>Net Untreated Water Variable Cost Revenue Requirement</b>	<b>\$ 509,812</b>

Fixed costs do not vary with the volume of water by customers. The fixed cost portion of the total FY 2021-22 revenue requirement was \$33,720,758 (36.4%) as shown in Table 14. Of these fixed costs, \$9,599,245 were associated with expenditures for replacement and enhancement capital costs that do not increase the capacity of the water utility system to serve new customer demand growth. Table 14 provides a detail of the FY 2021-22 fixed revenue requirement.

**Table 14: FY 2021-22 Potable Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Fixed Operating Costs</b>	
Domestic Water System Maintenance	\$15,342,094
General and Administrative Expenses	6,789,485
Customer Service	4,547,742
Fleet	1,347,518
General Plant	849,851
Building Maintenance	1,141,254
Water System Mitigation Monitoring	10,000
<b>Total Fixed Operating Costs</b>	<b>\$ 30,027,944</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$7,285,581
Enhancement	2,313,665
<b>Total Capital Costs</b>	<b>\$ 9,599,245</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$ 39,627,190</b>
<b>Revenue Requirement Offsets</b>	
Fireline Revenues	\$3,269,837
Miscellaneous Revenue	1,613,594
Pumping Surcharge Revenue	1,023,000
<b>Total Revenue Requirement Offsets</b>	<b>\$ 5,906,431</b>
<b>Net Fixed Cost Revenue Requirement from Rates</b>	<b>\$ 33,720,758</b>

### 4.3.1. VARIABLE COST RECOVERY – COMMODITY RATES

The District recovers water supply costs through commodity rates with the lowest cost water supplies being recovered in the low volume and base consumption tiers and the highest cost water supplies being recovered in the inefficient and wasteful tiers. The District's method for recovering variable costs is compliant with Proposition 218 because of the direct linkage between the revenue recovered in each tier to the costs incurred to provide service to customers with demand in each consumption tier.

The District also recovers the cost of water conservation and water supply reliability programs through its commodity rates with targeted costs being allocated to customers with consumption in the inefficient and wasteful tiers. This approach is reasonable because customers who exceed their monthly water budget allocation impose higher costs on the District. Thus, the commodity rates charged in these two upper tiers are designed to not only recover the cost of more expensive water supplies, but also the additional costs of:

- Targeted conservation programs designed to reduce excessive use.
- Water banking operational costs to enhance water supply reliability.
- Rebates for long-term improvements in customer water use efficiency.
- Urban runoff source control programs referred to as the NTS, which treats runoff from customers who use water in the inefficient and wasteful tiers.

In FY 2021-22, the District’s projected total water demand of 52,494 acre feet was based on historical averages by tier, adjusted for customer account growth and other relevant factors. This reflects a 2.7% decrease over the 53,939 acre feet of water demand projected in FY 2020-21. Table 15 details the FY 2021-22 unit cost of water supplies (\$/CCF) from each supply source as determined using cost and demand data provided by the District.

**Table 15: Unit Cost of FY 2021-22 Water Supplies**

Metric	Dyer Road Wellfield	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Cost and Acre Feet
Net Cost (1)	\$17,154,111	\$5,392,696	\$8,102,770	\$3,786,556	\$2,319,630	\$9,048,059	\$0	\$45,803,822
Demand in Acre Feet (net)	26,600	7,376	6,631	3,560	1,740	6,587	-	52,494
CCF (2)	11,586,960	3,212,986	2,888,464	1,550,736	757,944	2,869,297	-	22,866,386
Unit Cost per ccf (1) divided by (2)	\$1.48	\$1.68	\$2.81	\$2.44	\$3.06	\$3.15		

(1) From Table 14

(2) Acre feet is multiplied by 435.6 to convert to CCF

The District allocates the water supply in the order of cost for each source. The higher cost water supplies are appropriately allocated to the inefficient and wasteful tiers. Table 16 details this allocation for FY 2021-22 using cost and demand data provided by the District.

**Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs**

Metric	Dyer Road Wellfield (1)	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Acre Feet	Unit Cost by Tier (\$ /ccf) (2)
Unit Cost	\$1.48	\$1.68	\$2.81	\$2.44	\$3.06	\$3.15	\$0.00		
T1: Low Volume	19,105	-	-	-	-	-	-	19,105	\$1.48
T2: Base	7,495	7,376	6,631	3,560	1,740	1,418	-	28,220	\$2.15
T3: Inefficient	-	-	-	-	-	2,848	-	2,848	\$3.15
T4: Wasteful	-	-	-	-	-	2,320	-	2,320	\$3.15

(1) 19,105 acre feet are used to meet projected low volume demand estimated based on historic demand as adjusted for customer account growth and other relevant factors. The remainder (7,495 acre feet) is allocated to partially meet the base demand.

(2) The Unit Cost by Tier is the blended cost of the sources.

Having determined the unit cost of water supplies by consumption tier as shown in Table 16 above, the District then allocates the cost of conservation programs and supply reliability programs to the water budget tiers as described below:

**Universal Conservation:** Universal conservation costs are incurred to encourage customers to use water as efficiently as possible. Universal program costs are added to the commodity rate in the base, inefficient, and wasteful tiers. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

**Targeted Conservation:** Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceeds their water budgets. Therefore, these costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Based on a historical estimate of customers who have been provided assistance in these programs, approximately 75% of the customers are in the wasteful tier with the remainder of customers being in the inefficient tier. Therefore, 75% of the targeted conservation costs are allocated to the wasteful tier with the remaining 25% of the costs being allocated to the inefficient tier.

**NTS Costs:** These costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceeds their water budgets. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers because their excessive water usage creates urban water runoff. The allocation is based on an estimate of the historic mix of urban runoff created by customers in the inefficient and wasteful tiers primarily from hosing down hardscape and excess irrigation running off the landscape into the storm drains. The District estimates 85% of NTS costs are created by customers in the wasteful tier because wasteful outdoor demand flows to NTS sites. The remaining 15% of urban runoff costs results from inefficient customers overwatering drought tolerant landscape.

**Water Banking:** Water banking costs are incurred to support the reliability of the District's water supplies. These costs are added to the commodity rates of customers in the wasteful tier because their excessive water usage creates the need for enhanced reliability of costly imported water supplies as previously discussed.

Table 17 shows the outcome of derivation of the unit costs for the District's conservation and supply reliability programs.

**Table 17: FY 2021-22 Conservation and Supply Reliability Unit Costs (\$/CCF)**

Program	FY 2021-22 Revenue Requirement (1) (A)	FY 2021-22 Units of Demand (ccf) (2) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2021-22 Adjusted CCF B x C = (D)	Unit Cost Included in FY 2021-22 Commodity Rates A/B = (E)
Universal Conservation	\$1,029,523	14,544,120	100%	14,544,120	\$0.07
Water Banking					
Wasteful tier	\$1,888,510	1,010,745	90%	909,671	\$2.08
Targeted Conservation					
Inefficient tier (75%)	\$1,329,825	1,240,762	90%	1,116,686	\$1.19
Wasteful tier (25%)	\$4,473,049	1,010,745	90%	909,671	\$4.92
Natural Treatment System					
Inefficient tier (15%)	\$681,697	1,240,762	90%	1,116,686	\$0.61
Wasteful tier (85%)	\$3,692,527	1,010,745	90%	909,671	\$4.06

(1) From Table 14

(2) Units of Demand are based on the cumulative projected units of sale for the tiers. Universal Conservation includes the base, inefficient, and wasteful tiers.

Table 18 shows the FY 2021-22 commodity rates.

**Table 18: FY 2021-22 Potable Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (1)	Unit Cost of Universal Conservation (2)	Unit Cost of Water Banking (2)	Unit Cost of Targeted Conservation (2)	Unit Cost of Natural Treatment System (2)	FY 2021-22 Commodity Rates	FY 2021-22 CCF	FY 2021-22 Revenue
T1: Low Volume	\$1.48					\$1.48	8,322,265	\$12,316,952
T2: Base	\$2.15	\$0.07				\$2.22	12,292,520	27,289,395
T3: Inefficient	\$3.15	\$0.07		\$1.19	\$0.61	\$5.02	1,240,762	6,228,627
T4: Wasteful	\$3.15	\$0.07	\$2.08	\$4.92	\$4.06	\$14.28	1,010,745	14,433,441
<b>Totals</b>							<b>22,866,293</b>	<b>\$ 60,268,416</b>

(1) From Table 16

(2) From Table 17. Water used in the low volume tier is efficient and universal conservation efforts are not necessary.

### 4.3.2. VARIABLE COST RECOVERY - AGRICULTURAL RATES

Allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. DRWF provides 51% of the source of supply at a cost of \$1.48/CCF and imported water provides 13% at a cost of \$3.15/CCF. The remaining 37% is the blended cost of the other sources at \$2.33/CCF (Table 15). This results in a blended variable cost of \$2.00/CCF. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$55,981. The fixed cost applied to the agricultural commodity rate adds \$1.04 to the per CCF cost based on the estimated 53,725 CCF. Table 19 shows the calculation of FY 2021-22 agricultural rates.

**Table 19: FY 2021-22 Agricultural Water Commodity Rates (\$/CCF)**

System	FY 2021-22 Revenue Requirement	FY 2021-22 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Cost Component (CCF) (2)	FY 2021-22 Commodity Rates (1)+(2)	FY 2021-22 Revenue
Potable Water	\$163,598	53,725	\$2.00	\$1.04	\$3.05	\$163,861

### 4.3.3. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGES

The District recovers fixed operating costs and replacement and enhancement capital costs through monthly meter service charges. On the District potable water system, the baseline meter size serving customers is 5/8". Thus, the first step in developing the monthly meter service charge is to estimate the total number of 5/8" meter equivalent connections (MEUs) on the potable water system in order to establish the unit cost for a 5/8" equivalent meter. Table 20 shows a summary of this calculation using the District's fixed costs and meter count data.

**Table 20: FY 2021-22 Monthly Unit Cost of Serving a 5/8" Equivalent Meter**

System	5/8" MEU (A)	Operating Costs (B)	Capital Costs (C)	Total Fixed Cost Revenue Requirement (1) B + C = (D)	Operating Costs per 5/8" MEU B/A = (E)	Capital Costs per 5/8" MEU C/A = (F)	Total Unit Cost per 5/8" MEU(2) E + F = (G)
Potable Water	260,219	\$24,121,513	\$9,599,245	\$33,720,758	\$7.73	\$3.07	\$10.80

(1) From Table 14

(2) Values prior to rounding

Having established the monthly fixed charge unit cost as being \$10.80 per 5/8" meter equivalents, the final step in the process is to develop a schedule of monthly meter service charges for each meter size on the system. The cost per unit is rounded to the nearest \$0.05. Table 21 presents this calculation.



**Table 21: FY 2021-22 Monthly Meter Service Charges**

Meter Size and Technology	Meter Flow Rate Equivalency Ratio	Number of Accounts	FY 2021-22 Rates (After Rounding)	FY 2021-22 Total MEUs	FY 2021-22 Revenue
5/8" Disc	1.0	67,478	\$10.80	809,742	\$8,745,214
3/4" Disc	1.5	12,017	\$16.20	216,312	2,336,170
1" Disc	2.5	27,921	\$27.00	837,636	9,046,469
1 1/2" Disc	6.0	4,074	\$64.80	293,334	3,168,007
1 1/2" Single Jet	5.0	1	\$54.00	66	713
2" Disc	8.0	5,485	\$86.40	526,566	5,686,913
2" Single Jet	8.0	7	\$86.40	678	7,322
2" Turbo	12.5	710	\$135.00	106,506	1,150,265
3" Turbo	32.5	244	\$351.00	95,166	1,027,793
4" Turbo	62.5	205	\$675.00	153,756	1,660,565
4" Turbo Omni F-2	50.0	1	\$540.00	606	6,545
6" Mag Meter	139.9	0	\$1,510.38	6	65
6" Turbo	125.0	31	\$1,350.00	46,506	502,265
6" Turbo Omni F-2	100.0	4	\$1,080.00	4,806	51,905
8" Turbo	235.0	10	\$2,538.00	28,206	304,625
8" Turbo Omni F-2	235.0	1	\$2,538.00	2,826	30,521
<b>Totals</b>				<b>3,122,718</b>	<b>\$ 33,725,354</b>

#### 4.3.4. MONTHLY PRIVATE FIRELINE CHARGES

Private firelines provide water to sprinkler systems for fire suppression within private improvements such as buildings and other structures. The District, like many utilities, provides private fireline service to its customers.

Table 22 shows the calculation of the FY 2021-22 private fireline rates using the recommended approach. For a complete discussion of the calculation method for these rates, please see sections 4.3.4 in the 2021 COS study.



**Table 22: Proposed FY 2021-22 Private Fireline Charges**

Private Fireline Size	Number of Lines	Potential Demand Based on Pipe Diameter (1)	Customer Related Costs (2)	Private Fire O&M Peaking Costs (3)	Capital Cost Component (4)	FY 2021-22 Rates	FY 2021-22 Revenue
1"	42	1.00	\$5.70	\$0.16	\$0.25	\$6.10	\$3,074
2"	1,045	6.19	\$5.70	\$0.99	\$1.53	\$8.20	\$102,828.00
3"	31	17.98	\$5.70	\$2.89	\$4.44	\$13.00	\$4,836.00
4"	1,018	38.32	\$5.70	\$6.15	\$9.45	\$21.30	\$260,200.80
6"	1,173	111.31	\$5.70	\$17.87	\$27.46	\$51.00	\$717,876.00
8"	1,059	237.21	\$5.70	\$38.07	\$58.51	\$102.30	\$1,300,028.40
10"	127	426.58	\$5.70	\$68.47	\$105.22	\$179.40	\$273,405.60
11"	1	548.10	\$5.70	\$87.97	\$135.19	\$228.85	\$2,746.20
12"	5	689.04	\$5.70	\$110.60	\$169.95	\$286.25	\$17,175.00
<b>Total</b>	<b>4,501</b>						<b>\$ 2,682,170</b>
Fire Flow Testing and Hydrant Revenue							\$ 587,666
Total Fireline Revenue							\$3,269,837

- (1) Potential demand based on the Hazen-Williams Equation which estimates flow based on factors such as pipe diameter, friction, and the velocity of flow.
- (2) \$8,281,871 customer related operating costs/121,057 bills = \$5.70.
- (3) \$936,099 peaking costs/486,016 private fire demand units = \$0.16. For pipe diameters > 1", \$0.16 is increased by the potential demand based on pipe diameter (Hazen-Williams).
- (4) \$2.50 capital cost for a 1" meter equivalent X \$3.07 capital cost per MEU x 3.2% allocation to private firelines = \$0.25. For pipe diameters > 1", \$0.25 is increased by potential pipe diameter (Hazen-Williams).

### 4.3.5. PUBLIC FIRE WATER SERVICE COSTS

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2021-22 are:

Direct costs	\$ 523,000
<u>Indirect costs</u>	<u>\$2,490,000</u>
Total Public Fire Water Service Costs	\$3,013,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District's costs for design and sizing of the infrastructure to support the "fire flow" (volume and pressure of water) prescribed to meet peak firefighting water demand. The District's water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Appendix 5 for a more detailed discussion on these costs.

## 5. Sewer Cost of Service FY 2021-22

See section 5 of the Cost of Service Report for a complete discussion on the District's sewer cost of service.

As is the case with its potable water, the District separates the components of its annual sewer revenue requirement from rates into three specific types of costs: variable operating costs, fixed operating costs, and replacement and enhancement costs. However, as described in Section 5.1.1 in the Cost of Service report, the rate structure used to recover these costs differs from that of potable water service.

### 5.3. FY 2021-22 SEWER REVENUE REQUIREMENT

The FY 2021-22 sewer revenue requirement was determined to be \$56,606,301 (see tables 23 and 24 below). Of this amount, \$17,218,437 (30.4%) is associated with variable costs that are incurred to treat sewage for discharge. These costs vary with the amount of water used by customers that returns to the District's sewage treatment facilities and are recovered through IRWD's commodity rates. The District separates operational expenses between sewage treatment and recycled production with tertiary treatment and similar processes included in the cost for recycled water. Table 23 shows the FY 2021-22 sewer variable cost revenue requirement.

**Table 23: FY 2021-22 Sewer Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Variable Operating Costs</b>	
Sewer Variable Operations Costs	\$8,377,365
Variable Orange County Sanitation District Treatment Costs	4,176,800
General and Administrative Costs	3,610,980
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	627,753
Biosolids Disposal Michelson	103,400
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	449,073
<b>Gross Variable Cost Revenue Requirement</b>	<b>\$ 17,345,371</b>
<b>Revenue Requirement Offsets</b>	
Other Direct Billing Revenue	126,934
<b>Total Revenue Requirement Offsets</b>	<b>\$ 126,934</b>
<b>Net Variable Revenue Requirement from Rates</b>	<b>\$ 17,218,437</b>

Fixed costs do not vary with the volume of water used by customers and returned to the District's wastewater treatment facilities. The fixed cost portion of the total FY 2021-22 revenue requirement was \$ \$39,387,864 (69.6%). Table 24 provides a detail of the FY 2021-22 sewer fixed cost revenue requirement.

**Table 24: FY 2021-22 Sewer Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Sewer Fixed Operations	\$8,739,298
General and Administrative Costs	2,730,383
Customer Service	2,526,524
Fleet	888,137
Building Maintenance	634,030
General Plant	756,643
Orange County Sanitation District Treatment Costs	24,284
<b>Total Fixed Operating Costs</b>	<b>\$ 16,299,298</b>
<b>Replacement and Enhancement Capital Costs</b>	
Enhancement	\$1,591,013
Replacement	21,787,920
<b>Total Capital Costs</b>	<b>\$ 23,378,933</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$ 39,678,230</b>
<b>Revenue Offsets</b>	
Other Direct Billing Revenue	\$290,366
<b>Total Revenue Offsets</b>	<b>\$ 290,366</b>
<b>Net Fixed Revenue Requirement from Rates</b>	<b>\$ 39,387,864</b>

### 5.3.1. SEWER COST RECOVERY (RATE DESIGN)

The District uses the average of the three lowest water meter readings during the twelve month period ending December 31 to adjust for monthly anomalies in a ratepayer's water use and seasonal variations. The consumption block breakpoints (table 26) are based on a review of historical data for average usage during cooler months (November through March from 2016 through 2020) because of the limited demand for landscape during winter months. The analysis identified the average usage for all multi-family units was 5 CCF which aligns with the first block. The second block includes average usage below 10 CCF as single family residential customers averaged 10 CCF during the same low usage months. The third block, which includes all commercial, industrial, and institutional (CII) customers, exceeds 10 CCF (The average usage for CII customers exceeds 10 CCF). Non-residential/CII customers with billed water consumption of more than 10 CCF per month pay an additional commodity rate (\$/CCF). The Orange County Sanitation District's (OC San) Cost of Service study (December 2017) identified a flow factor, a percentage of metered water usage returning to the sewer system, of 90% for single family homes and non-residential customers (CII). Therefore, the District applies the additional charge on 90% of the billed water consumption for CII customers, consistent with the OC San study. See Table 25 in the Cost of Service Report to view the FY 2020-21 Sewer Rate Structure and Rates.

This rate structure is compliant with Proposition 218 because it provides a mechanism for recovering rate revenue from customers in a manner that is proportionate to the costs incurred by the District to provide service. It includes a fixed component for all three blocks that does not change. A variable component is included that is based on the historic average of estimated sewage flow by customers within each block.

**Step 1:** Determine the number of sewer customer accounts with usage in each consumption block as shown in Table 26.

**Table 26: FY 2021-22 Sewer Customer Accounts by Consumption Block**

Customer Class	Block 1	Block 2	Block 3	Total
Single Family Residence	27,721	25,006	13,611	66,339
Multi Family Residence	89,857	12,210	5,479	107,546
Commercial			6,239	6,239
Industrial			1,019	1,019
Public Authority			372	372
<b>Total</b>	<b>117,578</b>	<b>37,216</b>	<b>26,720</b>	<b>181,514</b>

**Step 2:** Estimate sewer volumes contributed by customer class as shown in Table 27.

**Table 27: FY 2021-22 Contributed Sewage Volumes**

Line No.	Metric	All Residential (Potable)	All Commercial, Industrial, Public Authority (Potable)	All Construction (Potable)
1	Number of Accounts	173,884	7,630	-
2	Projected Indoor Water Usage (ccf)	12,897,419	5,179,180	135,660
3	Return to Sewer Factor	72%	90%	2%
4	Annual Discharge (ccf) (Line 2*Line 3)	9,286,142	4,661,262	2,713
5	Annual Discharge (MG)	6,951	3,489	2

**Step 3:** Determine the fixed and variable unit cost of service as shown in Table 28.

**Table 28: FY 2021-22 Sewer Unit Cost of Service**

Metric	Fixed Costs	Variable Costs	Total
Operating Revenue Requirement	\$16,299,298	\$17,345,371	\$33,644,669
Capital Revenue Requirement	23,378,933		23,378,933
<b>Revenue Offset</b>			
Miscellaneous Revenue	215,078	94,022	309,100
Other Direct Billing Revenue	75,288	32,912	108,200
<b>Revenue Requirement (Table 23 and 24)</b>	<b>\$ 39,387,864</b>	<b>\$ 17,218,437</b>	<b>\$ 56,606,301</b>
Discharge (Table 27)		13,950,116	
		ccf of sewer flow	
Unit Cost		\$1.23	
		per ccf	

**Step 4:** Determine the average and total discharges in each fixed tier as shown in Table 29.

**Table 29: FY 2021-22 Sewer Discharges by Fixed Consumption Block**

Sewer Fixed Charge Tiers	Average Monthly Discharges (ccf) (A)	Number of Accounts (B)	Annual Avg Discharges (ccf) A x B x 12= (C)
Block 1: Average Water Usage < 5 ccf per month	3.2	117,578	4,514,997
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	37,216	3,126,143
Block 3: Average Water Usage > 10 ccf per month	10.0	26,720	3,206,436
<b>Total</b>		<b>181,514</b>	<b>10,847,576</b>

**Step 5:** Determine the allocation of fixed and variable sewer costs as shown in Table 30.

**Table 30: FY 2021-22 Allocation of Sewer Fixed and Variable Costs**

Fixed Allocation	Discharge	Allocation	Cost Allocation	Unit Costs
Operating Costs Allocated to Fixed Charge (from Table 29)	10,847,576	78%	12,581,543	\$5.78 per account
Capital Allocated to Fixed Charge		100%	23,207,845	\$10.65 per account
Total Fixed Charge per Customer				\$16.43 per account
Operating Costs Allocated to Discharge >10 ccf	3,102,540	22%	3,598,476	\$1.16 per ccf
Capital Allocated to Discharge >10 ccf				
Total (from Table 27)	13,950,116	100%	39,387,864	
Variable Allocation	Discharge	Cost Allocation	Rate	
<b>Discharge Block Rate – Allocated to Block Rates</b>	<b>13,950,116</b>	<b>17,218,437</b>	<b>\$ 1.23</b>	<b>per ccf</b>

**Step 6:** Calculate the sewer rates based on the allocation of fixed and variable costs shown in Table 30 above. Table 31 shows this outcome.

**Table 31: FY 2021-22 Proposed Sewer Rates**

Sewer Fixed Charge Tiers	Avg Monthly CCF' Discharged	Variable Cost (1)	Fixed Cost (2)	FY 2021-22 Monthly Rates (4)	FY 2021-22 Accounts (12 Months)	FY 2021-22 Revenue
Block 1: Average Water Usage < 5 ccf per month	3.2	\$3.95	\$16.43	\$20.40	1,410,937	\$28,783,109
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	\$8.64	\$16.43	\$25.05	446,592	11,187,126
Block 3: Average Water Usage > 10 ccf per month	10.0	\$12.34	\$16.43	\$28.75	322,934	9,284,365
<b>Totals</b>					<b>2,180,463</b>	<b>\$ 49,254,600</b>
<b>Variable Rates per ccf</b>	<b>Discharge</b>	<b>Variable Rate (3)</b>	<b>Fixed Charge (3)</b>	<b>Proposed Rate per CCF</b>	<b>FY 2022-23 Discharge CCF</b>	<b>FY 2022-23 Revenue</b>
Discharge >10 ccf	3,102,540	\$1.23	\$1.16	\$2.39	3,102,540	\$7,415,069

- (1) \$1.23 From Table 29 \* average monthly CCF discharged
- (2) Total fixed charge per customer from Table 30
- (3) From Table 30
- (4) Variable cost plus fixed cost rounded to nearest \$0.05

## 6. RECYCLED WATER COST OF SERVICE

See section 6 of the COS Report for a complete discussion on the District's recycled water cost of service.

The method used by the District to develop recycled water rates is similar to that of potable water service (see Section 2 of this report) with one significant difference. The District does not calculate unique monthly meter service charges for recycled water. Instead, the monthly service charges for recycled water are set to the same as those charged for the potable water monthly meter service charge (see Table 21 in section 4.3.3). The District takes this approach due to an imbalance between variable and fixed costs in the overall recycled water revenue requirement. This reallocation of fixed costs to variable revenue recovery through commodity rates is discussed in Section 6.1. below.

### 6.1. FY 2021-22 RECYCLED WATER REVENUE REQUIREMENT

The District's recycled water revenue requirement from rates is \$30,369,097. Prior to any adjustments, the composition of this revenue requirement is variable costs of \$14,197,792 (48.8%) and fixed costs of \$14,888,855 (51.2%). The District established the monthly fixed charge unit cost as being \$10.80 per 5/8" meter equivalents in the potable process (see Table 21 in section 4.3.3). Due to the high percentage of fixed costs identified in the recycled water revenue requirement, the District reallocates a portion of fixed costs not recovered by monthly meter service charges (\$7,129,311) into the variable cost revenue requirement. These costs are included in the recycled system and recycled revenue provides the funding which is consistent with Proposition 218 requirements. This strategy provides a fair and equitable application of these costs without deterring usage.

Tables 34 and 35 detail the FY 2021-22 variable and fixed recycled water revenue requirement before and after this reallocation.

**Table 34: FY 2021-22 Recycled Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Untreated Water Purchases	\$2,910,862
Recycled Water Tertiary Treatment	4,270,209
El Toro Remediation Principal Aquifer Plant	2,574,203
Recycled Water Tertiary Treatment Pumping Michelson	1,978,801
El Toro Remediation Shallow Groundwater	683,560
Recycled Water Tertiary Membrane Bio Reactor (MBR) Treatment Michelson	1,042,799
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	354,642
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	251,820
Recycled Water Tertiary Ultraviolet (UV) Disinfection Treatment Michelson	130,895
<b>Total Cost of Water Supplies</b>	<b>\$ 14,197,792</b>
<b>Conservation Programs</b>	
Natural Treatment System	1,306,587
Universal Conservation	492,177
Targeted Conservation	241,786
<b>Total Conservation and Supply Reliability Costs</b>	<b>\$ 2,040,550</b>
<b>Total Variable Cost Revenue Requirement Before Adjustment</b>	<b>\$ 16,238,343</b>
Adjustment to Reflect Reallocated Fixed Costs	\$7,129,311
<b>Total Variable Cost Revenue Requirement After Adjustment</b>	<b>\$ 23,367,653</b>

**Table 35: FY 2021-22 Recycled Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Recycled Water System Maintenance	\$7,625,911
Recycled Water Mitigation Monitoring	13,000
General and Administrative	2,696,796
Customer Service	2,021,219
Recycled Water Site Inspection and Testing-Field	449,100
Building Maintenance	507,224
Fleet	61,251
General Plant	208,206
Recycled Water Site Inspection and Testing-Office	59,900
<b>Total Fixed Operating Costs</b>	<b>\$ 13,642,606</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$880,341
Enhancement	365,908
<b>Total Capital Costs</b>	<b>1,246,249</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$ 14,888,855</b>
<b>Revenue Requirement Offsets</b>	
Pumping	120,000
Miscellaneous Revenues	638,100
<b>Total Revenue Requirement Offsets</b>	<b>\$ 758,100</b>
<b>Total Fixed Cost Revenue Requirement Before Adjustment</b>	<b>\$ 14,130,755</b>
<b>Adjustment to Reflect Reallocated Fixed Costs</b>	<b>(\$ 7,129,311)</b>
<b>Net Fixed Revenue Requirement from Rates After Adjustment</b>	<b>\$ 7,001,444</b>

### 6.1.3. VARIABLE COST RECOVERY - COMMODITY RATES

The method used to determine recycled water commodity rates is similar to that used for potable water. In FY 2021-22, the District's projected total recycled water demand was 29,730 acre feet based on historical demand, customer growth factors and other relevant factors. Table 36 provides a detail of the FY 2021-22 unit cost of water supplies (\$/CCF) from each supply source using the District's cost and demand data. Note that the net cost shown in each column includes the reallocation of fixed costs of \$7,129,311 discussed above.

**Table 36: Unit Cost of FY 2021-22 Recycled Water Supplies**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total
Net Cost	\$12,060,950	\$4,893,624	\$4,372,529	\$21,327,103
Acre Feet	22,890	3,540	3,300	29,730
Unit Cost per ccf (1)	\$1.21	\$3.17	\$3.04	

(1) Acre feet is multiplied by 435.6 to convert to CCF.



The District allocates the lower cost water supplies to the low volume and base consumption tiers with higher cost water supplies being allocated to the inefficient and wasteful tiers. Table 37 details this allocation for FY 2021-22 using cost and demand data provided by the District.

The general formula used to determine the water budget for a landscape customer served by a recycled water connection is discussed in detail in 4.1.5. in the Cost of Service report.

**Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total Acre Feet	Unit Cost per \$ /cf by Tier (1)
Unit Cost (Table 36)	\$1.21	\$3.17	\$3.04		
T1: Low Volume	13,769	-	-	13,769	\$1.21
T2: Base	9,121	3,540	1,053	13,714	\$1.86
T3: Inefficient	-	-	1,342	1,342	\$3.04
T4: Wasteful	-	-	905	905	\$3.04
Total	22,890	3,540	3,300	29,730	

(1) The Unit Cost per \$/CCF by TIER is the blended cost of the sources.

Having determined the unit cost of recycled water supplies by consumption tier for landscape customers as shown in Table 37 above, the District then allocates the cost of conservation programs, as shown in table 34, to the appropriate water budget tiers.

Universal conservation costs are added to the commodity rate in the base, inefficient, and wasteful tiers to pay for conservation program costs that help customers in each of these tiers achieve efficient use of recycled water. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage reaches the wasteful tier. Costs are allocated to the wasteful tier based on expected usage.

Natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceed their water budgets. The costs include prevention, control and treatment of the runoff of water from irrigation and other uses. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Costs are allocated based on the expected usage in each tier.

Table 38 shows the outcome of derivation of the unit costs for the District's conservation programs.

**Table 38: FY 2021-22 Conservation Program Unit Costs (\$/CCF)**

Program	FY 2021-22 Revenue Requirement (A)*	FY 2021-22 Units of Demand (ccf) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2021-22 Adjusted Units of Demand B x C = (D)	Unit Cost Included in FY 2021-22 Commodity Rates A/D = (E)
Universal Conservation	\$492,177	6,952,971	100%	6,952,971	\$0.07
Targeted Conservation					
Wasteful tier	\$241,786	394,297	90%	354,868	\$0.68
Natural Treatment System					
Inefficient tier	\$227,232	584,675	90%	526,208	\$0.43
Wasteful tier	\$1,079,354	394,297	90%	354,868	\$3.04

\*See Table 34

Having determined the unit cost of recycled water supplies by consumption tier as shown in Table 37 and the unit cost of conservation program cost in Table 38, the District must then allocate the cost of conservation programs to each consumption tier. Table 39 shows the outcome of this process using the District’s cost and demand data.

**Table 39: FY 2021-22 Recycled Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (Table 37)	Unit Cost of Universal Conservation (Table 38)	Unit Cost of Targeted Conservation (Table 38)	Unit Cost of Natural Treatment System (Table 38)	FY 2021-22 Commodity Rates	FY 2021-22 CCF	FY 2021-22 Revenue
T1: Low Volume	\$1.21				\$1.21	5,997,595	\$7,257,090
T2: Base	\$1.86	\$0.07			\$1.93	5,973,998	11,529,816
T3: Inefficient	\$3.04	\$0.07		\$0.43	\$3.54	584,675	2,069,750
T4: Wasteful	\$3.04	\$0.07	\$0.68	\$3.04	\$6.83	394,297	2,693,050
<b>Totals</b>						<b>12,950,566</b>	<b>\$23,549,707</b>

**6.1.4. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGE**

Recycled water fixed charges are the same as potable water fixed charges (see Table 21 in Section 4.3.3).

**6.1.5. VARIABLE COST RECOVERY – RECYCLED WATER AGRICULTURAL RATES**

As discussed in section 4.3.2, allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used and these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. It is assumed that produced water provides 77% of the source of supply, 12% is the cost of processed water, and imported water provides 11%. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$9,961. A portion of the fixed cost is included in the variable rate component as described in section 6.1.3. An additional fixed cost of \$0.01 per CCF is, which is not recovered through the commodity rate, is applied based on an estimated 1,300,894 CCF. Table 40 shows the calculation of FY 2021-22 recycled water agricultural rates.

**Table 40: FY 2021-22 Recycled Water Agricultural Water Commodity Rates (\$/CCF)**

Customer Class	FY 2021-22 Revenue Requirement	FY 2021-22 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Component Cost (CCF) (2)	FY 2021-22 Commodity Rates (1)+(2)	FY 2021-22 Revenue
Agricultural	\$2,159,484	1,300,894	\$1.65	\$0.01	\$1.66	\$2,159,484

## 8. Untreated Water Cost of Service FY 2021-22

### 8.1. UNTREATED WATER COMMODITY RATE

The FY 2021-22 variable revenue requirement for untreated water was determined to be \$135,650. The source of this water comes from the Santiago Aqueduct Commission (SAC) and this is the cost incurred to acquire water supplies (See Table 13). Table 41 shows the calculation of the variable rate for untreated water

**Table 41: FY 2021-22 Untreated Water Commodity Rate (\$/CCF)**

Consumption Tier	FY 2021-22 Revenue Requirement	FY 2021-22 SAC Purchases (AF)	Variable Cost (AF)	Variable Cost (CCF) <sup>(1)</sup>	FY 2021-22 Commodity Rates
Untreated Water	\$135,650	175	\$775	\$1.78	\$1.78

(1) Acre feet is multiplied by 435.6 to convert to CCF

#### 8.1.0. UNTREATED WATER AGRICULTURAL COMMODITY RATE

The fixed cost revenue requirement for all untreated water uses was determined to be \$375,010 for FY 2021-22. These include capacity, readiness to serve, and meter costs that do not vary based upon the amount of water used. The untreated agricultural rate includes a fixed charge component that is based upon an allocated portion of the untreated water costs for all untreated imported water uses. This includes untreated water supplies used by the Baker Treatment Plant (7,200 AF), the Recycled System (1,479 AF), and water sold directly to customers (187 AF). The total projected demand for these customers is 8,666. Table 42 shows the calculation of the rate included for fixed costs for untreated agricultural customers.

**Table 42: FY 2021-22 Untreated Water Agricultural Commodity Rates (\$/CCF)**

FY 2021-22 Revenue Requirement	FY 2021-22 Projected Demand (AF)	FY 2021-22 Projected Demand (CCF) <sup>(1)</sup>	Fixed Cost Component (CCF)
\$375,010	8,866	3,862,030	\$0.10

(1) Acre feet is multiplied by 435.6 to convert to CCF

Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. As discussed in section 4.3.2, allocated fixed and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. The untreated water agricultural rate is calculated by combining the variable cost shown in Table 41 and the fixed cost component as shown in Table 42.

**Table 43: FY 2021-22 Untreated Water Agricultural Commodity Rates (\$/CCF)**

Consumption Tier	Variable Cost (CCF)	Fixed Cost Component (CCF)	FY 2021-22 Commodity Rates
Untreated Water	\$1.78	\$0.10	\$1.88

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2021-22 and FY 2022-23.

The IRWD Board of Directors adopted a two year operating budget for FY 2021-22 and 2022-23 on April 26, 2021. Generally, rates are adopted and implemented to cover operating costs for each FY adopted budget. Rate increases for the full year FY 2021-22 were not implemented as the Board elected to defer rate increases part of the year due to continued customer hardships resulting from COVID-19. It is anticipated that the Board will adopt rate increases covering operating costs for both fiscal years (FY 2021-22 and FY 2022-23) in January 2022.

Appendix 2 provides the support for the development of rates to cover operating costs for FY 2021-22 assuming the Board had elected to implement new rates for the full FY 2021-22. Appendix 3 provides the support for the development of rates to cover operating costs for the full FY 2022-23.

As discussed above, rates increases were deferred for part of the FY 2021-22 and it is anticipated that the Board will adopt rate increases covering operating costs for both fiscal years (FY 2021-22 and FY 2022-23) in January 2022. Rate increases would be reflected on customer bills beginning March 1, 2022. Rates were developed to recover budgeted operating costs for both fiscal years over the remaining 16 month period (March 2022-June 30,2023). The support for the development of these rates is shown in Appendix 4 and provides the basis for the January 2022 recommended rate increases. The proposed rates in Appendix 4 are anticipated to generate sufficient revenues to recover operating costs for both fiscal years over the 16 month period.

The tables are updated with the details from the FY 2022-23 operating budget. The methodology and assumptions from the 2021 Cost of Service (COS) study remain the same and the tables included in this appendix use the same numbering scheme as those in the 2021 COS.

The District anticipates resuming the normal two-year rate cycle consistent with the adoption of the two-year budget for FY 2023-24 and FY 2024-25.

## Potable Water Cost of Service FY 2022-23

See section 4 of the Cost of Service Report for a complete discussion on the District's potable water cost of service.

The FY 2022-23 water revenue requirement was determined to be \$97,735,041 (see sum of tables 13 and 14 below). Of this amount, \$61,757,366 (63.6%) is associated with variable costs that are incurred to acquire and treat potable water supplies. These costs vary with the amount of water used by customers and are recovered through commodity rates. Note that the variable cost revenue requirement includes \$13,247,579 in costs for universal conservation, targeted conservation, water banking operations, and the District's natural treatment system used to control runoff from customers who use water in the inefficient and wasteful tiers. Table 13 provides detail of the FY 2022-23 variable revenue requirement.

### 4.3. FY 2022-23 POTABLE WATER REVENUE REQUIREMENT

**Table 13: FY 2022-23 Potable Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Dyer Road Wellfield	\$19,749,097
Baker Treatment Facilities	13,300,182
Imported Water Purchases Irvine Ranch	9,747,936
Deep Aquifer Treatment System	7,050,071
Irvine Desalter Domestic	4,011,380
Wells 21 & 22 Desalter Treatment Plant	2,749,193
Irvine Desalter Plant W115	643,642
Orange Park Acres Well 1	70,463
<b>Total Gross Potable Water Supply Costs</b>	<b>\$ 57,321,964</b>
<b>Revenue Requirement Offsets to Water Supply Costs</b>	
Revenue from Partners	\$4,886,177
Revenue from Sinking Fund	1,700,000
Revenue from Water Banking Operations	2,226,000
<b>Total Revenue Requirement Offsets</b>	<b>\$ 8,812,177</b>
<b>Net Revenue Requirement for Water Supply Costs</b>	<b>\$ 48,509,787</b>
<b>Conservation and Supply Reliability</b>	
Targeted Conservation	\$5,758,028
Natural Treatment System	4,483,176
Water Banking	1,907,266
Universal Conservation	1,099,109
<b>Total Conservation and Supply Reliability Costs</b>	<b>\$ 13,247,579</b>
<b>Net Potable Variable Cost Revenue Requirement</b>	<b>\$ 61,757,366</b>
<b>Untreated Water Supplies</b>	
Untreated Water Purchases	(\$630,034)
Santiago Aqueduct Commission	139,850
Untreated Water System Maintenance	236,679
Irvine Lake	130,824
Native Water	690,000
<b>Net Untreated Water Variable Cost Revenue Requirement</b>	<b>\$ 567,319</b>

Fixed costs do not vary with the volume of water by customers. The fixed cost portion of the total FY 2022-23 revenue requirement was \$35,410,355 (36.4%) as shown in Table 14. Of these fixed costs, \$10,566,505 were associated with expenditures for replacement and enhancement capital costs that do not increase the capacity of the water utility system to serve new customer demand growth. Table 14 provides a detail of the FY 2022-23 fixed revenue requirement.

**Table 14: FY 2022-23 Potable Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Fixed Operating Costs</b>	
Domestic Water System Maintenance	\$15,893,142
General and Administrative Expenses	7,091,446
Customer Service	4,819,307
Fleet	1,377,451
General Plant	756,030
Building Maintenance	1,181,555
Water System Mitigation Monitoring	10,200
<b>Total Fixed Operating Costs</b>	<b>\$31,129,130</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$8,218,135
Enhancement	2,348,370
<b>Total Capital Costs</b>	<b>\$10,566,505</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$41,695,635</b>
<b>Revenue Requirement Offsets</b>	
Fireline Revenues	\$3,565,690
Miscellaneous Revenue	1,645,589
Pumping Surcharge Revenue	1,074,000
<b>Total Revenue Requirement Offsets</b>	<b>\$6,285,279</b>
<b>Net Fixed Cost Revenue Requirement from Rates</b>	<b>\$35,410,355</b>

### 4.3.1. VARIABLE COST RECOVERY – COMMODITY RATES

The District recovers water supply costs through commodity rates with the lowest cost water supplies being recovered in the low volume and base consumption tiers and the highest cost water supplies being recovered in the inefficient and wasteful tiers. The District's method for recovering variable costs is compliant with Proposition 218 because of the direct linkage between the revenue recovered in each tier to the costs incurred to provide service to customers with demand in each consumption tier.

The District also recovers the cost of water conservation and water supply reliability programs through its commodity rates with targeted costs being allocated to customers with consumption in the inefficient and wasteful tiers. This approach is reasonable because customers who exceed their monthly water budget allocation impose higher costs on the District. Thus, the commodity rates charged in these two upper tiers are designed to not only recover the cost of more expensive water supplies, but also the additional costs of:

- Targeted conservation programs designed to reduce excessive use.
- Water banking operational costs to enhance water supply reliability.
- Rebates for long-term improvements in customer water use efficiency.
- Urban runoff source control programs referred to as the NTS, which treats runoff from customers who use water in the inefficient and wasteful tiers.

In FY 2022-23, the District’s projected total water demand of 53,294 acre feet was based on historical averages by tier, adjusted for customer account growth and other relevant factors. This reflects a 1.5% increase over the 52,494 acre feet of water demand projected in FY 2021-22. Table 15 details the FY 2022-23 unit cost of water supplies (\$/ccf) from each supply source as determined using cost and demand data provided by the District.

**Table 15: Unit Cost of FY 2022-23 Water Supplies**

Metric	Dyer Road Wellfield	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Cost and Acre Feet
Net Cost (1)	\$17,812,921	\$5,897,526	\$8,414,006	\$4,092,737	\$2,474,199	\$9,818,399	\$0	\$48,509,787
Demand in Acre Feet (net)	26,600	7,498	6,750	3,658	1,789	6,999	-	53,294
CCF (2)	11,586,960	3,266,129	2,940,300	1,593,425	779,288	3,048,764	-	
Unit Cost per ccf (1) divided by (2)	\$1.54	\$1.81	\$2.86	\$2.57	\$3.17	\$3.22		

- (1) From Table 14
- (2) Acre feet is multiplied by 435.6 to convert to CCF

The District allocates the water supply in the order of cost for each source. The higher cost water supplies are appropriately allocated to the inefficient and wasteful tiers. Table 16 details this allocation for FY 2022-23 using cost and demand data provided by the District.

**Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs**

Metric	Dyer Road Wellfield (1)	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Acre Feet	Unit Cost by Tier (\$ /ccf) (2)
Unit Cost	\$1.54	\$1.81	\$2.86	\$2.57	\$3.17	\$3.22	\$0.00		
T1: Low Volume	19,394	-	-	-	-	-	-	19,394	\$1.54
T2: Base	7,206	7,498	6,750	3,658	1,789	1,749	-	28,650	\$2.26
T3: Inefficient	-	-	-	-	-	2,893	-	2,893	\$3.22
T4: Wasteful	-	-	-	-	-	2,357	-	2,357	\$3.22

- (1) 19,394 acre feet are used to meet projected low volume demand estimated based on historic demand as adjusted for customer account growth and other relevant factors. The remainder (7,206 acre feet) is allocated to partially meet the base demand.
- (2) The Unit Cost by Tier is the blended cost of the sources.

Having determined the unit cost of water supplies by consumption tier as shown in Table 16 above, the District then allocates the cost of conservation programs and supply reliability programs to the water budget tiers as described below:

**Universal Conservation:** Universal conservation costs are incurred to encourage customers to use water as efficiently as possible. Universal program costs are added to the commodity rate in the base, inefficient, and wasteful tiers. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

**Targeted Conservation:** Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceeds their water budgets. Therefore, these costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Based on a historical estimate of customers who have been provided assistance in these programs, approximately 75% of the customers are in the wasteful tier with the remainder of customers being in the inefficient tier. Therefore, 75% of the targeted conservation costs are allocated to the wasteful tier with the remaining 25% of the costs being allocated to the inefficient tier.



**NTS Costs:** These costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceeds their water budgets. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers because their excessive water usage creates urban water runoff. The allocation is based on an estimate of the historic mix of urban runoff created by customers in the inefficient and wasteful tiers primarily from hosing down hardscape and excess irrigation running off the landscape into the storm drains. The District estimates 85% of NTS costs are created by customers in the wasteful tier because wasteful outdoor demand flows to NTS sites. The remaining 15% of urban runoff costs results from inefficient customers overwatering drought tolerant landscape.

**Water Banking:** Water banking costs are incurred to support the reliability of the District's water supplies. These costs are added to the commodity rates of customers in the wasteful tier because their excessive water usage creates the need for enhanced reliability of costly imported water supplies as previously discussed.

Table 17 shows the outcome of derivation of the unit costs for the District's conservation and supply reliability programs.

**Table 17: FY 2022-23 Conservation and Supply Reliability Unit Costs (\$/ccf)**

Program	FY 2022-23 Revenue Requirement (1) (A)	FY 2022-23 Units of Demand (ccf) (2) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2022-23 Adjusted CCF B x C = (D)	Unit Cost Included in FY 2022-23 Commodity Rates A/B = (E)
Universal Conservation	\$1,099,109	14,766,881	100%	14,766,881	\$0.07
Water Banking					
Wasteful tier	\$1,907,266	1,026,600	90%	923,940	\$2.06
Targeted Conservation					
Inefficient tier (75%)	\$1,319,548	1,260,225	90%	1,134,203	\$1.16
Wasteful tier (25%)	\$4,438,480	1,026,600	90%	923,940	\$4.80
Natural Treatment System					
Inefficient tier (15%)	\$698,677	1,260,225	90%	1,134,203	\$0.62
Wasteful tier (85%)	\$3,784,500	1,026,600	90%	923,940	\$4.10

- (1) From Table 14
- (2) FY 2022-23 Units of Demand are based on the cumulative projected units of sale for the tiers. Universal Conservation includes the base, inefficient, and wasteful tiers.

Table 18 shows the FY 2022-23 commodity rates.

**Table 18: FY 2022-23 Potable Water Commodity Rates (\$/ccf)**

Consumption Tier	Unit Cost of Water Supplies (1)	Unit Cost of Universal Conservation (2)	Unit Cost of Water Banking (2)	Unit Cost of Targeted Conservation (2)	Unit Cost of Natural Treatment System (2)	FY 2022-23 Commodity Rates	FY 2022-23 CCF	FY 2022-23 Revenue
T1: Low Volume	\$1.54					\$1.54	8,447,959	\$13,009,857
T2: Base	\$2.26	\$0.07				\$2.33	12,480,055	29,078,529
T3: Inefficient	\$3.22	\$0.07		\$1.16	\$0.62	\$5.07	1,260,225	6,389,342
T4: Wasteful	\$3.22	\$0.07	\$2.06	\$4.80	\$4.10	\$14.25	1,026,600	14,629,050
<b>Totals</b>							<b>23,214,840</b>	<b>\$ 63,106,779</b>

- (1) From Table 16
- (2) From Table 17. Water used in the low volume tier is efficient and universal conservation efforts are not necessary.



### 4.3.2. VARIABLE COST RECOVERY - AGRICULTURAL RATES

Allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. DRWF provides 51% of the source of supply at a cost of \$1.54/ccf and imported water provides 13% at a cost of \$3.22/ccf. The remaining 37% is the blended cost of the other sources at \$2.48/ccf (Table 15). This results in a blended variable cost of \$2.05/ccf. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$59,018. The fixed cost applied to the agricultural commodity rate adds \$1.08 to the per ccf cost based on the estimated 54,568 ccf's. Table 19 shows the calculation of FY 2022-23 agricultural rates.

**Table 19: FY 2022-23 Agricultural Water Commodity Rates (\$/ccf)**

System	FY 2022-23 Revenue Requirement	FY 2022-23 Projected Demand (CCF)	Variable Cost (CCF)	Fixed Component Cost (CCF)	FY 2022-23 Commodity Rates	FY 2022-23 Revenue
Potable Water	\$171,698	54,568	\$2.05	\$1.08	\$3.13	\$170,967

### 4.3.3. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGES

The District recovers fixed operating costs and replacement and enhancement capital costs through monthly meter service charges. On the District potable water system, the baseline meter size serving customers is 5/8". Thus, the first step in developing the monthly meter service charge is to estimate the total number of 5/8" meter equivalent connections (MEUs) on the potable water system in order to establish the unit cost for a 5/8" equivalent meter. Table 20 shows a summary of this calculation using the District's fixed costs and meter count data.

**Table 20: FY 2022-23 Monthly Unit Cost of Serving a 5/8" Equivalent Meter**

System	5/8" MEU (A)	Operating Costs (B)	Capital Costs (C)	Total Fixed Cost Revenue Requirement (1) B + C = (D)	Operating Costs per 5/8" MEU B/A = (E)	Capital Costs per 5/8" MEU C/A = (F)	Total Unit Cost per 5/8" MEU ((2) E + F = (G)
Potable Water	262,797	\$24,843,851	\$10,566,505	\$35,410,355	\$7.88	\$3.35	\$11.23

- (1) From Table 14  
(2) Values prior to rounding

Having established the monthly fixed charge unit cost as being \$11.23 per 5/8" meter equivalents, the final step in the process is to develop a schedule of monthly meter service charges for each meter size on the system. The cost per unit is rounded to the nearest \$0.05 to \$11.25. Table 21 presents this calculation.

**Table 21: FY 2022-23 Monthly Meter Service Charges**

Meter Size and Technology	Meter Flow Rate Equivalency Ratio	Number of Accounts	FY 2022-23 Rates (After Rounding)	FY 2022-23 Total MEUs	FY 2022-23 Revenue
5/8" Disc	1.0	70,542	\$11.25	846,468	\$9,522,765
3/4" Disc	1.5	12,577	\$16.88	226,386	2,546,843
1" Disc	2.5	30,001	\$28.13	900,030	10,125,338
1 1/2" Disc	6.0	4,195	\$67.50	302,040	3,397,950
1 1/2" Single Jet	5.0	1	\$56.25	60	675
2" Disc	8.0	5,735	\$90.00	550,560	6,193,800
2" Single Jet	8.0	8	\$90.00	768	8,640
2" Turbo	12.5	720	\$140.63	108,000	1,215,000
3" Turbo	32.5	249	\$365.63	97,110	1,092,488
4" Turbo	62.5	209	\$703.13	156,750	1,763,438
4" Turbo Omni F-2	50.0	1	\$562.50	600	6,750
6" Mag Meter	139.9	0	\$1,573.31	0	0
6" Turbo	125.0	32	\$1,406.25	48,000	540,000
6" Turbo Omni F-2	100.0	5	\$1,125.00	6,000	67,500
8" Turbo	235.0	11	\$2,643.75	31,020	348,975
8" Turbo Omni F-2	235.0	1	\$2,643.75	2,820	31,725
<b>Totals</b>				<b>3,276,612</b>	<b>\$ 36,861,885</b>

#### 4.3.4. MONTHLY PRIVATE FIRELINE CHARGES

Private firelines provide water to sprinkler systems for fire suppression within private improvements such as buildings and other structures. The District, like many utilities, provides private fireline service to its customers.

Table 22 shows the calculation of the FY 2022-23 private fireline rates using the recommended approach. For a complete discussion of the calculation method for these rates, please see sections 4.3.4 in the 2021 COS study.

**Table 22: Proposed FY 2022-23 Private Fireline Charges**

Private Fireline Size	Number of Lines	Potential Demand Based on Pipe Diameter (1)	Customer Related Costs (2)	Private Fire O&M Peaking Costs (3)	Capital Cost Component (4)	FY 2022-23 Rates	FY 2022-23 Revenue
1"	43	1.00	\$5.84	\$0.16	\$0.28	\$6.30	\$3,251
2"	1,066	6.19	\$5.84	\$1.01	\$1.75	\$8.60	\$110,011.20
3"	32	17.98	\$5.84	\$2.94	\$5.09	\$13.85	\$5,318.40
4"	1,038	38.32	\$5.84	\$6.27	\$10.84	\$22.95	\$285,865.20
6"	1,196	111.31	\$5.84	\$18.20	\$31.49	\$55.55	\$797,253.60
8"	1,080	237.21	\$5.84	\$38.80	\$67.12	\$111.75	\$1,448,280.00
10"	130	426.58	\$5.84	\$69.77	\$120.70	\$196.30	\$306,228.00
11"	1	548.10	\$5.84	\$89.64	\$155.08	\$250.55	\$3,006.60
12"	5	689.04	\$5.84	\$112.69	\$194.96	\$313.50	\$18,810.00
<b>Total</b>	<b>4,591</b>						<b>\$ 2,978,024</b>
Fire Flow Testing and Hydrant Revenue							\$ 587,666
Total Fireline Revenue							\$3,565,690

- (1) Potential demand based on the Hazen-Williams Equation which estimates flow based on factors such as pipe diameter, friction, and the velocity of flow.
- (2) \$8,659,922 customer related operating costs/123,478 bills = \$5.84.
- (3) \$972,965 peaking costs/495,752 private fire demand units = \$0.16. For pipe diameters > 1", \$0.16 is increased by the potential demand based on pipe diameter (Hazen-Williams).
- (4) \$2.50 capital cost for a 1" meter equivalent X \$3.35 capital cost per MEU x 3.2% allocation to private firelines = \$0.28. For pipe diameters > 1", \$0.28 is increased by potential pipe diameter (Hazen-Williams).

**4.3.5. PUBLIC FIRE WATER SERVICE COSTS**

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2022-23 are:

Direct costs	\$ 541,000
<u>Indirect costs</u>	<u>\$2,532,000</u>
Total Public Fire Hydrant Water Service Costs	\$3,073,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Appendix 6 for a more detailed discussion on these costs.

**5. Sewer Cost of Service FY 2022-23**

See section 5 of the Cost of Service Report for a complete discussion on the District’s sewer cost of service.

As is the case with its potable water, the District separates the components of its annual sewer revenue requirement from rates into three specific types of costs: variable operating costs, fixed operating costs, and replacement and enhancement costs. However, as described in Section 5.1.1 in the Cost of Service report, the rate structure used to recover these costs differs from that of potable water service.

### 5.3. FY 2022-23 SEWER REVENUE REQUIREMENT

The FY 2022-23 sewer revenue requirement was determined to be \$59,257,026 (see tables 23 and 24 below). Of this amount, \$17,464,289 (30.9%) is associated with variable costs that are incurred to treat sewage for discharge. These costs vary with the amount of water used by customers that returns to the District's sewage treatment facilities and are recovered through IRWD's commodity rates. The District separates operational expenses between sewage treatment and recycled production with tertiary treatment and similar processes included in the cost for recycled water. Table 23 shows the FY 2022-23 sewer variable cost revenue requirement.

**Table 23: FY 2022-23 Sewer Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Variable Operating Costs</b>	
Sewer Variable Operations Costs	\$8,438,558
Variable Orange County Sanitation District Treatment Costs	4,181,600
General and Administrative Costs	3,735,999
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	650,388
Biosolids Disposal Michelson	117,500
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	465,648
<b>Gross Variable Cost Revenue Requirement</b>	<b>\$17,589,693</b>
<b>Revenue Requirement Offsets</b>	
Other Direct Billing Revenue	125,404
<b>Total Revenue Requirement Offsets</b>	<b>\$125,404</b>
<b>Net Variable Revenue Requirement from Rates</b>	<b>\$17,464,289</b>

Fixed costs do not vary with the volume of water used by customers and returned to the District's wastewater treatment facilities. The fixed cost portion of the total FY 2022-23 revenue requirement was \$41,792,737 (73.8%). Table 24 provides a detail of the FY 2022-23 sewer fixed cost revenue requirement.

**Table 24: FY 2022-23 Sewer Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Sewer Fixed Operations	\$8,871,782
General and Administrative Costs	2,850,846
Customer Service	3,212,871
Fleet	907,865
Building Maintenance	656,419
General Plant	682,520
Orange County Sanitation District Treatment Costs	26,154
<b>Total Fixed Operating Costs</b>	<b>\$17,208,457</b>
<b>Replacement and Enhancement Capital Costs</b>	
Enhancement	\$1,614,878
Replacement	23,269,499
<b>Total Capital Costs</b>	<b>\$24,884,376</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$42,092,834</b>
<b>Revenue Offsets</b>	
Other Direct Billing Revenue	\$300,096
<b>Total Revenue Offsets</b>	<b>\$300,096</b>
<b>Net Fixed Revenue Requirement from Rates</b>	<b>\$41,792,737</b>

### 5.3.1. SEWER COST RECOVERY (RATE DESIGN)

The District uses the average of the three lowest water meter readings during the twelve month period ending December 31 to adjust for monthly anomalies in a ratepayer's water use and seasonal variations. The consumption block breakpoints (table 26) are based on a review of historical data for average usage during cooler months (November through March from 2016 through 2020) because of the limited demand for landscape during winter months. The analysis identified the average usage for all multi-family units was 5 CCF which aligns with the first block. The second block includes average usage below 10 CCF as single family residential customers averaged 10 CCF during the same low usage months. The third block, which includes all commercial, industrial, and institutional (CII) customers, exceeds 10 CCF (The average usage for CII customers exceeds 10 CCF). Non-residential/CII customers with billed water consumption of more than 10 CCF per month pay an additional commodity rate (\$/CCF). The Orange County Sanitation District's (OC San) Cost of Service study (December 2017) identified a flow factor, a percentage of metered water usage returning to the sewer system, of 90% for single family homes and non-residential customers (CII). Therefore, the District applies the additional charge on 90% of the billed water consumption for CII customers, consistent with the OC San study. See Table 25 in the Cost of Service Report to view the FY 2020-21 Sewer Rate Structure and Rates.

This rate structure is compliant with Proposition 218 because it provides a mechanism for recovering rate revenue from customers in a manner that is proportionate to the costs incurred by the District to provide service. It includes a fixed component for all three blocks that does not change. A variable component is included that is based on the historic average of estimated sewage flow by customers within each block.

**Step 1:** Determine the number of sewer customer accounts with usage in each consumption block as shown in Table 26.

**Table 26: FY 2022-23 Sewer Customer Accounts by Consumption Block**

Customer Class	Block 1	Block 2	Block 3	Total
Single Family Residence	27,998	25,256	13,747	67,002
Multi Family Residence	90,756	12,332	5,534	108,621
Commercial			6,239	6,239
Industrial			1,019	1,019
Public Authority			372	372
<b>Total</b>	<b>118,754</b>	<b>37,588</b>	<b>26,911</b>	<b>183,253</b>

**Step 2:** Estimate sewer volumes contributed by customer class as shown in Table 27.

**Table 27: FY 2022-23 Contributed Sewage Volumes**

Line No.	Metric	All Residential (Potable)	All Commercial, Industrial, Public Authority (Potable)	All Construction (Potable)
1	Number of Accounts	175,623	7,630	-
2	Projected Indoor Water Usage (ccf)	12,984,011	5,217,852	137,788
3	Return to Sewer Factor	72%	90%	2%
4	Annual Discharge (ccf) (Line 2*Line 3)	9,348,488	4,696,067	2,756
5	Annual Discharge (MG)	6,993	3,513	2

**Step 3:** Determine the fixed and variable unit cost of service as shown in Table 28.

**Table 28: FY 2022-23 Sewer Unit Cost of Service**

Metric	Fixed Costs	Variable Costs	Total
Operating Revenue Requirement	\$17,208,457	\$17,589,693	\$34,798,150
Capital Revenue Requirement	24,884,376		24,884,376
<b>Revenue Offset</b>			
Miscellaneous Revenue	222,304	92,896	315,200
Other Direct Billing Revenue	77,792	32,508	110,300
<b>Revenue Requirement (Table 23 and 24)</b>	<b>\$ 41,792,737</b>	<b>\$ 17,464,289</b>	<b>\$ 59,257,026</b>
Discharge (Table 27)		14,047,311	
		ccf of sewer flow	
Unit Cost		\$1.24	
		per ccf	

**Step 4:** Determine the average and total discharges in each fixed tier as shown in Table 29.

**Table 29: FY 2022-23 Sewer Discharges by Fixed Consumption Block**

Sewer Fixed Charge Tiers	Average Monthly Discharges (ccf) (A)	Number of Accounts (B)	Annual Avg Discharges (ccf) A x B x 12= (C)
Block 1: Average Water Usage < 5 ccf per month	3.2	118,754	4,560,147
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	37,588	3,157,404
Block 3: Average Water Usage > 10 ccf per month	10.0	26,911	3,229,344
<b>Total</b>		<b>183,253</b>	<b>10,946,896</b>

**Step 5:** Determine the allocation of fixed and variable sewer costs as shown in Table 30.

**Table 30: FY 2022-23 Allocation of Sewer Fixed and Variable Costs**

Fixed Allocation	Discharge	Allocation	Cost Allocation	Unit Costs
Operating Costs Allocated to Fixed Charge (from Table 29)	10,946,896	78%	13,314,731	\$6.05 per account
Capital Allocated to Fixed Charge		100%	24,706,966	\$11.24 per account
Total Fixed Charge per Customer				\$17.29 per account
Operating Costs Allocated to Discharge >10 ccf	3,100,415	22%	3,771,040	\$1.22 per ccf
Capital Allocated to Discharge >10 ccf				
Total (from Table 27)	14,047,311	100%	41,792,737	
Variable Allocation	Discharge	Cost Allocation	Rate	
<b>Discharge Block Rate – Allocated to Block Rates</b>	<b>14,047,311</b>	<b>17,218,437</b>	<b>\$ 1.24</b>	<b>per ccf</b>

**Step 6:** Calculate the sewer rates based on the allocation of fixed and variable costs shown in Table 30 above. Table 31 shows this outcome.

**Table 31: FY 2022-23 Proposed Sewer Rates**

Monthly Sewer Service Charge Per Account	Avg Monthly CCF' Discharged	Variable Cost (1)	Fixed Cost (2)	FY 2022-23 Monthly Rates (4)	FY 2022-23 Accounts (12 Months)	FY 2022-23 Revenue
Block 1: Average Water Usage < 5 ccf per month	3.2	\$3.98	\$17.29	\$21.25	1,425,046	\$30,282,229
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	\$8.70	\$17.29	\$26.00	451,058	11,727,502
Block 3: Average Water Usage > 10 ccf per month	10.0	\$12.43	\$17.29	\$29.70	322,934	9,591,153
<b>Totals</b>					<b>2,199,038</b>	<b>\$ 51,600,884</b>
Variable Rates per ccf	Discharge	Variable Rate (3)	Fixed Cost (3)	Proposed Rate per CCF (4)	Discharge CCF	FY 2022-23 Revenue
Discharge >10 ccf	3,100,415	\$1.24	\$1.22	\$2.46	3,100,415	\$7,627,020

- (1) \$1.24 From Table 30 \* average monthly CCF discharged
- (2) Total fixed charge per customer from Table 30
- (3) From Table 30
- (4) Variable cost plus fixed cost rounded to nearest \$0.05

## 6. RECYCLED WATER COST OF SERVICE

See section 6 of the COS Report for a complete discussion on the District's recycled water cost of service.

The method used by the District to develop recycled water rates is similar to that of potable water service (see Section 2 of this report) with one significant difference. The District does not calculate unique monthly meter service charges for recycled water. Instead, the monthly service charges for recycled water are set to the same as those charged for the potable water monthly meter service charge (see Table 9b in section 2.4). The District takes this approach due to an imbalance between variable and fixed costs in the overall recycled water revenue requirement. This reallocation of fixed costs to variable revenue recovery through commodity rates is discussed in Section 6.1. below.

### 6.1. FY 2022-23 RECYCLED WATER REVENUE REQUIREMENT

The District's recycled water revenue requirement from rates is \$31,957,123. Prior to any adjustments, the composition of this revenue requirement is variable costs of \$15,427,288 (50.4%) and fixed costs of \$15,197,633 (49.6%). The District established the monthly fixed charge unit cost as being \$11.25 per 5/8" meter equivalents in the potable process (see Table 21 in section 4.3.3). Due to the high percentage of fixed costs identified in the recycled water revenue requirement, the District reallocates a portion of fixed costs not recovered by monthly meter service charges (\$6,933,254) into the variable cost revenue requirement. These costs are included in the recycled system and recycled revenue provides the funding which is consistent with Proposition 218 requirements. This strategy provides a fair and equitable application of these costs without deterring usage.

Tables 34 and 35 detail the FY 2022-23 variable and fixed recycled water revenue requirement before and after this reallocation.



**Table 34: FY 2022-23 Recycled Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Untreated Water Purchases	\$3,581,564
Recycled Water Tertiary Treatment	4,447,450
El Toro Remediation Principal Aquifer Plant	2,749,473
Recycled Water Tertiary Treatment Pumping Michelson	2,075,999
El Toro Remediation Shallow Groundwater	712,517
Recycled Water Tertiary Membrane Bio Reactor (MBR) Treatment Michelson	1,094,100
Sewage Secondary Membrane Bio Reactor (MBR) Treatment Michelson	367,707
Sewage Tertiary Ultraviolet (UV) Treatment Michelson	261,533
Recycled Water Tertiary Ultraviolet (UV) Disinfection Treatment Michelson	136,946
<b>Total Cost of Water Supplies</b>	<b>\$15,427,288</b>
<b>Conservation and Supply Reliability</b>	
Natural Treatment System	1,339,131
Universal Conservation	529,954
Targeted Conservation	239,918
<b>Total Conservation and Supply Reliability Costs</b>	<b>\$2,109,003</b>
<b>Total Variable Cost Revenue Requirement Before Adjustment</b>	<b>\$17,536,291</b>
Adjustment to Reflect Reallocated Fixed Costs	\$6,933,254
<b>Total Variable Cost Revenue Requirement After Adjustment</b>	<b>\$24,469,544</b>

**Table 35: FY 2022-23 Recycled Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Recycled Water System Maintenance	\$7,789,218
Recycled Water Mitigation Monitoring	13,200
General and Administrative	2,806,385
Customer Service	2,021,219
Recycled Water Site Inspection and Testing-Field	421,100
Building Maintenance	525,135
Fleet	61,251
General Plant	149,150
Recycled Water Site Inspection and Testing-Office	62,400
<b>Total Fixed Operating Costs</b>	<b>\$13,849,058</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$977,179
Enhancement	371,396
<b>Total Capital Costs</b>	<b>1,348,575</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$15,197,633</b>
<b>Revenue Requirement Offsets</b>	
Pumping	125,900
Miscellaneous Revenues	650,900
<b>Total Revenue Requirement Offsets</b>	<b>\$776,800</b>
Total Fixed Cost Revenue Requirement Before Adjustment	\$14,420,833
<b>Adjustment to Reflect Reallocated Fixed Costs</b>	<b>(\$6,933,254)</b>
<b>Net Fixed Revenue Requirement from Rates After Adjustment</b>	<b>\$7,487,579</b>

### 6.1.3. VARIABLE COST RECOVERY - COMMODITY RATES

The method used to determine recycled water commodity rates is similar to that used for potable water. In FY 2022-23, the District's projected total recycled water demand was 30,445 acre feet based on historical demand, customer growth factors and other relevant factors. Table 36 provides a detail of the FY 2022-23 unit cost of water supplies (\$/ccf) from each supply source using the District's cost and demand data. Note that the net cost shown in each column includes the reallocation of fixed costs of \$6,933,254 discussed above.

**Table 36: Unit Cost of FY 2022-23 Recycled Water Supplies**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total
Net Cost	\$12,151,510	\$5,017,859	\$5,191,172	\$22,360,541
Acre Feet	22,890	3,975	3,580	30,445
Unit Cost per ccf (1)	\$1.22	\$2.90	\$3.33	

(1) Acre feet is multiplied by 435.6 to convert to CCF.

The District allocates the lower cost water supplies to the low volume and base consumption tiers with higher cost water supplies being allocated to the inefficient and wasteful tiers. Table 37 details this allocation for FY 2022-23 using cost and demand data provided by the District.

The general formula used to determine the water budget for a landscape customer served by a recycled water connection is discussed in detail in 4.1.5. in the Cost of Service report.

**Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total Acre Feet	Unit Cost per \$ /ccf by Tier (1)
Unit Cost (Table 36)	\$1.22	\$2.90	\$3.33		
T1: Low Volume	14,100	0	0	14,100	\$1.22
T2: Base	8,790	3,975	1,279	14,044	\$1.89
T3: Inefficient	0	0	1,374	1,374	\$3.33
T4: Wasteful	0	0	927	927	\$3.33
Total	22,890	3,975	3,580	30,445	

(1) The Unit Cost per \$/ccf by TIER is the blended cost of the sources.

Having determined the unit cost of recycled water supplies by consumption tier for landscape customers as shown in Table 37 above, the District then allocates the cost of conservation programs, as shown in table 34, to the appropriate water budget tiers.

Universal conservation costs are added to the commodity rate in the base, inefficient, and wasteful tiers to pay for conservation program costs that help customers in each of these tiers achieve efficient use of recycled water. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage reaches the wasteful tier. Costs are allocated to the wasteful tier based on expected usage.

Natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceed their water budgets. The costs include prevention, control and treatment of the runoff of water from irrigation and other uses. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Costs are allocated based on the expected usage in each tier.

Table 38 shows the outcome of derivation of the unit costs for the District's conservation programs.

**Table 38: FY 2022-23 Conservation Program Unit Costs (\$/ccf)**

Program	FY 2022-23 Revenue Requirement (A)*	FY 2022-23 Units of Demand (ccf) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2022-23 Adjusted Units of Demand (D) B x C = (D)	Unit Cost Included in FY 2022-23 Commodity Rates A/D = (E)
Universal Conservation	\$529,954	7,120,109	100%	7,120,109	\$0.07
Targeted Conservation					
Wasteful tier	\$239,918	403,776	90%	363,398	\$0.66
Natural Treatment System					
Inefficient tier	\$232,892	598,730	90%	538,857	\$0.43
Wasteful tier	\$1,106,238	403,776	90%	363,398	\$3.04

\*See Table 34

Having determined the unit cost of recycled water supplies by consumption tier as shown in Table 37 and the unit cost of conservation program cost in Table 38, the District must then allocate the cost of conservation programs to each consumption tier. Table 39 shows the outcome of this process using the District’s cost and demand data.

**Table 39: FY 2022-23 Recycled Water Commodity Rates (\$/ccf)**

Consumption Tier	Unit Cost of Water Supplies (Table 37)	Unit Cost of Universal Conservation (Table 38)	Unit Cost of Targeted Conservation (Table 38)	Unit Cost of Natural Treatment System (Table 38)	FY 2022-23 Commodity Rates	FY 2022-23 CCF	FY 2022-23 Revenue
T1: Low Volume	\$1.22				\$1.22	6,141,768	\$7,492,957
T2: Base	\$1.89	\$0.07			\$1.96	6,117,604	11,990,503
T3: Inefficient	\$3.33	\$0.07		\$0.43	\$3.83	598,730	2,293,135
T4: Wasteful	\$3.33	\$0.07	\$0.66	\$3.04	\$7.10	403,776	2,866,807
<b>Totals</b>						<b>13,261,878</b>	<b>\$24,643,403</b>

**6.1.4. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGE**

Recycled water fixed charges are the same as potable water fixed charges (see Table 21 in Section 4.3.3).

**6.1.5. VARIABLE COST RECOVERY – RECYCLED WATER AGRICULTURAL RATES**

As discussed in section 4.3.2, allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used and these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. It is assumed that produced water provides 75% of the source of supply, 13% is the cost of processed water, and imported water provides 12%. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$10,429. A portion of the fixed cost is included in the variable rate component as described in section 6.1.3. An additional fixed cost of \$0.01 per ccf is, which is not recovered through the commodity rate, is applied based on an estimated 1,332,165 ccf’s. Table 40 shows the calculation of FY 2022-23 recycled water agricultural rates.

**Table 40: FY 2022-23 Recycled Water Agricultural Water Commodity Rates (\$/ccf)**

Customer Class	FY 2022-23 Revenue Requirement	FY 2022-23 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Cost Component (CCF) (2)	FY 2022-23 Commodity Rates (1)+(2)	FY 2022-23 Revenue
Agricultural	\$2,264,681	1,332,165	\$1.69	\$0.01	\$1.70	\$2,264,681

## 8. Untreated Water Cost of Service FY 2022-23

### 8.1. UNTREATED WATER COMMODITY RATE

The FY 2022-23 variable revenue requirement for untreated water was determined to be \$139,850. The source of this water comes from the Santiago Aqueduct Commission (SAC) and this is the cost incurred to acquire water supplies (See Table 13). Table 41 shows the calculation of the variable rate for untreated water.

**Table 41: FY 2022-23 Untreated Water Commodity Rate (\$/ccf)**

Consumption Tier	FY 2022-23 Revenue Requirement	FY 2022-23 SAC Purchases (AF)	Variable Cost (AF)	Variable Cost (CCF) <sup>(1)</sup>	FY 2022-23 Commodity Rates
Untreated Water	\$139,850	175	\$799	\$1.83	\$1.83

(1) Acre feet is multiplied by 435.6 to convert to CCF

#### 8.1.0. UNTREATED WATER AGRICULTURAL COMMODITY RATE

The fixed cost revenue requirement for all untreated water uses was determined to be \$396,360 for FY 2022-23. These include capacity, readiness to serve, and meter costs that do not vary based upon the amount of water used. The untreated agricultural rate includes a fixed charge component that is based upon an allocated portion of the untreated water costs for all untreated imported water uses. This includes untreated water supplies used by the Baker Treatment Plant (7,200 AF), the Recycled System (2,425 AF), and water sold directly to customers (189 AF). The total projected demand for these customers is 9,814. Table 42 shows the calculation of the rate included for fixed costs for untreated agricultural customers.

**Table 42: FY 2022-23 Untreated Water Agricultural Commodity Rates (\$/ccf)**

FY 2022-23 Revenue Requirement	FY 2022-23 Projected Demand (AF)	FY 2022-23 Projected Demand (CCF)(1)	Fixed Cost Component (CCF)
\$396,360	9,814	4,275,188	0.09

(1) Acre feet is multiplied by 435.6 to convert to CCF

Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. As discussed in section 4.3.2, allocated fixed and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. The untreated water agricultural rate is calculated by combining the variable cost shown in Table 41 and the fixed cost component as shown in Table 42.

**Table 43: FY 2022-23 Untreated Water Agricultural Commodity Rates (\$/ccf)**

Consumption Tier	Variable Cost (CCF) (1)	Fixed Cost Component (CCF) (2)	FY 2022-23 Commodity Rates (1)+(2)
Untreated Water	\$1.83	\$0.09	\$1.92

## 1. Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2021-22 and FY 2022-23.

The IRWD Board of Directors adopted a two-year operating budget for FY 2021-22 and 2022-23 on April 26, 2021. Generally, rates are adopted and implemented to cover operating costs for each FY adopted budget. Rate increases for the full year FY 2021-22 were not implemented as the Board elected to defer rate increases part of the year due to continued customer hardships resulting from COVID-19. It is anticipated that the Board will adopt rate increases covering operating costs for both fiscal years (FY2021-22 and FY 2022-23) in January 2022. Rate increases would be reflected on customer bills beginning March 1, 2022 and would cover the period March 1, 2022 through June 30,2023 (16 months).

In order to calculate rates to cover costs for both fiscal years over the remaining period March 2022 through June 2023 rates first had to be developed as if they had been in effect for the each of the full fiscal years. Appendix 2 provides the support for the development of rates to cover operating costs for the full FY 2021-22. Appendix 3 provides the support for the development of rates to cover operating costs for the full FY 2022-23. Rates were then developed to recover budgeted operating costs for both fiscal years over the remaining 16-month period (March 2022 through June 30,2023). The support for the development of these rates is shown in Appendix 4 and provides the basis for the rates presented to the Board for approval in January 2022. The proposed rates in Appendix 4 are anticipated to generate sufficient revenues to recover operating costs for both fiscal years over the remaining 16 month period.

The tables are updated with the details from the respective operating budget. The assumptions from the 2021 Cost of Service (COS) study remain the same. This appendix uses the same section numbering scheme as those in the 2021 COS for easy reference.

The District anticipates resuming the normal two-year rate cycle consistent with the adoption of the two-year budget for FY 2023-24 and FY 2024-25.

## 2. Steps for Developing Cost of Service Rates over 16 Months

Proposed changes to rates were developed to address revenue requirements for the 16- month period as described above in the executive summary. Costs for FY 2021-22 and FY 2022-23 have been identified in Appendix 2 and 3. For fiscal year beginning July 1,2021, the District has been collecting revenues for the first 8 months based on rates that were effective in July 2019. Increased rates are needed to generate sufficient revenues to cover the full year of costs for FY 2021-22 and 2022-23 over the remaining 16-month period. The following steps outlined below were used to develop the rates for each tier.

**Step 1:** Identify sales volumes (based on the FY 2021-22 budget) from July 2021 through February 2022.

**Step 2:** Determine the revenue generated from July 2021 through February 2022 based on the previous rates. This is done by multiplying sales volumes from step 1 by the actual rates in effect during that period.

**Step 3:** Determine revenues required to cover operating costs for each full fiscal year (FY 2021-22 and FY 2022-23). This is done by multiplying calculated rates by budgeted sales volumes.

**Step 4:** Determine the remaining revenues needed. This is done by adding total revenue requirements for both fiscal years as calculated in step 3 and subtracting the revenue generated in step 2.

**Step 5:** Determine the remaining sales volumes to be covered. This is done by adding the total sales volumes for both fiscal years from step 3 and subtracting the sales volumes shown in step 1.

**Step 6:** Determine the rates needed. This is done by dividing the revenue required as calculated in step 4 by the remaining sales volumes in step 5.

The following Sections provide details on the rates that were developed to address revenue requirements for the period following Board approval in January 2022.

## 4. Potable Water Service Rates for FY 2021-22 and 2022-23

### 4.1. POTABLE WATER COMMODITY RATES

**Step 1:** Identify the budgeted potable water sales volumes per hundred cubic feet (CCF) used by each tier July 2021 through February 2022.

**Table 1: Potable Water Sales Volumes /CCF by Tier**

Consumption Tier	Sales CCF - 8 months
T1: Low Volume	5,627,286
T2: Base	8,537,240
T3: Inefficient	915,104
T4: Wasteful	757,106
<b>Totals</b>	<b>15,836,736</b>

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying the sales volumes from Step 1 by the actual rates in effect per CCF during that period.

**Table 2: Potable Water Commodity Revenue by Tier July 2021 through February 2022**

Consumption Tier	FY 2021-22 Rates July-February (1)	8 Months Sales CCF (Step 3) (2)	8 Months Revenue (1)*(2)
T1: Low Volume	\$1.47	5,627,286	\$8,272,110
T2: Base	\$2.00	8,537,240	17,074,479
T3: Inefficient	\$4.86	915,104	4,447,407
T4: Wasteful	\$13.63	757,106	10,319,358
<b>Totals</b>		<b>15,836,736</b>	<b>\$ 40,113,354</b>

**Step 3:** Determine the revenues required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 4.3.1 for the detailed calculation of rates. Revenue is calculated by multiplying the rate for each tier by budgeted sales volume.

**Table 3: Potable Water FY 2021-22 Commodity Revenue by Tier**

Consumption Tier	FY 2021-22 Cost of Service Rates (1)	FY 2021-22 Sales CCF (2)	FY 2021-22 Revenue (1) * (2)
T1: Low Volume	\$1.48	8,322,265	\$12,316,952
T2: Base	\$2.22	12,292,520	27,289,395
T3: Inefficient	\$5.02	1,240,762	6,228,627
T4: Wasteful	\$14.28	1,010,745	14,433,441
<b>Totals</b>		<b>22,866,293</b>	<b>\$ 60,268,416</b>

See Appendix 2 Table 18 in Section 4.3.1



**Table 4: Potable Water FY 2022-23 Commodity Revenue by Tier**

Consumption Tier	FY 2022-23 Cost of Service Rates (1)	FY 2022-23 Sales CCF (2)	FY 2022-23 Revenue (1) * (2)
T1: Low Volume	\$1.54	8,447,959	\$13,009,857
T2: Base	\$2.33	12,480,055	29,078,529
T3: Inefficient	\$5.07	1,260,225	6,389,342
T4: Wasteful	\$14.25	1,026,600	14,629,050
<b>Totals</b>		<b>23,214,840</b>	<b>\$ 63,106,779</b>

See Appendix 3 Table 18 in Section 4.3.1

**Step 4:** Determine the remaining revenues needed for cost of service equity. This is done by adding the total revenue requirements for both full fiscal years as calculated in step 3 (Tables 3 and 4) and subtracting the expected revenue based on current rates (July 2021 through February 2022) as calculated in step 2 (Table 2). This calculation provides the revenue required over the remaining 16 months.

**Table 5: Potable Water Remaining Revenue Required by Tier FY 2021-22 and FY 2022-23**

Consumption Tier	Revenue from Table 3 (1)	Revenue from Table 4 (2)	Total Revenue Requirement (3)	less: Revenue From Table 2 (4)	Revenue Required (3) -(4)
T1: Low Volume	\$12,316,952	\$13,009,857	\$25,326,809	\$8,272,110	\$17,054,699
T2: Base	27,289,395	29,078,529	56,367,924	17,074,479	39,293,445
T3: Inefficient	6,228,627	6,389,342	12,617,969	4,447,407	8,170,563
T4: Wasteful	14,433,441	14,629,050	29,062,492	10,319,358	18,743,134
<b>Totals</b>	<b>\$ 60,268,416</b>	<b>\$ 63,106,779</b>	<b>\$ 123,375,195</b>	<b>\$ 40,113,354</b>	<b>\$ 83,261,840</b>

**Step 5:** Determine the remaining budgeted sales volumes for both fiscal years. This is done by adding total sales volumes for both fiscal years used in step 3 (Tables 3 and 4) and subtracting the sales volumes from step 2. This calculation provides the budgeted sales volumes over the remaining 16 months.

**Table 6: Potable Water Remaining CCF Sales Volumes by Tier FY 2021-22 and FY 2022-23**

Consumption Tier	CCF From Table 3 (1)	CCF From Table 4 (2)	Total CCF Sales (3)	Less: CCF from Table 1 (4)	Remaining CCF Sales (3) - (4)
T1: Low Volume	8,322,265	8,447,959	16,770,224	5,627,286	11,142,938
T2: Base	12,292,520	12,480,055	24,772,576	8,537,240	16,235,336
T3: Inefficient	1,240,762	1,260,225	2,500,988	915,104	1,585,883
T4: Wasteful	1,010,745	1,026,600	2,037,345	757,106	1,280,239
<b>Totals</b>	<b>22,866,293</b>	<b>23,214,840</b>	<b>46,081,133</b>	<b>15,836,736</b>	<b>30,244,397</b>

**Step 6:** Determine the rates needed to cover the remaining sixteen-month period March 2022- June 2023. This is done by dividing revenue required as calculated in step 4 by the sales volumes calculated in step 5.



**Table 7: Sixteen-Month Potable Water Commodity Rates per CCF**

Consumption Tier	Revenue Required Table 5 (1)	Remaining Sales Table 6 (2)	Proposed Rates per CCF (1)/(2)
T1: Low Volume	\$17,054,699	11,142,938	\$1.53
T2: Base	39,293,445	16,235,336	\$2.42
T3: Inefficient	8,170,563	1,585,883	\$5.15
T4: Wasteful	18,743,134	1,280,239	\$14.64
<b>Totals</b>	<b>\$83,261,840</b>	<b>30,244,397</b>	

## 4.2. POTABLE WATER MONTHLY FIXED SERVICE RATES

**Step 1:** Identify the budgeted potable water meter equivalent units (MEU's) for July 2021 through February 2022.

**Table 8: Potable Water Fixed Service MEUs**

System	MEUs - 1 months	MEUs - 8 months
Potable Water	260,219	2,081,752

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying the meter equivalent unit volumes (MEU's) from Step 1 by the actual rates in effect per CCF during that period.

**Table 9: Potable Water Fixed Service Revenue July 2021 through February 2022**

System	FY 2021-22 Rate July-February (1)	8 Months Sales MEUs (2)	8 Months Revenue (1)*(2)
Potable Water	\$10.35	2,081,752	\$21,546,133

**Step 3:** Determine the revenue required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 4.3.3 for a detailed calculation of rates. Revenue is calculated by multiplying the full year MEU volumes by the fiscal year monthly rate.

**Table 10: Potable Water FY 2021-22 Fixed Service Revenue**

System	FY 2021-22 Cost of Service Rate (1)	FY 2021-22 Sales MEUs (2)	FY 2021-22 Revenue (1)*(2)
Potable Water	\$10.80	3,122,628	\$33,724,382

See Appendix 2 Table 21 in Section 4.3.3

**Table 11: Potable Water FY 2022-23 Fixed Service Revenue**

System	FY 2022-23 Cost of Service Rate (1)	FY 2022-23 Sales MEUs (2)	FY 2022-23 Revenue (1)*(2)*12
Potable Water	\$11.25	3,276,612	\$36,861,885

See Appendix 3 Table 21 in Section 4.3.3

**Step 4:** Determine the remaining revenues needed for cost of service equity. This is done by adding the total revenue requirements for both full fiscal years as calculated in step 3 (Tables 10 and 11) and subtracting the expected revenue based on current rates (July 2021 through February 2022) as calculated in step 2 (Table 9). This calculation provides the revenue required over the remaining 16 months.

**Table 12: Potable Water Remaining Fixed Service Revenue Required for FY 2021-22 and FY 2022-23**

System	Revenue from Table 10 (1)	Revenue from Table 11 (2)	Total Revenue Requirement (3)	less: Revenue From Table 9 (4)	Revenue Required (3) - (4)
Potable Water	\$ 33,724,382	\$ 36,861,885	\$ 70,586,267	\$ 21,546,133	\$ 49,040,134

**Step 5:** Determine the remaining budgeted MEU's for both fiscal years. This is done by adding total sales volumes MEU's for both fiscal years used in step 3 (Tables 10 and 11) and subtracting the sales volumes from step 2 (Table 8). This calculation provides the budgeted MEU sales volumes over the remaining 16 months.

**Table 13: Potable Water Remaining MEU Usage Required for FY 2021-22 and FY 2022-23**

System	MEUs from Table 10 (1)	MEUs from Table 11 (2)	Total MEUs Requirement (3)	Less: Total MEUs from Table 8 (4)	Remaining MEU Sales (3) - (4)
Potable Water	3,256,612	3,276,612	6,533,224	2,081,752	4,451,472

**Step 6:** Determine monthly rate needed to cover the remaining 16-month period March 2022 through June 2023. This is done by dividing revenue required as calculated in step 4 (Table 12) by the units calculated in step 5 (Table 13). Service rates are rounded to the nearest \$0.05.

**Table 14: Sixteen-month Potable Water Monthly Fixed Service Rate per MEU**

System	Revenue Required Table 12 (1)	Remaining Sales Table 13 (2)	Service Rate per MEU (1)/(2)
Potable Water	\$ 49,040,134	4,451,472	\$11.00

This rate was reviewed by the IRWD Finance and Personnel Committee. The Committee decided to recommend a slightly lower rate to reduce the overall impact to the average residential customer. The monthly fixed water service charge will be decreased by \$0.25 funded from the Replacement Fund as shown below.

**Table 15: Sixteen-month Adjusted Potable Water Monthly Fixed Service Rate per MEU**

System	Service Rate Table 14 (1)	Replacement Fund Contribution Reduction (2)	Proposed Rate per MEU (1)-(2)
Potable Water	\$11.00	\$0.25	\$10.75

**Step 7:** Determine the monthly rates for the remaining meter sizes. This is done by multiplying the proposed rate for the 5/8" disc by the meter ratio for each meter size and rounding to the nearest \$0.05. This is because the 5/8" is the smallest and therefore used for the meter ratio basis. The meter ratio is based on gallons of flow per minute

(GPM). For example, the 5/8" disc has a meter ratio of 1 with a flow rate of 20 GPM. The 3/4" disc has a flow rate of 30 GPM; therefore the meter ratio is 1.5.

**Table 16: Sixteen-month Potable Water Monthly Fixed Service Rate by Meter Size**

Meter Size	Meter Ratio (1)	Proposed Rates (1) * Rate from Table 15
5/8" Disc	1.0	\$10.75
3/4" Disc	1.5	16.15
1" Disc	2.5	26.90
1 1/2" Disc	6.0	64.50
1 1/2" Single Jet	5.0	53.75
2" Disc	8.0	86.00
2" Single Jet	8.0	86.00
2" Turbo	12.5	134.40
3" Turbo	32.5	349.40
4" Turbo	62.5	671.90
4" Turbo Omni F-2	50.0	537.50
6" Mag Meter	139.9	1,503.40
6" Turbo	125.0	1,343.75
6" Turbo Omni F-2	100.0	1,075.00
8" Mag Meter	248.7	2,673.55
8" Turbo	235.0	2,526.25
8" Turbo Omni F-2	235.0	2,526.25
10" Turbo	350.0	3,762.50
16" Propeller	190.0	2,042.50

### 4.3. POTABLE WATER AGRICULTURAL RATE

**Step 1:** Identify the budgeted potable water agricultural sales volumes (CCF) July 2021 through February 2022.

**Table 17: Potable Water Agricultural Sales Volumes /CCF**

Customer Class	CCF's - 8 months
Agricultural	35,715

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying the sales volumes from Step 1 by the actual rates in effect per CCF during that period.

**Table 18: Potable Water Agricultural Revenue July 2021 through February 2022**

Customer Class	FY 2021-22 Rate July-February (1)	8 Months Sales CCF (2)	8 Months Revenue (1)*(2)
Agricultural	\$2.77	35,715	\$98,931

**Step 3:** Determine the revenues required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 4.3.2 for the detailed calculation of rates. Revenue is calculated by multiplying the rate by the budgeted sales volume.

**Table 19: Potable Water Agricultural FY 2021-22 Revenue**

Customer Class	FY 2021-22		
	Cost of Service Rates	FY 2021-22 Sales CCF	FY 2021-22 Revenue
Agricultural	\$3.05	53,725	\$163,861

See Appendix 2 Table 19 in Section 4.3.2

**Table 20: Potable Water Agricultural FY 2022-23 Revenue**

Customer Class	FY 2022-23		
	Cost of Service Rates	FY 2022-23 Sales CCF	FY 2022-23 Revenue
Agricultural	\$3.13	54,568	\$170,797

See Appendix 3 Table 19 in Section 4.3.2

**Step 4:** Determine the remaining revenue required for cost equity. This is done by adding the total revenue requirements for both fiscal years as calculated in Step 3 (Tables 19 and 20) and subtracting the expected revenues based on the current rates (July 2021 through February 2022) as calculated in step 2 (Table 18). This calculation provides the revenues required over the remaining 16 months.

**Table 21: Potable Water Agricultural Remaining Revenue Required for FY 2021-22 and FY 2022-23**

Customer Class	Total				
	Revenue from Table 19 (1)	Revenue from Table 20 (2)	Revenue Requirement (3)	Less: Revenue From Table 18 (4)	Revenue Required (3) - (4)
Agricultural	\$ 163,861	\$ 170,797	\$ 334,658	\$ 98,931	\$ 235,726

**Step 5:** Determine the remaining budgeted sales volumes for both fiscal years. This is done by adding total sales volumes for both fiscal years used in step 3 (Tables 19 and 20) and subtracting the sales volumes from step 2. This calculation provides the budgeted sales volumes over the remaining 16 months.

**Table 22: Potable Water Agricultural Remaining Usage Required for FY 2021-22 and FY 2022-23**

Customer Class	Total				
	CCF From Table 19 (1)	CCF From Table 20 (2)	CCF Sales (3)	Less: CCF from Table 18 (4)	Remaining CCF Sales (3) - (4)
Agricultural	53,725	54,568	108,292	35,715	72,577

**Step 6:** Determine the rates needed to cover the remaining 16 month period March 2022 through June 2023. This is done by dividing revenue required as calculated in step 4 by the sales volumes calculated in step 5.

**Table 23: Sixteen-month Potable Water Agricultural Monthly Rate per CCF**

Customer Class	Revenue Required			Proposed Rate per CCF (1)/(2)
	Table 21 (1)	Remaining Table 22 (2)	Sales (3)	
Agricultural	\$ 235,726	72,577		\$3.25

#### 4.4. POTABLE WATER TEMPORARY USAGE RATE

Similar to commercial and agricultural customers, it is not possible to develop water budgets based on standardized metrics for customers who use water for temporary purposes, such as for new construction of buildings. Developing a customized budget is difficult without a history of water use needs. Therefore, IRWD uses a single base rate that proportionately combines base and wasteful usage. The District estimates usage percentages for this rate based on usage by commercial, industrial, and institutional customers (CII).

**Table 24: Potable Water Temporary Usage Rate Calculation**

Customer Class	FY 2021-22 Sales CCF (1)	FY 2022-23 Sales CCF (2)	24 Months Sales CCF (1)+(2)	% Sales	Tier Rate from Table 7	Rate Contribution
CII Base Tier	6,062,065	6,154,874	12,216,940	96%	\$2.42	\$2.33
CII Wasteful Tier	238,082	241,816	479,898	4%	\$14.64	\$0.55
<b>Totals</b>	<b>6,300,147</b>	<b>6,396,691</b>	<b>12,696,838</b>	<b>100%</b>		

**Table 25: Proposed Potable Water Temporary Usage Rate per CCF**

Customer Class	Base Tier Rate Contribution from Table 24 (1)	Wasteful Tier Rate Contribution from Table 24 (1)	Proposed Rate (1) + (2)
Construction/Temporary	\$2.33	\$0.55	\$2.88

#### 4.5. POTABLE WATER MONTHLY PRIVATE FIRELINE RATES

For a complete discussion of the calculation method for private fireline rates, please see Sections 4.3.4 in the 2021 COS study. The methodology for monthly private fireline potable water service has changed since the last rate change. Due to the change in methodology, rather than calculating a sixteen-month rate based partially on revenue received using previous rates for eight months, the proposed rates are based on four months of the revenue requirement for FY 2021-22 plus the revenue requirement for FY 2022-23, both using the updated methodology.

**Step 1:** The new rates will be in effect for four months. Determine revenue required for FY 2021-22 by multiplying the number of firelines by the new fiscal year cost of service monthly rate times 4 months.

**Table 26: Potable Water Monthly Private Fireline FY 2021-22 Four Month Revenue Requirement**

Private Fireline Size	FY 2021-22 Cost of Service Rates (1)	Number of Firelines (2)	FY 2021-22 4 Months Revenue (1)*(2)*4
1"	\$6.10	42	\$1,025
2"	8.20	1,045	34,276
3"	13.00	31	1,612
4"	21.30	1,018	86,734
6"	51.00	1,173	239,292
8"	102.30	1,059	433,343
10"	179.40	127	91,135
11"	228.85	1	915
12"	286.25	5	5,725
<b>Totals</b>		<b>4,501</b>	<b>\$ 894,057</b>

See Appendix 2 Table 22 in section 4.3.4 for rates and number of firelines.

**Step 2:** Determine the revenue required for FY 2022-23. This is done by multiplying the number of firelines by the fiscal year cost of service monthly rate (see Appendix 3 Table 22 in Section 4.3.4) times 12 months.

**Table 27: Potable Water Monthly Private Fireline FY 2022-23 Revenue Requirement**

Private Fireline Size	FY 2022-23 Cost of Service Rates (1)	Number of Firelines (2)	FY 2022-23 Revenue (1)*(2)*12
1"	\$6.30	43	\$3,251
2"	8.60	1,066	110,011
3"	13.85	32	5,318
4"	22.95	1,038	285,865
6"	55.55	1,196	797,254
8"	111.75	1,080	1,448,280
10"	196.30	130	306,228
11"	250.55	1	3,007
12"	313.50	5	18,810
<b>Totals</b>		<b>4,591</b>	<b>\$ 2,978,024</b>

See Appendix 3 Table 22 in section 4.3.4

**Step 3:** Determine the revenue required for cost of service equity for each fiscal year. This is done by adding four months of revenue for the first fiscal year as calculated in step 1 to the total revenue requirements for the second fiscal year as calculated in step 2

**Table 28: Sixteen-month Potable Water Private Fireline Revenue Requirement**

Private Fireline Size	Revenue from Table 26 (1)	Revenue from Table 27 (2)	Revenue Required (1)+(2)
1"	\$1,025	\$3,251	\$4,276
2"	34,276	110,011	144,287
3"	1,612	5,318	6,930
4"	86,734	285,865	372,599
6"	239,292	797,254	1,036,546
8"	433,343	1,448,280	1,881,623
10"	91,135	306,228	397,363
11"	915	3,007	3,922
12"	5,725	18,810	24,535
<b>Totals</b>	<b>\$ 894,057</b>	<b>\$ 2,978,024</b>	<b>\$ 3,872,081</b>

**Step 4:** Determine rates that are to be effective after Board approval in January 2022. This is done by dividing revenue required as calculated in step 3 by the number of firelines and dividing by 16 months (March 2022 through June 2023).

**Table 29: Sixteen-month Potable Water Private Fireline Monthly Fixed Service Rate**

Private Fireline Size	Revenue Required Table 28 (1)	Number of Firelines Table 27 (2)	Proposed Rates (1)/(2)/16
1"	\$4,276	43	\$ 6.20
2"	144,287	1,066	8.45
3"	6,930	32	13.55
4"	372,599	1,038	22.45
6"	1,036,546	1,196	54.15
8"	1,881,623	1,080	108.90
10"	397,363	130	191.05
11"	3,922	1	245.15
12"	24,535	5	306.70
<b>Totals</b>	<b>\$ 3,872,081</b>	<b>4,591</b>	

## 5. Sewer Service Rates for FY 2021-22 and 2022-23 Steps

**Step 1:** Identify the sewer service sales volumes (number of accounts for block tiers (tiers) and sewer discharge CCF for Discharge over 10 CCF) that are used by each tier for July 2021 through February 2022.

**Table 30: Sewer Service Accounts and/or Discharge CCF Used by Each Tier**

Sewer Fixed Charge Tiers	Accounts - 1 months	Accounts - 8 months
Block 1	117,578	940,624
Block 2	37,216	297,728
Block 3	26,720	213,763
<b>Totals</b>	<b>181,514</b>	<b>1,452,116</b>
Sewer Variable Charge	Discharge CCF - 1 months	Discharge CCF - 8 months
Discharge over > 10ccfs	252,081	2,016,651

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done for the block tiers by multiplying accounts by the actual rates in effect during that period. For Discharge over 10 CCF, discharge is multiplied by the actual rate.

**Table 31: Sewer Service Revenue by Tier July 2021 through February 2022**

Sewer Fixed Charge Tiers	FY 2021-22 Rate July-February (1)	1 Month Accounts (2)	8 Months Accounts (2)*8=(3)	8 Months Revenue (1)*(3)
Block 1	\$19.55	117,578	940,624	\$18,389,209
Block 2	\$23.50	37,216	297,728	6,996,606
Block 3	\$26.10	26,720	213,763	5,579,220
<b>Totals</b>		<b>181,514</b>	<b>1,452,116</b>	<b>\$ 30,965,034</b>
Sewer Variable Charge	FY 2021-22 Rate July-February (1)	1 Month Discharge CCF	8 Months Discharge CCF	8 Months Revenue
Discharge over > 10ccfs	\$2.92	252,081	2,016,651	\$5,880,553

**Step 3:** Determine the revenue required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 5.3.1 for the detailed calculation of rates. Revenue is calculated by multiplying the rates by the number of accounts.

**Table 32: Sewer Service Revenue by Tier FY 2021-22**

Sewer Fixed Charge Tiers	FY 2021-22 Cost of Service Rates	FY 2021-22 Accounts (12 Months)	FY 2021-22 Revenue
Block 1	\$20.40	1,410,937	\$28,783,109
Block 2	\$25.05	446,592	11,187,126
Block 3	\$28.75	322,934	9,284,365
<b>Totals</b>		<b>2,180,463</b>	<b>\$ 49,254,600</b>
Sewer Variable Charge	FY 2021-22 Cost of Service Rate	FY 2021-22 Discharge CCF	FY 2021-22 Revenue
Discharge over > 10ccfs	\$2.39	3,102,540	\$7,415,069

See Appendix 2 Table 31 in Section 5.3.1

**Table 33: Sewer Service Revenue by Tier FY 2022-23**

Sewer Fixed Charge Tiers	FY 2022-23 Cost of Service Rates	FY 2022-23 Accounts (12 Months)	FY 2022-23 Revenue
Block 1	\$21.25	1,425,046	\$30,282,229
Block 2	\$26.00	451,058	11,727,502
Block 3	\$29.70	322,934	9,591,153
<b>Totals</b>		<b>2,199,038</b>	<b>\$ 51,600,884</b>
Sewer Variable Charge	FY 2022-23 Cost of Service Rate	FY 2022-23 Discharge CCF	FY 2022-23 Revenue
Discharge over > 10ccfs	\$2.46	3,100,415	\$7,627,020

See Appendix 3 Table 31 in Section 5.3.1

**Step 4:** Determine the remaining revenue required needed for cost equity. This is done by adding the total revenue requirements for both full fiscal years as calculated in step 3 (Tables 32 and 33) and subtracting the expected revenue based on current rates (July 2021 through February 2022) as calculated in step 2 (Table 31). This calculation provides the revenue required over the remaining 16 months.



**Table 34: Sewer Service Remaining Revenue Required by Tier FY 2021-22 and FY 2022-23**

Sewer Fixed Charge Tiers	Revenue from Table 32 (1)	Revenue from Table 33 (2)	Total Revenue Requirement (3)	less: Revenue From Table 31 (4)	Revenue Required (3) -(4)
Block 1	\$28,783,109	\$30,282,229	\$59,065,338	\$18,389,209	\$40,676,130
Block 2	11,187,126	11,727,502	22,914,628	6,996,606	15,918,022
Block 3	9,284,365	9,591,153	18,875,518	5,579,220	13,296,298
<b>Totals</b>	<b>\$ 49,254,600</b>	<b>\$ 51,600,884</b>	<b>\$ 100,855,484</b>	<b>\$ 30,965,034</b>	<b>\$ 69,890,450</b>
Sewer Variable Charge	Revenue from Table 32 (1)	Revenue from Table 33 (2)	Total Revenue Requirement (3)	less: Revenue From Table 31 (4)	Revenue Required (3) -(4)
Discharge over > 10ccfs	\$7,415,069	\$7,627,020	\$15,042,089	\$5,880,553	\$9,161,536

**Step 5:** Determine the remaining budgeted accounts for both fiscal years. This is done by adding total accounts for both fiscal years used in step 3 (Tables 32 and 33) and subtracting accounts from step 2 (Table 31).

**Table 35: Sewer Service Remaining Accounts for FY 2021-22 and FY 2022-23**

Sewer Fixed Charge Tiers	Accounts from Table 32 (1)	Accounts from Table 33 (2)	Total Accounts Requirement (3)	Less: Total Accounts from Table 31 (4)	Remaining Account Total (3) - (4)
Block 1	1,410,937	1,425,046	2,835,983	940,624	1,895,359
Block 2	446,592	451,058	897,650	297,728	599,922
Block 3	322,934	322,934	645,868	213,763	432,105
<b>Totals</b>	<b>2,180,463</b>	<b>2,199,038</b>	<b>4,379,501</b>	<b>1,452,115</b>	<b>2,927,386</b>
Sewer Variable Charge	Discharge CCF from Table 32 (1)	Discharge CCF from Table 33 (2)	Total Discharge CCF Requirement (3)	Less: Total Discharge CCF from Table 31 (4)	Remaining Discharge CCF (3) - (4)
Discharge over > 10ccfs	3,102,540	3,100,415	6,202,954	2,016,651	4,186,303

**Step 6:** Determine rates needed to cover the remaining 16 month period March 2022 through June 2023. This is done by dividing revenue required as calculated in step 4 by the accounts calculated in step 5.

**Table 36: Sixteen-month Sewer Service Rates**

Sewer Fixed Charge Tiers	Revenue Required Table 34 (1)	Remaining Account Total Table 35 (2)	Service Rate per Account (1)/(2)
Block 1	\$40,676,130	1,895,359	\$21.45
Block 2	15,918,022	599,922	\$26.55
Block 3	13,296,298	432,105	\$30.75
<b>Totals</b>	<b>\$ 69,890,450</b>	<b>2,927,386</b>	
Sewer Variable Charge	Revenue Required Table 34 (1)	Remaining Discharge CCF Table 35 (2)	Service Rate per CCF (1)/(2)
Discharge over > 10ccfs	\$9,161,536	4,186,303	\$2.19

These rates were reviewed by the IRWD Finance and Personnel Committee. The Committee decided to recommend a slightly lower rate to reduce the overall impact to the average residential customer. The monthly sewer fixed service charge will be reduced by contributions funded from the Replacement Fund as shown below.

**Table 37: Adjusted Sixteen-month Sewer Service Rates**

Sewer Fixed Charge Tiers	Monthly Service Rate Table 36	Replacement Fund Contribution Reduction	Proposed Rates
Block 1	\$21.45	\$1.00	\$20.45
Block 2	\$26.55	\$1.05	\$25.50
Block 3	\$30.75	\$1.00	\$29.75
Sewer Variable Charge	Monthly Service Rate Table 36	Replacement Fund Contribution Reduction	Proposed Rate
Discharge over > 10ccfs	\$2.19	\$0.00	\$2.19

## 6. Recycled Water Service Rates for FY 2021-22 and 2022-23 Steps

### 6.1. RECYCLED WATER COMMODITY RATES

**Step 1:** Identify the budgeted recycled water sales volumes (CCF) used by each tier for July 2021 through February 2022.

**Table 38: Recycled Water Sales Volumes/ CCF Used by Each Tier**

Consumption Tier	Sales CCF - 8 months
T1: Low Volume	4,163,656
T2: Base	4,387,481
T3: Inefficient	465,655
T4: Wasteful	325,215
<b>Totals</b>	<b>9,342,007</b>

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying the sales volumes from step 1 by the actual rates in effect per CCF during that period.

**Table 39: Recycled Water Commodity Revenue by Tier July 2021 through February 2022**

Consumption Tier	FY 2021-22 Rate July-February (1)	8 Months Sales CCF (2)	8 Months Revenue (1)*(2)
T1: Low Volume	\$1.19	4,163,656	\$4,954,751
T2: Base	\$1.57	4,387,481	6,888,345
T3: Inefficient	\$3.15	465,655	1,466,814
T4: Wasteful	\$6.62	325,215	2,152,925
<b>Totals</b>		<b>9,342,007</b>	<b>\$ 15,462,835</b>

**Step 3:** Determine the revenues required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 6.1.3 for the detailed calculation of rates. Revenue is calculated by multiplying the rate for each tier by the budgeted sales volume.

**Table 40: Recycled Water Commodity Revenue by Tier FY 2021-22**

Consumption Tier	FY 2021-22 Cost of Service Rates (1)	FY 2021-22 Sales CCF (2)	FY 2021-22 Revenue (1)*(2)
T1: Low Volume	\$1.21	5,997,595	\$7,257,090
T2: Base	\$1.93	5,973,998	11,529,816
T3: Inefficient	\$3.54	584,675	2,069,750
T4: Wasteful	\$6.83	394,297	2,693,050
<b>Totals</b>		<b>12,950,566</b>	<b>\$ 23,549,707</b>

See Appendix 2 Table 39 in Section 6.1.3

**Table 41: Recycled Water Commodity Revenue by Tier FY 2022-23**

Consumption Tier	FY 2022-23 Cost of Service Rates (1)	FY 2022-23 Sales CCF (2)	FY 2022-23 Revenue (1)*(2)
T1: Low Volume	\$1.22	6,141,768	\$7,492,957
T2: Base	\$1.96	6,117,604	11,990,503
T3: Inefficient	\$3.83	598,730	2,293,135
T4: Wasteful	\$7.10	403,776	2,866,807
<b>Totals</b>		<b>13,261,878</b>	<b>\$ 24,643,403</b>

See Appendix 3 Table 39 in Section 6.1.3

**Step 4:** Determine the remaining revenues needed for cost equity. This is done by adding the total revenue requirements for both full fiscal years as calculated in step 3 (Tables 40 and 41) and subtracting the expected revenue based on current rates (July 2021 through February 2022) as calculated in step 2 (Table 39). This calculation provides the revenue required over the remaining 16 months.

**Table 42: Recycled Water Remaining Revenue Required by Tier FY 2021-22 and FY 2022-23**

Consumption Tier	Revenue from Table 40 (1)	Revenue from Table 41 (2)	Total Revenue Requirement (3)	less: Revenue From Table 39 (4)	Revenue Required (3) -(4)
T1: Low Volume	\$7,257,090	\$7,492,957	\$14,750,048	\$4,954,751	\$9,795,297
T2: Base	11,529,816	11,990,503	23,520,320	6,888,345	16,631,975
T3: Inefficient	2,069,750	2,293,135	4,362,885	1,466,814	2,896,072
T4: Wasteful	2,693,050	2,866,807	5,559,857	2,152,925	3,406,932
<b>Totals</b>	<b>\$ 23,549,707</b>	<b>\$ 24,643,403</b>	<b>\$ 48,193,110</b>	<b>\$ 15,462,835</b>	<b>\$ 32,730,276</b>

**Step 5:** Determine the remaining budgeted sales volumes for both fiscal years. This is done by adding total sales volumes for both fiscal years used in step 3 (Tables 40 and 41) and subtracting the sales volumes from step 2. This calculation provides the budgeted sales volumes over the remaining 16 months.

**Table 43: Recycled Water Remaining CCF Sales Volumes by Tier FY 2021-22 and FY 2022-23**

Consumption Tier	CCF From Table 40 (1)	CCF From Table 41 (2)	Total CCF Sales (3)	Less: CCF from Table 39 (4)	Remaining CCF Sales (3) - (4)
T1: Low Volume	5,997,595	6,141,768	12,139,364	4,163,656	7,975,708
T2: Base	5,973,998	6,117,604	12,091,602	4,387,481	7,704,121
T3: Inefficient	584,675	598,730	1,183,405	465,655	717,750
T4: Wasteful	394,297	403,776	798,073	325,215	472,858
<b>Totals</b>	<b>12,950,566</b>	<b>13,261,878</b>	<b>26,212,444</b>	<b>9,342,007</b>	<b>16,870,436</b>

**Step 6:** Determine the rates needed to cover the remaining 16 month period March 2022-June 2023. This is done by dividing revenue required as calculated in step 4 by the sales volumes calculated in step 5.

**Table 44: Sixteen-month Recycled Water Commodity Rates per CCF**

Consumption Tier	Revenue Required Table 42 (1)	Remaining Sales Table 43 (2)	Proposed Rates per CCF (1)/(2)
T1: Low Volume	\$9,795,297	7,975,708	\$1.23
T2: Base	16,631,975	7,704,121	\$2.16
T3: Inefficient	2,896,072	717,750	\$4.03
T4: Wasteful	3,406,932	472,858	\$7.20
<b>Totals</b>	<b>\$ 32,730,276</b>	<b>16,870,436</b>	

## 6.2. RECYCLED WATER AGRICULTURAL RATE

**Step 1:** Identify the budgeted recycled water agricultural sales volumes (CCF) for July 2021 through February 2022.

**Table 45: Recycled Water Agricultural Sales Volumes**

Customer Class	CCF - 8 months
Agricultural	900,157

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying the sales volumes from step 1 by the actual monthly rate in effect per CCF during that period.

**Table 46: Recycled Water Agricultural Revenue July 2021 through February 2022**

Customer Class	FY 2021-22 Rate July-February (1)	8 Months Sales CCF (2)	8 Months Revenue (3)
Agricultural	\$1.64	900,157	\$1,476,257

**Step 3:** Determine the revenues required for cost of service equity for each fiscal year. See Appendices 2 and 3 Section 6.1.2 for the detailed calculation of rates. Revenue is calculated by multiplying the rate by the budgeted sales volume.

**Table 47: Recycled Water Agricultural Revenue for FY 2021-22**

Customer Class	FY 2021-22 Cost of Service Rates (1)	FY 2021-22 Sales CCF (2)	FY 2021-22 Revenue (1)*(2)
Agricultural	\$1.66	1,300,894	\$2,159,484

See Appendix 2 Table 40 in Section 6.1.5

**Table 48: Recycled Water Agricultural Revenue for FY 2022-23**

Customer Class	FY 2022-23 Cost of Service Rates (1)	FY 2022-23 Sales CCF (2)	FY 2022-23 Revenue (1)*(2)
Agricultural	\$1.70	1,332,165	\$2,264,681

See Appendix 3 Table 40 in Section 6.1.5

**Step 4:** Determine the remaining revenues required for cost equity. This is done by adding the total revenue requirements for both full fiscal years as calculated in step 3 (Tables 47 and 48) and subtracting the expected revenue based on current rates (July 2021 through February 2022) as calculated in step 2 (Table 46). This calculation provides the revenue required over the remaining 16 months.

**Table 49: Recycled Water Agricultural Remaining Revenue Required for FY 2021-22 and FY 2022-23**

Customer Class	Revenue from Table 47 (1)	Revenue from Table 48 (2)	Total Revenue Requirement (3)	Less: Revenue From Table 46 (4)	Revenue Required (3) -(4)
Agricultural	\$ 2,159,484	\$ 2,264,681	\$ 4,424,164	\$ 1,476,257	\$ 2,947,907

**Step 5:** Determine the remaining budgeted sales volumes for both fiscal years. This is done by adding total sales for both fiscal years used in step 3 (Tables 47 and 48) and subtracting the sales volumes in step 2. This calculation provides the budgeted sales volumes over the remaining 16 months.

**Table 50: Recycled Water Agricultural Remaining CCF Sales Volumes for FY 2021-22 and FY 2022-23**

Customer Class	CCF From Table 47 (1)	CCF From Table 48 (2)	Total CCF Sales (3)	Less: CCF from Table 45 (4)	Remaining CCF Sales (3) - (4)
Agricultural	1,300,894	1,332,165	2,633,059	900,157	1,732,902

**Step 6:** Determine the rates needed to cover the remaining 16 month period March 2022-June 2023. This is done by dividing revenue required as calculated in step 4 by the sales volumes calculated in step 5.

**Table 51: Sixteen-month Recycled Water Agricultural Monthly Agricultural Rate per CCF**

Customer Class	Revenue Required Table 49 (1)	Remaining Sales Table 50 (2)	Proposed Rate per CCF (1)/(2)
Agricultural	\$ 2,947,907	1,732,902	\$1.70

### 6.3. RECYCLED WATER TEMPORARY USAGE RATE

Similar to commercial and agricultural customers, it is not possible to develop water budgets based on standardized metrics for customers who use water for temporary purposes, such as for new construction of buildings. Developing a customized budget is difficult without a history of water use needs. Therefore, IRWD uses a single base rate that proportionately combines base and wasteful usage. The District estimates usage percentages for this rate based on budgeted usage (which is based on historical usage) by commercial, industrial, and institutional customers (CII).

**Table 52: Recycled Water Temporary Usage Rate Calculation**

Customer Class	FY 2021-22 Sales CCF (1)	FY 2022-23 Sales CCF (2)	24 Months Sales CCF (1)+(2)	% Sales	Tier Rate from Table 44*	Rate Contribution
CII Base Tier	210,412	215,470	425,882	97%	\$1.23	\$1.20
CII Wasteful Tier	6,120	6,268	12,388	3%	\$7.20	\$0.20
<b>Totals</b>	<b>216,533</b>	<b>221,738</b>	<b>438,270</b>	<b>100%</b>		

\* The base cost for CII customers who use recycled water is the cost of produced water, which is the same as the low volume tier rate.

**Table 53: Recycled Water Temporary Usage Rate per CCF**

Customer Class	Base Tier Rate Contribution from Table 52 (1)	Wasteful Tier Rate Contribution from Table 52 (1)	Proposed Rate per CCF (1) + (2)
Construction/Temporary	\$1.20	\$0.20	\$1.40

### 6.4. RECYCLED WATER MONTHLY METER SERVICE CHARGE

Recycled water fixed charges are the same as potable water fixed charges (see Table 15 in Section 4.2).

## 8. Untreated Water Service Rates for FY 2021-22 and 2022-23

The rates addressed in this area were not addressed in the 2021 Cost of Service generated by Raftelis. The untreated commodity rate is based on water costs for all untreated imported water uses, which include Baker Treatment Plant, recycled water production, and untreated water sold directly to customers. As a result, the revenue requirement for these costs is partially recovered through the commodity costs for potable and recycled commodity rates. Therefore the sixteen-month rate is based on the cost of water using the following steps.

**Step 1:** Determine the percentage to apply to each rate. The FY 2021-22 rates will be in effect for four months, which is 25% of the sixteen months. The FY 2022-23 rates will be in effect for twelve months, which is 75% of sixteen months.

**Step 2:** Multiply the FY 2021-22 rates by 25% and the FY 2022-23 rates by 75%.

**Step 3:** Determine rates needed to cover the remaining sixteen-month period March 2022 through June 2023. This is done by adding the Year 1 contribution to the Year 2 contribution as shown in the following tables.

**Table 54: Sixteen-Month Untreated Water Commodity Rate per CCF**

Water Type	Year 1 Rate (1)	Year 2 Rate (2)	Year 1 % (3)	Year 2 % (4)	Year 1 Contribution (1)*(3)= (5)	Year 1 Contribution (2)*(4)= (6)	Proposed Rate (5)+(6)
Untreated	\$1.78	\$1.83	25%	75%	\$0.45	\$1.37	\$1.82

(1) See Appendix 2 Table 41 in Section 8.1

(2) See Appendix 3 Table 41 in Section 8.1

**Table 55: Sixteen-Month Untreated Water Agricultural Rate per CCF**

Customer Class	Year 1 Rate (1)	Year 2 Rate (2)	Year 1 % (3)	Year 2 % (4)	Year 1 Contribution (1)*(3)= (5)	Year 1 Contribution (2)*(4)= (6)	Proposed Rate (5)+(6)
Agricultural	\$1.88	\$1.92	25%	75%	\$0.47	\$1.44	\$1.91

(1) See Appendix 2 Table 42 in Section 8.1

(2) See Appendix 3 Table 42 in Section 8.1

## 9. Potable and Recycled Pumping Surcharges

The rates addressed in this area were not included in the 2021 Cost of Service potable or recycled sections generated by Raftelis.

The District used Navigant Consulting, Inc. (Navigant) to generate pumping surcharge rates for District customers in elevated zones in March 2019. These customers live in zones which are higher in elevation and therefore require additional energy costs to pump the water to their service addresses. The work represents Navigant's professional judgment based on the information available at the time the report was prepared.

### 9.1. BACKGROUND

Navigant provided information required to develop a pumping surcharge recommendation. The report consisted of several tasks used to establish pumping surcharge areas including:

1. Calculating total energy use and historic embedded energy on an annual basis from 2014 to 2018 for each of IRWD's major systems.
2. Developing estimates of embedded energy in each of the 109 potable geo-pressure zones and 33 non-potable geo-pressure zones within the IRWD territory.
3. Analyzing historic potable and non-potable water use in IRWD territory on an annual basis from 2014 to 2018, as well as the associated wastewater collection.

## 9.2. PUMPING SURCHARGE ESTIMATE

The cost of distributing potable water and non-potable water (including recycled water) varies throughout IRWD’s service area based on elevation. Navigant assessed the variation in cost of pumping water to different regions throughout IRWD’s service area and developed a “pumping surcharge” by region or area.

Consistent with IRWD’s historic pumping surcharge costs, the analysis did not include costs associated with water supply, water treatment, sewage collection, or any sewage treatment processes because these costs are already included in our commodity rates. Furthermore, the analysis only considered energy costs directly paid by IRWD; it did not consider energy costs that may be incurred by wholesale water agencies from which IRWD imports water as those costs are already included in our commodity rates. It excluded capital cost recovery and any non-energy operation and maintenance costs associated with delivering water because these costs are already included in our fixed service charge.

Each customer within each pumping area has the same pumping surcharge applied to their bill as every other customer within the same pumping area.

## 9.3. SURCHARGE SUMMARY

Navigant identified three potable surcharge areas based on similar energy use plus a base area that receives no surcharge. The cost to pump water to the base area is included as part of IRWD’s commodity rates shown in Table 7 (potable) and Table 44 (Recycled). Due to the complexity of calculating usage and embedded energy costs by month, pumping surcharges were calculated for both fiscal years using 24 months of costs and usage.

## 9.4. POTABLE WATER PUMPING SURCHARGE

**Step 1:** Identify the estimated usage for 24 months. The usage in AF per year as calculated by Navigant is multiplied by 435.6 to convert to CCF and multiplied by 2 for 24 months usage.

**Table 56: Potable Water Sales Volumes /CCF by Area**

Surcharge Areas	Number of Pressure Zones	AF per Year* (1)	CCF (1) * 435.6 (2)	24 months CCF (2) *2
Base	81			
1	14	2,741	1,193,980	2,387,959
2	6	925	402,930	805,860
3	8	857	373,309	746,618
<b>Totals</b>	<b>109</b>	<b>4,523</b>	<b>1,970,219</b>	<b>3,940,438</b>

\* Section 9.1 item 3

**Step 2:** The revenue requirement is determined by multiplying the pumping energy cost as calculated by Navigant in 2019 by the estimated increase since 2019 (10%) and multiplied by 2 for estimated costs for both fiscal years.



**Table 57: Potable Water Surcharge Revenue by Area for FY 2021-22 & FY 2022-23**

Surcharge Areas	Number of Pressure Zones	Pumping Energy Cost in 2019* (1)	Estimated Energy Costs (1)* 10% Increase (2)	24 Months Revenue Requirement (2)* 2
Base	81	\$0	\$0	\$0
1	14	355,611	391,172	782,344
2	6	166,813	183,494	366,989
3	8	266,422	293,064	586,128
<b>Totals</b>	<b>109</b>	<b>\$788,846</b>	<b>\$867,731</b>	<b>\$1,735,461</b>

\* Section 9.1 item 2

**Step 3:** Determine the rates needed to cover the revenue requirement by dividing the revenue requirement by CCF.

**Table 58: Pumping Zone Surcharges per CCF**

Surcharge Areas	Number of Pressure Zones	CCF (Table 56) (1)	Estimated Energy Costs (Table 57) (2)	Proposed Surcharge per CCF (2)/(1)
Base	81		\$0	\$0.00
1	14	2,387,959	782,344	\$0.33
2	6	805,860	366,989	\$0.46
3	8	746,618	586,128	\$0.79
<b>Totals</b>	<b>109</b>	<b>3,940,438</b>	<b>\$1,735,461</b>	

## 9.5. RECYCLED WATER PUMPING SURCHARGE

**Step 1:** Identify the estimated usage for 24 months. The usage in AF per year as calculated by Navigant is multiplied by 435.6 to convert to CCF and multiplied by 2 for 24 months usage.

**Table 59: Recycled Water Sales Volumes /CCF by Area**

Surcharge Areas	Number of Pressure Zones	AF per Year* (1)	CCF (1) * 435.6 (2)	24 months CCF (2) * 2
Base	15			
1	8	2,678	1,166,537	2,333,074
2	9	2,168	944,381	1,888,762
3	1	55	23,958	47,916
<b>Totals</b>	<b>33</b>	<b>4,901</b>	<b>2,134,876</b>	<b>4,269,751</b>

\* Section 9.1 item 3

**Step 2:** The revenue requirement is determined by multiplying the pumping energy cost as calculated by Navigant in 2019 by the estimated increase since 2019 (10%) and multiplied by 2 for estimated costs for both fiscal years.

**Table 60: Recycled Water Surcharge Revenue by Area for FY 2021-22 & FY 2022-23**

Surcharge Areas	Number of Pressure Zones	Pumping Energy Cost in 2019* (1)	Estimated Energy Costs (1)* 10% Increase (2)	24 Months Revenue Requirement (2)* 2
Base	81	\$0	\$0	\$0
1	14	147,984	162,782	325,565
2	6	212,486	233,735	467,469
3	8	10,135	11,149	22,297
<b>Totals</b>	<b>109</b>	<b>\$370,605</b>	<b>\$407,666</b>	<b>\$815,331</b>

\* Section 9.1 item 2

**Step 3:** Determine the rates needed to cover the revenue requirement by dividing the revenue requirement by CCF.

**Table 61: Pumping Zone Surcharges per CCF**

Surcharge Areas	Number of Pressure Zones	CCF From Table 59 (1)	Estimated Energy Costs From Table 60 (2)	Proposed Surcharge per CCF (2)/(1)
Base	81		\$0	\$0.00
1	14	2,333,074	325,565	\$0.14
2	6	1,888,762	467,469	\$0.25
3	8	47,916	22,297	\$0.47
<b>Totals</b>	<b>109</b>	<b>4,269,751</b>	<b>\$815,331</b>	

## 10. Other Sewer Related Rates

The rates addressed in this area were not addressed in the 2021 Cost of Service sewer section generated by Raftelis. The remaining areas that require analysis include:

- Industrial Waste Charge – Included in the sewer quantity charge to address sewer discharge that is stronger in terms of its organic waste strength and solids content than that of a typical user.
- Sewer Service Charge Separation – Monthly fixed sewer service charges for a collection-only rate and a treatment-only rate for customers receiving only one of the two services.

### 10.1. INDUSTRIAL WASTE CHARGE

This cost is included as a component of the sewer service quantity charge. Firms are required to sign industrial sewer discharge permits with OC San when their flow is expected to fall into this category. The flow is measured and the fees paid are based on OC San rates.

The District's CII waste may contain stronger organic waste strength and solids content than typical users. Using this assumption, the cost is included as a component of the quantity charge and not included in the fixed monthly service charge. The cost added to the quantity charge does not include a component for capital replacement. The

District estimates that 2.75% of the treatment and bio-solids disposal costs are allocated for industrial waste costs to treat and dispose of higher concentration waste. This estimate is based on OC San’s percentage of total revenue generated from industrial waste and IRWD’s CII customer base.

**Step 1:** Determine the total industrial waste revenue requirement. Allocate cost using the industrial waste factor.

**Table 62: Industrial Waste Total Revenue Requirement**

Industrial Waste Treatment and Disposal	FY 2021-22	FY 2021-23	Total	Allocation*
Sewer Treatment	\$8,098,767	\$8,263,371	\$16,362,138	\$449,959
Bio-solids Treatment and Disposal	4,974,265	5,011,321	9,985,586	274,604
<b>Totals</b>	<b>\$13,073,032</b>	<b>\$13,274,692</b>	<b>\$26,347,724</b>	<b>\$724,562</b>

\* 2.75% of costs allocated to industrial waste handling.

**Step 2:** Determine the revenue generated from July 2021 through February 2022. This is done by multiplying 8 months discharge from table 31 multiplied by the actual rate.

**Table 63: Industrial Waste Revenue July 2021 through February 2022**

Industrial Waste Treatment and Disposal	Discharge CCF - 8 months		Revenue 8 months (1) * (2)
	From Table 31 (1)	FY 2021-22 Rate July-January (2)	
Discharge	2,016,651	\$0.136	\$274,264

**Step 3:** Determine the revenue required for cost of service equity for each fiscal year.

**Table 64: Industrial Waste Revenue July 2021 through February 2022**

Customer Class	Total Revenue From Table 62 (1)	Revenue 8 months From Table 63 (2)	16 Months Revenue Required (1) - (2)
Industrial Waste Treatment and Disposal	\$724,562	\$274,264	\$450,298

**Step 4:** Determine rates needed to cover the remaining 16 month period March 2022 through June 2023. This is done by dividing revenue required as calculated in step 3 by the discharge calculated in Table 35.

**Table 65: Industrial Waste Charge**

Customer Class	Revenue Required From Table 64 (1)	Discharge From Table 35 (2)	Proposed Rate per CCF (1)/(2)
Industrial Waste Treatment and Disposal	\$450,298	4,186,303	\$0.107

## 10.2. SEWAGE COLLECTION AND TREATMENT RATES

The District has some areas that receive only sewage collection (Newport Coast) or treatment services (Orange Park Acres). Collection only customers have their sewage flows sent directly to OC San where the treatment is provided. This is due to the service address location of the customer which makes it easier to send the sewage flows directly to OC San for treatment. For those customers who receive treatment-only services from IRWD, due to the location of their service address, these customers use OC San pipelines for collection which then flows into Michelson Water Recycling Plant (MWRP) for treatment. In both of these cases, the District allocates appropriate expenses based on the cost of service.

Sewer costs were discussed in Section (5.0) of Appendices 2, 3, and consolidated in 4. For customers who receive only collection or treatment services, the majority of those customers fall into the middle block (Block 2) of the three block sewer structure (see Table 37). The cost of service calculation for only collection or treatment services are shown in Table 60 below.

The total charge for the middle tier of \$25.50 is based on a fixed charge of \$7.00, a variable charge of \$8.85 and a replacement cost of \$9.65. The rates for collection or treatment services only are based on an allocation of fixed and variable costs plus a capital component to provide for the necessary eventual replacement of the infrastructure assets. For the fixed cost component, the collection and treatment rates are allocated equally between collection and treatment services since the benefits received by each are similar. The variable O&M component is allocated entirely to treatment services because these costs are associated entirely with treatment. For the replacement component, the percentage allocation is based on the proportionate estimated useful lives of the assets. Collection assets are primary pipes which have an estimated average useful life of 50 years. Treatment plants have an estimated average useful life of 75+ years, therefore the allocation for collection only replacement cost is  $1-(50/125)$  or 60% of the \$9.65 and treatment services allocation is  $1-(75/125)$  or 40% of the \$9.65. Pipes have to be replaced more often therefore the larger replacement percentage is allocated to pipes. Costs are rounded to the nearest \$.05. Adding columns across in column 5 of Table 60, for the fixed, variable and replacement components, the collection only service costs are \$9.25 and the treatment only costs are \$16.25.

**Table 60: Collection and Treatment Rates**

Sewer Charges	Block 2 * (1)	Fixed Charge Split Equally (2)	O&M Allocated to Discharge ** (3)	Replacement *** (4)	Total (2+3+4) (5)
<b>Block 2</b>	\$25.50	\$7.00	\$8.85	\$9.65	\$25.50
<b>Collection</b>		\$3.50	-	\$5.75	\$9.25
<b>Treatment</b>		\$3.50	\$8.85	\$3.90	\$16.25

\* from Table 37.

\*\* Variable costs allocated based on cost of treatment.

\*\*\* Replacement capital allocated 60% to collection and 40% to treatment.

FY 2021-22

## Technical Memo

### Determination of Costs of Public Fire Water Service For Irvine Ranch Water District

In February 2020, a statewide lawsuit entitled *Kessner v. City of Santa Clara* (Santa Clara Superior Court Case No. 20CV364054), was filed against over 75 public water suppliers in California, including Irvine Ranch Water District (“IRWD” or the “District”). The plaintiffs alleged that public fire water service is a "general governmental service" and not a property-related service for which customers can be charged.

As discussed in Exhibit A, and as is the custom throughout California, IRWD treats public fire water service as a property-related service. California Government Code Section 53750.5(b) explicitly authorizes this:

*The fees or charges for property-related water service imposed or increased pursuant to Section 6 of Article XIII D of the California Constitution may include the costs to construct, maintain, repair, or replace hydrants as needed or consistent with applicable fire codes and industry standards, and may include the cost of water distributed through hydrants. In addition to any other method consistent with Section 6 of Article XIII D of the California Constitution, fees or charges for the aspects of water service related to hydrants and the water distributed through them may be fixed and collected as a separate fee or charge, or included in the other water rates and charges fixed and collected by a public agency, as provided for in Section 53069.9 of the Government Code.*

The purpose of this memo is to identify the costs for public fire water service for District customers and to describe how the District allocates these costs among all customers who receive fire water service.

#### Executive Summary

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2021-22 are:

Direct costs	\$ 523,000
<u>Indirect costs</u>	<u>\$2,490,000</u>
Total Public Fire Water Service Costs	\$3,013,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Table J below. The annual costs to provide that fire flow capacity are the indirect costs.

Details as to how these costs are calculated are described in this memo. Both direct and indirect costs are incurred by IRWD to ensure that fire hydrants can immediately provide the prescribed water flows to fight structure fires on adjacent and proximate real property served by IRWD. IRWD's rate structure, including public fire water service, complies with Proposition 218's cost-of-service and proportionality principles.

### **Calculation of Public Fire Water Service Costs**

As discussed in the Cost of Service Design Study (the "Study"), IRWD's existing rate structure allocates fire water service costs among customers through a monthly fixed water meter service charge (see Sections 4.3.3 and 4.3.5 in the Study for further discussion). The monthly charges are for fixed expenditures that relate to the overall asset maintenance and operational activities of the District, including operational support activities such as accounting, billing, customer service, and administrative and technical support. These expenditures are common to all customers and are reasonably uniform across the different customer classes. The service charges also include meter- and capacity-related costs, such as meter maintenance and peaking charges, to meet peak fire water demand requirements that are included based on the meter's hydraulic capacity (measured in gallons per minute [gpm]). The total cost for public fire water service is allocated to all customers - residential, commercial, industrial, institutional, irrigation, and agricultural – because all those customers benefit from the protection of fire flows to extinguish fires on sites connected to the water system, both with and without structures.

There are two cost components associated with public fire water service: direct costs and indirect costs.

**Direct Costs:** Direct costs of fire water service include triennial fire hydrant maintenance. This is based on inspections and services to all District fire hydrants, of which approximately one-third are serviced or inspected annually on a rotating basis. The direct cost component also includes the amount of water used for flushing. The budget for direct costs for FY 2021-22 is \$523,000. Budgeted costs are based on historical unit costs, inflation factors, and projected maintenance activity.

**Indirect Costs:** The second component of public fire water service costs is indirect costs. Indirect costs are those associated with designing, building, operating, and maintaining the infrastructure to support the fire flow necessary to meet peak fire flow demand requirements (called "peaking factors"), which are set generally by the relevant land use agency as a condition for subdivision or construction permitting, as well as the water used for firefighting. These costs are included in IRWD's normal operating expenses and allocated to District customers through the monthly meter service charge. Indirect costs for FY 2021-22 are budgeted at \$2,490,000.

The District uses a detailed method to calculate the annual indirect costs of fire water service. There are two primary components of indirect fire water service costs: asset maintenance and operating expense. For the first component, the District categorizes its assets by function and calculates the costs of asset maintenance allocated to fire water service. For the second component, the District breaks down system operating costs and determines allocations to fire water service based on demand categories.

The following steps are used to calculate indirect fire water service costs:

- a. Identify total system peaking factors allocated to Base, Max Day, and Max Hour demands;
- b. Apply functional allocation percentages to the asset categories;
- c. Allocate asset values by function;
- d. Allocate functions to peaking factors;
- e. Determine asset value by peaking factor;
- f. Allocate operating costs by their demands on the system;
- g. Summarize peaking factor percentages for all operating costs by demand category;
- h. Identify operating costs by demand category;
- i. Calculate the cost of service by peaking factor;

- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity; and
- k. Compute the public fire water supply cost-of-service.

The result is the cost estimate for the indirect component related to public fire water service. Each of these steps is discussed in more detail below:

- a. **Identify total system peaking factors** – Peak water system demand factors, or "peaking factors," are based on the District's Master Plan, which uses the requirements of the city or other land use agency in which the hydrants are located. The factors are calculated based on the following demands on the system:
  1. Base demand, which is equivalent to the average daily demand on the water system within a given year;
  2. Maximum day or Max Day demand, which represents the maximum volume of water used during a 24 hour period within a year. Based on historical experience, the Master Plan sets Max Day demand equal to 1.8 times the Base demand. The Base demand component of Max Day (1.0/1.8) is 55.6%, while the incremental Max Day demand (the portion in excess of the Base demand component) is (0.8/1.8) is 44.4%; and
  3. Maximum hour or Max Hour demand, which represents the maximum volume of water used within a one hour period within a year. Based on historical experience, the Master Plan sets Max Hour demand equal to 2.5 times the Base demand. The Base demand component of Max Hour (1.0/2.5) is 40%, while the Max Day component (0.8/2.5) is 32% and the incremental Max Hour demand (0.7/2.5) is 28%.

**Table A: Identify Peaking Factors**

Allocation Factor	System Peaking Factor	Base	Max Day	Max Hour	Total
Base	1.00	100%	0%	0%	100%
Max Day	1.80	56%	44%	0%	100%
Max Hour	2.50	40%	32%	28%	100%

First Component – asset maintenance: To allocate annual asset maintenance costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates the value of its assets to functional categories (Tables B and C below), then assigns the functionalized assets to the several peaking factors (Table D below), and then calculates the values per peaking factor (Table E below).

- b. **Apply functional allocation percentages to the asset categories** - The asset categories are based on the District's historic asset groupings as identified in the District's accounting system. Raftelis Financial Consultants (Raftelis) has identified the several functions performed by District assets. Based on their professional judgement and experience, Raftelis has assigned the percentage of each asset type allocable to each function.

**Table B: Functional Allocation Percentages**



Asset Type	Asset Functions							Total
	Supply	Storage	Pumping	Transmission	Distribution	Meters	Fire	
Pipes				30%	70%			100%
Reservoirs	80%	20%						100%
Hydrants							100%	100%
System Valves				30%	70%			100%
Pump Stations			100%					100%
Meters						100%		100%
Pressure Regulating Stations					100%			100%
Wells	100%							100%

- c. **Allocate asset values by function** – The total value of each asset category, as shown in the District’s fiscal year end 2019-20 accounting records, is allocated to the several asset functions according to the percentages identified in Table B. FY 2019-20 was used because the data for FY 2020-21 was not available until recently, the change in assets from FY 2019-20 to FY 2020-21 is immaterial and the impact to allocations is minimal.

**Table C: Allocation of Asset Values to Functions**

Asset Type	Asset Functions (dollars in millions)							Total
	Supply	Storage	Pumping	Transmission	Distribution	Meters	Fire	
Pipes	\$ -	\$ -	\$ -	\$ 688.4	\$ 1,606.3	\$ -	\$ -	\$ 2,294.7
Reservoirs	282.1	70.5	-	-	-	-	-	352.6
Hydrants	-	-	-	-	-	-	228.7	228.7
System Valves	-	-	-	51.3	119.8	-	-	171.1
Pump Stations	-	-	92.8	-	-	-	-	92.8
Meters	-	-	-	-	-	40.9	-	40.9
Pressure Regulating Stati	-	-	-	-	7.8	-	-	7.8
Wells	3.6	-	-	-	-	-	-	3.6
<b>Total Allocation</b>	<b>\$ 285.7</b>	<b>\$ 70.5</b>	<b>\$ 92.8</b>	<b>\$ 739.7</b>	<b>\$ 1,733.9</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>

- d. **Allocate functions to peaking factors** - Peaking factor allocation percentages in Table A are assigned to the functions in Table B. These assignments are based on the professional judgement and experience of Raftelis. Meter and direct fire hydrant maintenance expenses do not change with peaking factors and are allocated separately to become a component in the customer’s fixed meter service charge.

**Table D: Peaking Factor Percentages Allocated to Asset Functions**

Asset Functions	Allocation Basis	Allocation				Fire	Total
		Base	Max Day	Max Hour	Customer		
Supply	Base	100%	0%	0%		100%	
Storage	Max Hour	40%	32%	28%		100%	
Pumping	Max Hour	40%	32%	28%		100%	
Transmission	Max Day	56%	44%	0%		100%	
Distribution	Max Hour	40%	32%	28%		100%	
Meters					100%	100%	
Fire						100%	

- e. **Determine asset value by peaking factor** - The asset values in Table C are multiplied by the percentages identified in Table D. The assets that are assigned directly to fire water supply (i.e., the hydrants) are then reallocated to peaking factors based on the total allocation value component percentages. The percentage of annual maintenance costs allocated to each demand factor is then determined based on the reallocated values.

**Table E: Asset Values Allocated by Peaking Factor Percentages**



Functionalized Expenses (millions)	Allocation Basis	Allocation					Total
		Base	Max Day	Max Hour	Customer	Fire	
Supply	Base	\$ 285.7	\$ -	\$ -	\$ -	\$ -	\$ 285.7
Storage	Max Hour	28.2	22.6	19.7	-	-	70.5
Pumping	Max Hour	37.1	29.7	26.0	-	-	92.8
Transmission	Max Day	411.0	328.7	-	-	-	739.7
Distribution	Max Hour	693.6	554.8	485.5	-	-	1,733.9
Meters		-	-	-	40.9	-	40.9
Fire		-	-	-	-	228.7	228.7
<b>Total Allocation</b>		<b>\$ 1,455.6</b>	<b>\$ 935.8</b>	<b>\$ 531.2</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>
Reallocation of Fire		\$ 112.3	\$ 72.2	\$ 41.0	\$ 3.2	\$(228.7)	\$ -
<b>Revised Allocation</b>		<b>\$ 1,567.9</b>	<b>\$ 1,008.0</b>	<b>\$ 572.2</b>	<b>\$ 44.1</b>	<b>\$ -</b>	<b>\$ 3,192.2</b>
<i>Asset Maintenance</i>		<i>49.1%</i>	<i>31.6%</i>	<i>17.9%</i>	<i>1.4%</i>	<i>0.0%</i>	<i>100%</i>

Second component – operating costs: To allocate annual operating costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates each of the nine demand categories of operating costs (see list and Table G below) to the three demand factors. The District then assigns costs to each of the demand categories (Table H below). Finally, the District calculates the costs per peaking factor (Exhibit I below).

- f. **Categorize operating costs by their demands on the system** – The strategy for allocating operating expenses is based on demands on the system. Table F below shows the nine operating cost demand categories and the asset maintenance cost demand category, assigned to variable and fixed revenue requirement groups. The net costs include all potable operating costs, capital contributions, and offsets. (See Table 13 [variable revenue requirement] and Table 14 [fixed revenue requirement] in the Study for the identification of the demand categories and the costs assigned to each one).

**Table F: Operating and Asset Maintenance Cost System Demand Categories**

Cost Group	Demand Category	
<b>Variable:</b>	Water Supplies	Base Supply
	Water Supplies	Excess Supply
	Conservation and Supply Reliability	Water Banking
	Conservation and Supply Reliability	Conservation and NTS
	Conservation and Supply Reliability	Universal Conservation
<b>Fixed:</b>	Fixed Operating Costs	Customer Service
	Fixed Operating Costs	System Maintenance
	Fixed Operating Costs	G&A and Administrative
	Fixed Operating Costs	G&A Plant
	Fixed Operating Costs	Asset Maintenance <sup>(1)</sup>

(1) Includes fleet and building maintenance.

The demands for each operating expense category on the system, based on the professional judgment and experience of Raftelis, are as follows:

1. Base Supply – Primary water supply sources meeting low volume and most base rate demands. This is included as 100% Base demand.
2. Excess Supply – Imported water is used to meet a portion of the base and all over-allocation demands. The distribution between Base, Max Day, and Max Hour is based on allocated use of imported water between the base, inefficient, and wasteful tiers (Table 16 Cost of Service Report).

3. Water Banking – Similarly, water banking is a source of supply that is only necessary during severe water limitations. This is allocated entirely to Max Hour.
  4. Targeted Conservation and NTS – These expenses are used to manage and reduce water overuse. Targeted conservation is outreach to customers exceeding budget use while NTS provides for treatment of overuse flows prior to flowing to the ocean. These costs are allocated to Max Day and Max Hour based on demands (Table 17 Cost of Service Report).
  5. Universal Conservation – These costs include District efforts to educate customers on ways to conserve water. This is allocated to all sales except low volume. Low volume sales are excluded because remaining within low volume usage provides a high level of conservation. These costs are allocated to Base, Max Day, and Max Hour based on the respective percentage of sales to the base, inefficient and wasteful tiers (Table 17 Cost of Service Report).
  6. Customer Service – This is primarily costs associated with providing communication to District customers. It includes responding to bill payment questions, requests for service, reading meters, etc. This has no impact on peaking factors and is included in the fixed charges allocated to meters.
  7. System Maintenance – This includes costs related to the overall maintenance and operational activities of the District. It is a Base cost and excludes the direct cost of fire hydrant maintenance.
  8. General and Administrative (G&A) – This includes indirect operating costs that are not directly allocable to a system but provide a benefit for all systems. This is allocated to Base, Max Day, Max Hour, customer, and direct fire hydrant maintenance based on their respective portion of total costs.
  9. General Plant - This includes costs associated with the purchase of assets used within the office, District fleet, etc. They are allocated between Base and Max Day using the Max Day peaking factor percentage.
- g. Summarize peaking factor percentages for all operating costs by demand category -** Peaking factor percentages for operating expenses by demand category are summarized in the table below. These are assigned based on the professional judgment and experience of Raftelis.

**Table G: Summarized Peaking Factor Percentages for all Operating Costs**

Demand Category	Base	Max Day	Max Hour	Customer	Fire	General	Total
Base Supply	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Excess Supply	21.5%	43.2%	35.2%	0.0%	0.0%	0.0%	100%
Conservation and Supply Reliability	5.9%	45.0%	49.1%	0.0%	0.0%	0.0%	100%
Customer Service	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
System Maintenance	94.8%	0.0%	0.0%	0.0%	3.1%	0.0%	98%
Asset Maintenance	49.1%	31.6%	17.9%	1.4%	0.0%	0.0%	100%
G & A	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
GP	55.6%	44.4%	0.0%	0.0%	0.0%	0.0%	100%

- h. Identify operating costs by demand category** – Amounts are assigned to demand categories shown in Table F. The net costs are explained in further detail in section 4.3 in the Study and as stated above, are shown in Table 13 (variable revenue requirement) and Table 14 (fixed revenue requirement).

**Table H: Operating and Asset Maintenance Costs by System Demands FY 2021-22**

	Cost Group	Demand Category	Cost (Thousands)	Totals
<b>Variable:</b>	Water Supplies	Base Supply	\$34,774	58,892
	Water Supplies	Excess Supply	8,983	
	Conservation and Supply Reliability	Water Banking	1,889	
	Conservation and Supply Reliability	Conservation and NTS	11,725	
	Conservation and Supply Reliability	Universal Conservation	1,522	
	<b>Fixed:</b>	Fixed Operating Costs	Customer Service	
Fixed Operating Costs	System Maintenance	15,352		
Fixed Operating Costs	G&A and Administrative	9,046		
Fixed Operating Costs	G&A Plant	850		
Fixed Operating Costs	Asset Maintenance	2,489		
		Net allocated Costs	\$91,177	\$91,177

- i. Calculate cost-of-service by peaking factor** - The allocated percentages identified in Table G are applied to the operating costs identified in Table H to calculate the cost by peaking factor. General and Administrative (G&A) is reallocated based on the total cost of service.

**Table I: Calculate Cost-of-Service by Peaking Factor for FY 2021-22**

Demand Category	Cost Allocation (thousands)							Total
	Base	Max Day	Max Hour	Customer	Fire	G&A		
Base Supply	\$ 34,572	\$ -	\$ -	\$ 203	\$ -	\$ -	\$ 34,774	
Excess Supply	1,934	3,884	3,164	-	-	-	8,983	
Conservation and Supply Reliability	1,286	6,591	7,258	-	-	-	15,136	
Customer Service	-	-	-	4,548	-	-	4,548	
System Maintenance	14,876	-	-	-	476	-	15,352	
Asset Maintenance	1,222	786	446	34	-	-	2,489	
G & A	-	-	-	-	-	9,046	9,046	
GP	472	378	-	-	-	-	850	
<b>Total Allocated Costs</b>	<b>\$ 54,363</b>	<b>\$ 11,639</b>	<b>\$ 10,869</b>	<b>\$ 4,785</b>	<b>\$ 476</b>	<b>\$ 9,046</b>	<b>\$ 91,177</b>	

- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity** - To estimate the costs associated with (and to provide capacity for) public fire water service, the methodology put forth in the AWWA M1 Manual was used.

To determine the capacity requirements for fire flow, the District uses two hypothetical fires with varying fire flow. The first fire requires flows of 2,500 gallons per minute for a minimum of 4 hours, and the second requires 8,000 gallons per minute for a minimum of 8 hours as shown below. These hypothetical fires were chosen based on the professional judgement and experience of Raftelis.

Fire flows as a percentage of total capacity is converted to a percentage and used to identify the indirect cost allocated to water supply for public and private fire protection. The water supply demand capacity for public and private fire water service are based on firelines and hydrant capacity.

Water is supplied for private fire service through pipes and appurtenances on private property. These include all water-based fire protection systems, such as fire protection sprinklers and fire hydrants that are not part of, but are connected to, the public water service. Costs are allocated to these systems in a similar fashion and billed separately to the individual customers owning the private fire protection systems.

Max Day capacity is the amount of water needed for the duration of a fire in one day (fire flow gallons per minute multiplied by the duration of fire in minutes).

Max Hour capacity is the amount of water needed if a similar fire lasted an entire day (fire flow gallons per minute multiplied by the number of minutes in a day), less the capacity already allocated to Max Day. Capacity amounts in gallons are converted to CCF in the table below. (One CCF = 748.05 gallons.)

**Table J: Capacity Requirements for Fire Flow and Public Fire Allocation**

Fire Flow Estimate	Fire #1		Fire #2		Total	
	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day	Max Hour
Duration of Fire (Hours)	4.00		4.00		8.00	
Fire Flow (gpm)	2,500	2,500	8,000	8,000	10,500	10,500
Percent Allocated to Public Fire	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%
Capacity Demanded for Fire (ccf)	802	4,010	2,567	12,833	3,369	16,844
Public Fire Capacity (ccf) <sup>(3)</sup>	601	3,005	1,923	9,616	2,524	12,621
Private Fire Capacity (ccf) <sup>(4)</sup>	201	1,005	643	3,217	845	4,223
Total Potable Capacity	84,624	72,789				
<b>Public Fire Allocation (Max Day: 2,524/84,624; Max Hour 12,621/72,789)</b>					<b>3.0%</b>	<b>17.3%</b>
Private Fire Allocation (Max Day: 845/84,624; Max Hour 4,223/72,789)					1.0%	5.8%

(2) Max Day Capacity demanded for fire = (hours\*minutes\*gallons)/748.05.

(3) Max Hour Capacity demanded for fire = (hours\*minutes\*gallons)/748.05 – Max Day Capacity.

(4) Split is based on total system hydrants =2,784,809/fireline meter capacity= 698,174

(5) Total potable capacity is max day and max hour demands for all customer classes.

**k. Compute the public fire water service cost –**

The Max Day and Max Hour percentages identified in Table J for public fire water service are applied to the total cost-of-service by peaking factor to reallocate expenses included in Max Day and Max Hour fire protection water service costs to customer costs:

Max Day Public Fire Water Service costs:  $3.0\% * \$13,086K = \$390k$

Max Hour Public Fire Water Service costs:  $17.3\% * \$12,110K = \$2,100k$

Total indirect costs of Public Fire Water Service:  $\$2,490k$

**Table K: Public Fire Water Service Cost-of-Service for FY 2021-22**

Cost Allocation (thousands)	Base	Max Day	Max Hour	Customer	Direct Fire	Private Fire	Total
Total Operating Costs	\$ 60,188	\$ 13,086	\$ 12,110	\$ 5,270	\$ 523	\$ -	\$ 91,177
Allocation of Direct Public Fire to Customer				523	(523)		-
Allocation of Indirect Public Fire to Customer <sup>(1)</sup>		(390)	(2,100)	2,490			-
Allocation to Private Fire		(147)	(789)	-		936	-
<b>Adjusted Cost of Service</b>	<b>\$ 60,188</b>	<b>\$ 12,549</b>	<b>\$ 9,221</b>	<b>\$ 8,282</b>	<b>\$ -</b>	<b>\$ 936</b>	<b>\$ 91,177</b>
<b>Total Cost of Public Fire Included in "Customer"</b>				<b>\$ 3,013</b>			

(1) As described above, public fire water is calculated as follows:

Max day - \$13,086K (Table J) \* 3.0% = \$390K

Max Hour - \$12,110K (Table J) \* 17.3% = \$2,100K

As identified in Table K, there are two cost components associated with public fire water service: direct and indirect. The total cost of public fire water service is \$3,013,000 including the direct cost of \$523,000 and the indirect cost of \$2,490,000.

Total public fire water service costs are allocated to all customers through the fixed meter charge through the IRWD's rate structure. This complies with Proposition 218's cost-of-service and proportionality principles because meter charges are proportional to a given property's water demand, and that water demand is proportional to the property's use and need for fire water service.

FY 2022-23

## Technical Memo

### Determination of Costs of Public Fire Water Service For Irvine Ranch Water District

In February 2020, a statewide lawsuit entitled *Kessner v. City of Santa Clara* (Santa Clara Superior Court Case No. 20CV364054), was filed against over 75 public water suppliers in California, including Irvine Ranch Water District (“IRWD” or the “District”). The plaintiffs alleged that public fire water service is a "general governmental service" and not a property-related service for which customers can be charged.

As discussed in Exhibit A, and as is the custom throughout California, IRWD treats public fire water service as a property-related service. California Government Code Section 53750.5(b) explicitly authorizes this:

*The fees or charges for property-related water service imposed or increased pursuant to Section 6 of Article XIII D of the California Constitution may include the costs to construct, maintain, repair, or replace hydrants as needed or consistent with applicable fire codes and industry standards, and may include the cost of water distributed through hydrants. In addition to any other method consistent with Section 6 of Article XIII D of the California Constitution, fees or charges for the aspects of water service related to hydrants and the water distributed through them may be fixed and collected as a separate fee or charge, or included in the other water rates and charges fixed and collected by a public agency, as provided for in Section 53069.9 of the Government Code.*

The purpose of this memo is to identify the costs for public fire water service for District customers and to describe how the District allocates these costs among all customers who receive fire water service.

#### Executive Summary

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2022-23 are:

Direct costs	\$ 541,000
<u>Indirect costs</u>	<u>\$2,532,000</u>
Total Public Fire Water Service Costs	\$3,073,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in

terms of maximum hourly and maximum daily water flow. See Table J below. The annual costs to provide that fire flow capacity are the indirect costs.

Details as to how these costs are calculated are described in this memo. Both direct and indirect costs are incurred by IRWD to ensure that fire hydrants can immediately provide the prescribed water flows to fight structure fires on adjacent and proximate real property served by IRWD. IRWD's rate structure, including public fire water service, complies with Proposition 218's cost-of-service and proportionality principles.

### **Calculation of Public Fire Water Service Costs**

As discussed in the Cost of Service Design Study (the "Study"), IRWD's existing rate structure allocates fire water service costs among customers through a monthly fixed water meter service charge (see Sections 4.3.3 and 4.3.5 in the Study for further discussion). The monthly charges are for fixed expenditures that relate to the overall asset maintenance and operational activities of the District, including operational support activities such as accounting, billing, customer service, and administrative and technical support. These expenditures are common to all customers and are reasonably uniform across the different customer classes. The service charges also include meter- and capacity-related costs, such as meter maintenance and peaking charges, to meet peak fire water demand requirements that are included based on the meter's hydraulic capacity (measured in gallons per minute [gpm]). The total cost for public fire water service is allocated to all customers - residential, commercial, industrial, institutional, irrigation, and agricultural – because all those customers benefit from the protection of fire flows to extinguish fires on sites connected to the water system, both with and without structures.

There are two cost components associated with public fire water service: direct costs and indirect costs.

**Direct Costs:** Direct costs of fire water service include triennial fire hydrant maintenance. This is based on inspections and services to all District fire hydrants, of which approximately one-third are serviced or inspected annually on a rotating basis. The direct cost component also includes the amount of water used for flushing. The budget for direct costs for FY 2022-23 is \$541,000. Budgeted costs are based on historical unit costs, inflation factors, and projected maintenance activity.

**Indirect Costs:** The second component of public fire water service costs is indirect costs. Indirect costs are those associated with designing, building, operating, and maintaining the infrastructure to support the fire flow necessary to meet peak fire flow demand requirements (called "peaking factors"), which are set generally by the relevant land use agency as a condition for subdivision or construction permitting, as well as the water used for firefighting. These costs are included in IRWD's normal operating expenses and allocated to District customers through the monthly meter service charge. Indirect costs for FY 2022-23 are budgeted at \$2,532,000.

The District uses a detailed method to calculate the annual indirect costs of fire water service. There are two primary components of indirect fire water service costs: asset maintenance and operating expense. For the first component, the District categorizes its assets by function and calculates the costs of asset maintenance allocated to fire water service. For the second component, the District breaks down system operating costs and determines allocations to fire water service based on demand categories.

The following steps are used to calculate indirect fire water service costs:

- a. Identify total system peaking factors allocated to Base, Max Day, and Max Hour demands;
- b. Apply functional allocation percentages to the asset categories;
- c. Allocate asset values by function;
- d. Allocate functions to peaking factors;
- e. Determine asset value by peaking factor;
- f. Allocate operating costs by their demands on the system;



- g. Summarize peaking factor percentages for all operating costs by demand category;
- h. Identify operating costs by demand category;
- i. Calculate the cost of service by peaking factor;
- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity; and
- k. Compute the public fire water supply cost-of-service.

The result is the cost estimate for the indirect component related to public fire water service. Each of these steps is discussed in more detail below:

- a. **Identify total system peaking factors** – Peak water system demand factors, or "peaking factors," are based on the District's Master Plan, which uses the requirements of the city or other land use agency in which the hydrants are located. The factors are calculated based on the following demands on the system:
  1. Base demand, which is equivalent to the average daily demand on the water system within a given year;
  2. Maximum day or Max Day demand, which represents the maximum volume of water used during a 24 hour period within a year. Based on historical experience, the Master Plan sets Max Day demand equal to 1.8 times the Base demand. The Base demand component of Max Day (1.0/1.8) is 55.6%, while the incremental Max Day demand (the portion in excess of the Base demand component) is (0.8/1.8) is 44.4%; and
  3. Maximum hour or Max Hour demand, which represents the maximum volume of water used within a one hour period within a year. Based on historical experience, the Master Plan sets Max Hour demand equal to 2.5 times the Base demand. The Base demand component of Max Hour (1.0/2.5) is 40%, while the Max Day component (0.8/2.5) is 32% and the incremental Max Hour demand (0.7/2.5) is 28%.

**Table A: Identify Peaking Factors**

Allocation Factor	System Peaking Factor	Base	Max Day	Max Hour	Total
Base	1.00	100%	0%	0%	100%
Max Day	1.80	56%	44%	0%	100%
Max Hour	2.50	40%	32%	28%	100%

First Component – asset maintenance: To allocate annual asset maintenance costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates the value of its assets to functional categories (Tables B and C below), then assigns the functionalized assets to the several peaking factors (Table D below), and then calculates the values per peaking factor (Table E below).

- b. **Apply functional allocation percentages to the asset categories** – The asset categories are based on the District's historic asset groupings as identified in the District's accounting system. Raftelis Financial Consultants (Raftelis) has identified the several functions performed by District assets. Based on their professional judgement and experience, Raftelis has assigned the percentage of each asset type allocable to each function.

**Table B: Functional Allocation Percentages**



Asset Type	Asset Functions							Total
	Supply	Storage	Pumping	Transmission	Distribution	Meters	Fire	
Pipes				30%	70%			100%
Reservoirs	80%	20%						100%
Hydrants							100%	100%
System Valves				30%	70%			100%
Pump Stations			100%					100%
Meters						100%		100%
Pressure Regulating Stations					100%			100%
Wells	100%							100%

- c. **Allocate asset values by function** – The total value of each asset category, as shown in the District’s fiscal year end 2019-20 accounting records, is allocated to the several asset functions according to the percentages identified in Table B. FY 2019-20 was used because the data for FY 2020-21 was not available until recently, the change in assets from FY 2019-20 to FY 2020-21 is immaterial and the impact to allocations is minimal.

**Table C: Allocation of Asset Values to Functions**

Asset Type	Asset Functions (dollars in millions)							Total
	Supply	Storage	Pumping	Transmission	Distribution	Meters	Fire	
Pipes	\$ -	\$ -	\$ -	\$ 688.4	\$ 1,606.3	\$ -	\$ -	\$ 2,294.7
Reservoirs	282.1	70.5	-	-	-	-	-	352.6
Hydrants	-	-	-	-	-	-	228.7	228.7
System Valves	-	-	-	51.3	119.8	-	-	171.1
Pump Stations	-	-	92.8	-	-	-	-	92.8
Meters	-	-	-	-	-	40.9	-	40.9
Pressure Regulating Stations	-	-	-	-	7.8	-	-	7.8
Wells	3.6	-	-	-	-	-	-	3.6
<b>Total Allocation</b>	<b>\$ 285.7</b>	<b>\$ 70.5</b>	<b>\$ 92.8</b>	<b>\$ 739.7</b>	<b>\$ 1,733.9</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>

- d. **Allocate functions to peaking factors** – Peaking factor allocation percentages in Table A are assigned to the functions in Table B. These assignments are based on the professional judgement and experience of Raftelis. Meter and direct fire hydrant maintenance expenses do not change with peaking factors and are allocated separately to become a component in the customer’s fixed meter service charge.

**Table D: Peaking Factor Percentages Allocated to Asset Functions**

Asset Functions	Allocation Basis	Base	Max Day	Max Hour	Customer	Fire	Total
Supply	Base	100%	0%	0%			100%
Storage	Max Hour	40%	32%	28%			100%
Pumping	Max Hour	40%	32%	28%			100%
Transmission	Max Day	56%	44%	0%			100%
Distribution	Max Hour	40%	32%	28%			100%
Meters					100%		100%
Fire						100%	100%

- e. **Determine asset value by peaking factor** – The asset values in Table C are multiplied by the percentages identified in Table D. The assets that are assigned directly to fire water supply (i.e., the hydrants) are then reallocated to peaking factors based on the total allocation value component percentages. The percentage of annual maintenance costs allocated to each demand factor is then determined based on the reallocated values.

**Table E: Asset Values Allocated by Peaking Factor Percentages**

Functionalized Expenses (millions)	Allocation Basis	Allocation					Total
		Base	Max Day	Max Hour	Customer	Fire	
Supply	Base	\$ 285.7	\$ -	\$ -	\$ -	\$ -	\$ 285.7
Storage	Max Hour	28.2	22.6	19.7	-	-	70.5
Pumping	Max Hour	37.1	29.7	26.0	-	-	92.8
Transmission	Max Day	411.0	328.7	-	-	-	739.7
Distribution	Max Hour	693.6	554.8	485.5	-	-	1,733.9
Meters		-	-	-	40.9	-	40.9
Fire		-	-	-	-	228.7	228.7
<b>Total Allocation</b>		<b>\$ 1,455.6</b>	<b>\$ 935.8</b>	<b>\$ 531.2</b>	<b>\$ 40.9</b>	<b>\$ 228.7</b>	<b>\$ 3,192.2</b>
Reallocation of Fire		\$ 112.3	\$ 72.2	\$ 41.0	\$ 3.2	\$(228.7)	\$ -
<b>Revised Allocation</b>		<b>\$ 1,567.9</b>	<b>\$ 1,008.0</b>	<b>\$ 572.2</b>	<b>\$ 44.1</b>	<b>\$ -</b>	<b>\$ 3,192.2</b>
<i>Asset Maintenance</i>		<i>49.1%</i>	<i>31.6%</i>	<i>17.9%</i>	<i>1.4%</i>	<i>0.0%</i>	<i>100%</i>

**Second component – operating costs:** To allocate annual operating costs to Base demand, Max Day demand, and Max Hour demand capacity, the District first allocates each of the nine demand categories of operating costs (see list and Table G below) to the three demand factors. The District then assigns costs to each of the demand categories (Table H below). Finally, the District calculates the costs per peaking factor (Exhibit I below).

- f. **Allocate operating costs by their demands on the system** – The strategy for allocating operating expenses is based on demands on the system. Table F below shows the nine operating cost demand categories and the asset maintenance cost demand category, assigned to variable and fixed revenue requirement groups. The net costs include all potable operating costs, capital contributions, and offsets. (See Table 13 [variable revenue requirement] and Table 14 [fixed revenue requirement] in the Study for the identification of the demand categories and the costs assigned to each one).

**Table F: Operating and Asset Maintenance Cost System Demand Categories**

	Cost Group	Demand Category
<b>Variable:</b>	Water Supplies	Base Supply
	Water Supplies	Excess Supply
	Conservation and Supply Reliability	Water Banking
	Conservation and Supply Reliability	Conservation and NTS
	Conservation and Supply Reliability	Universal Conservation
<b>Fixed:</b>	Fixed Operating Costs	Customer Service
	Fixed Operating Costs	System Maintenance
	Fixed Operating Costs	G&A and Administrative
	Fixed Operating Costs	G&A Plant
	Fixed Operating Costs	Asset Maintenance <sup>(1)</sup>

(1) Includes fleet and building maintenance.

The demands for each operating expense category on the system, based on the professional judgment and experience of Raftelis, are as follows:

1. Base Supply – Primary water supply sources meeting low volume and most base rate demands. This is included as 100% Base demand.
2. Excess Supply – Imported water is used to meet a portion of the base and all over-allocation demands. The distribution between Base, Max Day, and Max Hour is based on allocated use of imported water between the base, inefficient, and wasteful tiers (Table 16 Cost of Service Report).

3. Water Banking – Similarly, water banking is a source of supply that is only necessary during severe water limitations. This is allocated entirely to Max Hour.
  4. Targeted Conservation and NTS – These expenses are used to manage and reduce water overuse. Targeted conservation is outreach to customers exceeding budget use while NTS provides for treatment of overuse flows prior to flowing to the ocean. These costs are allocated to Max Day and Max Hour based on demands (Table 17 Cost of Service Report).
  5. Universal Conservation – These costs include District efforts to educate customers on ways to conserve water. This is allocated to all sales except low volume. Low volume sales are excluded because remaining within low volume usage provides a high level of conservation. These costs are allocated to Base, Max Day, and Max Hour based on the respective percentage of sales to the base, inefficient and wasteful tiers (Table 17 Cost of Service Report).
  6. Customer Service – This is primarily costs associated with providing communication to District customers. It includes responding to bill payment questions, requests for service, reading meters, etc. This has no impact on peaking factors and is included in the fixed charges allocated to meters.
  7. System Maintenance – This includes costs related to the overall maintenance and operational activities of the District. It is a Base cost and excludes the direct cost of fire hydrant maintenance.
  8. General and Administrative (G&A) – This includes indirect operating costs that are not directly allocable to a system but provide a benefit for all systems. This is allocated to Base, Max Day, Max Hour, customer, and direct fire hydrant maintenance based on their respective portion of total costs.
  9. General Plant - This includes costs associated with the purchase of assets used within the office, District fleet, etc. They are allocated between Base and Max Day using the Max Day peaking factor percentage.
- g. Summarize peaking factor percentages for all operating costs by demand category –** Peaking factor percentages for operating expenses by demand category are summarized in the table below. These are assigned based on the professional judgment and experience of Raftelis.

**Table G: Summarized Peaking Factor Percentages for all Operating Costs**

<b>Demand Category</b>	<b>Base</b>	<b>Max Day</b>	<b>Max Hour</b>	<b>Customer</b>	<b>Fire</b>	<b>General</b>	<b>Total</b>
Base Supply	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Excess Supply	21.5%	43.2%	35.2%	0.0%	0.0%	0.0%	100%
Conservation and Supply Reliability	5.9%	45.0%	49.1%	0.0%	0.0%	0.0%	100%
Customer Service	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
System Maintenance	94.8%	0.0%	0.0%	0.0%	3.1%	0.0%	98%
Asset Maintenance	49.1%	31.6%	17.9%	1.4%	0.0%	0.0%	100%
G & A	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
GP	55.6%	44.4%	0.0%	0.0%	0.0%	0.0%	100%

- h. Identify operating costs by demand category** – Amounts are assigned to demand categories shown in Table F. The net costs are explained in further detail in section 4.3 in the Study and as stated above, are shown in Table 13 (variable revenue requirement) and Table 14 (fixed revenue requirement).

**Table H: Operating and Asset Maintenance Costs by System Demands FY 2022-23**

	Cost Group	Demand Category	Cost (Thousands)	Totals
<b>Variable:</b>	Water Supplies	Base Supply	\$36,644	
	Water Supplies	Excess Supply	9,748	
	Conservation and Supply Reliability	Water Banking	1,907	
	Conservation and Supply Reliability	Conservation and NTS	11,820	
	Conservation and Supply Reliability	Universal Conservation	1,629	61,749
	<b>Fixed:</b>	Fixed Operating Costs	Customer Service	\$4,819
Fixed Operating Costs		System Maintenance	15,903	
Fixed Operating Costs		G&A and Administrative	9,437	
Fixed Operating Costs		G&A Plant	756	
Fixed Operating Costs		Asset Maintenance	2,559	33,474
		Net allocated Costs		\$95,223

- i. Calculate cost-of-service by peaking factor** – The allocated percentages identified in Table G are applied to the operating costs identified in Table H to calculate the cost by peaking factor. General and Administrative (G&A) is reallocated based on the total cost of service.

**Table I: Calculate Cost-of-Service by Peaking Factor for FY 2022-23**

Demand Category	Cost Allocation (thousands)							Total
	Base	Max Day	Max Hour	Customer	Fire	G&A		
Base Supply	\$ 36,423	\$ -	\$ -	\$ 221	\$ -	\$ -	\$ 36,644	
Excess Supply	2,099	4,215	3,434	-	-	-	9,748	
Conservation and Supply Reliability	1,377	6,653	7,327	-	-	-	15,357	
Customer Service	-	-	-	4,819	-	-	4,819	
System Maintenance	15,411	-	-	-	493	-	15,903	
Asset Maintenance	1,257	808	459	35	-	-	2,559	
G & A	-	-	-	-	-	9,437	9,437	
GP	420	336	-	-	-	-	756	
<b>Total Allocated Costs</b>	<b>\$ 56,986</b>	<b>\$ 12,012</b>	<b>\$ 11,220</b>	<b>\$ 5,075</b>	<b>\$ 493</b>	<b>\$ 9,437</b>	<b>\$ 95,223</b>	

- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity** – To estimate the costs associated with (and to provide capacity for) public fire water service, the methodology put forth in the AWWA M1 Manual was used.

To determine the capacity requirements for fire flow, the District uses two hypothetical fires with varying fire flow. The first fire requires flows of 2,500 gallons per minute for a minimum of 4 hours, and the second requires 8,000 gallons per minute for a minimum of 8 hours as shown below. These hypothetical fires were chosen based on the professional judgement and experience of Raftelis.

Fire flows as a percentage of total capacity is converted to a percentage and used to identify the indirect cost allocated to water supply for public and private fire protection. The water supply demand capacity for public and private fire water service are based on firelines and hydrant capacity.

Water is supplied for private fire service through pipes and appurtenances on private property. These include all water-based fire protection systems, such as fire protection sprinklers and fire hydrants that are not part of, but are connected to, the public water service. Costs are allocated to these systems in a similar fashion and billed separately to the individual customers owning the private fire protection systems.

Max Day capacity is the amount of water needed for the duration of a fire in one day (fire flow gallons per minute multiplied by the duration of fire in minutes).

Max Hour capacity is the amount of water needed if a similar fire lasted an entire day (fire flow gallons per minute multiplied by the number of minutes in a day), less the capacity already allocated to Max Day. Capacity amounts in gallons are converted to CCF in the table below. (One CCF = 748.05 gallons.)

**Table J: Capacity Requirements for Fire Flow and Public Fire Allocation**

Fire Flow Estimate	Fire #1		Fire #2		Total	
	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day	Max Hour
Duration of Fire (Hours)	4.00		4.00		8.00	
Fire Flow (gpm)	2,500	2,500	8,000	8,000	10,500	10,500
Percent Allocated to Public Fire	74.7%	74.7%	74.7%	74.7%	74.7%	74.7%
Capacity Demanded for Fire (ccf)	802	4,010	2,567	12,833	3,369	16,844
Public Fire Capacity (ccf) <sup>(3)</sup>	599	2,995	1,916	9,582	2,515	12,577
Private Fire Capacity (ccf) <sup>(4)</sup>	203	1,016	650	3,251	853	4,267
Total Potable Capacity	85,917	73,663				
<b>Public Fire Allocation (Max Day: 2,515/85,917;Max Hour 12,577/73,663)</b>					<b>2.9%</b>	<b>17.1%</b>
Private Fire Allocation (MaxDay: 853/85,917;Max Hour 4,267/73,663)					1.0%	5.8%

(2) Max Day Capacity demanded for fire = (hours\*minutes\*gallons)/748.05.

(3) Max Hour Capacity demanded for fire = (hours\*minutes\*gallons)/748.05 – Max Day Capacity.

(4) Split is based on total system hydrants =2,794,545/fireline meter capacity= 707,911

(5) Total potable capacity is max day and max hour demands for all customer classes.

**k. Compute the public fire water service cost –**

The Max Day and Max Hour percentages identified in Table J for public fire water service are applied to the total cost-of-service by peaking factor to reallocate expenses included in Max Day and Max Hour fire protection water service costs to customer costs:

Max Day Public Fire Water Service costs:  $2.9\% * \$13,516K = \$ 396k$

Max Hour Public Fire Water Service costs:  $17.1\% * \$12,504K = \$2,136k$

Total indirect costs of Public Fire Water Service:  $\$2,532k$

**Table K: Public Fire Water Service Cost-of-Service for FY 2022-23**

Cost Allocation (thousands)	Base	Max Day	Max Hour	Customer	Direct Fire	Private Fire	Total
Total Operating Costs	\$ 63,076	\$ 13,516	\$ 12,504	\$ 5,586	\$ 541	\$ -	\$ 95,223
<b>Allocation of Direct Public Fire to Customer</b>				<b>541</b>	<b>(541)</b>		<b>-</b>
<b>Allocation of Indirect Public Fire to Customer<sup>(1)</sup></b>		<b>(396)</b>	<b>(2,136)</b>	<b>2,532</b>			<b>-</b>
Allocation to Private Fire		(152)	(821)	-		973	-
<b>Adjusted Cost of Service</b>	<b>\$ 63,076</b>	<b>\$ 12,968</b>	<b>\$ 9,547</b>	<b>\$ 8,660</b>	<b>\$ -</b>	<b>\$ 973</b>	<b>\$ 95,223</b>
<b>Total Cost of Public Fire Included in "Customer"</b>				<b>\$ 3,073</b>			

(1) As described above, public fire water is calculated as follows:

Max day - \$13,516K (Table J) \* 2.9% = \$396K

Max Hour - \$12,504K (Table J) \* 17.1% = 2,136K

As identified in Table K, there are two cost components associated with public fire water service: direct and indirect. The total cost of public fire water service is \$3,073,000 including the direct cost of \$541,000 and the indirect cost of \$2,532,000.

Total public fire water service costs are allocated to all customers through the fixed meter charge through the IRWD's rate structure. This complies with Proposition 218's cost-of-service and proportionality principles because meter charges are proportional to a given property's water demand, and that water demand is proportional to the property's use and need for fire water service.

# 1. Executive Summary

In compliance with California Water Codes Section 10632 the IRWD Board of Directors adopted an updated [Water Shortage Contingency Plan](#) (WSCP) in June 2021. The WSCP includes a “toolbox” of potential strategies for responding to each level of potable water shortage. One of the potential strategies included within each water shortage level is adjustments to water budgets as a means to achieve the savings needed to respond to a prescribed level of water shortage. The WSCP, allows the District to strategically reduce water use through a number of potential actions that are staged dependent upon the severity of water shortages. The WSCP incorporates six standard water shortage levels corresponding to progressive ranges of up to 10%, 20%, 30%, 40%, 50%, and greater shortages. For each level or shortage, the WSCP includes a list of voluntary measures, non-rate response measures, and potential cost-of-service based rate response strategies. The WSCP outlines how the District will reduce water demands or augment supplies if it were to experience a water shortage within each of the six levels of water shortage. Table 1 shows the potable water shortage amounts that the District would need to either reduce or makeup via supply augmentation for each level of shortage.

**Table 1: WSCP Augmentation or Demand Reduction Need Based on Level of Shortage**

Water Shortage Contingency Plan Stage	Range of Shortage Within the Stage	Needed Augmentation or Reduction at Mid-Point of the Stage
1	0-10%	2,500 AF
2	11-20%	7,700 AF
3	21-30%	12,800 AF
4	31-40%	18,000 AF
5	41-50%	23,000 AF
6	51% +	28,200 AF

This Technical Memo describes the maximum potential adjustments to customer water budgets and rates based on each level of potable water supply shortage and the corresponding maximum rate adjustments.



## 1.1. Customer Water Budget Rate Structure

IRWD's water budget-based rate structure is a cost-of-service based rate structure that provides revenue stability in both non-shortage and water shortage periods. Additionally, it allocates the water – and the associated costs with its use – based on the monthly water budget assigned to each customer providing the lowest cost water for efficient use and higher cost water for uses beyond efficient use.

As discussed in the 2021 Cost of Service Study (November 2021), the District uses a "budget-based" rate structure to recover the variable costs of providing potable and recycled water service to customers. Under this approach, a customized monthly budget (i.e., monthly water usage allocation) is developed for each customer. The commodity rates charged by the District in each consumption tier are designed to:

- Reflect and recover the increased cost of meeting consumption demands within each tier.
- Fund demand reduction and reliability programs.
- Mitigate for costs arising from customers' wasteful use that causes urban runoff requiring treatment by the Natural Treatment System (NTS).

When IRWD experiences a water shortage, it may have less water or different costs of water than in normal times. IRWD initially would rely on public outreach and non-rate response measures during a declared shortage. When the District has less water available, the WSCP outlines the strategies it will use to reduce demands to align with the available supplies. Adjustments to customer water budgets are a key response measure in the WSCP that are implemented by equitably reducing water budget allocations based on the available water supply under the water shortage circumstances under each level.

Such changes would be implemented at the discretion of IRWD's Board of Directors during a declared shortage. The changes in water budgets and rates are set using cost-of-service principles and would not exceed the District's cost of providing water service to each customer.

### 1.1.1. WATER SHORTAGE MAXIMUM WATER BUDGET ADJUSTMENTS

IRWD has modeled maximum water budget allocation adjustments that are designed as response measures to target a percentage reduction from 2020 demands for each of the six WSCP shortage levels. The mid-point of the targeted water reduction goal for each WSCP level was used. For example, a Level 1 shortage ranges from 0% to 10%, so the reduction target used is 5%. The proposed maximum water budget adjustments, shown in Table 2 follow the WSCP by first targeting discretionary outdoor potable uses, then indoor uses, and finally commercial, industrial, and institutional (CII) indoor uses as the shortage levels increase in severity.

**Table 2: Maximum Adjustments to Water Budgets for Each Level of Water Shortage**

Water Shortage Contingency Plan level	Target reduction  Midpoint of the level	Messaging and outreach	Outdoor potable landscape  Includes residential, dedicated irrigation and CII outdoor	ET Factor	Indoor gallons per capita	Commercial, Industrial, and Institutional (CII) percent indoor reduction
None	0	Water efficiency programs and outreach	40% drought-tolerant plants	.75	50	
Level 1 0-10%	5% 2,500 AF	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75	50	
Level 2 11-20%	15% 7,700 AF	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625	50	
Level 3 21-30%	25% 12,800 AF	Expanded messaging and targeted outreach	No turf; tree health affected;  75% native plants; 25% drought-tolerant plants	.35	40	
Level 4 31-40%	35% 18,000 AF	Expanded messaging and targeted outreach	No turf; tree health affected;  100% native plants only	.25	32.5	10%
Level 5 41-50%	45% 23,000 AF	Expanded messaging and targeted outreach	No landscape	0	30	20%
Level 6 51%+	55% 28,200 AF	Expanded messaging and targeted outreach	No landscape	0	Basic needs only; 20	30%

**1.1.2. WATER SHORTAGE CONTINGENCY WATER BUDGET ADJUSTMENTS**

The maximum water budget adjustments are calculated to proportionately reduce potable water budgets to align with the volume of the projected water shortage. Consistent with the WSCP outdoor discretionary uses are targeted first, which results in reductions to the evapotranspiration (ET) Factor. Beginning with a level 3 shortage and increased level of water supply shortage, reductions to the indoor per capita use also would need to be implemented. Beginning with a

level 4 shortage, reductions in available water supplies would require that the District also implement reductions to indoor uses for commercial, industrial and institutional customers (CII).

#### 1.1.2.1. Outdoor Budget Adjustments During Shortage

The fundamental metric used in the District's calculation of efficient outdoor water usage is the evapotranspiration rate of landscape plants. Evapotranspiration is the process by which water is lost to the atmosphere through evaporation and transpiration. Having established the ET rate for each day of the monthly billing cycle based on actual weather conditions, the District applies an adjustment factor. The District's standard ET Factor (ETF) for potable landscapes of 0.75 is based on a typical landscape plant mix and an irrigation system with an assumed efficiency of 80%. Different plants have different watering requirements, called plant factors, which can be quantified compared to a reference crop such as cool-season turf, which requires 100% of ET.

A simplified representation of the general formula used to determine a customer's outdoor water budget is shown below.

$$\text{Outdoor Budget Served by Potable Connection (ccf)} = \text{Irrigated Landscape Area (1)} * \text{Evapotranspiration (ET) Rate (2)} * \text{ET Factor (3)} * 36.3 \text{ Conversion Factor (4)}$$

(1) Area measured in acres.

(2) Evapotranspiration rate during each day of the monthly billing cycle based on actual temperature, humidity, and other factors.

(3) ET factor based on plant watering requirements relative to cool-season turf and 20% irrigation system inefficiency.

(4) 36.3 is a factor to convert acre-inches of water to one hundred cubic feet (ccf).

During a water shortage, discretionary uses such as landscape irrigation are the first targeted for reductions. As shown in Table 1, the amount of water budgeted for outdoor use would be reduced to match the level of shortage and available supplies beginning at Level 2. At Level 2, the minimum water budget would only be sufficient to irrigate drought tolerant plants, with an ET Factor of 0.625. At Level 4, the minimum water budget would only be sufficient to support California native plants. At Level 5 or 6, which are severe levels of shortage, no water would be available to allocate to outdoor water budgets.

#### 1.1.2.2. Indoor residential budget adjustments during shortage

IRWD allocates a standard indoor water budget of 50 gallons per capita per day (gpcd) for residential customers, as described in the Cost of Service Study . During a water shortage, the District would need to reduce the indoor water budget down from 50 gpcd beginning at Level 3. The indoor budget would be reduced to 40 gpcd at Level 3, to 32.5 gpcd at Level 4, to 25 gpcd at Level 5 and then to only basic human needs of 20 gpcd at Level 6.

### 1.1.2.3. Commercial customer water budget adjustments during shortage

Given the diversity of water usage characteristics, the District establishes an individualized water budget for each customer based on an analysis of business water use needs. This may include an on-site assessment. This allows the water budget of each commercial, industrial and institutional customer (CII) to be tailored to their specific needs and requirements.

Although reductions to CII customer outdoor budgets are consistent with section 1.1.2.1 above, IRWD would apply percentage reductions to CII indoor budgets as shown in Table 2 up to the maximum reductions shown in Table 2 because the water budgets are tailored to each CII customer. Indoor reductions would not start until level 4 to reduce impacts to the economy, health, and safety that result from reduced commercial use of water. The maximum percentage reductions to each CII customer’s base allocation would be 10% at Level 4, 20% at Level 5 and 30% at Level 6.

These reductions, when combined with the outdoor and residential indoor reductions equitably allocate the potable water supply available to the District at each level of projected shortage, consistent with the District’s adopted WSCP.

### 1.1.2.4. Example Water Budgets During Each Level of Shortage

Table 3 provides the various factors for the indoor and outdoor portions of residential customer water budgets, and shows both the indoor, outdoor, and total CCFs (CCF = one hundred cubic feet = 748 gallons) that would be allocated in a hypothetical Level 3 shortage, with the maximum adjustment applied. Applying the maximum adjustment results in the minimum customer water budget at a Level 3 water shortage. Average monthly ET of 4.1 inches, rather than actual ET for the month being billed, is used solely for example purposes.

**Table 3: Example Minimum Residential Water Budgets for Level 3 Water Shortage**

Customer Type	Indoor Gal Per Person Per Day	Default People	Days in Bill Cycle	Default Acres Default Acres	ET Factor	Average Monthly ET (inches)	Indoor CCF	Outdoor CCF	Total CCF (after rounding)
Residential Single Family	40	4	30	0.03	0.35	4.1	6.42	1.61	9
Residential Condo	40	3	30	0.01	0.35	4.1	4.81	0.52	6
Residential Apartment*	40	2	30	0	0.35	4.1	3.21	0.00	4
Potable Landscape	40	0	30	1.00	0.35	4.1	0.00	52.09	53

\*Water budget multiplied by number of units  
CCF = One Hundred Cubic Feet = 748 gallons

The water budget indoor and outdoor CCFs are calculated using the formulas described in the Cost of Service Study. To further illustrate, the actual calculation for a residential single family in a Level 3 shortage is shown in Table 4 (note that any differences with Table 3 are due to rounding).

**Table 4: Example Calculation of Minimum Single Family Residential Monthly Water Budget at Level 3 Shortage**

Example Minimum Monthly Water Budget Calculation for an Average Single Family Residential Customer at Level 3 Shortage		
Line	Indoor Water Budget Calculation	
1	Default Persons per Household	4.0
2	Required Gallons per Person per Day	40.0
3	Days in Billing Cycle	30
4	Monthly Indoor Water Budget (gallons)	4,800 (Lines 1 * 2 * 3)
5	Monthly Indoor Water Budget (ccf)	6.42 (Line 4 / 748 Conversion Factor)
<b>Outdoor Water Budget Calculation</b>		
6	Average Monthly ET Rate During the Billing Cycle Based on Measured Temperature, Humidity and other factors (Inches)	4.1
7	Adjustment for 75% drought tolerant plants and 25% native landscaping and irrigation efficiency of 80%	0.28
8	Adjustment for Irrigation System Efficiency	0.8
9	ET Factor	0.35 (Line 7 / Line 8)
10	Adjusted Average Monthly ET Rate (30 day bill cycle)	1.435 (Line 6 * Line 9)
11	Customer Irrigated Landscape Area (acres)	0.03
12	Required Inches of Water per Acre	0.044 (Line 10 * Line 11)
13	Monthly Outdoor Water Budget (ccf)	1.6 (Line 12 * 36.3 Conversion Factor)
<b>Total Water Budget</b>		
14	Total Monthly Water Budget Before Rounding (ccf)	8.2 (Line 5 + Line 13)
15	Total Monthly Water Budget Used in Customer Billing (ccf)	9.0

Applying the same methodology, the minimum water budget is calculated for each level of water shortage. The resulting minimum water budget, broken down by tier, is shown for an average single family residential customer for each of the six levels of shortage in Table 5. This same methodology and approach would be used to calculate the water budgets for each tier for each customer type for each level of shortage.

**Table 5: Minimum Water Budget Allocations by Tier for Single Family Customer at Each Level of Shortage**

Water Shortage Level	Total Water Budget CCF	Low Volume CCF	Base Tier CCF	Inefficient Tier CCF	Wasteful Tier CCF
<b>Percent of Budget</b>	<b>100%</b>	<b>0-40%</b>	<b>41-100%</b>	<b>101-140%</b>	<b>All CCF usage equal or greater than</b>
None	12	5	7	5	18
1	12	5	7	5	18
2	11	5	6	5	17
3	9	4	5	4	14
4	7	3	4	3	11
5	5	2	3	2	8
6	4	2	2	2	7

**1.1.2.5. Water shortage Contingency Rates - FY 2021-22 & FY 2022-23**

The WSCP rates were developed using a cost of service methodology consistent with the IRWD updated cost of service rate model. As stated previously, the District uses a "budget-based" rate structure to recover the variable costs of providing potable and recycled water service to customers. Under this approach, a customized monthly budget (i.e. monthly water usage allocation) is developed for each customer. The commodity rates charged by the District in each consumption tier are designed to:

- Reflect and recover the increased cost of meeting consumption demands within each tier.
- Fund demand reduction and reliability programs.
- Mitigate for costs arising from customers’ wasteful use that causes urban runoff requiring treatment by the Natural Treatment System (NTS).

The low volume and base tiers are included in the budget allocation while the inefficient and wasteful tiers exceed the budgeted allocation. The tiered rates assume that the lowest cost source of water is used first for each tier. Costs associated with outreach to all customers are allocated to all tiers except the low-volume tier. Costs associated with over-allocation usage, such as targeted outreach and supply reliability programs, are allocated to the inefficient and wasteful

tiers. The District includes the cost of compliance efforts in tiers four and five because the targets will be extremely difficult to meet from existing programs alone.

Changes affecting rates include:

- Reduced expenses associated with water availability and the reduced demand associated with each level of the WSCP;
- An increasing cost for targeted conservation to aid in reaching the targets identified for each level in the WSCP; and
- The addition of a compliance effort to reach the reductions included in the highest levels.

### 1.1.2.6. Source Water Reductions

The all-in cost of water includes variable and fixed costs. The variable cost per unit do not change as the volume decreases. These costs represent between 70% to over 90% for all groundwater sources. There are fixed costs (labor and associated G&A, repairs and maintenance, etc.) included in the commodity rate. Although these costs are fixed, the fixed cost per unit increases as the volumes decrease. The analysis for low volume and the base tier below reflects the changes at each level starting with the standard rate. The standard rate is the rate in effect when the Board has not elected to implement a change in rates during a declared shortage. These rates are shown in Appendix 4.

The source of supply in Table 6 is based on the FY 2021-22 and 2022-23 Board approved budgets. For each level starting with 0 reflecting no reduction, the reduced source water in levels 1-6 was applied proportionally to all sources based on the percentage of required reduction at each level (except the Baker Treatment Plant (BTP). Baker was excluded primarily because we have multiple partners and would only reduce production as a last resort. The reductions use the same time period, March 2022-June 2023, consistent with the period used in calculating the standard rates (see Appendix 4). The sources for each level are presented below.

**Table 6: Source of Supply Reductions Applied to the WSCP Levels**

Reduced Source Water (acre feet)	0	1	2	3	4	5	6
Dyer Road Well Field	56,000	53,507	48,538	43,565	38,590	33,615	28,642
Deep Aquifer Treatment System	16,000	15,288	13,868	12,447	11,025	9,604	8,183
Other Process Wells	13,420	12,823	11,632	10,439	9,248	8,057	6,864
Baker Treatment Plant (SAC)	14,400	14,400	14,400	14,400	14,400	14,400	14,400
Water Purchases Imported (MWD)	14,368	13,724	12,440	11,154	9,868	8,583	7,297
Total	114,188	109,742	100,878	92,005	83,131	74,259	65,386

### 1.1.2.7. Increased Conservation Efforts

Over-allocation tiers include three cost elements included in rates:

- Conservation efforts that target reducing the District’s overall demands and support reliability programs that include:

- Interaction between District staff and customers in the over-allocation tiers to provide aid in reducing monthly demands; and
- Funding programs that aid in reducing water use such as replacing lawns with drought tolerant plants and programs that replace older fixtures with low flow fixtures.
- Funding costs associated with wasteful use that causes urban runoff requiring treatment by the District’s NTS sites.
- Water banking programs to meet demands during major supply interruptions that can be used to address shortages addressed in the WSCP.

The cost increases included for each of the WSCP levels are based on the history of increased expenditures incurred when the District was required to meet a mandatory 16% reduction in 2015, increased by the Consumer Price Index. Additional costs for compliance efforts are included at levels 5 and 6 of the WSCP because reaching reductions that exceed 35% will be extremely difficult for an agency such as IRWD, whose customers have already significantly reduced gpcd since the last drought. The conservation and compliance expenses included in the table below are allocated to the over-allocation tiers to aid in reaching the identified WSCP level.

**Table 7: Additional Conservation and Compliance Efforts Applied to Over-allocation Tiers by Level**

	(thousands)					
	1	2	3	4	5	6
<b><u>Additional Conservation Efforts:</u></b>						
FY 2021-22	\$1,170	\$3,022	\$3,778	\$7,556	\$7,556	\$7,556
FY 2022-23	1,884	3,768	7,556	7,556	7,556	7,556
<b><u>Additional Compliance Efforts:</u></b>						
FY 2021-22	-	-	-	-	1,500	3,000
FY 2022-23	-	-	-	-	2,400	3,000
<b>Total by Level</b>	\$3,054	\$6,790	\$11,334	\$15,112	\$19,012	\$21,112
<b><u>Over-allocation Increase by Level</u></b>						
Inefficient	\$ 745	\$ 1,768	\$ 2,986	\$ 4,402	\$ 5,620	\$ 6,406
Wasteful	2,309	5,022	8,348	10,710	13,392	14,706
<b>Total by Level</b>	\$ 3,054	\$ 6,790	\$ 11,334	\$ 15,112	\$ 19,012	\$ 21,112

**1.1.2.8. WSCP Rates**

The WSCP rates are based on a consistent cost of service methodology with the IRWD updated cost of service rate model. The rates identified by tier and WSCP level take into consideration the reduced demands, the source shift in reduced water (i.e. available ground water versus imported water) and increased conservation and compliance costs required to reach WSCP targets. For each tier, the standard rate is adjusted for changes in reduced volumes and any increases in costs. The resulting rates are summarized in Table 8 below by tier and WSCP Level. This is followed by the individual rate calculations grouped by tier.



**Table 8: Summary WSCP Rates**

Tiered Rates/CCF	0	1	2	3	4	5	6
<b>Low Volume</b>	\$1.53	\$1.53	\$1.53	\$1.53	\$1.55	\$1.57	\$1.60
<b>Base</b>	\$2.42	\$2.43	\$2.46	\$2.50	\$2.53	\$2.57	\$2.62
<b>Inefficient</b>	\$5.15	\$5.45	\$5.86	\$6.34	\$6.91	\$7.40	\$7.71
<b>Wasteful</b>	\$14.64	\$15.77	\$17.11	\$18.74	\$19.90	\$21.21	\$21.86

**Low Volume Tier:**

The standard rate for the low volume tier is \$1.53 per CCF. Over 80% of the costs included in the standard rate are variable and fluctuate with total sales; therefore rates do not change with a proportionate change in costs and reduced sales volumes. Other expenses are not variable with changes in sales (labor and associated benefits, repairs and maintenance, permits, licenses and fees etc.). The increase costs in the WSCP levels are based on spreading these costs to the reduced units. The calculation of rates for the low volume tier is as follows.

**Table 9: Low Volume Rates by Level**

Rates per CCF	0	1	2	3	4	5	6
Standard Rate	\$1.53	\$1.53	\$1.53	\$1.53	\$1.53	\$1.53	\$1.53
Change *	\$0.00	\$0.00	\$0.00	\$0.00	\$0.02	\$0.04	\$0.07
WSCP Rate	\$1.53	\$1.53	\$1.53	\$1.53	\$1.55	\$1.57	\$1.60
<b>*Factors Influencing Rate Differential:</b>							
Acre Feet Sales (CCF / 435.6) (A)	38,499	38,499	38,499	37,679	33,176	29,219	24,866
Change in Acre Feet	-	-	-	(820)	(5,323)	(9,280)	(13,633)
Expense:							
Cumulative Fixed Costs in Water Rate (thousands): <sup>(1)</sup> (B)	\$2,180.0	\$2,180.0	\$2,180.0	\$2,180.0	\$2,180.0	\$2,180.0	\$2,180.0
Cost per AF (B / A)	\$56.62	\$56.62	\$56.62	\$57.86	\$65.71	\$74.61	\$87.67
Cost per AF /435.6	\$0.13	\$0.13	\$0.13	\$0.13	\$0.15	\$0.17	\$0.20
<b>Change per CCF *</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.02</b>	<b>\$0.04</b>	<b>\$0.07</b>

(1) Includes costs associated with water systems that are not directly variable to the use including Labor and associated G&A, repairs and maintenance, etc.

See appendix 4 Table 6 in Section 4.1 for Total Sales in CCF.

**Base Tier:**

The standard rate for the base tier is \$2.43 per CCF. The same assumptions apply to the base rate. Variable rates do not change with a proportionate change in costs and reduced sales volumes. Other expenses are not variable with changes in sales volumes. The increase costs in the WSCP levels are based on spreading these costs to the reduced units. The calculation of rates for the base tier is as follows:

**Table 10: Base Rates by Level**

<b>Base WSCP Rates</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Standard Rate	\$2.42	\$2.42	\$2.42	\$2.42	\$2.42	\$2.42	\$2.42
Change *	\$0.00	\$0.01	\$0.04	\$0.08	\$0.11	\$0.15	\$0.20
WSCP Rate	\$2.42	\$2.43	\$2.46	\$2.50	\$2.53	\$2.57	\$2.62
<b>* Factors Influencing Rate Differential</b>							
Acre Feet Sales (CCF / 435.6) (A)	56,870	53,014	46,726	38,519	34,170	30,355	26,298
Change in Acre Feet	-	(3,856)	(10,144)	(18,351)	(22,700)	(26,515)	(30,572)
Expense:							
Cumulative Fixed Costs in Water Rate (thousands): <sup>(1)</sup> (B)	\$4,197.0	\$4,197.0	\$4,197.0	\$4,197.0	\$4,197.0	\$4,197.0	\$4,197.0
Cost per AF (B / A)	\$73.80	\$79.17	\$89.82	\$108.96	\$122.83	\$138.27	\$159.59
Cost per CCF/ 435.6	\$0.17	\$0.18	\$0.21	\$0.25	\$0.28	\$0.32	\$0.37
<b>Change per CCF *</b>	<b>\$0.00</b>	<b>\$0.01</b>	<b>\$0.04</b>	<b>\$0.08</b>	<b>\$0.11</b>	<b>\$0.15</b>	<b>\$0.20</b>

(1) Includes costs associated with water systems that are not directly variable to the use including Labor and associated G&A, repairs and maintenance, etc.

See Appendix 4, Table 6 in Section 4.1 for sales in CCF.

**Inefficient Tier:**

The standard rate for the Inefficient tier is \$5.15. The over-allocation tiers use imported water and there is no assumed change in the acre feet usage. The assumption is that although some will reduce over-allocation usage, others might move into the tier. The changes in rates to the inefficient tier is based on the increased costs identified above to meet the WSCP targets. The costs increase is spread to the per unit cost to establish each of the WSCP rates by level. The calculation of rates for the inefficient tier is as follows:

**Table 11: Inefficient Rates by Level**

Inefficient WSCP Rates	0	1	2	3	4	5	6
Standard Rate	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15	\$5.15
Change *	\$0.00	\$0.30	\$0.71	\$1.19	\$1.76	\$2.25	\$2.56
WSCP Rate	\$5.15	\$5.45	\$5.86	\$6.34	\$6.91	\$7.40	\$7.71
<b>* Factors Influencing Rate Differential</b>							
Acre Feet Sales (CCF / 435.6) (A)	5,741	5,741	5,741	5,741	5,741	5,741	5,741
Expense:							
Conservation (thousands)	\$2,644.5	\$2,644.5	\$2,644.5	\$2,644.5	\$2,644.5	\$2,644.5	\$2,644.5
Increase for Conservation	\$0.0	\$745.1	\$1,767.8	\$2,986.1	\$4,402.4	\$5,620.5	\$6,406.4
Total Conservation (B)	\$2,644.5	\$3,389.6	\$4,412.3	\$5,630.6	\$7,046.9	\$8,265.0	\$9,050.9
Cost per AF (B / A)	\$460.64	\$590.43	\$768.56	\$980.78	\$1,227.48	\$1,439.65	\$1,576.55
Cost per CCF (AF/435.6)	\$1.06	\$1.36	\$1.76	\$2.25	\$2.82	\$3.30	\$3.62
<b>Change *</b>	<b>\$0.00</b>	<b>\$0.30</b>	<b>\$0.71</b>	<b>\$1.19</b>	<b>\$1.76</b>	<b>\$2.25</b>	<b>\$2.56</b>

See Appendix 4, Table 6 in Section 4.1 for sales in CCF.

See Table 7 in Section 1.1.2.7 for the Increase in Conservation.

**Wasteful Tier:**

The standard rate for the wasteful tier is \$14.64. Similar to the inefficient tier, the change to the wasteful tier is based on the increased costs identified above to meet the WSCP targets. The increase is spread to the per unit cost to establish each of the WSCP rates by level. The wasteful tier rate is calculated as follows.

**Table 12: Wasteful Rates by Level**

Wasteful WSCP Rates	0	1	2	3	4	5	6
Standard Rate	\$14.64	\$14.64	\$14.64	\$14.64	\$14.64	\$14.64	\$14.64
Change *	\$0.00	\$1.13	\$2.47	\$4.10	\$5.26	\$6.57	\$7.22
WSCP Rate	\$14.64	\$15.77	\$17.11	\$18.74	\$19.90	\$21.21	\$21.86
<b>* Factors Influencing Rate Differential</b>							
Acre Feet Sales (CCF / 435.6) (A)	4,677	4,677	4,677	4,677	4,677	4,677	4,677
Expense:							
Conservation (thousands)	\$8,910.5	\$8,910.5	\$8,910.5	\$8,910.5	\$8,910.5	\$8,910.5	\$8,910.5
Increase for Conservation	\$0.0	\$2,309.2	\$5,022.4	\$8,347.9	\$10,709.6	\$13,391.5	\$14,705.6
Total Conservation (B)	\$8,910.5	\$11,219.7	\$13,932.9	\$17,258.4	\$19,620.1	\$22,302.0	\$23,616.1
Cost per AF (B / A)	\$1,905.17	\$2,398.91	\$2,979.03	\$3,690.05	\$4,195.01	\$4,768.45	\$5,049.41
Cost per CCF (AF/435.6)	\$4.37	\$5.51	\$6.84	\$8.47	\$9.63	\$10.95	\$11.59
<b>Change</b>	<b>\$0.00</b>	<b>\$1.13</b>	<b>\$2.47</b>	<b>\$4.10</b>	<b>\$5.26</b>	<b>\$6.57</b>	<b>\$7.22</b>

See Appendix 4, Table 6 in Section 4.1 for sales in CCF.

See Table 7 in Section 1.1.2.7 for the Increase in Conservation.

The change in commodity rates have no impact on the monthly fixed service water or sewer charges. If the Board of Directors elect to implement any of these WSCP rates, the proposed commodity rates are expected to provide cost of service equity for the budgeted operating

variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level. Implementation of WSCP rates would require additional Board action.

**Potential Additional Regulatory Cost to Provide Water Service**

This appendix calculates a surcharge on water sales volumes to pay costs that may be imposed on IRWD by the State Water Resources Control Board (the “State Board”) in response to any violations of emergency drought regulations restricting water use by IRWD and its customers.

**State Board Drought Regulatory Penalties**

The State Board cites Water Code section 1058.5 to adopt emergency regulations to prevent the waste, unreasonable use, or unreasonable method of use of water or to promote water conservation. In past droughts, the State Board has adopted such regulations to reduce existing levels of water use by retail public water suppliers, including IRWD. The State Board cites Water Code section 1831(d) to issue a cease and desist order to local agencies, such as IRWD, in response to a violation or threatened violation of a regulation adopted under Section 1058.5. A local agency that fails to comply with a cease and desist order issued by the State Board may be liable in an amount not exceeding ten thousand dollars (\$10,000) for each day in which the violation occurs, if the violation occurs in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years. The State is now in such a critically dry year.

Although IRWD has a robust water conservation program with extensive customer outreach, if the State Board were to adopt an emergency regulation requiring reduced water usage, and IRWD customers were to fail to sufficiently reduce their usage to bring total IRWD customer water use into compliance, the State Board could seek to hold IRWD liable for failing to comply with a cease and desist order. Any monetary liability imposed upon IRWD would be an additional cost of providing water service.

**Calculation of the Surcharge**

IRWD's potential financial exposure over a 12-month period is \$3,600,000 (12 months times 30 days per month times \$10,000 per day).

The excess water consumption that IRWD expects would be prohibited by the State Board is that consumption by IRWD customers that exceeds their water usage budgets, including water usage budgets that are lowered pursuant to IRWD's adopted water shortage contingency plan (WSCP). The total over-use of water in the inefficient and wasteful tiers of IRWD's proposed rate structure for FY 2022-23 is calculated to be 2,286,825 ccf (hundred cubic feet), as shown in the table below.

Tier	FY 2022-23
<b>Total Inefficient (Acre Feet)</b>	2,893
<b>Total Wasteful (Acre Feet)</b>	2,357
<b>Total Over-allocation (Acre Feet)</b>	5,250
<b>Total Over-allocation (ccf = AF X 435.6)</b>	2,286,825
<b>State Penalties (12 X 30 X \$10,000)</b>	\$3,600,000
<b>Allocated Cost per CCF (State Penalties / Total Over-allocation)</b>	<b>\$1.57</b>

## APPENDIX 8: RATE DEVELOPMENT FOR SURCHARGE

Allocating the \$3,600,000 cost across 2,286,825 ccf of excess water consumption equates to \$1.57 per ccf. To fund IRWD's potential costs of monetary liability to the State Board, IRWD would be authorized to levy a surcharge on the volume of water used up to \$1.57 per ccf in the inefficient and wasteful tiers. This is included in the Proposition 218 Notices.

## 1. Executive Summary

This is an update to the 2021 Cost of Service (COS) Study to support Irvine Ranch Water District's (District) water and sewer service rates for Fiscal Years (FY) 2023-24 and FY 2024-25. The 2021 COS Study described the costs to provide such service for FY 2021-22 and FY 2022-23 and described the method for allocating the costs to customers through rates.

The appendix attachments listed in Section 3, below, are a supplement to support the development of rates for FY 2023-24 through FY 2024-25. The methodology in the 2021 COS Study remains the same, however its tables are updated with detailed costs from the FY 2023-24 and FY 2024-25 proposed operating expense budgets. These appendix tables use the same reference numbering scheme as those in the original 2021 COS Study. To evaluate the rates proposed for FY 2023-24 through FY 2024-25, review the 2021 COS Study together with the updated tables and narrative explanations in Appendices 10 through 17.

## 2. Background

The proposed Fiscal Year (FY) 2023-24 Operating Budget for IRWD is \$220.7 million, representing an increase of \$32.9 million, or 17.5%, compared to the Operating Budget for FY 2022-23. The proposed FY 2024-25 Operating Budget for IRWD is \$234.5 million, representing an increase of \$13.8 million, or 6.3%, compared to the proposed Operating Budget for FY 2023-24.

Staff and Raftelis updated IRWD's 2020 rate model based on Raftelis' findings and Committee recommendations. The same methodology was used to develop cost-of-service-based rates for FY 2023-24 and FY 2024-25.

The 2021 COS Study includes the following:

- Raftelis COS Study for FY 2020-21;
- Exhibit A – Tech Memo re: Legal Basis for Fire Water in Service Charge;
- Exhibit B – Tech Memo re: Determination of Costs of Fire Water;
- Appendices 1- 8 to support rates for years after 2021;
  - Appendix 1: Appendices to 2021 COS Study
  - Appendix 2: Rate Development for FY 2021-22
  - Appendix 3: Rate Development for FY 2022-23
  - Appendix 4: Rate Development for 16-month Period from February 2022 to June 2023
  - Appendix 5: Costs for Public Fire Water for FY 2021-22
  - Appendix 6: Costs for Public Fire Water for FY 2022-23
  - Appendix 7: Rate Development for Water Shortage Contingency Plan
  - Appendix 8: Rate Development for Surcharge

## 3. Appendices to the 2021 COS Study

The cost-allocation method described in the 2021 COS Study is applied to FY 2023-23 and FY 2023-24 costs to develop proposed rates for the next two fiscal years. The following new appendices show the calculation of the new rates proposed for FY 2023-24 and FY 2024-25.

Appendix 9: List of Updated Appendices to 2021 COS Study for FY 2023-24 and 2024-25

Appendix 10: Rate Development for FY 2023-24

Appendix 11: Rate Development for FY 2024-25

Appendix 12: Costs for Public Fire Water for FY 2023-24

Appendix 13: Costs for Public Fire Water for FY 2024-25

Appendix 14: Rate Development for Water Shortage Contingency Plan for FY 2023-24

Appendix 15: Rate Development for Water Shortage Contingency Plan for FY 2024-25

Appendix 16: Rate Development for Surcharge for FY 2023-24 and FY 2024-25

Appendix 17: Tech Memo re: Pumping Surcharge

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## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 10 provides support for the development of rates to cover proposed operating costs for FY 2023-24.

Appendix 11 provides support for the development of rates to cover proposed operating costs for FY 2024-25.

The tables are updated with the detailed costs from the FY 2023-24 operating budget. The methodology from the 2021 Cost of Service (COS) Study remains the same and the tables included in this appendix use the same reference numbering scheme as those in the 2021 COS Study. Section 8 has been added to address rates for untreated water.

### 4. Potable Water Cost of Service FY 2023-24

See section 4 of the COS Study for a complete discussion on the District's potable water cost of service.

The FY 2023-24 water revenue requirement was determined to be \$112,783,874 (see sum of tables 13 and 14 below). Of this amount, \$71,142,596 (63.4%) is associated with variable costs that are incurred to acquire, treat, and deliver water supplies. These costs vary with the amount of water used by customers and are recovered through commodity rates. Note that the variable cost revenue requirement includes \$15,494,061 in costs for universal conservation, targeted conservation, water banking operations, and the District's natural treatment system used to control runoff from customers who use water in the inefficient and wasteful tiers. Table 13 provides detail of the FY 2023-24 variable revenue requirement.



### 4.3. FY 2023-24 POTABLE WATER REVENUE REQUIREMENT

**Table 13: FY 2023-24 Potable Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Dyer Road Wellfield	\$23,829,318
Baker Treatment Facilities	14,512,071
Imported Water Purchases	10,412,312
Deep Aquifer Treatment System	8,014,481
Irvine Desalter Domestic	5,820,182
Wells 21 & 22 Desalter Treatment Plant	3,006,878
Orange Park Acres	1,552,363
<b>Total Potable Water Supply Costs</b>	<b>\$ 67,147,605</b>
<b>Revenue Requirement Offsets to Water Supply Costs</b>	
Baker Partners	5,956,070
Sinking Fund	1,700,000
Water Banking Operations	2,093,000
MWDOC PTP/IDP Credits	1,750,000
<b>Total Revenue Requirement Offsets</b>	<b>11,499,070</b>
<b>Net Revenue Requirement for Water Supply Costs</b>	<b>\$ 55,648,535</b>
<b>Conservation and Supply Reliability</b>	
Universal Conservation	1,651,174
Targeted Conservation	7,472,813
Natural Treatment System	4,714,794
Water Banking	1,655,280
<b>Total Conservation and Supply Reliability Costs</b>	<b>15,494,061</b>
<b>Net Potable Variable Cost Revenue Requirement</b>	<b>\$ 71,142,596</b>
<b>Untreated Water Supplies</b>	
Untreated Imported Water Purchases	154,000
Untreated Water System Maintenance	326,999
Native Water	1,296,280
<b>Total Untreated Water Supply Costs</b>	<b>\$ 1,777,279</b>
<b>Revenue Requirement Offsets to Untreated Water Supply Costs</b>	
Transferred to Recycled	1,186,946
<b>Total Revenue Requirement Offsets</b>	<b>\$ 1,186,946</b>
<b>Net Untreated Water Variable Cost Revenue Requirement</b>	<b>\$ 590,333</b>

Fixed costs do not vary with the volume of water by customers. The fixed cost portion of the total FY 2023-24 revenue requirement was \$41,050,945 (36.6%) as shown in Table 14. Of these fixed costs, \$9,456,120 were associated with expenditures for replacement and enhancement capital costs that do not increase the capacity of

the water utility system to serve new customer demand growth. Table 14 provides a detail of the FY 2023-24 fixed revenue requirement.

**Table 14: FY 2023-24 Potable Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Fixed Operating Costs</b>	
System Maintenance and Monitoring	28,751,893
Customer Service	5,799,665
Fleet	1,499,777
General Plant	829,790
Building Maintenance	1,876,804
<b>Total Fixed Operating Costs</b>	<b>\$ 38,757,930</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	7,221,120
Enhancement	2,235,000
<b>Total Capital Costs</b>	<b>\$ 9,456,120</b>
<b>Fixed Cost Revenue Requirement</b>	<b>\$ 48,214,050</b>
<b>Revenue Requirement Offsets</b>	
Firelines	3,831,488
Pumping Surcharge	1,530,817
Miscellaneous/Other	1,171,156
Low Volume Benefit	629,644
<b>Total Revenue Requirement Offsets</b>	<b>\$ 7,163,105</b>
<b>Net Fixed Cost Revenue Requirement from Rates</b>	<b>\$ 41,050,945</b>
<b>Total Water Revenue Requirement</b>	<b>\$ 112,783,874</b>

### 4.3.1 VARIABLE COST RECOVERY – COMMODITY RATES

The District recovers water supply costs through commodity rates with the lowest cost water supplies being recovered in the low volume and base consumption tiers and the highest cost water supplies being recovered in the inefficient and wasteful tiers. The District's method for recovering variable costs is compliant with Proposition 218 because of the direct linkage between the revenue recovered in each tier to the costs incurred to provide service to customers with demand in each consumption tier.

The District also recovers the cost of water conservation and water supply reliability programs through its commodity rates with targeted costs being allocated to customers with consumption in the inefficient and wasteful tiers. This approach is reasonable because customers who exceed their monthly water budget allocation impose higher costs on the District. Thus, the commodity rates charged in these two upper tiers are designed to not only recover the cost of more expensive water supplies, but also the additional costs of:

- Targeted conservation programs designed to reduce excessive use.
- Water banking operational costs to enhance water supply reliability.
- Rebates for long-term improvements in customer water use efficiency.

- Urban runoff source control programs referred to as the natural treatment system (NTS) treat runoff from customers who use water in the inefficient and wasteful tiers.

In FY 2023-24, the District’s projected total water demand of 53,481 acre feet was based on historical averages by tier, adjusted for customer account growth and other relevant factors. This reflects a 0.4% increase over the 53,294 acre feet of water demand projected in FY 2022-23. Table 15 details the FY 2023-24 unit cost of water supplies (\$/CCF) from each supply source as determined using cost and demand data provided by the District.

**Table 15: Unit Cost of FY 2023-24 Water Supplies**

Metric	Dyer Road Wellfield	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Totals
Net Cost (1)	\$21,848,494	\$7,076,726	\$8,556,001	\$4,067,083	\$2,305,638	\$10,412,312	\$1,382,280	\$55,648,535
Demand in Acre Feet (net)	26,233	7,344	6,912	3,940	1,576	6,144	1,332	53,481
CCF (2)	11,427,095	3,199,046	3,010,867	1,716,264	686,506	2,676,326	580,219	23,296,324
Unit Cost per ccf (1) divided by (2)	\$1.91	\$2.21	\$2.84	\$2.37	\$3.36	\$3.89	\$2.38	

- (1) From Table 14  
 (2) Acre feet is multiplied by 435.6 to convert to CCF

The District allocates the water supply in the order of cost for each source. The higher cost water supplies are appropriately allocated to the inefficient and wasteful tiers. Fluctuations in sales between the tiers impact the cost per unit as sales are spread over lesser or greater units. In FY 2023-24, the sales in the Inefficient tier were flat with the prior year; however, sales in the Wasteful tier increased by approximately 200 AF. The result is that the rate increase in the Inefficient tier is higher than the Wasteful tier from the prior year. Table 16 details this allocation for FY 2023-24 using cost and demand data provided by the District.

**Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs**

Metric	Dyer Road Wellfield (1)	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Acre Feet	Unit Cost by Tier (\$ /ccf) (2)
Unit Cost	\$1.91	\$2.21	\$2.84	\$2.37	\$3.36	\$3.89	\$2.38		
T1: Low Volume	20,134	-	-	-	-	-	-	20,134	\$1.91
T2: Base	6,099	7,344	6,912	1,332	1,576	752	3,940	27,955	\$2.44
T3: Inefficient	-	-	-	-	-	2,885	-	2,885	\$3.89
T4: Wasteful	-	-	-	-	-	2,507	-	2,507	\$3.89

- (1) 20,134 acre feet are used to meet projected low volume demand estimated based on historic demand as adjusted for customer account growth and other relevant factors. The remainder (6,099 acre feet) is allocated to partially meet the base demand.  
 (2) The Unit Cost by Tier is the blended cost of the sources.

Having determined the unit cost of water supplies by consumption tier as shown in Table 16 above, the District then allocates the cost of conservation programs and supply reliability programs to the water budget tiers as described below:

**Universal Conservation:** Universal conservation costs are incurred to encourage customers to use water as efficiently as possible. Universal program costs are added to the commodity rate in the base, inefficient, and wasteful tiers. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

**Targeted Conservation:** Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceeds their water budgets. Therefore, these costs are added to the commodity rates of customers in the inefficient and wasteful tiers. Based on a historical estimate of customers who have been provided assistance in these programs, approximately 77% of the customers are in the wasteful tier with the remainder of customers being in the inefficient tier. Therefore, 77% of the targeted conservation costs are allocated to the wasteful tier with the remaining 23% of the costs being allocated to the inefficient tier.

**NTS Costs:** These natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceeds their water budgets. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers because their excessive water usage creates urban water runoff. The allocation is based on an estimate of the historic mix of urban runoff created by customers in the inefficient and wasteful tiers primarily from hosing down hardscape and excess irrigation running off the landscape into the storm drains. The District estimates 82% of NTS costs are created by customers in the wasteful tier because wasteful outdoor demand flows to NTS sites. The remaining 18% of urban runoff costs results from inefficient customers overwatering drought tolerant landscape. The allocated costs provide the components and the anticipated sales result in the established rates.

**Water Banking:** Water banking costs are incurred to support the reliability of the District's water supplies. These costs are added to the commodity rates of customers in the wasteful tier because their excessive water usage creates the need for enhanced reliability of costly imported water supplies as previously discussed.

Table 17 shows the outcome of derivation of the unit costs for the District's conservation and supply reliability programs.

**Table 17: FY 2023-24 Conservation and Supply Reliability Unit Costs (\$/CCF)**

Program	FY 2023-24 Revenue Requirement (1) (A)	FY 2023-24 Units of Demand (cf) (2) (B)	Demand Adjustment Factor for Price Elasticity (3) (C)	FY 2023-24 Adjusted CCF B x C = (D)	Unit Cost Included in FY 2023-24 Commodity Rates A/B = (E)
Universal Conservation	\$1,651,174	14,525,993	100%	14,525,993	\$0.11
Water Banking					
Wasteful tier	\$1,655,280	1,092,122	90%	982,910	\$1.68
Targeted Conservation					
Inefficient tier (75%)	\$1,712,520	1,256,667	90%	1,131,000	\$1.51
Wasteful tier (25%)	\$5,760,293	1,092,122	90%	982,910	\$5.86
Natural Treatment System					
Inefficient tier (15%)	\$835,533	1,256,667	90%	1,131,000	\$0.74
Wasteful tier (85%)	\$3,879,261	1,092,122	90%	982,910	\$3.95

(1) From Table 14

(2) Units of Demand are based on the cumulative projected units of sale for the tiers. Universal Conservation includes the base, inefficient, and wasteful tiers.

Table 18 shows the FY 2023-24 potable water commodity rates.

**Table 18: FY 2023-24 Potable Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (1)	Unit Cost of Universal Conservation (2)	Unit Cost of Water Banking (2)	Unit Cost of Targeted Conservation (2)	Unit Cost of Natural Treatment System (2)	Rate Stabilization	FY 2023-24 Commodity Rates	FY 2023-24 CCF	FY 2023-24 Revenue
T1: Low Volume	\$1.91					(\$0.16)	\$1.75	8,770,330	\$15,348,078
T2: Base	\$2.44	\$0.11				(\$0.03)	\$2.52	12,177,204	30,686,554
T3: Inefficient	\$3.89	\$0.11		\$1.51	\$0.74		\$6.25	1,256,667	7,854,170
T4: Wasteful	\$3.89	\$0.11	\$1.68	\$5.86	\$3.95		\$15.49	1,092,122	16,916,972
<b>Totals</b>								<b>23,296,324</b>	<b>\$ 70,805,774</b>

(1) From Table 16

(2) From Table 17. Water used in the low volume tier is efficient and universal conservation efforts are not necessary.

The Rate Stabilization Fund is used to moderate the financial impact for significant cost increases on user rates in a single year. It provides a current benefit to our customers by smoothing out the rate increase and avoiding a one-time rate spike. Rate stabilization was utilized to pay for a portion of the increase. Rate Stabilization is a component of the District’s Replacement Fund, which is money set aside for funding long- term capital replacements of existing infrastructure and paid by customers through user rates and other non-operating revenue sources.

**4.3.2. VARIABLE COST RECOVERY - AGRICULTURAL RATES**

Allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. DRWF provides 49% of the source of supply at a cost of \$1.91/CCF and imported water provides 12% at a cost of \$3.89/CCF. The remaining 39% is the blended cost of the other sources at \$2.54/CCF (Table 15). This results in a blended variable cost of \$2.39/CCF. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$22,840. The fixed cost applied to the agricultural commodity rate adds \$1.10 to the per CCF cost based on the estimated 20,843 CCF. Table 19 shows the calculation of FY 2023-24 agricultural rates.

**Table 19: FY 2023-24 Agricultural Water Commodity Rates (\$/CCF)**

System	FY 2023-24 Revenue Requirement	FY 2023-24 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Cost Component (CCF) (2)	FY 2023-24 Commodity Rates (1)+(2)
Potable Water	\$72,627	20,843	\$2.39	\$1.10	\$3.48

**4.3.3. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGES**

The District recovers fixed operating costs and replacement and enhancement capital costs through monthly meter service charges. On the District potable water system, the baseline meter size serving customers is 5/8". Thus, the first step in developing the monthly meter service charge is to estimate the total number of 5/8" meter equivalent connections (MEUs) on the potable water system in order to establish the unit cost for a 5/8" equivalent meter. Table 20 shows a summary of this calculation using the District’s fixed costs and meter count data.

**Table 20: FY 2023-24 Monthly Unit Cost of Serving a 5/8" Equivalent Meter**

System	5/8" MEU (A)	Operating Costs (B)	Capital Costs (C)	Total Fixed Cost Revenue Requirement (1) B+C = (D)	Operating Costs per 5/8" MEU B/A = (E)	Capital Costs per 5/8" MEU C/A = (F)	Rate Stabilization (3) (G)	Total Unit Cost per 5/8" MEU(2) E+F+G = (H)
Potable Water	266,504	\$30,820,676	\$9,224,423	\$40,045,099	\$9.64	\$2.88	(\$0.65)	\$11.85

- (1) From Table 14
- (2) Values prior to rounding
- (3) Use of the Replacement Fund as explained below table 18.

Having established the monthly fixed charge unit cost as being \$11.85 per 5/8" meter equivalents, the final step in the process is to develop a schedule of monthly meter service charges for each meter size on the system. The cost per unit is rounded to the nearest \$0.05. Table 21 presents this calculation.

**Table 21: FY 2023-24 Monthly Meter Service Charges**

Meter Size and Technology *	Meter Flow Rate Equivalency Ratio	Number of Accounts	FY 2023-24 Rates (After Rounding)	FY 2023-24 Total MEUs	FY 2023-24 Revenue
5/8" Disc	1.0	66,169	\$11.85	794,028	\$9,409,232
3/4" Disc	1.5	11,659	\$17.80	209,862	2,486,865
1" Disc	2.5	31,183	\$29.65	935,490	11,085,557
1 1/2" Disc	6.0	4,127	\$71.10	297,144	3,521,156
1 1/2" Single Jet	5.0	1	\$59.25	60	711
2" Disc	8.0	5,424	\$94.80	520,704	6,170,342
2" Single Jet	8.0	2	\$94.80	192	2,275
2" Turbo	12.5	706	\$148.15	105,900	1,254,915
3" Turbo	32.5	407	\$385.15	158,730	1,880,951
4" Turbo	62.5	198	\$740.65	148,500	1,759,725
4" Turbo Omni F-2	62.5	1	\$740.65	750	8,888
6" Turbo	125.0	35	\$1,481.25	52,500	622,125
6" Turbo Omni F-2	100.0	4	\$1,185.00	4,800	56,880
8" Mag Meter	248.7	0	\$2,947.10	0	0
8" Turbo	175.0	10	\$2,073.75	21,000	248,850
8" Turbo Omni F-2	175.0	1	\$2,073.75	2,100	24,885
10" Turbo	350.0	4	\$4,147.50	16,800	199,080
<b>Totals</b>				<b>3,268,560</b>	<b>\$ 38,732,436</b>

\* Identified maxed capacity (GPM) updated for some meters based on data from meter manufacturers.

Customers who remain in the Low Volume tier for most of the year will have a larger percentage of their bill made up of the fixed service charge even though the reduced system demand can extend the life of system assets. The District provides a fixed service charge rate reduction based on the reduced impact on District assets. This concept provides a “lease-back” conservation credit to those whose use remains in the Low Volume tier via a fixed service charge reduction. With the “lease-back” approach, an agency recognizes that a low volume user is not fully using their budgeted capacity, and therefore, it is reasonable to provide a lease-back credit to users who are underutilizing that flow and effectively “leasing it back” to the system for other users. This prevents the District from having to upsize infrastructure as quickly as capacity is exhausted. The monthly service charge is reduced for customers that remain in the Low Volume tier for at least nine months of the prior calendar year resulting in a \$2.00 credit per month, which is itemized on each bill. Nine months is deemed reasonable to account for a customer that may



occasionally leave the Low Volume tier due to a leak, etc. The nexus is based on removing 75% (nine months) of the capital fixed service charge contribution which is approximately \$2.00 per month.

### 4.3.4. MONTHLY PRIVATE FIRELINE CHARGES

Private firelines provide water to sprinkler systems for fire suppression within private improvements such as buildings and other structures. The District, like many utilities, provides private fireline service to its customers.

Table 22 shows the calculation of the FY 2023-24 private fireline rates. For a complete discussion of the calculation method for these rates, please see sections 4.3.4 in the 2021 COS Study.

**Table 22: Proposed FY 2023-24 Private Fireline Charges**

Private Fireline Size	Number of Lines	Potential Demand Based on Pipe Diameter (1)	Customer Related Costs (2)	Private Fire O&M Peaking Costs (3)	Capital Cost Component (4)	FY 2023-24 Rates	FY 2023-24 Revenue	
1"	42	1.00	\$7.02	\$0.20	\$0.25	\$7.45	\$3,755	
2"	1,045	6.19	\$7.02	\$1.21	\$1.52	\$9.75	\$122,265.00	
3"	31	17.98	\$7.02	\$3.52	\$4.41	\$14.95	\$5,561.40	
4"	1,057	38.32	\$7.02	\$7.49	\$9.41	\$23.90	\$303,147.60	
6"	1,195	111.31	\$7.02	\$21.76	\$27.33	\$56.10	\$804,474.00	
8"	1,077	237.21	\$7.02	\$46.37	\$58.24	\$111.65	\$1,442,964.60	
10"	130	426.58	\$7.02	\$83.39	\$104.73	\$195.15	\$304,434.00	
11"	1	548.10	\$7.02	\$107.14	\$134.57	\$248.75	\$2,985.00	
12"	5	689.04	\$7.02	\$134.69	\$169.17	\$310.90	\$18,654.00	
<b>Total</b>	<b>4,583</b>						<b>\$ 3,008,240</b>	
Fire Flow Testing and Hydrant Revenue							\$	823,248
Total Fireline Revenue								\$3,831,488

- (1) Potential demand based on the Hazen-Williams Equation which estimates flow based on factors such as pipe diameter, friction, and the velocity of flow.
- (2) \$10,494,491 customer related operating costs / 124,604 bills / 12 months = \$7.02.
- (3) \$1,162,349 peaking costs / 495,508 private fire demand units / 12 months = \$0.20. For pipe diameters > 1", \$0.20 is increased by the potential demand based on pipe diameter (Hazen-Williams).
- (4) \$2.50 capital cost for a 1" meter equivalent X \$2.88 capital cost per MEU x 3.4% allocation to private firelines = \$0.25. For pipe diameters > 1", \$0.25 is increased by potential pipe diameter (Hazen-Williams).

### 4.3.5. PUBLIC FIRE WATER SERVICE COSTS

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2023-24 are:

Direct costs	\$ 693,000
<u>Indirect costs</u>	<u>\$3,058,000</u>
Total Public Fire Water Service Costs	\$3,751,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed

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to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Appendix 5 for a more detailed discussion on these costs.

## 5. Sewer Cost of Service FY 2023-24

See section 5 of the COS Study for a complete discussion on the District's sewer cost of service.

As is the case with its potable water, the District separates the components of its annual sewer revenue requirement from rates into three specific types of costs: variable operating costs, fixed operating costs, and replacement and enhancement costs. However, as described in Section 5.1.1 in the COS Study, the rate structure used to recover these costs differs from that of potable water service.

### 5.1. FY 2023-24 SEWER REVENUE REQUIREMENT

The FY 2023-24 sewer revenue requirement was determined to be \$68,398,123 (see tables 23 and 24 below). Of this amount, \$23,991,547 (35.1%) is associated with variable costs that are incurred to treat sewage for discharge. These costs vary with the amount of water used by customers that returns to the District's sewage treatment facilities and are recovered through IRWD's commodity rates. The District separates operational expenses between sewage treatment and recycled water production with tertiary treatment and similar processes included in the cost for recycled water. Table 23 shows the FY 2023-24 sewer variable cost revenue requirement.

**Table 23: FY 2023-24 Sewer Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Variable Operating Costs</b>	
Sewage Treatment	\$10,138,449
Biosolids Treatment	9,922,855
OC San Treatment and Disposal	4,270,435
<b>Gross Variable Cost Revenue Requirement</b>	<b>\$ 24,331,738</b>
<b>Revenue Requirement Offsets</b>	
Direct Billing Revenue and FOG	\$340,191
<b>Total Revenue Requirement Offsets</b>	<b>\$ 340,191</b>
<b>Net Variable Revenue Requirement from Rates</b>	<b>\$ 23,991,547</b>

Fixed costs do not vary with the volume of water used by customers and returned to the District's sewage treatment facilities. The fixed cost portion of the total FY 2023-24 revenue requirement was \$44,406,576 (64.9%). Table 24 provides a detail of the FY 2023-24 sewer fixed cost revenue requirement.



**Table 24: FY 2023-24 Sewer Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Sewage System Monitoring and Fixed Costs	\$10,770,747
Biosolids Fixed Operating Costs	5,228,213
OC San Sewage Fixed Costs	860
Customer Service	\$2,899,833
Fleet	988,490
General Plant	927,014
Building Maintenance	\$938,402
<b>Total Fixed Operating Costs</b>	<b>\$ 21,753,559</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$21,748,686
Enhancement	1,534,000
<b>Total Capital Costs</b>	<b>\$ 23,282,686</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$ 45,036,245</b>
<b>Revenue Offsets</b>	
Direct Billing Revenue and FOG	\$629,669
<b>Total Revenue Offsets</b>	<b>\$ 629,669</b>
<b>Net Fixed Revenue Requirement from Rates</b>	<b>\$ 44,406,576</b>

### 5.1.1. SEWER COST RECOVERY (RATE DESIGN)

The District uses the average of the three lowest water meter readings during the twelve month period ending December 31 to adjust for monthly anomalies in a ratepayer's water use and seasonal variations. The consumption block breakpoints (table 26) are based on a review of historical data for average usage during cooler months because of the limited demand for landscape during winter months. The analysis identified the average usage for all multi-family units was 5 CCF which aligns with the first block. The second block includes average usage below 10 CCF as single family residential customers averaged 10 CCF during the same low usage months. The third block, which includes all commercial, industrial, and institutional (CII) customers, exceeds 10 CCF (The average usage for CII customers exceeds 10 CCF). Non-residential/CII customers with billed water consumption of more than 10 CCF per month pay an additional commodity rate (\$/CCF). The Orange County Sanitation District's (OC San) Cost of Service Study (December 2017) identified a flow factor, a percentage of metered water usage returning to the sewer system, of 90% for single family homes and non-residential customers (CII). Therefore, the District applies the additional charge on 90% of the billed water consumption for CII customers, consistent with the OC San study. See Table 25 in the COS Study to view the FY 2020-21 Sewer Rate Structure and Rates.

This rate structure is compliant with Proposition 218 because it provides a mechanism for recovering rate revenue from customers in a manner that is proportionate to the costs incurred by the District to provide service. It includes a fixed component for all three blocks that does not change. A variable component is included that is based on the historic average of estimated sewage flow by customers within each block.

**Step 1:** Determine the number of sewer customer accounts with usage in each consumption block as shown in Table 26.

**Table 26: FY 2023-24 Sewer Customer Accounts by Consumption Block**

Customer Class	Block 1	Block 2	Block 3	Total
Single Family Residence	42,254	28,402	32,215	102,871
Multi Family Residence	45,873	7,350	4,011	57,234
Residence Sewer Only	872	283	0	1,155
Commercial			4,920	4,920
Industrial			789	789
Public Authority			3	3
<b>Total</b>	<b>88,999</b>	<b>36,035</b>	<b>41,938</b>	<b>166,972</b>

**Step 2:** Estimate sewer volumes contributed by customer class as shown in Table 27.

**Table 27: FY 2023-24 Contributed Sewage Volumes**

Line No.	Metric	All Residential (Potable)	All Commercial, Industrial, Public Authority (Potable)	All Construction (Potable)
1	Number of Accounts	161,260	5,712	-
2	Projected Indoor Water Usage (ccf)	13,467,290	4,873,793	116,069
3	Return to Sewer Factor	80%	90%	2%
4	Annual Discharge (ccf) (Line 2*Line 3)	10,773,832	4,386,414	2,321
5	Annual Discharge (MG)	8,064	3,283	2

**Step 3:** Determine the fixed and variable unit cost of service as shown in Table 28.

**Table 28: FY 2023-24 Sewer Unit Cost of Service**

Metric	Fixed Costs	Variable Costs	Total
Operating Revenue Requirement	\$21,753,559	\$24,331,738	\$46,085,297
Capital Revenue Requirement	23,282,686		23,282,686
<b>Revenue Offset</b>			
Direct Billing Revenue and FOG	629,669	340,191	969,860
<b>Revenue Requirement (Table 23 and 24)</b>	<b>\$ 44,406,576</b>	<b>\$ 23,991,547</b>	<b>\$ 68,398,123</b>
Discharge (Table 27)		15,162,568	
		ccf of sewer flow	
Unit Cost		\$1.58	
		per ccf	

**Step 4:** Determine the average and total discharges in each fixed tier as shown in Table 29.

**Table 29: FY 2023-24 Sewer Discharges by Fixed Consumption Block**

Sewer Fixed Charge Tiers	Average Monthly Discharges (ccf) (A)	Number of Accounts (B)	Annual Avg Discharges (ccf) A x B x 12= (C)
Block 1: Average Water Usage < 5 ccf per month	3.2	88,999	3,417,562
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	36,035	3,026,940
Block 3: Average Water Usage > 10 ccf per month	10.0	41,938	5,032,560
<b>Total</b>		<b>166,972</b>	<b>11,477,062</b>

**Step 5:** Determine the allocation of fixed and variable sewer costs as shown in Table 30.

**Table 30: FY 2023-24 Allocation of Sewer Fixed and Variable Costs**

Fixed Allocation	Discharge	Allocation	Cost Allocation	Unit Costs
Operating Costs Allocated to Fixed Charge (from Table 29)	11,477,062	76%	16,235,789	\$8.1 per account
Capital Allocated to Fixed Charge		100%	22,957,162	\$11.46 per account
<b>Total Fixed Charge per Customer</b>				<b>\$19.56 per account (1)</b>
Operating Costs Allocated to Discharge >10 ccf	3,685,506	24%	5,213,625	\$1.41 per ccf
Capital Allocated to Discharge >10 ccf				
<b>Total (from Table 27)</b>	<b>15,162,568</b>	<b>100%</b>	<b>44,406,576</b>	
Variable Allocation	Discharge	Cost Allocation	Rate	
<b>Discharge Block Rate – Allocated to Block Rates</b>	<b>15,162,568</b>	<b>23,991,547</b>	<b>\$ 1.58</b>	<b>per ccf</b>

**Step 6:** Calculate the sewer rates based on the allocation of fixed and variable costs shown in Table 30 above. Table 31 shows this outcome.

**Table 31: FY 2023-24 Proposed Sewer Rates**

Sewer Fixed Charge Tiers	Avg Monthly CCF' Discharged	Variable Cost (1)	Fixed Cost (2)	Rate Stabilization Fund (3)	FY 2023-24 Monthly Rates (4)	FY 2023-24 Accounts (12 Months)	FY 2023-24 Revenue
Block 1: Average Water Usage < 5 ccf per month	3.2	\$5.06	\$19.56	(1.50)	\$23.10	1,067,988	\$24,670,523
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	\$11.08	\$19.56	(1.87)	\$28.78	432,420	12,446,660
Block 3: Average Water Usage > 10 ccf per month	10.0	\$15.82	\$19.56	(2.16)	\$33.24	503,256	16,730,528
<b>Totals</b>						<b>2,003,664</b>	<b>\$53,847,711</b>
<b>Variable Rates per ccf</b>		<b>Discharge</b>	<b>Variable Rate (3)</b>	<b>Fixed Charge (3)</b>	<b>Proposed Rate per CCF</b>	<b>FY 2023-24 Discharge CCF</b>	<b>FY 2023-24 Revenue</b>
Discharge >10 ccf		3,685,506	\$1.58	\$1.41	\$3.00	3,685,506	\$11,056,518

- (1) \$1.58 From Table 29 \* average monthly CCF discharged
- (2) Total fixed charge per customer from Table 30
- (3) Use of the Replacement Fund as explained below table 18.
- (4) Variable cost plus fixed cost rounded to nearest \$0.05

## 6. RECYCLED WATER COST OF SERVICE

See section 6 of the COS Study for a complete discussion on the District's recycled water cost of service.

The method used by the District to develop recycled water rates is similar to that for potable water service (see Section 2 of this report) with one significant difference. The District does not calculate unique monthly meter service charges for recycled water. Instead, the monthly service charges for recycled water are set to the same as those charged for the potable water monthly meter service charge (see Table 21 in section 4.3.3). The District takes this approach due to an imbalance between variable and fixed costs in the overall recycled water revenue requirement. This reallocation of fixed costs to variable revenue recovery through commodity rates is discussed in Section 6.1. below.

### 6.1.2. FY 2023-24 RECYCLED WATER REVENUE REQUIREMENT

The District's recycled water revenue requirement from rates is \$39,181,175. Prior to any adjustments, the composition of this revenue requirement is variable costs of \$21,734,964 (51.3%) and fixed costs of \$17,446,210 (48.7%). The District established the monthly fixed charge unit cost as being \$11.85 per 5/8" meter equivalents in the potable water service process (see Table 21 in section 4.3.3). Due to the high percentage of fixed costs identified in the recycled water revenue requirement, the District reallocates a portion of fixed costs not recovered by monthly meter service charges (\$9,860,650) into the variable cost revenue requirement. These costs are included in the recycled system and recycled water revenue provides the funding consistent with Proposition 218 requirements. This strategy provides a fair and equitable application of these costs without deterring usage.

Tables 34 and 35 detail the FY 2023-24 variable and fixed recycled water revenue requirement before and after this reallocation.

**Table 34: FY 2023-24 Recycled Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Untreated Water Purchases	\$5,539,690
Recycled Water Treatment	10,610,901
El Toro Groundwater	3,903,318
<b>Total Cost of Water Supplies</b>	<b>\$ 20,053,909</b>
<b>Conservation and Supply Reliability</b>	
Universal Conservation	116,388
Targeted Conservation	311,367
Natural Treatment System	1,253,300
<b>Total Cost of Water Supplies</b>	<b>1,681,055</b>
<b>Total Variable Cost Revenue Requirement Before Adjustment</b>	<b>\$ 21,734,964</b>
Adjustment to Reflect Reallocated Fixed Costs	\$9,860,650
<b>Total Variable Cost Revenue Requirement After Adjustment</b>	<b>\$ 31,595,614</b>

**Table 35: FY 2023-24 Recycled Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
System Maintenance and Monitoring	\$14,447,824
Customer Service	1,739,900
Fleet	68,172
General Plant	923,940
Building Maintenance	563,041
<b>Total Fixed Operating Costs</b>	<b>\$ 17,742,876</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$941,413
Enhancement	330,000
<b>Total Capital Costs</b>	<b>1,271,413</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>19,014,289</b>
<b>Revenue Requirement Offsets</b>	
Pumping	807,975
Miscellaneous/Other Revenues	760,104
<b>Total Revenue Requirement Offsets</b>	<b>1,568,079</b>
<b>Total Fixed Cost Revenue Requirement Before Adjustment</b>	<b>17,446,210</b>
<b>Adjustment to Reflect Reallocated Fixed Costs</b>	<b>(\$ 9,860,650)</b>
<b>Net Fixed Revenue Requirement from Rates After Adjustment</b>	<b>7,585,560</b>

### 6.1.3. VARIABLE COST RECOVERY - COMMODITY RATES

The method used to determine recycled water commodity rates is similar to that used for potable water. In FY 2023-24, the District's projected total recycled water demand was 32,943 acre feet based on historical demand, customer growth factors and other relevant factors. Table 36 provides a detail of the FY 2023-24 unit cost of water supplies (\$/CCF) from each supply source using the District's cost and demand data. Note that the net cost shown in each column includes the reallocation of fixed costs of \$9,860,650 as discussed above.

**Table 36: Unit Cost of FY 2023-24 Recycled Water Supplies**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported (Supplemental)	Total
Net Cost	\$15,541,227	\$4,889,383	\$9,483,950	\$29,914,559
Acre Feet	25,640	3,030	4,273	32,943
Unit Cost per ccf (1)	\$1.39	\$3.70	\$5.10	

(1) Acre feet is multiplied by 435.6 to convert to CCF.

The District allocates the lower cost water supplies to the low volume and base consumption tiers with higher cost water supplies being allocated to the inefficient and wasteful tiers. Table 37 details this allocation for FY 2023-24 using cost and demand data provided by the District.

The general formula used to determine the water budget for a landscape customer served by a recycled water connection is discussed in detail in 4.1.5. in the COS Study.

**Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total Acre Feet	Unit Cost per \$ /ccf by Tier (1)
Unit Cost (Table 36)	\$1.39	\$3.70	\$5.10		
T1: Low Volume	16,003	-	-	16,003	\$1.39
T2: Base	9,637	3,030	1,922	14,590	\$2.36
T3: Inefficient	-	-	1,399	1,399	\$5.10
T4: Wasteful	-	-	951	951	\$5.10
Total	25,640	3,030	4,273	32,943	

(1) The Unit Cost per \$/CCF by TIER is the blended cost of the sources.

Having determined the unit cost of recycled water supplies by consumption tier for landscape customers as shown in Table 37 above, the District then allocates the cost of conservation programs, as shown in table 34, to the appropriate water budget tiers.

Universal conservation costs are added to the commodity rate in the inefficient, and wasteful tiers to pay for conservation program costs that help customers in each of these tiers achieve efficient use of recycled water. This cost is not included in the low volume or base rates since customers who remain in these usage tiers do not need assistance to stay within their water budgets.

Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceed their water budgets. Costs are allocated to each tier based on expected usage.

Natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage reaches the wasteful tier. The costs include prevention, control and treatment of the runoff of water from irrigation and other uses and are added to the commodity rates of customers in the wasteful tier. Costs are allocated based on the expected usage in each tier.

Table 38 shows the outcome of derivation of the unit costs for the District's conservation programs.

**Table 38: FY 2023-24 Conservation Program Unit Costs (\$/CCF)**

Program	FY 2023-24 Revenue Requirement (A)(1)	FY 2023-24 Units of Demand (ccf) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2023-24 Adjusted Units of Demand B x C = (D)	Rate Stabilization Adjustment (E)(2)	Unit Cost Included in FY 2023-24 Commodity Rates A/D - E = (F)
Universal Conservation	\$116,388	1,023,910	100%	1,023,910		\$0.11
Targeted Conservation						
Inefficient tier	\$77,842	609,483	90%	548,535	(\$0.10)	\$0.04
Wasteful tier	\$233,525	414,427	90%	372,984		\$0.63
Natural Treatment System						
Wasteful tier	\$1,253,300	414,427	90%	372,984		\$3.36

(1) See Table 34

(2) Use of the Replacement Fund as explained below table 18.

Having determined the unit cost of recycled water supplies by consumption tier as shown in Table 37 and the unit cost of conservation program cost in Table 38, the District must then allocate the cost of conservation programs to each consumption tier. Table 39 shows the outcome of this process using the District’s cost and demand data.

**Table 39: FY 2023-24 Recycled Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (Table 37)	Unit Cost of Universal Conservation (Table 38)	Unit Cost of Targeted Conservation (Table 38)	Unit Cost of Natural Treatment System (Table 38)	FY 2023-24 Commodity Rates	FY 2023-24 CCF	FY 2023-24 Revenue
T1: Low Volume	\$1.39				\$1.39	6,970,780	\$9,689,385
T2: Base	\$2.36				\$2.36	6,355,281	14,998,462
T3: Inefficient	\$5.10	\$0.11	\$0.04	\$0.00	\$5.25	609,483	3,199,787
T4: Wasteful	\$5.10	\$0.11	\$0.63	\$3.36	\$9.20	414,427	3,812,724
<b>Totals</b>						<b>14,349,971</b>	<b>\$ 31,700,358</b>

**6.1.4. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGE**

Recycled water fixed charges are the same as potable water fixed charges (see Table 21 in Section 4.3.3).

**6.1.5. VARIABLE COST RECOVERY – RECYCLED WATER AGRICULTURAL RATES**

As discussed in section 4.3.2, allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used and these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. It is assumed that produced water provides 78% of the source of supply, 9% is the cost of processed water, and imported water provides 13%. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$14,409. A portion of the fixed cost is included in the variable rate component as described in section 6.1.3. An additional fixed cost of \$0.01 per CCF is, which is not recovered through the commodity rate, is applied based on an estimated 1,440,909 CCF. Table 40 shows the calculation of FY 2023-24 recycled water agricultural rates.

**Table 40: FY 2023-24 Recycled Water Agricultural Water Commodity Rates (\$/CCF)**

Customer Class	FY 2023-24 Revenue Requirement	FY 2023-24 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Component Cost (CCF) (2)	FY 2023-24 Commodity Rates (1)+(2)	FY 2023-24 Revenue
Agricultural	\$3,011,501	1,440,909	\$2.08	\$0.01	\$2.09	\$3,011,501



## 8. Untreated Water Cost of Service FY 2023-24

Section 8 of the COS Study is updated to describe projected costs to serve untreated water.

### 8.1. UNTREATED WATER COMMODITY RATE

The FY 2023-24 variable revenue requirement for untreated water was determined to be \$154,000. The source of this water comes from the Santiago Aqueduct Commission (SAC), and this is the cost incurred to acquire water supplies (See Table 13). Table 41 shows the calculation of the variable rate for untreated water.

**Table 41: FY 2023-24 Untreated Water Commodity Rate (\$/CCF)**

Consumption Tier	FY 2023-24 Revenue Requirement	FY 2023-24 SAC Purchases (AF)	Variable Cost (AF)	Variable Cost (CCF) (1)	FY 2023-24 Commodity Rates
Untreated Water	\$92,831	101	\$919	\$2.11	\$2.11

(1) Acre feet is multiplied by 435.6 to convert to CCF

#### 8.1.1. UNTREATED WATER AGRICULTURAL COMMODITY RATE

The fixed cost revenue requirement for all untreated water uses was determined to be \$479,555 for FY 2023-24. These include capacity, readiness to serve, and meter costs that do not vary based upon the amount of water used. The untreated agricultural rate includes a fixed charge component that is based upon an allocated portion of the untreated water costs for all untreated imported water uses. This includes untreated water supplies used by the Baker Treatment Plant (7,200 AF), the Recycled System (5,591 AF), and water sold directly to customers (101 AF). The total projected demand for these customers is 12,892 AF. Table 42 shows the calculation of the rate included for fixed costs for untreated agricultural customers.

**Table 42: FY 2023-24 Untreated Water Agricultural Commodity Rates (\$/CCF)**

FY 2023-24 Revenue Requirement	FY 2023-24 Projected Demand (AF)	FY 2023-24 Projected Demand (CCF)(1)	Variable Cost (CCF)(2)	Fixed Cost Component (CCF)	FY 2023-24 Commodity Rate
\$446,298	5,692	2,479,435	\$2.11	\$0.18	\$2.29

(1) Acre feet is multiplied by 435.6 to convert to CCF

(2) From table 41

Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. As discussed in section 4.3.2, allocated fixed and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. The untreated water agricultural rate is calculated by combining the variable cost shown in Table 41 and the fixed cost component as shown in Table 42.

**Table 43: FY 2023-24 Untreated Water Agricultural Commodity Rates (\$/CCF)**

Consumption Tier	Variable Cost (CCF)	Fixed Cost Component (CCF)	FY 2023-24 Commodity Rates
Untreated Water	\$2.11	\$0.18	\$2.29



## 9. Setup and Reconnect Fees Cost of Service FY 2023-24

Section 9 of the COS Study is updated to describe projected costs of setup and reconnection fees.

### 9.1. SETUP AND RECONNECT FEES

New customers pay a setup fee to offset labor, general and administrative (G&A) costs related to establishing a new account with the District. The fee is \$25.00 and has not changed since June 2015 since this fee is sufficient to offset new account costs.

When service is discontinued because of delinquency in payment of a water, sewer, or recycled water bill, the service shall not be restored until all delinquent charges, late charges and interest charges, and a trip charge (reconnection fee) have been paid.

The costs for the reconnection fee include labor, G&A, and vehicle costs. Reconnecting after hours is at a higher cost due to labor overtime and minimum guaranteed hours. Estimated costs are shown in Table 44.

**Table 44: Reconnection Fee Costs**

Estimated Cost	Normal Hours	After Hours Average
Labor and G&A	\$62	\$186
Vehicle Costs	\$14	\$14
Estimated Total Cost	\$76	\$200

In 2019, the California Health and Safety Code § 116914(a) limited reconnection fees for urban water systems for very low-income households to \$50 during working hours and \$150 at other times and allowed for Consumer Price Index (CPI) adjustments starting in 2021. The District applied the December Los Angeles CPI rates for 2021 (6.6%) and 2022 (4.9%) for the low income reconnection fee rate increases. Fees are rounded to nearest five dollars.

**Table 45: FY 2023-24 Reconnection Fees**

Reconnection Fees	Normal Hours	After Hours
Standard Fee	\$75	\$200
Low Income	\$55	\$165

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 10 provides support for the development of rates to cover proposed operating costs for FY 2023-24.

Appendix 11 provides support for the development of rates to cover proposed operating costs for FY 2024-25.

The tables are updated with the detailed costs from the FY 2024-25 operating budget. The methodology from the 2021 Cost of Service (COS) Study remains the same and the tables included in this appendix use the same reference numbering scheme as those in the 2021 COS Study. Section 8 has been added to address rates for untreated water.

### 4. Potable Water Cost of Service FY 2024-25

See section 4 of the COS Study for a complete discussion on the District's potable water cost of service.

The FY 2024-25 water revenue requirement was determined to be \$120,320,660 (see sum of tables 13 and 14 below). Of this amount, \$76,505,575 (63.6%) is associated with variable costs that are incurred to acquire, treat, and deliver water supplies. These costs vary with the amount of water used by customers and are recovered through commodity rates. Note that the variable cost revenue requirement includes \$16,537,403 in costs for universal conservation, targeted conservation, water banking operations, and the District's natural treatment system used to control runoff from customers who use water in the inefficient and wasteful tiers. Table 13 provides detail of the FY 2024-25 variable revenue requirement.

### 4.3. FY 2024-25 POTABLE WATER REVENUE REQUIREMENT

**Table 13: FY 2024-25 Potable Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Dyer Road Wellfield	\$25,092,730
Baker Treatment Facilities	15,381,569
Imported Water Purchases	9,681,275
Deep Aquifer Treatment System	8,615,833
Irvine Desalter Domestic	6,072,459
Wells 21 & 22 Desalter Treatment Plant	3,300,605
Orange Park Acres	3,181,343
<b>Total Potable Water Supply Costs</b>	<b>\$ 71,325,815</b>
<b>Revenue Requirement Offsets to Water Supply Costs</b>	
Baker Partners	6,324,396
Sinking Fund	1,700,000
Water Banking Operations	2,202,000
MWDOC PTP/IDP Credits	1,750,000
<b>Total Revenue Requirement Offsets</b>	<b>11,976,396</b>
<b>Net Revenue Requirement for Water Supply Costs</b>	<b>\$ 59,349,419</b>
<b>Conservation and Supply Reliability</b>	
Universal Conservation	1,633,283
Targeted Conservation	7,754,476
Natural Treatment System	5,011,479
Water Banking	2,138,165
<b>Total Conservation and Supply Reliability Costs</b>	<b>16,537,403</b>
<b>Net Potable Variable Cost Revenue Requirement</b>	<b>\$ 75,886,821</b>
<b>Untreated Water Supplies</b>	
Untreated Imported Water Purchases	163,187
Untreated Water System Maintenance	341,085
Native Water	1,340,760
<b>Total Untreated Water Supply Costs</b>	<b>\$ 1,845,032</b>
<b>Revenue Requirement Offsets to Untreated Water Supply Costs</b>	
Transferred to Recycled	1,226,278
<b>Total Revenue Requirement Offsets</b>	<b>\$ 1,226,278</b>
<b>Net Untreated Water Variable Cost Revenue Requirement</b>	<b>\$ 618,754</b>

Fixed costs do not vary with the volume of water by customers. The fixed cost portion of the total FY 2024-25 revenue requirement was \$43,815,085 (36.4%) as shown in Table 14. Of these fixed costs, \$10,250,444 were associated with expenditures for replacement and enhancement capital costs that do not increase the capacity of

the water utility system to serve new customer demand growth. Table 14 provides a detail of the FY 2024-25 fixed revenue requirement.

**Table 14: FY 2024-25 Potable Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Fixed Operating Costs</b>	
System Maintenance and Monitoring	30,642,242
Customer Service	6,095,165
Fleet	1,579,495
General Plant	980,279
Building Maintenance	1,984,493
<b>Total Fixed Operating Costs</b>	<b>\$ 41,281,674</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	8,015,444
Enhancement	2,235,000
<b>Total Capital Costs</b>	<b>\$ 10,250,444</b>
<b>Fixed Cost Revenue Requirement</b>	<b>\$ 51,532,118</b>
<b>Revenue Requirement Offsets</b>	
Firelines	4,184,472
Pumping Surcharge	1,695,742
Miscellaneous/Other	1,194,578
Low Volume Benefit	642,241
<b>Total Revenue Requirement Offsets</b>	<b>7,717,033</b>
<b>Net Fixed Cost Revenue Requirement from Rates</b>	<b>\$ 43,815,085</b>
<b>Total Water Revenue Requirement</b>	<b>\$ 120,320,660</b>

#### 4.3.1. VARIABLE COST RECOVERY – COMMODITY RATES

The District recovers water supply costs through commodity rates with the lowest cost water supplies being recovered in the low volume and base consumption tiers and the highest cost water supplies being recovered in the inefficient and wasteful tiers. The District's method for recovering variable costs is compliant with Proposition 218 because of the direct linkage between the revenue recovered in each tier to the costs incurred to provide service to customers with demand in each consumption tier.

The District also recovers the cost of water conservation and water supply reliability programs through its commodity rates with targeted costs being allocated to customers with consumption in the inefficient and wasteful tiers. This approach is reasonable because customers who exceed their monthly water budget allocation impose higher costs on the District. Thus, the commodity rates charged in these two upper tiers are designed to not only recover the cost of more expensive water supplies, but also the additional costs of:

- Targeted conservation programs designed to reduce excessive use.
- Water banking operational costs to enhance water supply reliability.
- Rebates for long-term improvements in customer water use efficiency.

- Urban runoff source control programs referred to as the natural treatment system (NTS) treat runoff from customers who use water in the inefficient and wasteful tiers.

In FY 2024-25, the District’s projected total water demand of 54,551 acre feet was based on historical averages by tier, adjusted for customer account growth and other relevant factors. This reflects a 2.0% increase over the 53,481 acre feet of water demand projected in FY 2023-24. Table 15 details the FY 2024-25 unit cost of water supplies (\$/CCF) from each supply source as determined using cost and demand data provided by the District.

**Table 15: Unit Cost of FY 2024-25 Water Supplies**

Metric	Dyer Road Wellfield	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Totals
Net Cost (1)	\$23,054,983	\$7,726,089	\$9,057,173	\$4,344,186	\$2,627,249	\$9,681,275	\$2,858,464	\$59,349,419
Demand in Acre Feet (net)	26,567	7,432	6,912	3,995	1,598	5,350	2,697	54,551
CCF (2)	11,572,585	3,237,379	3,010,867	1,740,222	696,089	2,330,460	1,174,813	23,762,416
Unit Cost per ccf (1) divided by (2)	\$1.99	\$2.39	\$3.01	\$2.50	\$3.77	\$4.15	\$2.43	

- (1) From Table 14  
 (2) Acre feet is multiplied by 435.6 to convert to CCF

The District allocates the water supply in the order of cost for each source. The higher cost water supplies are appropriately allocated to the inefficient and wasteful tiers. Table 16 details this allocation for FY 2024-25 using cost and demand data provided by the District.

**Table 16: Allocation of Potable Water Supplies to Consumption Tiers for Unit Costs**

Metric	Dyer Road Wellfield (1)	Deep Aquifer Treatment System	Baker Treatment Facilities	Irvine Desalter Domestic	Wells 21 & 22 Desalter Treatment Plant	Imported Water Purchases	Orange Park Acres Well 1	Total Acre Feet	Unit Cost by Tier (\$ /ccf) (2)
Unit Cost	\$1.99	\$2.39	\$3.01	\$2.50	\$3.77	\$4.15	\$2.43		
T1: Low Volume	20,537	-	-	-	-	-	-	20,537	\$1.99
T2: Base	6,030	7,432	6,912	3,995	1,448	-	2,697	28,514	\$2.54
T3: Inefficient	-	-	-	-	150	2,793	-	2,943	\$4.13
T4: Wasteful	-	-	-	-	-	2,557	-	2,557	\$4.15

- (1) 20,537 acre feet are used to meet projected low volume demand estimated based on historic demand as adjusted for customer account growth and other relevant factors. The remainder (6,030 acre feet) is allocated to partially meet the base demand.  
 (2) The Unit Cost by Tier is the blended cost of the sources.

Having determined the unit cost of water supplies by consumption tier as shown in Table 16 above, the District then allocates the cost of conservation programs and supply reliability programs to the water budget tiers as described below:

**Universal Conservation:** Universal conservation costs are incurred to encourage customers to use water as efficiently as possible. Universal program costs are added to the commodity rate in the base, inefficient, and wasteful tiers. This cost is not included in the low volume rate since customers who remain in this usage tier do not need assistance to efficiently use water.

**Targeted Conservation:** Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceeds their water budgets. Therefore, these costs are added to the

commodity rates of customers in the inefficient and wasteful tiers. Based on a historical estimate of customers who have been provided assistance in these programs, approximately 77% of the customers are in the wasteful tier with the remainder of customers being in the inefficient tier. Therefore, 77% of the targeted conservation costs are allocated to the wasteful tier with the remaining 23% of the costs being allocated to the inefficient tier.

**NTS Costs:** These natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage exceeds their water budgets. These costs are added to the commodity rates of customers in the inefficient and wasteful tiers because their excessive water usage creates urban water runoff. The allocation is based on an estimate of the historic mix of urban runoff created by customers in the inefficient and wasteful tiers primarily from hosing down hardscape and excess irrigation running off the landscape into the storm drains. The District estimates 82% of NTS costs are created by customers in the wasteful tier because wasteful outdoor demand flows to NTS sites. The remaining 18% of urban runoff costs results from inefficient customers overwatering drought tolerant landscape. The allocated costs provide the components and the anticipated sales result in the established rates.

**Water Banking:** Water banking costs are incurred to support the reliability of the District's water supplies. These costs are added to the commodity rates of customers in the wasteful tier because their excessive water usage creates the need for enhanced reliability of costly imported water supplies as previously discussed.

Table 17 shows the outcome of derivation of the unit costs for the District's conservation and supply reliability programs.

**Table 17: FY 2024-25 Conservation and Supply Reliability Unit Costs (\$/CCF)**

Program	FY 2024-25 Revenue Requirement (1) (A)	FY 2024-25 Units of Demand (ccf) (2) (B)	Demand Adjustment Factor for Price Elasticity (3) (C)	FY 2024-25 Adjusted CCF B x C = (D)	Unit Cost Included in FY 2024-25 Commodity Rates A/B = (E)
Universal Conservation	\$1,633,283	14,816,616	100%	14,816,616	\$0.11
Water Banking					
Wasteful tier	\$2,138,165	1,113,972	90%	1,002,575	\$2.13
Targeted Conservation					
Inefficient tier (75%)	\$1,777,068	1,281,809	90%	1,153,629	\$1.54
Wasteful tier (25%)	\$5,977,409	1,113,972	90%	1,002,575	\$5.96
Natural Treatment System					
Inefficient tier (15%)	\$888,110	1,281,809	90%	1,153,629	\$0.77
Wasteful tier (85%)	\$4,123,368	1,113,972	90%	1,002,575	\$4.11

(3) From Table 14

(4) Units of Demand are based on the cumulative projected units of sale for the tiers. Universal Conservation includes the base, inefficient, and wasteful tiers.

Table 18 shows the FY 2024-25 potable water commodity rates.

**Table 18: FY 2024-25 Potable Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (1)	Unit Cost of Universal Conservation (2)	Unit Cost of Water Banking (2)	Unit Cost of Targeted Conservation (2)	Unit Cost of Natural Treatment System (2)	FY 2024-25 Commodity Rates	FY 2024-25 CCF	FY 2024-25 Revenue
T1: Low Volume	\$1.99					\$1.99	8,945,799	\$17,802,141
T2: Base	\$2.54	\$0.11				\$2.65	12,420,834	32,915,211
T3: Inefficient	\$4.13	\$0.11		\$1.54	\$0.77	\$6.55	1,281,809	8,395,852
T4: Wasteful	\$4.15	\$0.11	\$2.13	\$5.96	\$4.11	\$16.46	1,113,972	18,335,985
<b>Totals</b>							<b>23,762,416</b>	<b>\$ 77,449,189</b>

(3) From Table 16

(4) From Table 17. Water used in the low volume tier is efficient and universal conservation efforts are not necessary.

### 4.3.2. VARIABLE COST RECOVERY - AGRICULTURAL RATES

Allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. DRWF provides 49% of the source of supply at a cost of \$1.99/CCF and imported water provides 10% at a cost of \$4.15/CCF. The remaining 41% is the blended cost of the other sources at \$2.70/CCF (Table 15). This results in a blended variable cost of \$2.50/CCF. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$24,139. The fixed cost applied to the agricultural commodity rate adds \$1.14 to the per CCF cost based on the estimated 21,260 CCF. Table 19 shows the calculation of FY 2024-25 agricultural rates.

**Table 19: FY 2024-25 Agricultural Water Commodity Rates (\$/CCF)**

System	FY 2024-25 Revenue Requirement	FY 2024-25 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Cost Component (CCF) (2)	FY 2024-25 Commodity Rates (1)+(2)
Potable Water	\$77,238	21,260	\$2.50	\$1.14	\$3.63

### 4.3.3. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGES

The District recovers fixed operating costs and replacement and enhancement capital costs through monthly meter service charges. On the District potable water system, the baseline meter size serving customers is 5/8". Thus, the first step in developing the monthly meter service charge is to estimate the total number of 5/8" meter equivalent connections (MEUs) on the potable water system in order to establish the unit cost for a 5/8" equivalent meter. Table 20 shows a summary of this calculation using the District's fixed costs and meter count data.

**Table 20: FY 2024-25 Monthly Unit Cost of Serving a 5/8" Equivalent Meter**

System	5/8" MEU (A)	Operating Costs (B)	Capital Costs (C)	Total Fixed Cost Revenue Requirement (1) B + C = (D)	Operating Costs per 5/8" MEU B/A = (E)	Capital Costs per 5/8" MEU C/A = (F)	Rate Stabilization (G)	Total Unit Cost per 5/8" MEU(2) E+F+G= (H)
Potable Water	269,142	\$32,742,614	\$9,999,402	\$42,742,015	\$10.14	\$3.10	(\$0.05)	\$13.20

(1) From Table 14

(2) Values prior to rounding



The Rate Stabilization Fund is used to moderate the financial impact for significant cost increases on user rates in a single year. It provides a current benefit to our customers by smoothing out the rate increase and avoiding a one-time rate spike. Rate stabilization was utilized to pay for a portion of the increase. Rate Stabilization is a component of the District’s Replacement Fund, which is money set aside for funding long- term capital replacements of existing infrastructure and paid by customers through user rates and other non-operating revenue sources.

Having established the monthly fixed charge unit cost as being \$13.20 per 5/8" meter equivalents, the final step in the process is to develop a schedule of monthly meter service charges for each meter size on the system. The cost per unit is rounded to the nearest \$0.05. Table 21 presents this calculation.

**Table 21: FY 2024-25 Monthly Meter Service Charges**

Meter Size and Technology	Meter Flow Rate Equivalency Ratio	Number of Accounts	FY 2024-25 Rates (After Rounding)	FY 2024-25 Total MEUs	FY 2024-25 Revenue
5/8" Disc	1.0	67,492	\$13.20	809,904	\$10,690,733
3/4" Disc	1.5	11,892	\$19.80	214,056	2,825,539
1" Disc	2.5	31,806	\$33.00	954,180	12,595,176
1 1/2" Disc	6.0	4,210	\$79.20	303,120	4,001,184
1 1/2" Single Jet	5.0	1	\$66.00	60	792
2" Disc	8.0	5,532	\$105.60	531,072	7,010,150
2" Single Jet	8.0	2	\$105.60	192	2,534
2" Turbo	12.5	719	\$165.00	107,850	1,423,620
3" Turbo	32.5	414	\$429.00	161,460	2,131,272
4" Turbo	62.5	202	\$825.00	151,500	1,999,800
4" Turbo Omni F-2	62.5	1	\$825.00	750	9,900
6" Turbo	125.0	35	\$1,650.00	52,500	693,000
6" Turbo Omni F-2	100.0	4	\$1,320.00	4,800	63,360
8" Mag Meter	248.7	0	\$3,282.85	0	0
8" Turbo	175.0	10	\$2,310.00	21,000	277,200
8" Turbo Omni F-2	175.0	1	\$2,310.00	2,100	27,720
10" Turbo	350.0	4	\$4,620.00	16,800	221,760
<b>Totals</b>				<b>3,314,544</b>	<b>\$ 43,751,981</b>

Customers who remain in the Low Volume tier for most of the year will have a larger percentage of their bill made up of the fixed service charge even though the reduced system demand can extend the life of system assets. The District provides a fixed service charge rate reduction based on the reduced impact on District assets. This concept provides a “lease-back” conservation credit to those whose use remains in the Low Volume tier via a fixed service charge reduction. With the “lease-back” approach, an agency recognizes that a low volume user is not fully using their budgeted capacity, and therefore, it is reasonable to provide a lease-back credit to users who are underutilizing that flow and effectively “leasing it back” to the system for other users. This prevents the District from having to upsize infrastructure as quickly as capacity is exhausted. The monthly service charge is reduced for customers that remain in the Low Volume tier for at least nine months of the prior calendar year resulting in a \$2.00 credit per month, which is itemized on each bill. Nine months is deemed reasonable to account for a customer that may occasionally leave the Low Volume tier due to a leak, etc. The nexus is based on removing 75% (nine months) of the capital fixed service charge contribution which is approximately \$2.00 per month.



### 4.3.4. MONTHLY PRIVATE FIRELINE CHARGES

Private firelines provide water to sprinkler systems for fire suppression within private improvements such as buildings and other structures. The District, like many utilities, provides private fireline service to its customers.

Table 22 shows the calculation of the FY 2024-25 private fireline rates. For a complete discussion of the calculation method for these rates, please see sections 4.3.4 in the 2021 COS Study.

**Table 22: Proposed FY 2024-25 Private Fireline Charges**

Private Fireline Size	Number of Lines	Potential Demand Based on Pipe Diameter (1)	Customer Related Costs (2)	Private Fire O&M Peaking Costs (3)	Capital Cost Component (4)	FY 2024-25 Rates	FY 2024-25 Revenue
1"	43	1.00	\$7.19	\$0.20	\$0.28	\$7.65	\$3,947
2"	1,066	6.19	\$7.19	\$1.23	\$1.72	\$10.15	\$129,838.80
3"	32	17.98	\$7.19	\$3.58	\$5.01	\$15.80	\$6,067.20
4"	1,078	38.32	\$7.19	\$7.63	\$10.67	\$25.50	\$329,868.00
6"	1,219	111.31	\$7.19	\$22.17	\$30.99	\$60.35	\$882,799.80
8"	1,099	237.21	\$7.19	\$47.25	\$66.04	\$120.50	\$1,589,154.00
10"	133	426.58	\$7.19	\$84.98	\$118.76	\$210.95	\$336,676.20
11"	1	548.10	\$7.19	\$109.18	\$152.59	\$268.95	\$3,227.40
12"	5	689.04	\$7.19	\$137.26	\$191.83	\$336.30	\$20,178.00
<b>Total</b>	<b>4,676</b>						<b>\$ 3,301,757</b>
Fire Flow Testing and Hydrant Revenue							\$ 882,715
Total Fireline Revenue							\$4,184,472

- (5) Potential demand based on the Hazen-Williams Equation which estimates flow based on factors such as pipe diameter, friction, and the velocity of flow.
- (6) \$10,970,888 customer related operating costs/ 127,096 bills/ 12 months = \$7.19.
- (7) \$1,208,676 peaking costs/ 505,632 private fire demand units/ 12 months = \$0.20. For pipe diameters > 1", \$0.20 is increased by the potential demand based on pipe diameter (Hazen-Williams).
- (8) \$2.50 capital cost for a 1" meter equivalent X \$3.10 capital cost per MEU x 3.6% allocation to private firelines = \$0.28. For pipe diameters > 1", \$0.28 is increased by potential pipe diameter (Hazen-Williams).

### 4.3.5. PUBLIC FIRE WATER SERVICE COSTS

There are two cost components associated with public fire water service: direct costs and indirect costs. The budgeted costs for FY 2024-25 are:

Direct costs	\$ 738,000
<u>Indirect costs</u>	<u>\$3,122,000</u>
Total Public Fire Water Service Costs	\$3,860,000

Direct costs are associated primarily with maintenance of the fire hydrants. These include inspections, painting, and flushing of the hydrants. Flushing is an important maintenance activity that verifies the proper operation of the hydrant to ensure adequate water flow will be available when the need to extinguish a structure fire arises. Flushing also removes the sediment that naturally accumulates in the hydrant.

Indirect costs are the District’s costs for design and sizing of the infrastructure to support the “fire flow” (volume and pressure of water) prescribed to meet peak firefighting water demand. The District’s water system is designed to provide capacity to handle two defined hypothetical fires. Capacity is measured in terms of maximum hourly and maximum daily water flow. See Appendix 5 for a more detailed discussion on these costs.

## 5. Sewer Cost of Service FY 2024-25

See section 5 of the COS Study for a complete discussion on the District's sewer cost of service.

As is the case with its potable water, the District separates the components of its annual sewer revenue requirement from rates into three specific types of costs: variable operating costs, fixed operating costs, and replacement and enhancement costs. However, as described in Section 5.1.1 in the COS Study, the rate structure used to recover these costs differs from that of potable water service.

### 5.1. FY 2024-25 SEWER REVENUE REQUIREMENT

The FY 2024-25 sewer revenue requirement was determined to be \$72,790,352 (see tables 23 and 24 below). Of this amount, \$25,268,747 (34.7%) is associated with variable costs that are incurred to treat sewage for discharge. These costs vary with the amount of water used by customers that returns to the District's sewage treatment facilities and are recovered through IRWD's commodity rates. The District separates operational expenses between sewage treatment and recycled water production with tertiary treatment and similar processes included in the cost for recycled water. Table 23 shows the FY 2024-25 sewer variable cost revenue requirement.

**Table 23: FY 2024-25 Sewer Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Variable Operating Costs</b>	
Sewage Treatment	\$10,732,162
Biosolids Treatment	10,611,644
OC San Treatment and Disposal	4,279,000
<b>Gross Variable Cost Revenue Requirement</b>	<b>\$ 25,622,806</b>
<b>Revenue Requirement Offsets</b>	
Direct Billing Revenue and FOG	\$354,059
<b>Total Revenue Requirement Offsets</b>	<b>\$ 354,059</b>
<b>Net Variable Revenue Requirement from Rates</b>	<b>\$ 25,268,747</b>

Fixed costs do not vary with the volume of water used by customers and returned to the District's sewage treatment facilities. The fixed cost portion of the total FY 2024-25 revenue requirement was \$47,521,605 (65.3%). Table 24 provides a detail of the FY 2024-25 sewer fixed cost revenue requirement.

**Table 24: FY 2024-25 Sewer Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
Sewage System Monitoring and Fixed Costs	\$11,428,404
Biosolids Fixed Operating Costs	5,413,372
OC San Sewage Fixed Costs	860
Customer Service	\$3,047,583
Fleet	1,041,031
General Plant	588,928
Building Maintenance	\$992,247
<b>Total Fixed Operating Costs</b>	<b>\$ 22,512,424</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$24,141,041
Enhancement	1,534,000
<b>Total Capital Costs</b>	<b>\$ 25,675,041</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>\$ 48,187,465</b>
<b>Revenue Offsets</b>	
Direct Billing Revenue and FOG	\$665,860
<b>Total Revenue Offsets</b>	<b>\$ 665,860</b>
<b>Net Fixed Revenue Requirement from Rates</b>	<b>\$ 47,521,605</b>

### 5.1.1. SEWER COST RECOVERY (RATE DESIGN)

The District uses the average of the three lowest water meter readings during the twelve month period ending December 31 to adjust for monthly anomalies in a ratepayer's water use and seasonal variations. The consumption block breakpoints (table 26) are based on a review of historical data for average usage during cooler months because of the limited demand for landscape during winter months. The analysis identified the average usage for all multi-family units was 5 CCF which aligns with the first block. The second block includes average usage below 10 CCF as single family residential customers averaged 10 CCF during the same low usage months. The third block, which includes all commercial, industrial, and institutional (CII) customers, exceeds 10 CCF (The average usage for CII customers exceeds 10 CCF). Non-residential/CII customers with billed water consumption of more than 10 CCF per month pay an additional commodity rate (\$/CCF). The Orange County Sanitation District's (OC San) Cost of Service Study (December 2017) identified a flow factor, a percentage of metered water usage returning to the sewer system, of 90% for single family homes and non-residential customers (CII). Therefore, the District applies the additional charge on 90% of the billed water consumption for CII customers, consistent with the OC San study. See Table 25 in the COS Study to view the FY 2020-21 Sewer Rate Structure and Rates.

This rate structure is compliant with Proposition 218 because it provides a mechanism for recovering rate revenue from customers in a manner that is proportionate to the costs incurred by the District to provide service. It includes a fixed component for all three blocks that does not change. A variable component is included that is based on the historic average of estimated sewage flow by customers within each block.

**Step 1:** Determine the number of sewer customer accounts with usage in each consumption block as shown in Table 26.

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**Table 26: FY 2024-25 Sewer Customer Accounts by Consumption Block**

Customer Class	Block 1	Block 2	Block 3	Total
Single Family Residence	43,099	28,970	32,859	104,928
Multi Family Residence	46,790	7,497	4,091	58,379
Residence Sewer Only	881	286	0	1,167
Commercial			4,920	4,920
Industrial			789	789
Public Authority			3	3
<b>Total</b>	<b>90,770</b>	<b>36,753</b>	<b>42,663</b>	<b>170,186</b>

**Step 2:** Estimate sewer volumes contributed by customer class as shown in Table 27.

**Table 27: FY 2024-25 Contributed Sewage Volumes**

Line No.	Metric	All Residential (Potable)	All Commercial, Industrial, Public Authority (Potable)	All Construction (Potable)
1	Number of Accounts	164,474	5,712	-
2	Projected Indoor Water Usage (ccf)	13,621,940	5,058,522	118,391
3	Return to Sewer Factor	80%	90%	2%
4	Annual Discharge (ccf) (Line 2*Line 3)	10,897,552	4,552,670	2,368
5	Annual Discharge (MG)	8,157	3,408	2

**Step 3:** Determine the fixed and variable unit cost of service as shown in Table 28.

**Table 28: FY 2024-25 Sewer Unit Cost of Service**

Metric	Fixed Costs	Variable Costs	Total
Operating Revenue Requirement	\$22,512,424	\$25,622,806	\$48,135,230
Capital Revenue Requirement	25,675,041		25,675,041
<b>Revenue Offset</b>			
Direct Billing Revenue and FOG	665,860	354,059	1,019,918
<b>Revenue Requirement (Table 23 and 24)</b>	<b>\$ 47,521,605</b>	<b>\$ 25,268,747</b>	<b>\$ 72,790,353</b>
Units of service (Table 26)	15,452,590		
		ccf of sewer flow	
Unit Cost		\$1.64	
		per ccf	

**Step 4:** Determine the average and total discharges in each fixed tier as shown in Table 29.

**Table 29: FY 2024-25 Sewer Discharges by Fixed Consumption Block**

Sewer Fixed Charge Tiers	Average Monthly Discharges (ccf) (A)	Number of Accounts (B)	Annual Avg Discharges (ccf) A x B x 12= (C)
Block 1: Average Water Usage < 5 ccf per month	3.2	90,770	3,485,578
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	36,753	3,087,241
Block 3: Average Water Usage > 10 ccf per month	10.0	42,663	5,119,502
<b>Total</b>		<b>170,186</b>	<b>11,692,321</b>

**Step 5:** Determine the allocation of fixed and variable sewer costs as shown in Table 30.

**Table 30: FY 2024-25 Allocation of Sewer Fixed and Variable Costs**

Fixed Allocation	Discharge	Allocation	Cost Allocation	Unit Costs
Operating Costs Allocated to Fixed Charge (from Table 29)	11,692,321	76%	16,798,819	\$8.23 per account
Capital Allocated to Fixed Charge		100%	25,320,261	\$12.4 per account
<b>Total Fixed Charge per Customer</b>				<b>\$20.62 per account (1)</b>
Operating Costs Allocated to Discharge >10 ccf	3,760,268	24%	5,402,526	\$1.44 per ccf
Capital Allocated to Discharge >10 ccf				
<b>Total (from Table 27)</b>	<b>15,452,590</b>	<b>100%</b>	<b>47,521,605</b>	
Variable Allocation	Discharge	Cost Allocation	Rate	
<b>Discharge Block Rate – Allocated to Block Rates</b>	<b>15,452,590</b>	<b>25,268,747</b>	<b>\$ 1.64</b>	<b>per ccf</b>

**Step 6:** Calculate the sewer rates based on the allocation of fixed and variable costs shown in Table 30 above. Table 31 shows this outcome.

**Table 31: FY 2024-25 Proposed Sewer Rates**

Sewer Fixed Charge Tiers	Avg Monthly CCF' Discharged	Variable Cost (1)	Fixed Cost (2)	Rate Stabilization Fund (3)	FY 2024-25 Monthly Rates (4)	FY 2024-25 Accounts (12 Months)	FY 2024-25 Revenue
Block 1: Average Water Usage < 5 ccf per month	3.2	\$5.23	\$20.62	(0.15)	\$25.70	1,089,243	\$27,993,548
Block 2: Average Water Usage between 5 and 10 ccf per month	7.0	\$11.45	\$20.62	(0.19)	\$31.86	441,034	14,053,100
Block 3: Average Water Usage > 10 ccf per month	10.0	\$16.35	\$20.62	(0.21)	\$36.79	511,950	18,832,342
<b>Totals</b>						<b>2,042,228</b>	<b>\$60,878,990</b>
<b>Variable Rates per ccf</b>		<b>Discharge</b>	<b>Variable Rate (3)</b>	<b>Fixed Charge (3)</b>	<b>Proposed Rate per CCF</b>	<b>FY 2024-25 Discharge CCF</b>	<b>FY 2024-25 Revenue</b>
Discharge >10 ccf		3,760,268	\$1.64	\$1.44	\$3.07	3,760,268	\$11,544,024

- (1) \$1.64 From Table 29 \* average monthly CCF discharged
- (2) Total fixed charge per customer from Table 30
- (3) Use of the Replacement Fund as explained below table 18.
- (4) Variable cost plus fixed cost rounded to nearest \$0.05

## 6. RECYCLED WATER COST OF SERVICE

See section 6 of the COS Study for a complete discussion on the District's recycled water cost of service.

The method used by the District to develop recycled water rates is similar to that for potable water service (see Section 2 of this report) with one significant difference. The District does not calculate unique monthly meter service charges for recycled water. Instead, the monthly service charges for recycled water are set to the same as those charged for the potable water monthly meter service charge (see Table 21 in section 4.3.3). The District takes this approach due to an imbalance between variable and fixed costs in the overall recycled water revenue requirement. This reallocation of fixed costs to variable revenue recovery through commodity rates is discussed in Section 6.1. below.

### 6.1.2. FY 2024-25 RECYCLED WATER REVENUE REQUIREMENT

The District's recycled water revenue requirement from rates is \$41,895,129. Prior to any adjustments, the composition of this revenue requirement is variable costs of \$23,695,895 (56.6%) and fixed costs of \$18,199,234 (43.4%). The District established the monthly fixed charge unit cost as being \$13.20 per 5/8" meter equivalents in the potable water service process (see Table 21 in section 4.3.3). Due to the high percentage of fixed costs identified in the recycled water revenue requirement, the District reallocates a portion of fixed costs not recovered by monthly meter service charges (\$9,510,108) into the variable cost revenue requirement. These costs are included in the recycled system and recycled water revenue provides the funding consistent with Proposition 218 requirements. This strategy provides a fair and equitable application of these costs without deterring usage.

Tables 34 and 35 detail the FY 2024-25 variable and fixed recycled water revenue requirement before and after this reallocation.

**Table 34: FY 2024-25 Recycled Water Variable Cost Revenue Requirement**

Revenue Requirement Component	Amount
<b>Water Supplies</b>	
Untreated Water Purchases	\$5,830,878
Recycled Water Treatment	11,222,587
El Toro Groundwater	4,872,035
<b>Total Cost of Water Supplies</b>	<b>\$ 21,925,500</b>
<b>Conservation and Supply Reliability</b>	
Universal Conservation	115,127
Targeted Conservation	323,103
Natural Treatment System	1,332,165
<b>Total Cost of Water Supplies</b>	<b>1,770,395</b>
<b>Total Variable Cost Revenue Requirement Before Adjustment</b>	<b>\$ 23,695,895</b>
Adjustment to Reflect Reallocated Fixed Costs	\$9,510,108
<b>Total Variable Cost Revenue Requirement After Adjustment</b>	<b>\$ 33,206,003</b>

**Table 35: FY 2024-25 Recycled Water Fixed Cost Revenue Requirement**

Revenue Requirement Component	Total
<b>Fixed Operating Costs</b>	
System Maintenance and Monitoring	\$15,413,400
Customer Service	1,828,550
Fleet	71,795
General Plant	586,712
Building Maintenance	595,348
<b>Total Fixed Operating Costs</b>	<b>\$ 18,495,805</b>
<b>Replacement and Enhancement Capital Costs</b>	
Replacement	\$1,044,969
Enhancement	330,000
<b>Total Capital Costs</b>	<b>1,374,969</b>
<b>Gross Fixed Cost Revenue Requirement</b>	<b>19,870,774</b>
<b>Revenue Requirement Offsets</b>	
Pumping	896,233
Miscellaneous/Other Revenues	775,306
<b>Total Revenue Requirement Offsets</b>	<b>1,671,539</b>
<b>Total Fixed Cost Revenue Requirement Before Adjustment</b>	<b>18,199,234</b>
<b>Adjustment to Reflect Reallocated Fixed Costs</b>	<b>(\$ 9,510,108)</b>
<b>Net Fixed Revenue Requirement from Rates After Adjustment</b>	<b>8,689,126</b>

### 6.1.3. VARIABLE COST RECOVERY - COMMODITY RATES

The method used to determine recycled water commodity rates is similar to that used for potable water. In FY 2024-25, the District's projected total recycled water demand was 33,587 acre feet based on historical demand, customer growth factors and other relevant factors. Table 36 provides a detail of the FY 2024-25 unit cost of water supplies (\$/CCF) from each supply source using the District's cost and demand data. Note that the net cost shown in each column includes the reallocation of fixed costs of \$9,510,108 as discussed above.

**Table 36: Unit Cost of FY 2024-25 Recycled Water Supplies**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported (Supplemental)	Total
Net Cost	\$15,977,641	\$5,823,045	\$9,634,921	\$31,435,608
Acre Feet	25,640	3,541	4,406	33,587
Unit Cost per ccf (1)	\$1.43	\$3.78	\$5.02	

(1) Acre feet is multiplied by 435.6 to convert to CCF.

The District allocates the lower cost water supplies to the low volume and base consumption tiers with higher cost water supplies being allocated to the inefficient and wasteful tiers. Table 37 details this allocation for FY 2024-25 using cost and demand data provided by the District.

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The general formula used to determine the water budget for a landscape customer served by a recycled water connection is discussed in detail in 4.1.5. in the COS Study.

**Table 37: Allocation of Recycled Water Supplies to Consumption Tiers for Landscape Customers**

Metric	Produced from Treatment Plant	Processed from El Toro Remediation	Imported	Total Acre Feet	Unit Cost per \$ /ccf by Tier (1)
Unit Cost (Table 36)	\$1.43	\$3.78	\$5.02		
T1: Low Volume	16,323	-	-	16,323	\$1.43
T2: Base	9,317	3,541	2,008	14,867	\$2.47
T3: Inefficient	-	-	1,427	1,427	\$5.02
T4: Wasteful	-	-	970	970	\$5.02
Total	25,640	3,541	4,406	33,587	

(2) The Unit Cost per \$/CCF by TIER is the blended cost of the sources.

Having determined the unit cost of recycled water supplies by consumption tier for landscape customers as shown in Table 37 above, the District then allocates the cost of conservation programs, as shown in table 34, to the appropriate water budget tiers.

Universal conservation costs are added to the commodity rate in the inefficient, and wasteful tiers to pay for conservation program costs that help customers in each of these tiers achieve efficient use of recycled water. This cost is not included in the low volume or base rates since customers who remain in these usage tiers do not need assistance to stay within their water budgets.

Targeted conservation costs reflect programs specifically designed to encourage efficient water practices of customers whose usage exceed their water budgets. Costs are allocated to each tier based on expected usage.

Natural treatment system costs are incurred by the District to deal with urban water runoff produced by customers whose usage reaches the wasteful tier. The costs include prevention, control and treatment of the runoff of water from irrigation and other uses and are added to the commodity rates of customers in the wasteful tier. Costs are allocated based on the expected usage in each tier.

Table 38 shows the outcome of derivation of the unit costs for the District's conservation programs.

**Table 38: FY 2024-25 Conservation Program Unit Costs (\$/CCF)**

Program	FY 2024-25 Revenue Requirement (A)*	FY 2024-25 Units of Demand (ccf) (B)	Demand Adjustment Factor for Price Elasticity (C)	FY 2024-25 Adjusted Units of Demand B x C = (D)	Unit Cost Included in FY 2024-25 Commodity Rates A/D = (E)
Universal Conservation	\$115,127	1,044,392	100%	1,044,392	\$0.11
Targeted Conservation					
Inefficient tier	\$80,776	621,675	90%	559,508	\$0.14
Wasteful tier	\$242,327	422,717	90%	380,445	\$0.64
Natural Treatment System					
Wasteful tier	\$1,332,165	422,717	90%	380,445	\$3.50

\*See Table 34



Having determined the unit cost of recycled water supplies by consumption tier as shown in Table 37 and the unit cost of conservation program cost in Table 38, the District must then allocate the cost of conservation programs to each consumption tier. Table 39 shows the outcome of this process using the District’s cost and demand data.

**Table 39: FY 2024-25 Recycled Water Commodity Rates (\$/CCF)**

Consumption Tier	Unit Cost of Water Supplies (Table 37)	Unit Cost of Universal Conservation (Table 38)	Unit Cost of Targeted Conservation (Table 38)	Unit Cost of Natural Treatment System (Table 38)	FY 2024-25 Commodity Rates	FY 2024-25 CCF	FY 2024-25 Revenue
T1: Low Volume	\$1.43				\$1.43	7,110,226	\$10,167,624
T2: Base	\$2.47				\$2.47	6,475,879	15,995,420
T3: Inefficient	\$5.02	\$0.11	\$0.14		\$5.27	621,675	3,276,230
T4: Wasteful	\$5.02	\$0.11	\$0.64	\$3.50	\$9.27	422,717	3,918,585
<b>Totals</b>						<b>14,630,497</b>	<b>\$ 33,357,859</b>

**6.1.4. FIXED COST RECOVERY - MONTHLY METER SERVICE CHARGE**

Recycled water fixed charges are the same as potable water fixed charges (see Table 21 in Section 4.3.3).

**6.1.5. VARIABLE COST RECOVERY – RECYCLED WATER AGRICULTURAL RATES**

As discussed in section 4.3.2, allocated fixed costs and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used and these customers do not have a budget. The variable rate is based on the total available source of supply. The variable rate component is based on the respective proportions of those available sources using the same allocation of available sources used for residential and commercial customers. It is assumed that produced water provides 76% of the source of supply, 11% is the cost of processed water, and imported water provides 13%. The fixed component is based on an allocation of fixed expense which includes a component for replacement and enhancement capital to the agricultural customer class of \$14,697. A portion of the fixed cost is included in the variable rate component as described in section 6.1.3. An additional fixed cost of \$0.01 per CCF is, which is not recovered through the commodity rate, is applied based on an estimated 1,469,734 CCF. Table 40 shows the calculation of FY 2024-25 recycled water agricultural rates.

**Table 40: FY 2024-25 Recycled Water Agricultural Water Commodity Rates (\$/CCF)**

Customer Class	FY 2024-25 Revenue Requirement	FY 2024-25 Projected Demand (CCF)	Variable Cost (CCF) (1)	Fixed Component Cost (CCF) (2)	FY 2024-25 Commodity Rates (1)+(2)	FY 2024-25 Revenue
Agricultural	\$3,174,625	1,469,734	\$2.15	\$0.01	\$2.16	\$3,174,625

## 8. Untreated Water Cost of Service FY 2024-25

Section 8 of the COS Study is updated to describe projected costs to serve untreated water.

### 8.1. UNTREATED WATER COMMODITY RATE

The FY 2024-25 variable revenue requirement for untreated water was determined to be \$163,187. The source of this water comes from the Santiago Aqueduct Commission (SAC), and this is the cost incurred to acquire water supplies (See Table 13). Table 41 shows the calculation of the variable rate for untreated water

**Table 41: FY 2024-25 Untreated Water Commodity Rate (\$/CCF)**

Consumption Tier	FY 2024-25 Revenue Requirement	FY 2024-25 SAC Purchases (AF)	Variable Cost (AF)	Variable Cost (CCF) <sup>(1)</sup>	FY 2024-25 Commodity Rates
Untreated Water	\$100,053	103	\$971	\$2.23	\$2.23

(1) Acre feet is multiplied by 435.6 to convert to CCF

#### 8.1.1. UNTREATED WATER AGRICULTURAL COMMODITY RATE

The fixed cost revenue requirement for all untreated water uses was determined to be \$492,798 for FY 2024-25. These include capacity, readiness to serve, and meter costs that do not vary based upon the amount of water used. The untreated agricultural rate includes a fixed charge component that is based upon an allocated portion of the untreated water costs for all untreated imported water uses. This includes untreated water supplies used by the Baker Treatment Plant (7,200 AF), the Recycled System (5,414 AF), and water sold directly to customers (97 AF). The total projected demand for these customers is 12,711. Table 42 shows the calculation of the rate included for fixed costs for untreated agricultural customers.

**Table 42: FY 2024-25 Untreated Water Agricultural Commodity Rates (\$/CCF)**

FY 2024-25 Revenue Requirement	FY 2024-25 Projected Demand (AF)	FY 2024-25 Projected Demand (CCF) <sup>(1)</sup>	Variable Cost (CCF) <sup>(2)</sup>	Fixed Cost Component (CCF)	FY 2024-25 Commodity Rate
\$432,106	5,511	2,400,592	\$2.23	\$0.18	\$2.41

(3) Acre feet is multiplied by 435.6 to convert to CCF

(4) From table 41

Due to the variable nature of water demands for seasonal growing (i.e. not permanent crops), these customers do not have a budget. As discussed in section 4.3.2, allocated fixed and variable costs are combined to calculate the agricultural commodity rate, and these customers are charged a single volumetric rate for all water used. The untreated water agricultural rate is calculated by combining the variable cost shown in Table 41 and the fixed cost component as shown in Table 42.

**Table 43: FY 2024-25 Untreated Water Agricultural Commodity Rates (\$/CCF)**

Consumption Tier	Variable Cost (CCF)	Fixed Cost Component (CCF)	FY 2024-25 Commodity Rates
Untreated Water	\$2.23	\$0.18	\$2.41

## 9. Setup and Reconnect Fees Cost of Service FY 2024-25

Section 9 of the COS Study is updated to describe projected costs of reconnection fees.

### 9.1. SETUP AND RECONNECT FEES

New customers pay a setup fee to offset labor, general and administrative (G&A) costs related to establishing a new account with the District. The fee is \$25.00 and has not changed since June 2015 since this fee is sufficient to offset new account costs.

When service is discontinued because of delinquency in payment of a water, sewer, or recycled water bill, the service shall not be restored until all delinquent charges, late charges and interest charges, and a trip charge (reconnection fee) have been paid.

The costs for the reconnection fee include labor, G&A, and vehicle costs. Reconnecting after hours is at a higher cost due to labor overtime and minimum guaranteed hours. Estimated costs are shown in Table 44.

**Table 44: Reconnection Fee Costs**

Estimated Cost	Normal Hours	After Hours Average
Labor and G&A	\$62	\$186
Vehicle Costs	\$14	\$14
Estimated Total Cost	\$76	\$200

In 2019, the California Health and Safety Code § 116914(a) limited reconnection fees for urban water systems for very low-income households to \$50 during working hours and \$150 at other times and allowed for Consumer Price Index (CPI) adjustments starting in 2021. The District applied the December Los Angeles CPI rates for 2021 (6.6%) and 2022 (4.9%) for the low income reconnection fee rate increases. Fees are rounded to nearest five dollars.

**Table 45: FY 2023-24 Reconnection Fees**

Reconnection Fees	Normal Hours	After Hours
Standard Fee	\$75	\$200
Low Income	\$55	\$165

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 12 provides the support for public fire water costs for FY 2023-24. Appendix 13 provides support for public fire water costs for FY 2024-25. The tables are updated with the details from the FY 2023-24 operating budget. The methodology from the 2021 Cost of Service (COS) Study Appendices 5 and 6 (Appendices) remains the same, and tables included in this appendix use the same alphabetical reference scheme as those in the 2021 COS Study Public Fire Water Costs Technical Memos.

### 1.1. COST COMPONENTS ASSOCIATED WITH PUBLIC FIRE WATER SERVICE

See Appendices 5 and 6 of the COS Study for a complete discussion on the District's public fire water service cost components and how public fire water service costs are calculated.

The following steps are used to calculate indirect fire water service costs:

- a. Identify total system peaking factors allocated to Base, Max Day, and Max Hour demands;
- b. Apply functional allocation percentages to the asset categories;
- c. Allocate asset values by function;
- d. Allocate functions to peaking factors;
- e. Determine asset value by peaking factor;
- f. Allocate operating costs by their demands on the system;
- g. Summarize peaking factor percentages for all operating costs by demand category;
- h. Identify operating costs by demand category;
- i. Calculate the cost of service by peaking factor;
- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity; and
- k. Compute the public fire water supply cost-of-service.

The result is the cost estimate for the indirect component related to public fire water service.

Steps a through f of the fire water costs calculation are the same as calculated in Appendices 5 and 6.

- g. **Summarize peaking factor percentages for all operating costs by demand category -** Peaking factor percentages for operating expenses by demand category are summarized in the table below.

**Table G: Summarized Peaking Factor Percentages for all Operating Costs  
FY 2023-24**

Functional Group	Base	Max Day	Max Hour	Customer	Fire	General
Base Supply	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Excess Supply	12.2%	47.0%	40.8%	0.0%	0.0%	0.0%
Conservation and Supply Reliability	8.6%	43.7%	47.6%	0.0%	0.0%	0.0%
Customer Service	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
System Maintenance	96.9%	0.0%	0.0%	0.0%	3.1%	0.0%
General & Administrative	49.1%	31.6%	17.9%	1.4%	0.0%	0.0%
General Plant	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Asset Mangement	55.6%	44.4%	0.0%	0.0%	0.0%	0.0%

- h. Identify operating costs by demand category** – Amounts are assigned to demand categories shown in Table F. The net costs are explained in further detail in section 4.3 in the COS Study and are shown in Table 13 (variable revenue requirement) and Table 14 (fixed revenue requirement) in Appendix 10.

**Table H: Operating and Asset Maintenance Costs by System Demands  
FY 2023-24**

Cost Group		Demand Category	Cost (Thousands)	Totals
Variable:	Water Supplies	Base Supply	\$44,625	
	Water Supplies	Excess Supply	10,412	
	Conservation and Supply Reliability	Water Banking	1,655	
	Conservation and Supply Reliability	Conservation and NTS	13,752	
	Conservation and Supply Reliability	Universal Conservation	1,768	\$72,213
Fixed:	Fixed Operating Costs	Customer Service	\$5,800	
	Fixed Operating Costs	System Maintenance	20,210	
	Fixed Operating Costs	General & Administrative	10,933	
	Fixed Operating Costs	General Plant	830	
	Fixed Operating Costs	Asset Management	3,377	\$41,149
			Net Allocated Costs	\$113,362

- i. Calculate cost-of-service by peaking factor** - The allocated percentages identified in Table G are applied to the operating costs identified in Table H to calculate the cost by peaking factor. General and Administrative (G&A) cost is reallocated based on the total cost of service.

**Table I: Calculate Cost-of-Service by Peaking Factor  
FY 2023-24**

Demand Category	Base	Max Day	Max Hour	Customer	Fire	G&A	Total
Base Supply	\$44,625	\$0	\$0	\$0	\$0	\$0	\$44,625
Excess Supply	1,274	4,889	4,249	0	0	0	10,412
Conservation and Supply Reliability	1,482	7,511	8,183	0	0	0	17,175
Customer Service	0	0	0	5,800	0	0	5,800
System Maintenance	19,584	0	0	0	626	0	20,210
General & Administrative	0	0	0	0	0	10,933	10,933
General Plant	461	369	0	0	0	0	830
Asset Management	1,658	1,066	605	47	0	0	3,377
Total Allocated Costs	\$69,085	\$13,835	\$13,037	\$5,846	\$626	\$10,933	\$113,362

- j. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity** –

To estimate the costs associated with (and to provide capacity for) public fire water service, the methodology put forth in the AWWA M1 Manual was used.

To determine the capacity requirements for fire flow, the District uses two hypothetical fires with varying fire flow. The first fire requires flows of 2,500 gallons per minute for a minimum of 4 hours, and the second requires 8,000 gallons per minute for a minimum of 8 hours as shown below. These hypothetical fires were chosen based on the professional judgement and experience of Raftelis applied to the District's service area.

Fire flows as a percentage of total capacity is converted to a percentage and used to identify the indirect cost allocated to water supply for public and private fire protection. The water supply demand capacity for public and private fire water service are based on firelines and hydrant capacity.

Water is supplied for private fire service through pipes and appurtenances on private property. These include all water-based fire protection systems, such as fire protection sprinklers and fire hydrants that are not part of, but are connected to, the public water service. Costs are allocated to these systems in a similar fashion and billed separately to the individual customers owning the private fire protection systems.

Max Day capacity is the amount of water needed for the duration of a fire in one day (fire flow gallons per minute multiplied by the duration of fire in minutes).

Max Hour capacity is the amount of water needed if a similar fire lasted an entire day (fire flow gallons per minute multiplied by the number of minutes in a day), less the capacity already allocated to meeting Max Day demand. Capacity amounts in gallons are converted to CCF in the table below. (One CCF = 748.05 gallons.)

**Table J: Capacity Requirements for Fire Flow and Public Fire Allocation  
FY 2023-24**

	Fire #1		Fire #2		Total	
<b>Fire Flow Estimate</b>	<b>Max Day<sup>(1)</sup></b>	<b>Max Hour<sup>(2)</sup></b>	<b>Max Day<sup>(1)</sup></b>	<b>Max Hour<sup>(2)</sup></b>	<b>Max Day</b>	<b>Max Hour</b>
Duration of Fire (Hours)	4.00		4.00		8.00	
Fire Flow (gpm)	2,500	2,500	8,000	8,000	10,500	10,500
Percent Allocated to Public Fire	74.7%	74.7%	74.7%	74.7%	74.7%	74.7%
Capacity Demanded for Fire (ccf)	802	4,010	2,567	12,833	3,369	16,844
Public Fire Capacity (ccf) <sup>(3)</sup>	599	2,995	1,917	9,583	2,516	12,578
Private Fire Capacity (ccf) <sup>(4)</sup>	203	1,016	650	3,250	853	4,266
Total Potable Capacity	77,539	70,509				
<b>Public Fire Allocation (Max Day: 2,516/77,539; Max Hour 12,578/70,509)</b>					<b>3.2%</b>	<b>17.8%</b>
Private Fire Allocation (Max Day: 853/77,539; Max Hour 4,266/70,509)					1.1%	6.0%

(1) Max Day Capacity demanded for fire = (hours\*minutes\*gallons)/748.05.

(2) Max Hour Capacity demanded for fire = (hours\*minutes\*gallons)/748.05 – Max Day Capacity.

(3) Split is based on fireline meter capacity = 707,667 / total system hydrants = 2,794,302.

(4) Total potable capacity is max day and max hour demands for all customer classes.

**k. Compute the public fire water service cost –**

The Max Day and Max Hour percentages identified in Table J for public fire water service are applied to the total cost-of-service by peaking factor to reallocate expenses included in Max Day and Max Hour fire protection water service costs to customer costs:

Max Day Public Fire Water Service costs: 3.2% \* \$15,312K = \$ 490k

Max Hour Public Fire Water Service costs: 17.8% \* \$14,428K = \$2,568k

Total indirect costs of Public Fire Water Service: \$3,058k

**Table K: Public Fire Water Service Cost-of-Service  
FY 2023-24**

Cost Allocation (Thousands)	Base	Max Day	Max Hour	Customer	Direct Fire	Private Fire	Total
Total Operating Costs	\$76,459	\$15,312	\$14,428	\$6,470	\$693	\$ -	\$113,362
Allocation of Public Fire To Customer				693	(693)		-
Allocation of Indirect Public Fire to Customer		(490)	(2,568)	3,058			-
Allocation to Private Fire		(168)	(866)			1,034	-
<b>Adjusted Cost of Service</b>	<b>\$ 76,459</b>	<b>\$ 14,654</b>	<b>\$ 10,994</b>	<b>\$ 10,221</b>	<b>\$ -</b>	<b>\$ 1,034</b>	<b>\$ 113,362</b>
Total Cost of Public Fire included in "Customer"				\$3,751			

(1) As described above, public fire water is calculated as follows:

$$\text{Max day} - 15,312k * 3.2\% = 490k$$

$$\text{Max hour} - 14,428k * 17.8\% = 2,568k$$

As identified in Table K, there are two cost components associated with public fire water service: direct and indirect. The total cost of public fire water service is \$3,751,000 including the direct cost of \$693,000 and the indirect cost of \$3,058,000.

Total public fire water service costs are allocated to all customers through the fixed meter charge through the IRWD’s rate structure. This complies with Proposition 218’s cost-of-service and proportionality principles because meter charges are proportional to a given property’s water demand, and that water demand is proportional to the property's use and need for fire water service.

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 12 provides the support for public fire water costs for FY 2023-24. Appendix 13 provides support for public fire water costs for FY 2024-25. The tables are updated with the details from the FY 2023-24 operating budget. The methodology from the 2021 Cost of Service (COS) Study Appendices 5 and 6 (Appendices) remains the same, and tables included in this appendix use the same alphabetical reference scheme as those in the 2021 COS Study Public Fire Water Costs Technical Memos.

### 1.1. COST COMPONENTS ASSOCIATED WITH PUBLIC FIRE WATER SERVICE

See Appendices 5 and 6 of the COS Study for a complete discussion on the District's public fire water service cost components and how public fire water service costs are calculated.

The following steps are used to calculate indirect fire water service costs:

- l. Identify total system peaking factors allocated to Base, Max Day, and Max Hour demands;
- m. Apply functional allocation percentages to the asset categories;
- n. Allocate asset values by function;
- o. Allocate functions to peaking factors;
- p. Determine asset value by peaking factor;
- q. Allocate operating costs by their demands on the system;
- r. Summarize peaking factor percentages for all operating costs by demand category;
- s. Identify operating costs by demand category;
- t. Calculate the cost of service by peaking factor;
- u. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity; and
- v. Compute the public fire water supply cost-of-service.

The result is the cost estimate for the indirect component related to public fire water service.

Steps a through f of the fire water costs calculation are the same as calculated in Appendices 5 and 6.

- l. Summarize peaking factor percentages for all operating costs by demand category -** Peaking factor percentages for operating expenses by demand category are summarized in the table below.



**Table G: Summarized Peaking Factor Percentages for all Operating Costs  
FY 2024-25**

Functional Group	Base	Max Day	Max Hour	Customer	Fire	General
Base Supply	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Excess Supply	12.2%	47.0%	40.8%	0.0%	0.0%	0.0%
Conservation and Supply Reliability	8.0%	43.0%	49.0%	0.0%	0.0%	0.0%
Customer Service	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
System Maintenance	96.9%	0.0%	0.0%	0.0%	3.1%	0.0%
General & Administrative	49.1%	31.6%	17.9%	1.4%	0.0%	0.0%
General Plant	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Asset Mangement	55.6%	44.4%	0.0%	0.0%	0.0%	0.0%

- m. Identify operating costs by demand category** – Amounts are assigned to demand categories shown in Table F. The net costs are explained in further detail in section 4.3 in the COS Study and are shown in Table 13 (variable revenue requirement) and Table 14 (fixed revenue requirement) in Appendix 10.

**Table H: Operating and Asset Maintenance Costs by System Demands  
FY 2024-25**

Cost Group	Demand Category	Cost (Thousands)	Totals
Variable:	Water Supplies	Base Supply	\$48,918
	Water Supplies	Excess Supply	9,681
	Conservation and Supply Reliability	Water Banking	2,138
	Conservation and Supply Reliability	Conservation and NTS	14,421
	Conservation and Supply Reliability	Universal Conservation	1,748
Fixed	Fixed Operating Costs	Customer Service	\$6,095
	Fixed Operating Costs	System Maintenance	21,537
	Fixed Operating Costs	General & Administrative	11,639
	Fixed Operating Costs	General Plant	980
	Fixed Operating Costs	Asset Management	3,564
Net Allocated Costs			\$120,722

- n. Calculate cost-of-service by peaking factor** - The allocated percentages identified in Table G are applied to the operating costs identified in Table H to calculate the cost by peaking factor. General and Administrative (G&A) cost is reallocated based on the total cost of service.

**Table I: Calculate Cost-of-Service by Peaking Factor  
FY 2024-25**

Demand Category	Base	Max Day	Max Hour	Customer	Fire	G&A	Total
Base Supply	\$48,918	\$0	\$0	\$0	\$0	\$0	\$48,918
Excess Supply	1,185	4,546	3,951	0	0	0	9,681
Conservation and Supply Reliability	1,466	7,867	8,975	0	0	0	18,308
Customer Service	0	0	0	6,095	0	0	6,095
System Maintenance	20,870	0	0	0	667	0	21,537
General & Administrative	0	0	0	0	0	11,639	11,639
General Plant	545	436	0	0	0	0	980
Asset Management	1,751	1,126	639	49	0	0	3,564
Total Allocated Costs	\$74,733	\$13,974	\$13,565	\$6,144	\$667	\$11,639	\$120,722

**o. Determine capacity requirements for fire flow and the allocation to public fire water supply capacity –**

To estimate the costs associated with (and to provide capacity for) public fire water service, the methodology put forth in the AWWA M1 Manual was used.

To determine the capacity requirements for fire flow, the District uses two hypothetical fires with varying fire flow. The first fire requires flows of 2,500 gallons per minute for a minimum of 4 hours, and the second requires 8,000 gallons per minute for a minimum of 8 hours as shown below. These hypothetical fires were chosen based on the professional judgement and experience of Raftelis applied to the District’s service area.

Fire flows as a percentage of total capacity is converted to a percentage and used to identify the indirect cost allocated to water supply for public and private fire protection. The water supply demand capacity for public and private fire water service are based on firelines and hydrant capacity.

Water is supplied for private fire service through pipes and appurtenances on private property. These include all water-based fire protection systems, such as fire protection sprinklers and fire hydrants that are not part of, but are connected to, the public water service. Costs are allocated to these systems in a similar fashion and billed separately to the individual customers owning the private fire protection systems.

Max Day capacity is the amount of water needed for the duration of a fire in one day (fire flow gallons per minute multiplied by the duration of fire in minutes).

Max Hour capacity is the amount of water needed if a similar fire lasted an entire day (fire flow gallons per minute multiplied by the number of minutes in a day), less the capacity already allocated to meeting Max Day demand. Capacity amounts in gallons are converted to CCF in the table below. (One CCF = 748.05 gallons.)

**Table J: Capacity Requirements for Fire Flow and Public Fire Allocation  
FY 2024-25**

Fire Flow Estimate	Fire #1		Fire #2		Total	
	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day <sup>(1)</sup>	Max Hour <sup>(2)</sup>	Max Day	Max Hour
Duration of Fire (Hours)	4.00		4.00		8.00	
Fire Flow (gpm)	2,500	2,500	8,000	8,000	10,500	10,500
Percent Allocated to Public Fire	74.4%	74.4%	74.4%	74.4%	74.4%	74.4%
Capacity Demanded for Fire (ccf)	802	4,010	2,567	12,833	3,369	16,844
Public Fire Capacity (ccf) <sup>(3)</sup>	597	2,984	1,910	9,549	2,507	12,533
Private Fire Capacity (ccf) <sup>(4)</sup>	205	1,026	657	3,285	862	4,311
Total Potable Capacity	79,023	71,583				
<b>Public Fire Allocation (Max Day: 2,507/79,023; Max Hour 12,533/71,583)</b>					<b>3.2%</b>	<b>17.5%</b>
Private Fire Allocation (Max Day: 862/79,023; Max Hour 4,311/71,583)					1.1%	6.0%

(5) Max Day Capacity demanded for fire = (hours\*minutes\*gallons)/748.05.

(6) Max Hour Capacity demanded for fire = (hours\*minutes\*gallons)/748.05 – Max Day Capacity.

(7) Split is based on fireline meter capacity=717,790 / total system hydrants =2,804,425.

(8) Total potable capacity is max day and max hour demands for all customer classes.

**p. Compute the public fire water service cost –**

The Max Day and Max Hour percentages identified in Table J for public fire water service are applied to the total cost-of-service by peaking factor to reallocate expenses included in Max Day and Max Hour fire protection water service costs to customer costs:

Max Day Public Fire Water Service costs:  $3.2\% * \$15,466K = \$495k$

Max Hour Public Fire Water Service costs:  $17.8\% * \$15,012K = \$2,627k$

Total indirect costs of Public Fire Water Service:  $\$3,122k$

**Table K: Public Fire Water Service Cost-of-Service  
FY 2024-25**

Cost Allocation (Thousands)	Base	Max Day	Max Hour	Customer	Direct Fire	Private Fire	Total
Total Operating Costs	\$82,711	\$15,466	\$15,012	\$6,800	\$738	\$ -	\$120,727
Allocation of Public Fire To Customer				738	(738)		-
Allocation of Indirect Public Fire to Customer		(495)	(2,627)	3,122			-
Allocation to Private Fire		(170)	(901)			1,071	-
<b>Adjusted Cost of Service</b>	<b>\$ 82,711</b>	<b>\$ 14,801</b>	<b>\$ 11,484</b>	<b>\$ 10,660</b>	<b>\$ -</b>	<b>\$ 1,071</b>	<b>\$ 120,727</b>
Total Cost of Public Fire included in "Customer"				\$3,860			

(2) As described above, public fire water is calculated as follows:

Max day -  $15,312k * 3.2\% = 495k$

Max hour -  $14,428k * 17.8\% = 2,627k$

As identified in Table K, there are two cost components associated with public fire water service: direct and indirect. The total cost of public fire water service is \$3,860,000 including the direct cost of \$738,000 and the indirect cost of \$3,122,000.

Total public fire water service costs are allocated to all customers through the fixed meter charge through the IRWD's rate structure. This complies with Proposition 218's cost-of-service and proportionality principles because meter charges are proportional to a given property's water demand, and that water demand is proportional to the property's use and need for fire water service.

# Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 14 provides the support for the development of Water Shortage Contingency Plan (WSCP) rates for FY 2023-24. Appendix 15 provides support for the development of WSCP rates for FY 2024-25. The tables are updated with detailed costs from the FY 2023-24 operating budget. The methodology from the 2021 Cost of Service (COS) Study Water Shortage Contingency Plan Rates Technical Memo (Appendix 7) remains the same, and tables 1, 6, and 7 included in this appendix use the same reference numbering scheme as those in the 2021 COS Study’s WSCP Technical Memo.

## Water Shortage Contingency Plan Cost of Service FY 2023-24

See Appendix 7 of the COS Study for a complete discussion on the District’s Water Shortage Contingency Plan Rates.

**Table 1: WSCP Augmentation or Demand Reduction Need Based on Level of Shortage FY 2023-24**

Water Shortage Contingency Plan Stage	Range of Shortage Within the Stage	Needed Augmentation or Reduction at maximum point of the Stage
1	0-10%	5,300 AF
2	11-20%	10,700 AF
3	21-30%	16,000 AF
4	31-40%	21,400 AF
5	41-50%	26,700 AF
6	51% +	32,100 AF

### 1.1.1. WATER SHORTAGE MAXIMUM WATER BUDGET ADJUSTMENTS

IRWD has modeled maximum water budget allocation adjustments as response measures to target a percentage reduction from FY 2023-24 demands for each of the six WSCP shortage levels. The water reduction goal is the maximum shortage for each WSCP level. For example, a Level 1 shortage ranges from 0% to 10%, so the reduction target used is 10%. The proposed maximum water budget adjustments, shown in Table 2 follow the WSCP by first targeting discretionary outdoor potable uses, then indoor uses, and finally commercial, industrial, and institutional (CII) indoor uses as the shortage levels increase in severity. Agricultural and construction usage is considered discretionary and would be reduced based on WSCP stage; however, rates would remain the same.

**Table 2: Adjustments to Water Budgets for Each Level of Water Shortage**

Water Shortage Contingency Plan level	Target reduction Midpoint of the level	Messaging and outreach	Outdoor potable landscape Includes residential, dedicated irrigation and CII outdoor	ET Factor	Indoor gallons per capita	Commercial, Industrial, and Institutional (CII) percent indoor reduction
None	0	Water efficiency programs and outreach	40% drought-tolerant plants	.75	50	
Level 1 0-10%	10%	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75	50	
Level 2 11-20%	20%	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625	50	
Level 3 21-30%	30%	Expanded messaging and targeted outreach	No turf; 25% drought-tolerant plants; 75% native plants; tree health affected	.35	40	
Level 4 31-40%	40%	Expanded messaging and targeted outreach	No turf; 100% native plants only; tree health affected	.25	32.5	10%
Level 5 41-50%	50%	Expanded messaging and targeted outreach	No landscape	0	30	20%
Level 6 51%+	60%	Expanded messaging and targeted outreach	No landscape	0	Basic needs only; 20	30%

**1.1.2.6 SOURCE WATER REDUCTIONS**

See Section 1.1.2.6 in Appendix 7 of the 2021 COS Study for a complete discussion on source water reductions.

The source of supply in Table 6 is based on the FY 2023-24 Board approved budget. For each level starting with 0 reflecting no reduction, the reduced source water in levels 1-6 was applied proportionally to all sources based on the percentage of required reduction at each level. The sources for each level are presented below.

**Table 6: Source of Supply Reductions Applied to the WSCP Levels  
FY 2023-24**

Reduced Source Water (acre feet)	0	1	2	3	4	5	6
Dyer Road Well Field	26,233	24,610	21,875	19,141	16,406	13,672	10,938
Other Process Wells	14,192	12,773	11,354	9,934	8,515	7,096	5,677
Baker Treatment Plant (SAC)	6,912	6,221	5,530	4,838	4,147	3,456	2,765
Water Purchases Imported (MWD)	6,144	4,530	4,026	3,523	3,020	2,517	2,013
Total	53,481	48,133	42,785	37,437	32,089	26,741	21,392

### 1.1.2.7 INCREASED CONSERVATION EFFORTS

See Section 1.1.2.7 in Appendix 7 for a complete discussion on increased conservation efforts.

The conservation and compliance expenses included in the table below are allocated to the over-allocation tiers to aid in reaching the identified WSCP level.

**Table 7: Additional Conservation and Compliance Efforts  
Applied to Over-allocation Tiers by Level  
FY 2023-24**

(in thousands)						
Additional Costs	1	2	3	4	5	6
Universal/Targeted Costs	\$1,852	\$3,703	\$5,145	\$6,431	\$6,626	\$7,406
Compliance Costs	0	0	0	423	1,410	2,820
Over-allocation Increase by Level	1	2	3	4	5	6
Inefficient	\$424	\$849	\$1,179	\$1,571	\$1,842	\$2,343
Wasteful	1,427	2,854	3,966	5,283	6,194	7,882
Total By Level	\$1,852	\$3,703	\$5,145	\$6,854	\$8,036	\$10,226

### 1.1.2.8 WSCP RATES

The WSCP rates are based on a consistent cost of service methodology with the IRWD updated cost of service rate model. The rates identified by tier and WSCP level take into consideration the reduced demands, the source shift in reduced water (i.e. available ground water versus imported water) and increased conservation and compliance costs required to reach WSCP targets. For each tier, the standard rate is adjusted for changes in reduced volumes and any increases in costs.

Many of the costs included in the standard rate are variable and fluctuate with total sales. However, with the exception of imported water, many expenses are not variable with changes in sales (labor and associated benefits, repairs and maintenance, permits, licenses and fees etc.). The cost of water component in WSCP rates increase as a result of allocating these costs to the reduced units as water usage is reduced.

The following table shows the cost of water by source by shortage level.

**Table 8: Cost of water per CCF by Water Shortage Level  
 FY 2023-24**

Level	0	1	2	3	4	5
Dyer Road Well Field	\$1.91	\$1.92	\$1.92	\$1.93	\$1.94	\$1.95
Orange Park Acres	2.38	2.39	2.41	2.43	2.46	2.49
Wells 21 & 22	3.36	3.49	3.66	3.87	4.16	4.56
Deep Aquifer Treatment	2.21	2.24	2.28	2.33	2.39	2.48
Potable Treatment Plant	2.37	2.42	2.49	2.58	2.69	2.85
Baker Water Treatment Plant	2.84	2.83	2.82	2.80	2.77	2.74
Imported Water	3.89	3.89	3.89	3.89	3.89	3.89

Budgeted costs for programs to educate and incentivize all District customers will be allocated to fewer sales units, which increases the cost per ccf. In addition, costs for extra programs to encourage further water conservation will be necessary and increase with the shortage levels. The following table shows the increases in universal conservation costs by shortage level.

**Table 9: District Wide Conservation Cost per CCF  
 FY 2023-24**

Universal Conservation Costs*	0	1	2	3	4	5	6
Budgeted Costs	1,768	1,768	1,768	1,768	1,768	1,768	1,768
Additional Costs	-	975	1,950	2,340	2,925	3,120	3,900
<b>Total Costs</b>	<b>1,768</b>	<b>2,744</b>	<b>3,720</b>	<b>4,111</b>	<b>4,697</b>	<b>4,893</b>	<b>5,674</b>
Potable and Recycled Sales (ccf)	15,549,903	13,220,239	11,767,632	10,315,083	8,862,454	6,971,357	5,518,381
Universal Conservation Rates	\$0.11	\$0.21	\$0.32	\$0.40	\$0.53	\$0.70	\$1.03
*in thousands							

In levels 1 through 4, inefficient and wasteful usage are assumed to remain the same. In levels 5 and 6, it is assumed that over-allocation usage will decrease due to price elasticity and increased conservation efforts, and budgeted costs will be allocated to fewer units. In addition, costs for customer outreach and targeted programs to encourage further water conservation will be necessary and increase with the shortage levels.

**Table 10: Targeted Conservation and Compliance Effort Cost per CCF  
 FY 2023-24**

<b>Targeted Costs *</b>	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Budget Cost Targeted	7,473	7,473	7,473	7,473	7,473	7,473	7,473
Additional Conservation Costs	-	877	1,753	2,805	3,506	3,506	3,506
Compliance Effort	-	-	-	-	423	1,410	2,820
<b>Total Costs</b>	<b>7,473</b>	<b>8,349</b>	<b>9,226</b>	<b>10,278</b>	<b>11,402</b>	<b>12,389</b>	<b>13,798</b>
<b>Cost Allocation*</b>							
Inefficient tier	1,713	1,913	2,114	2,355	2,613	2,839	3,162
Wasteful tier	5,760	6,436	7,112	7,922	8,789	9,550	10,636
<b>Total CCF</b>	<b>7,473</b>	<b>8,349</b>	<b>9,226</b>	<b>10,278</b>	<b>11,402</b>	<b>12,389</b>	<b>13,798</b>
*in thousands							
<b>Level</b>	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
<b>Target Demand CCF</b>							
Inefficient tier	1,131,000	1,131,000	1,131,000	1,131,000	1,131,000	1,017,900	916,110
Wasteful tier	982,910	982,910	982,910	982,910	982,910	884,426	796,157
<b>Targeted Costs per ccf</b>							
Inefficient tier	\$1.51	\$1.69	\$1.87	\$2.08	\$2.31	\$2.79	\$3.45
Wasteful tier	5.86	6.55	7.24	8.06	8.94	10.80	13.36

Water banking and natural treatment system (NTS) costs included in the budget do not change with water shortage levels. See Appendix 10 Table 17 for more information. Standard rates and WSCP rates at all levels include the amounts shown in the table below.

**Table 11: Water Banking and Natural Treatment Systems Rate Components  
 FY 2023-24**

<b>All Levels</b>	
<b>Water Banking</b>	
Wasteful tier	\$1.68
<b>Natural Treatment System</b>	
Inefficient tier	\$0.74
Wasteful tier	3.95



WSCP Rate calculations by tier are shown in the tables below.

**Table 12: WSCP Rate Calculations by Tier  
 FY 2023-24**

Level	0	1	2	3	4	5	6
<b>Low Volume tier</b>							
Cost of Water	\$1.91	\$1.92	\$1.92	\$1.93	\$1.94	\$1.95	\$1.98
Rate Stabilization	(\$0.16)	(\$0.16)	(\$0.16)	(\$0.16)	(\$0.16)	(\$0.16)	(\$0.16)
Low Volume tier Rate	\$1.75	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
<b>Base tier</b>							
Cost of Water	\$2.41	\$2.38	\$2.37	\$2.39	\$2.42	\$2.54	\$2.61
Universal Conservation	0.11	\$0.21	\$0.32	\$0.40	\$0.53	\$0.70	\$1.03
Base tier Rate	\$2.52	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
<b>Inefficient tier</b>							
Cost of Water	\$3.89	\$3.77	\$3.75	\$3.59	\$3.34	\$3.27	\$3.27
Universal Conservation	0.11	0.21	0.32	0.40	0.53	0.70	1.03
Targeted Conservation	1.51	1.69	1.87	2.08	2.31	2.79	3.45
Natural Treatment System	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Inefficient tier Rate	\$6.25	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
<b>Wasteful tier</b>							
Cost of Water	\$3.89	\$3.89	\$3.89	\$3.89	\$3.99	\$4.12	\$4.28
Universal Conservation	0.11	0.21	0.32	0.40	0.53	0.70	1.03
Targeted Conservation	5.86	6.55	7.24	8.06	8.94	10.80	13.36
Water Banking and NTS	\$5.63	\$5.63	\$5.63	\$5.63	\$5.63	\$5.63	\$5.63
Wasteful tier Rate	\$15.49	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

The rates are summarized in Table 13 below by tier and WSCP Level.

**Table 13: Summary WSCP Rates  
 FY 2023-24**

Level	0	1	2	3	4	5	6
Shortage	0%	10%	20%	30%	40%	50%	60%
Low Volume	\$1.75	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
Base	\$2.52	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Inefficient	\$6.25	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
Wasteful	\$15.49	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

The change in commodity rates has no impact on the monthly fixed service water or sewer charges. If the Board of Directors elect to implement any of these WSCP rates, the proposed commodity rates are expected to provide cost of service equity for the budgeted operating variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level. Implementation of WSCP rates would require additional Board action.

## Executive Summary

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25.

Appendix 14 provides the support for the development of Water Shortage Contingency Plan (WSCP) rates for FY 2023-24. Appendix 15 provides support for the development of WSCP for FY 2024-25. The tables are updated with the details from the FY 2024-25 operating budget. The methodology and assumptions from the 2021 Cost of Service (COS) Study Water Shortage Contingency Plan Rates Technical Memo (Appendix 7) remain the same and tables 1, 6, and 7 included in this appendix use the same numbering scheme as those in the 2021 COS Study WSCP Technical Memo.

## Water Shortage Contingency Plan Cost of Service FY 2024-25

See Appendix 7 of the COS Study for a complete discussion on the District’s Water Shortage Contingency Plan Rates.

**Table 1: WSCP Augmentation or Demand Reduction Need Based on Level of Shortage FY 2024-25**

Water Shortage Contingency Plan Stage	Range of Shortage Within the Stage	Needed Augmentation or Reduction at maximum point of the Stage
1	0-10%	5,500 AF
2	11-20%	10,900 AF
3	21-30%	16,400 AF
4	31-40%	21,800 AF
5	41-50%	27,300 AF
6	51% +	32,700 AF

### 1.1.1. WATER SHORTAGE MAXIMUM WATER BUDGET ADJUSTMENTS

IRWD has modeled maximum water budget allocation adjustments as response measures to target a percentage reduction from FY 2024-25 demands for each of the six WSCP shortage levels. The water reduction goal is the maximum shortage for each WSCP level. For example, a Level 1 shortage ranges from 0% to 10%, so the reduction target used is 10%. The proposed maximum water budget adjustments, shown in Table 2 follow the WSCP by first targeting discretionary outdoor potable uses, then indoor uses, and finally commercial, industrial, and institutional (CII) indoor uses as the shortage levels increase in severity. Agricultural and construction usage is considered discretionary and would be reduced based on WSCP stage; however, rates would remain the same.

**Table 2: Adjustments to Water Budgets for Each Level of Water Shortage**

Water Shortage Contingency Plan level	Target reduction Midpoint of the level	Messaging and outreach	Outdoor potable landscape Includes residential, dedicated irrigation and CII outdoor	ET Factor	Indoor gallons per capita	Commercial, Industrial, and Institutional (CII) percent indoor reduction
None	0	Water efficiency programs and outreach	40% drought-tolerant plants	.75	50	
Level 1 0-10%	10%	Expanded messaging and targeted outreach	40% drought-tolerant plants	.75	50	
Level 2 11-20%	20%	Expanded messaging and targeted outreach	No turf; 100% drought-tolerant plants	.625	50	
Level 3 21-30%	30%	Expanded messaging and targeted outreach	No turf; 25% drought-tolerant plants; 75% native plants; tree health affected	.35	40	
Level 4 31-40%	40%	Expanded messaging and targeted outreach	No turf; 100% native plants only; tree health affected	.25	32.5	10%
Level 5 41-50%	50%	Expanded messaging and targeted outreach	No landscape	0	30	20%
Level 6 51%+	60%	Expanded messaging and targeted outreach	No landscape	0	Basic needs only; 20	30%

**1.1.2.6 SOURCE WATER REDUCTIONS**

See Section 1.1.2.6 in Appendix 7 of the 2021 COS Study for a complete discussion on source water reductions.

The source of supply in Table 6 is based on the FY 2024-25 Board approved budget. For each level starting with 0 reflecting no reduction, the reduced source water in levels 1-6 was applied

proportionally to all sources based on the percentage of required reduction at each level. The sources for each level are presented below.

**Table 6: Source of Supply Reductions Applied to the WSCP Levels  
FY 2024-25**

<b>Reduced Source Water (acre feet)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Dyer Road Well Field	26,567	24,643	21,854	19,065	16,276	13,486	10,697
Other Process Wells	15,722	14,274	12,827	11,379	9,932	8,484	7,036
Baker Treatment Plant (SAC)	6,912	6,207	5,502	4,797	4,092	3,387	2,682
Water Purchases Imported (MWD)	5,350	3,972	3,458	2,945	2,432	1,918	1,405
<b>Total</b>	<b>54,551</b>	<b>49,096</b>	<b>43,641</b>	<b>38,186</b>	<b>32,731</b>	<b>27,276</b>	<b>21,820</b>

### 1.1.2.7 INCREASED CONSERVATION EFFORTS

See Section 1.1.2.7 in Appendix 7 for a complete discussion on increased conservation efforts.

The conservation and compliance expenses included in the table below are allocated to the over-allocation tiers to aid in reaching the identified WSCP level.

**Table 7: Additional Conservation and Compliance Efforts  
Applied to Over-allocation Tiers by Level  
FY 2024-25**

<b>(in thousands)</b>						
<b>Additional Costs</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Universal/Targeted Costs	\$1,906	\$3,812	\$5,300	\$6,625	\$6,825	\$7,625
Compliance Costs	0	0	0	438	1,459	2,918
<b>Over-allocation Increase by Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Inefficient	\$437	\$874	\$1,215	\$1,618	\$1,898	\$2,416
Wasteful	1,469	2,939	4,085	5,444	6,385	8,127
<b>Total By Level</b>	<b>\$1,906</b>	<b>\$3,812</b>	<b>\$5,300</b>	<b>\$7,062</b>	<b>\$8,284</b>	<b>\$10,543</b>

### 1.1.2.8 WSCP RATES

The WSCP rates are based on a consistent cost of service methodology with the IRWD updated cost of service rate model. The rates identified by tier and WSCP level take into consideration the reduced demands, the source shift in reduced water (i.e. available ground water versus imported water) and increased conservation and compliance costs required to reach WSCP targets. For each tier, the standard rate is adjusted for changes in reduced volumes and any increases in costs.

Many of the costs included in the standard rate are variable and fluctuate with total sales. However, with the exception of imported water, many expenses are not variable with changes in sales (labor and associated benefits, repairs and maintenance, permits, licenses and fees etc.). The cost of water component in WSCP rates increase as a result of allocating these costs to the reduced units as water usage is reduced.

The following table shows the cost of water by source by shortage level.

**Table 8: Cost of water per CCF by Water Shortage Level  
 FY 2024-25**

Cost per CCF	0	1	2	3	4	5	6
DRWF	\$1.99	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.03
OPA	2.43	2.43	2.44	2.44	2.44	2.44	2.44
Wells 21 & 22	3.77	3.85	3.95	4.08	4.25	4.50	4.86
DATS	2.39	2.42	2.47	2.53	2.60	2.71	2.88
PTP	2.50	2.55	2.61	2.69	2.80	2.95	3.18
Baker WTP	3.01	3.00	2.98	2.96	2.94	2.90	2.84
Import	4.15	4.15	4.15	4.15	4.15	4.15	4.15

Budgeted costs for programs to educate and incentivize all District customers will be allocated to fewer sales units, which increases the cost per ccf. In addition, costs for extra programs to encourage further water conservation will be necessary and increase with the shortage levels. The following table shows the increases in universal conservation costs by shortage level.

**Table 9: District Wide Conservation Cost per CCF  
 FY 2024-25**

Universal Conservation Costs*	0	1	2	3	4	5	6
Budgeted Costs	1,748	1,748	1,748	1,748	1,748	1,748	1,748
Additional Costs	-	1,000	2,000	2,400	3,000	3,200	4,000
<b>Total Costs</b>	<b>1,748</b>	<b>2,749</b>	<b>3,750</b>	<b>4,151</b>	<b>4,752</b>	<b>4,953</b>	<b>5,754</b>
Potable and Recycled Sales (ccf)	15,861,009	13,484,665	12,003,009	10,521,444	9,039,782	7,110,831	5,628,968
Universal Conservation Rates	\$0.11	\$0.20	\$0.31	\$0.39	\$0.53	\$0.70	\$1.02
*in thousands							

In levels 1 through 4, inefficient and wasteful usage are assumed to remain the same. In levels 5 and 6, it is assumed that over-allocation usage will decrease due to price elasticity and increased conservation efforts, and budgeted costs will be allocated to fewer units. In addition, costs for customer outreach and targeted programs to encourage further water conservation will be necessary and increase with the shortage levels.

**Table 10: Targeted Conservation and Compliance Effort Cost per CCF  
 FY 2024-25**

<b>Targeted Costs *</b>	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Budget Cost Targeted	7,754	7,754	7,754	7,754	7,754	7,754	7,754
Additional Conservation Costs	-	906	1,812	2,900	3,625	3,625	3,625
Compliance Effort	-	-	-	-	438	1,459	2,918
<b>Total Costs</b>	<b>7,754</b>	<b>8,661</b>	<b>9,567</b>	<b>10,654</b>	<b>11,817</b>	<b>12,838</b>	<b>14,297</b>
<b>Cost Allocation*</b>							
Inefficient tier	1,777	1,985	2,192	2,442	2,708	2,942	3,277
Wasteful tier	5,977	6,676	7,374	8,213	9,109	9,896	11,021
<b>Total CCF</b>	<b>7,754</b>	<b>8,661</b>	<b>9,567</b>	<b>10,654</b>	<b>11,817</b>	<b>12,838</b>	<b>14,297</b>
*in thousands							
<b>Level</b>	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
<b>Target Demand CCF</b>							
Inefficient tier	1,153,629	1,153,629	1,153,629	1,153,629	1,153,629	1,038,266	934,439
Wasteful tier	1,002,575	1,002,575	1,002,575	1,002,572	1,002,479	902,227	812,086
<b>Targeted Costs per ccf</b>							
Inefficient tier	\$1.54	\$1.72	\$1.90	\$2.12	\$2.35	\$2.83	\$3.51
Wasteful tier	5.96	6.66	7.36	8.19	9.09	10.97	13.57

Water banking and natural treatment system (NTS) costs included in the budget do not change with water shortage levels. See Appendix 10 Table 17 for more information. Standard rates and WSCP rates at all levels include the amounts shown in the table below.

**Table 11: Water Banking and Natural Treatment Systems Rate Components  
 FY 2024-25**

<b>All Levels</b>	
<b>Water Banking</b>	
Wasteful tier	\$2.13
<b>Natural Treatment System</b>	
Inefficient tier	\$0.77
Wasteful tier	4.11

WSCP Rate calculations by tier are shown in the tables below.

**Table 12: WSCP Rate Calculations by Tier  
 FY 2024-25**

Level	0	1	2	3	4	5	6
<b>Low Volume tier</b>							
Cost of Water	\$1.99	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Low Volume tier Rate	\$1.99	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
<b>Base tier</b>							
Cost of Water	\$2.54	\$2.52	\$2.53	\$2.55	\$2.58	\$2.71	\$2.77
Universal Conservation	0.11	\$0.20	\$0.31	\$0.39	\$0.53	\$0.70	\$1.02
Base tier Rate	\$2.65	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
<b>Inefficient tier</b>							
Cost of Water	\$4.13	\$3.97	\$3.76	\$3.54	\$3.28	\$3.13	\$3.08
Universal Conservation	0.11	0.20	0.31	0.39	\$0.53	0.70	1.02
Targeted Conservation	1.54	1.72	1.90	2.12	2.35	2.83	3.51
Natural Treatment System	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Inefficient tier Rate	\$6.55	\$6.66	\$6.74	\$6.82	\$6.93	\$7.43	\$8.38
<b>Wasteful tier</b>							
Cost of Water	\$4.15	\$4.15	\$4.15	\$4.15	\$4.19	\$4.27	\$4.35
Universal Conservation	0.11	0.20	0.31	0.39	0.53	0.70	1.02
Targeted Conservation	5.96	6.66	7.36	8.19	9.09	10.97	13.57
Water Banking and NTS	\$6.24	\$6.24	\$6.24	\$6.24	\$6.24	\$6.24	\$6.24
Wasteful tier Rate	\$16.46	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

The rates are summarized in Table 13 below by tier and WSCP Level.

**Table 13: Summary WSCP Rates  
 FY 2024-25**

Level	0	1	2	3	4	5	6
Shortage	0%	10%	20%	30%	40%	50%	60%
Low Volume	\$1.99	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Base	\$2.65	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Inefficient	\$6.55	\$6.66	\$6.74	\$6.82	\$6.93	\$7.43	\$8.38
Wasteful	\$16.46	\$17.25	\$18.06	\$18.97	\$20.05	\$22.18	\$25.18

The change in commodity rates has no impact on the monthly fixed service water or sewer charges. If the Board of Directors elect to implement any of these WSCP rates, the proposed commodity rates are expected to provide cost of service equity for the budgeted operating variable costs and additional costs incurred as a direct result of a water shortage declaration at the associated stage level. Implementation of WSCP rates would require additional Board action.

## Potential Additional Regulatory Cost to Provide Water Service

This appendix calculates a surcharge on water sales volumes to pay costs that may be imposed on IRWD by the State Water Resources Control Board (the “State Board”) in response to any violations of emergency drought regulations restricting water use by IRWD and its customers.

### State Board Drought Regulatory Penalties

The State Board cites Water Code section 1058.5 to adopt emergency regulations to prevent the waste, unreasonable use, or unreasonable method of use of water or to promote water conservation. In past droughts, the State Board has adopted such regulations to reduce existing levels of water use by retail public water suppliers, including IRWD. The State Board cites Water Code section 1831(d) to issue a cease and desist order to local agencies, such as IRWD, in response to a violation or threatened violation of a regulation adopted under Section 1058.5. A local agency that fails to comply with a cease and desist order issued by the State Board may be liable in an amount not exceeding ten thousand dollars (\$10,000) for each day in which the violation occurs, if the violation occurs in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years. The State recently experienced such critically dry years, including in 2021 and 2022.

Although IRWD has a robust water conservation program with extensive customer outreach, if the State Board were to adopt an emergency regulation requiring reduced water usage, and IRWD customers were to fail to sufficiently reduce their usage to bring total IRWD customer water use into compliance, the State Board could seek to hold IRWD liable for failing to comply with a cease and desist order. Any monetary liability imposed upon IRWD would be an additional cost of providing water service.

### Calculation of the Surcharge

IRWD's potential financial exposure over a 24-month period is \$7,300,000 (2 years times 365 days per year times \$10,000 per day).

The excess water consumption that IRWD expects would be prohibited by the State Board is the amount used by IRWD customers in the Wasteful tier, including when water usage budgets are lowered pursuant to IRWD's adopted water shortage contingency plan (WSCP). The total use of water in the wasteful tiers of IRWD's proposed rate structure for FY 2023-24 and FY 2024-25 is calculated to be 2,206,095 ccf (hundred cubic feet).

Allocating the \$7,300,000 cost across 2,206,095 ccf of Wasteful Tier water consumption equates to \$3.31 per ccf. To fund IRWD's potential costs of monetary liability to the State Board, IRWD would be authorized to levy a surcharge of up to \$3.31 per ccf on the volume of water used in the Wasteful tiers. This is included in the Proposition 218 Notices.

The table below shows the calculation of excess water consumption, state penalties, and



**Table 1: State Water Resources Control Board Penalty Surcharge  
FY 2023-24 and FY 2024-25**

<b>FY 2023-24 Wasteful Tier Usage (Acre Feet)</b>	2,507
<b>FY 2024-25 Wasteful Tier Usage (Acre Feet)</b>	2,557
<b>Total Excess Water Consumption (Acre Feet)</b>	5,064
<b>Total Excess Water Consumption (ccf = AF X 435.6)</b>	2,206,095
<b>State Penalties (2 X 365X \$10,000)</b>	\$7,300,000
<b>Allocated Cost per CCF (State Penalties / Total Wasteful Tier Usage)</b>	<b>\$3.31</b>

## **Technical Memorandum**

# **Determination of Costs for Proposed Pumping Surcharges For Irvine Ranch Water District**

### **Executive Summary**

This appendix is part of the Cost of Service update for Fiscal Year (FY) 2023-24 and FY 2024-25. The purpose of the memo is to identify and allocate pumping surcharge costs for District customers in locations that cause the District to incur additional pumping costs to supply their water. Pumping surcharges are based on the actual prevailing energy costs and vary depending upon the cost to pump water to the area served. Details as to how these costs are calculated and allocated to pumping surcharge areas are described in this memo. IRWD's rate structure, including pumping surcharge costs, complies with Proposition 218's cost-of-service and proportionality principles.

The District uses a detailed methodology, developed by consultants at Navigant and refined in a 2023 update by HDR Engineering, Inc. (HDR), to calculate and allocate pumping surcharge costs to pumping surcharge areas. The approach uses embedded energy calculations to determine areas of the District where customers live which require additional energy to pump the water to their service addresses. The additional costs are added to a customer's bill in the form of a pumping surcharge based on the amount of water they use each month.

The approach to calculating pumping surcharges that was developed by Navigant Consulting used hydraulic model and customer billing data to determine water demands throughout the District. From those customer usage demands, Navigant estimated water flows associated with the areas of the District that incur additional energy costs. The estimated water flow data and energy data from Southern California Edison (SCE) was used to compute energy and cost intensities (CI) in order to calculate additional pumping costs throughout the District.

HDR refined the approach in a 2023 update by using the latest available hydraulic models and Supervisory Control and Data Acquisition (SCADA) water flow information from IRWD's pump stations and facilities. Use of the actual flow information from SCADA is more accurate than the flow estimates derived from the customer demand data used in the Navigant approach. Energy and cost intensities (CI) are calculated based on SCE data and SCADA data for conveying water to various hydraulic pressure zones (pressure zones). A pressure zone is an area with similar pressure, elevation and hydraulic requirements. Pressure zones with similar energy and cost intensities are aggregated into pumping surcharge areas. The same methodology is applied to the potable and recycled (non-potable) water distribution systems.

Pumping surcharges are determined based on the additional energy costs required to deliver water to certain locations within the District's service area, beyond the energy costs covered within the IRWD "base" commodity rate, as described in the Cost of Service update. The steps to calculate the pumping surcharges consider water flow volumes, energy, and costs associated

with delivering water from the supply sources to customers. The analysis does not consider the costs of water supply, water treatment, or sewage collection processes. The analysis conducted only considers costs directly paid by IRWD for delivery of water service. The pumping surcharge analysis excludes costs associated with water obtained from wholesale agencies as well as facility costs included in the commodity rate. The following steps are used to calculate pumping surcharge costs and assign costs to pumping surcharge areas:

1. Data Pre-Processing of Flow, Energy, and Cost Data: Provides an overview of the data used to compute the cost intensities, including review of changes from previous analyses.
2. Flow Tracing: Determines the distribution pumps that serve each pressure zone in IRWD’s service area, with detailed list of all assets (pump stations) utilized.
3. Energy and Cost Intensity Calculations by Pressure Zone: Computes energy and cost intensities for pump stations and calculates the results for cost intensities by pressure zone.
4. Aggregate Proposed Surcharge areas and Set Rates: Reviews grouping of pressure zones with similar CIs into proposed pumping surcharge areas and their associated pumping surcharge rates.

Summary of Pumping Surcharge Analysis and Proposed Pumping Surcharge Rates

Table 1 shows the proposed pumping surcharge areas and proposed pumping surcharge rates for FY 2023-24 for the potable system. HDR’s professional expertise and staff’s review of aggregate groupings produced four proposed potable pumping surcharge areas. As shown in Table 1, 85% of customers are assigned to the base area and would incur no pumping surcharge. Fifteen percent of customers are assigned to one of the four pumping surcharge areas for the potable system. Pumping surcharge rates range from \$0.38 to \$1.72 per hundred cubic feet (ccf) depending on the Pumping Surcharge Area. Expected revenues are \$1.51 million.

**Table 1. Recommended FY 2023-2024 Potable Pumping Surcharge Rates**

<b>Summary of Proposed Pumping Surcharge Areas and Rates - Potable</b>				
<b>Proposed Pumping Surcharge</b>		<b>Percentage Contribution to Revenue</b>		
<b>Pumping Surcharge Area</b>	<b>Pumping Surcharge Rate \$ per ccf*</b>	<b>% Customers</b>	<b>% Flow</b>	<b>Modeled Revenue</b>
Base	\$0.00	85%	89%	\$0
1	\$0.38	9%	7%	\$577,790
2	\$0.67	2%	1%	\$125,947
3	\$0.90	2%	2%	\$497,333
4	\$1.72	2%	1%	\$312,892
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>\$1,513,963</b>
<i>*Weighted Cost Intensity (CI) Method</i>				

Table 2 shows the recommended pumping surcharge areas and proposed rates for FY 2023-24 for the recycled system. HDR’s analysis recommended three pumping surcharge areas in addition to a base area. Customers are distributed with 74% assigned to the base area and 26 % assigned to

one of the three Pumping Surcharge Areas. Proposed pumping surcharge rates range from \$0.23 to \$0.53 per CCF, depending on the Pumping Surcharge Area. Expected revenues are \$885,716.

**Table 2 Recommended FY 2023-2024 Recycled Pumping Surcharge Rates**

<b>Summary of Proposed Pumping Surcharge Areas and Proposed Rates - Recycled</b>				
<b>Proposed Pumping Surcharge</b>		<b>Percentage Contribution to Revenue</b>		
<b>Pumping Surcharge Area</b>	<b>Pumping Surcharge Rate \$ per ccf*</b>	<b>% Customers</b>	<b>% Flow</b>	<b>Modeled Revenue</b>
Base	\$0.00	74%	79%	\$0
1	\$0.23	12%	11%	\$344,027
2	\$0.37	12%	7%	\$346,811
3	\$0.53	2%	3%	\$194,878
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>\$885,716</b>
<i>*Manually Adjusted from Weighted Cost Intensity (CI) Method</i>				

**Potable System: Pumping Surcharge Areas and Rates**

**Potable System Pumping Surcharge Areas**

HDR calculated the cost intensity (CI) for each District potable pressure zone using the steps and methodology described above. Based on HDR’s professional judgment and experience, pressure zones with similar adjusted CIs were grouped into a total of five proposed areas for the potable system; a Base area, which does not incur any pumping surcharge, and four proposed pumping surcharge areas: 1, 2, 3 and 4. The resulting CIs for each potable pressure zone and proposed groupings and pumping surcharge areas for the potable system are shown in Table 3.

**Table 3: Proposed Pumping Surcharge Area by Potable System Pressure Zone**

Potable Pressure Zones	Flow (ccf/year)	Cost Intensity (\$/CCF)	Proposed Pumping Surcharge Areas	Percent of Customers
Zone 1 - Central Irvine	66,792	-	Base	85%
Zone 4 - Lake Forest	390,130	-	Base	
Zone 5 - Lake Forest	1,320,259	-	Base	
Zone 3 - TRK / QHL	1,251,245	-	Base	
Zone 4 - EIR / PTS	1,938,074	-	Base	
Zone 2 - Newport Coast	4,691,089	-	Base	
Zone 4 - Newport Coast	4,691,089	-	Base	
Zone 3 - NWD / EIR / PTS	2,344,022	-	Base	
Zone 2 - Northwood	2,326,332	-	Base	
Zone 4 - Turtle Rock	90,631	-	Base	
Zone 5 - SNC / ORH	1,126,331	-	Base	
Zone 8 - East Orange	151,155	-	Base	
N/A (planned future)	151,155	-	Base	
Zone 4 - Quail Hill	57,279	-	Base	
Zone 6 - Foothill Ranch	1,131,931	\$0.36	1	9%
Zone 6A - Foothill Ranch	385,958	\$0.45	1	
Zone 4 - Shady Canyon	23,043	\$0.63	2	2%
Zone 6 - Portola Springs	113,545	\$0.72	2	
Zone 9 - Santiago Canyon	52,431	\$0.57	2	
Zone 8 - Portola Hills	244,451	\$0.85	3	2%
Zone 9 - Portola Hills	205,809	\$0.97	3	
Zone 10B - Santiago Canyon	54,250	\$0.82	3	
Zone 10A - Santiago Canyon	28,231	\$0.85	3	
Zone 10 - Santiago Canyon	21,345	\$1.07	3	2%
Zone 4 - Hidden Canyon	60,291	\$1.41	4	
Zone 6 - Newport Coast	41,896	\$1.70	4	
Zone 7 - Newport Coast	72,150	\$1.95	4	
Zone 10C - Santiago Canyon	314	\$1.84	4	
Zone 11 - Santiago Canyon	7,641	\$1.97	4	

Eighty-five percent of customers are within the Base area and would not incur a pumping surcharge. Nine percent of customers fall within Pumping Surcharge Area 1. Two percent of customers fall within each of Pumping Surcharge Areas 2, 3 and 4.

The current pumping surcharges for the potable system only uses a Base area and three Pumping Surcharge Areas. HDR’s updated pumping surcharge analysis recommended the use of a Base area and four Pumping Surcharge Areas due to the large jump in CIs between Zone 10 - Santiago Canyon and Zone 4 - Hidden Canyon, from \$1.07 to \$1.41. Without a fourth pumping surcharge

area, Pumping Surcharge Area 3 would span a range of adjusted CIs from \$0.85 in Zone 10 A Santiago Canyon to a CI of \$1.97 in Zone 11 Santiago Canyon. In that case, pressure zones with significantly lower CI would be assigned the same pumping surcharge rate as pressure zones with much higher CIs. This would subsidize those in the higher-pressure zones or apply increased pumping surcharges to pressure zones with lower CIs. Grouping pressure zones further into a fourth pumping surcharge area better accounts for the high variability in CI across the District’s service area for potable water supplies. Previously Newport Coast Zones 6 and 7 were assigned to lower pumping surcharge areas due to a lack of sufficient data at the pump stations and flow tracing that was not as accurate or granular as the methods used in the 2023 analysis.

The Hidden Canyon Zone is a special case due to being served by a single pump station for a limited number of customers (approximately 250). While Hidden Canyon could be placed within the higher Pumping Surcharge Area 4 due to its high CI resulting from the single pump station, it was placed in Pumping Surcharge Area 3 due to the limited effect on overall revenue and other surcharge area costs, after sensitivity checks. This change occurred to allow a “step-up” adjustment. In the future, depending on service area changes and the effect on other customer pumping surcharges, Hidden Canyon may move to a higher pumping surcharge area for potable water service.

### **Potable System: Recommended FY 2023-24 Pumping Surcharge Rates and Revenues**

HDR weighted the flows and CIs for the pressure zones in each of the proposed groupings to develop an aggregate proposed pumping surcharge rate per ccf for each of the proposed Pumping Surcharge Areas. For example, in proposed Pumping Surcharge Area 1, the annual flow in Pressure Zone 6 is 1,131,931 ccf. The annual flow in Pressure Zone 6A is 385,958 ccf. The combined flow for the two pressure zones assigned to Pumping Surcharge Area 1 is 1,517,889 ccf. Zone 6 comprises 75% of the total flow. Zone 6A comprises 25% of the total flow. If weighted, the CI’s based on those percentages of flow in each pressure zone produce a blended CI, which is the basis for the proposed pumping surcharge rate of \$0.38/ccf for Pumping Surcharge Area 1 (Equation 1):

#### **Equation 1:**

$$(\$0.36 \times 0.75) + (\$0.45 \times 0.25) = \$0.38 \text{ per ccf}$$

This same flow and CI weighting methodology was applied to each of pumping surcharge area groupings, resulting in a proposed pumping surcharge rate for each of the four proposed Pumping Surcharge Areas, shown below in Table 4.

**Table 4. Recommended FY 2023-2024 Potable Pumping Surcharge Rates**

<b>Summary of Proposed Pumping Surcharge Areas and Rates - Potable</b>				
<b>Proposed Pumping Surcharge</b>		<b>Percentage Contribution to Revenue</b>		
<b>Pumping Surcharge Area</b>	<b>Pumping Surcharge Rate per CCF*</b>	<b>% Customers</b>	<b>% Flow</b>	<b>Modeled Revenue</b>
Base	\$0.00	85%	89%	\$ 0
1	\$0.38	9%	7%	\$577,790
2	\$0.67	2%	1%	\$125,947
3	\$0.90	2%	2%	\$497,333
4	\$1.72	2%	1%	\$312,892
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>\$1,513,963</b>
<i>* Weighted Cost Intensity (CI) Method</i>				

Approximately 85% of IRWD customers are assigned to the Base Area and as proposed would incur no pumping surcharge cost. Seven percent of customers are in Pumping Surcharge Area 1 and would be charged a proposed rate of \$0.38 per ccf, with the two percent of customers in proposed Pumping Surcharge Area 4 charged the highest surcharge rate of \$1.72 per ccf. Expected revenue is computed by multiplying the pumping surcharge rate by the combined flow volume from each pressure zone within each surcharge area. Modeled revenue for the potable system, calculated by multiplying the total annual flow within the Pumping Surcharge Area by the proposed Pumping Surcharge rate, is expected to total approximately \$1.51 million.

**Potable System Pumping Surcharge Rate Comparison**

Table 5 shows expected average monthly changes for customers who will remain in an equivalent Pumping Surcharge Area to their existing assignment. Compared to current surcharge rates, customers in Pumping Surcharge Areas 1 to 3 would be charged an increase between \$0.05 to \$0.21 per ccf. An average change in the pumping surcharge monthly bill amount was calculated by multiplying the change in pumping surcharge rate (proposed pumping surcharge rate minus current pumping surcharge rate) by the flow and dividing by the number of customers. The actual change in a customer’s monthly bill amount depends on the water usage of each customer. Customer monthly bills in Pumping Surcharge Area 1 on average would increase by \$0.41, while customer monthly bills in in Pumping Surcharge Area 3 on average would increase by \$1.23 per month.

**Table 5. Comparison of Proposed Surcharge Rates to Current Rates, Potable System**

<b>Pumping Surcharge Area</b>	<b>Current Surcharge Rate per ccf</b>	<b>Proposed Surcharge Rate per ccf</b>	<b>Change in Surcharge Rate per ccf</b>	<b>Average Monthly Change in Surcharge Bill Amount</b>
Base	\$-	\$-	\$-	\$-
1	\$0.33	\$0.38	+\$0.05	\$0.41
2	\$0.46	\$0.67	+\$0.21	\$1.09
3	\$0.79	\$0.90	+\$0.11	\$1.23
4	<i>Not applicable. Pumping Surcharge Area 4 newly proposed for highest CI ranges at \$1.72 per CCF beginning in FY 2023-24.</i>			



## Potable System Pumping Surcharge Area Assignment Map

The map shown in Figure 2 below indicates the proposed potable system pumping surcharge area assignments:

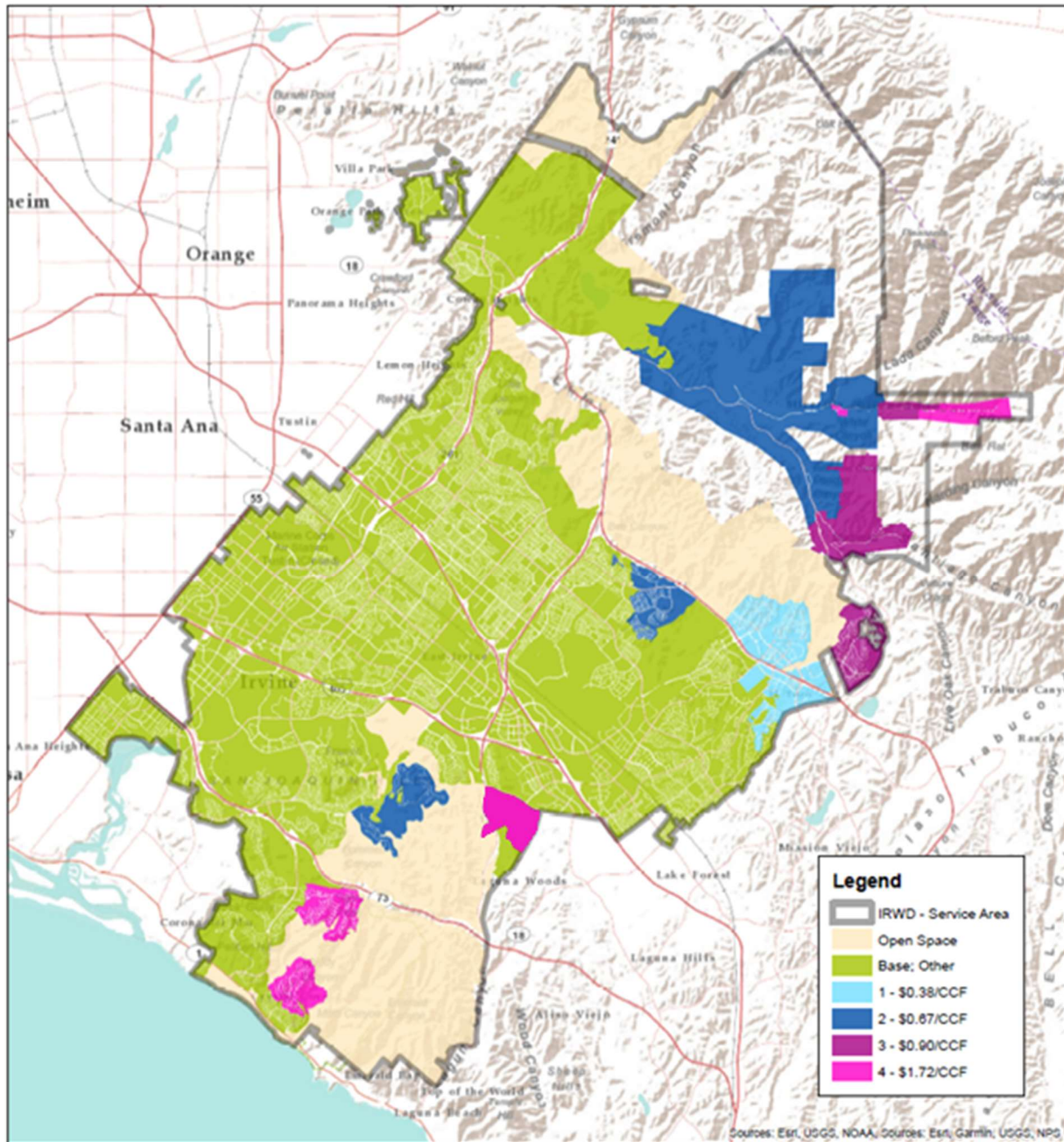


Figure 2. Proposed Potable Pumping Surcharge Areas

**Recycled (Non-Potable System): Pumping Surcharge Areas and Rates**

**Recycled System Pumping Surcharge Areas**

Similar to the process used for the potable system, HDR calculated the CIs for each of the District’s recycled system pressure zones using the steps and methodology described above. Similar to the potable water system, pressure zones, such as Zone H NPC and Coastal Zone G, which are further from the water supply generally have higher CIs. Pressure zones close to the supply generally have lower CIs, such as Lake Forest A (No 1/2), Laguna Zone B, and Northwood Zone B.

HDR calculated the weighted flows and additional costs for each of the recycled system pressure zones. The resulting CIs for each non-potable pressure zone are shown in Table 6. Based on HDR’s professional judgment and experience, pressure zones with similar adjusted CIs were grouped into a total of four proposed areas, a Base area, and three proposed Pumping Surcharge Areas: 1, 2, and 3. Seventy-four percent of customers are within the Base area and would not incur a pumping surcharge. Two percent of customers fall within Pumping Surcharge Area 1, twelve percent of customers are in Pumping Surcharge Areas 2, and twelve percent are within Pumping Surcharge Area 3.

**Table 6: Recycled System Pressure Zone Cost Intensities, Groupings and Proposed Pumping Surcharge Areas**

Recycled (Non-potable) Pressure Zones	Flow (ccf/year)	CI (\$/ccf)	Surcharge Area	Percent of Customers
Zone A North and South	-	-	Base	74%
Lake Forest A (No 1/2)	1,282,761	-	Base	
Laguna Zone B	6,110,252	-	Base	
Northwood Zone B	1,521,560	-	Base	
Lake Forest B (East/West)	605,954	-	Base	
Oso Reservoir	106,949	-	Base	
TRK_B_t_000	105,918	-	Base	
Northern Zone C	500,116	-	Base	
Portola Springs Zone D	367,693	\$0.22	1	2%
Coastal Zone D + Zone D TRG	1,495,769	\$0.37	2	12%
Coastal Zone G	900,306	\$0.48	3	12%
Zone H NPC	37,022	\$0.48	3	

Table 6 shows the proposed surcharge areas for the IRWD recycled (non-potable) system. Zone A North and South through Northern Zone C are assigned to the Base Area with no proposed pumping surcharge rate, after sensitivity checks and to be consistent with the methodology applied in the potable system (“80-20” distribution method).

HDR considered all alternatives of statistical groupings, weighted CI ranges, and Base Area configurations to develop the recommended pumping surcharge areas for the recycled system. HDR used professional experience and judgment to adjust the recycled pumping surcharges to account for various Base Areas while considering the recycled pressure zone CI calculations, comparison to 2015 results, and sensitivity checks for impacts on overall rates and charges. The values of the CIs for the recycled system pressure zones naturally group into three Pumping Surcharge Areas, and are similar to the current pumping surcharge areas.

**Recycled System: Recommended FY 2023-24 Pumping Surcharge Rates and Revenues**

HDR weighted the flows and CIs for the pressure zones in each of the proposed groupings to develop an aggregate proposed pumping surcharge rate per ccf for each of the proposed Pumping Surcharge Areas in the recycled system. For example, Pumping Surcharge Area 3 includes the Coastal Zone G pressure zone and the Zone H NPC pressure zone. From Table 7, the annual flow in Coastal Zone G pressure zone is 900,306 ccf, and the annual flow in the Zone H NPC is 37,022 ccf. The combined flow for the two recycled pressure zones assigned to Pumping Surcharge Area 3 is 937,328 ccf. Coastal Zone G comprises approximately 96% of the total flow in Pumping Surcharge Area 3, and Zone H NPC comprises approximately 4% of the total flow in Pumping Surcharge Area 3. If we weight the CIs based on the percentages of flow in each of the pressure zones in a proposed Pumping Surcharge Area, we can calculate a blended CI. The blended CI is the basis for the proposed pumping surcharge rate, which is \$0.48/ccf (rounded to nearest cent) for Pumping Surcharge Area 3 (Equation 2):

**Equation 2:**

$$(\$0.486 \times 0.96) + (\$0.48 \times 0.04) = \$0.48 \text{ per CCF}$$

This same flow and CI weighting methodology is applied to each of the recycled system pumping surcharge area groupings, resulting in a proposed pumping surcharge rate for each of the three proposed Pumping Surcharge Areas, shown below in Table 7.

**Table 7 Recommended FY 2023-2024 Recycled Pumping Surcharge Rates**

Summary of Proposed Pumping Surcharge Areas and Proposed Rates - Recycled				
Proposed Pumping Surcharge		Percentage Contribution to Revenue		
Pumping Surcharge Area	Pumping Surcharge Rate \$ per CCF*	% Customers	% Flow	Modeled Revenue
Base	\$0.00	74%	79%	\$0
1	\$0.22	2%	3%	\$81,665
2	\$0.37	12%	11%	\$552,421
3	\$0.48	12%	7%	\$449,310
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>\$1,083,395</b>
<i>*Manually Adjusted from Weighted Cost Intensity (CI) Method</i>				

Approximately 74% of customers are assigned to the Base Area and would incur no surcharge rate, as proposed. Two percent would be charged a rate of \$0.22 per ccf. Twelve percent would be charged a rate of \$0.37 per ccf, with twelve percent being charged the highest surcharge rate of \$0.48 per ccf. Expected revenue is computed by multiplying the surcharge rate by the flow volume within each surcharge area, which is expected to total \$1,083,395 in the analysis period.

### Recycled System Pumping Surcharge Rate Comparison

Compared to current surcharge rates, customers in Pumping Surcharge Areas 1 – 3 would be charged an increase between \$0.01 and \$0.12 per ccf. By multiplying the change in pumping surcharge rate (proposed surcharge rate minus current surcharge rate) by the flow and dividing by the number of customers, an average change in surcharge monthly bill amount was calculated. The actual change in a customer’s monthly bill amount depends on the water usage of each customer. Customer monthly bills in Pumping Surcharge Area 1 on average would increase by \$18.77, while customer monthly bills in in Pumping Surcharge Area 3 on average would increase by \$1.02 per month. Table 8 shows expected average monthly changes for customers who will remain in an equivalent Pumping Surcharge Area compared to their existing Pumping Surcharge Area assignment.

**Table 8. Comparison of Proposed Surcharge Rates to Current Rates, Recycled (Non-Potable) Water System**

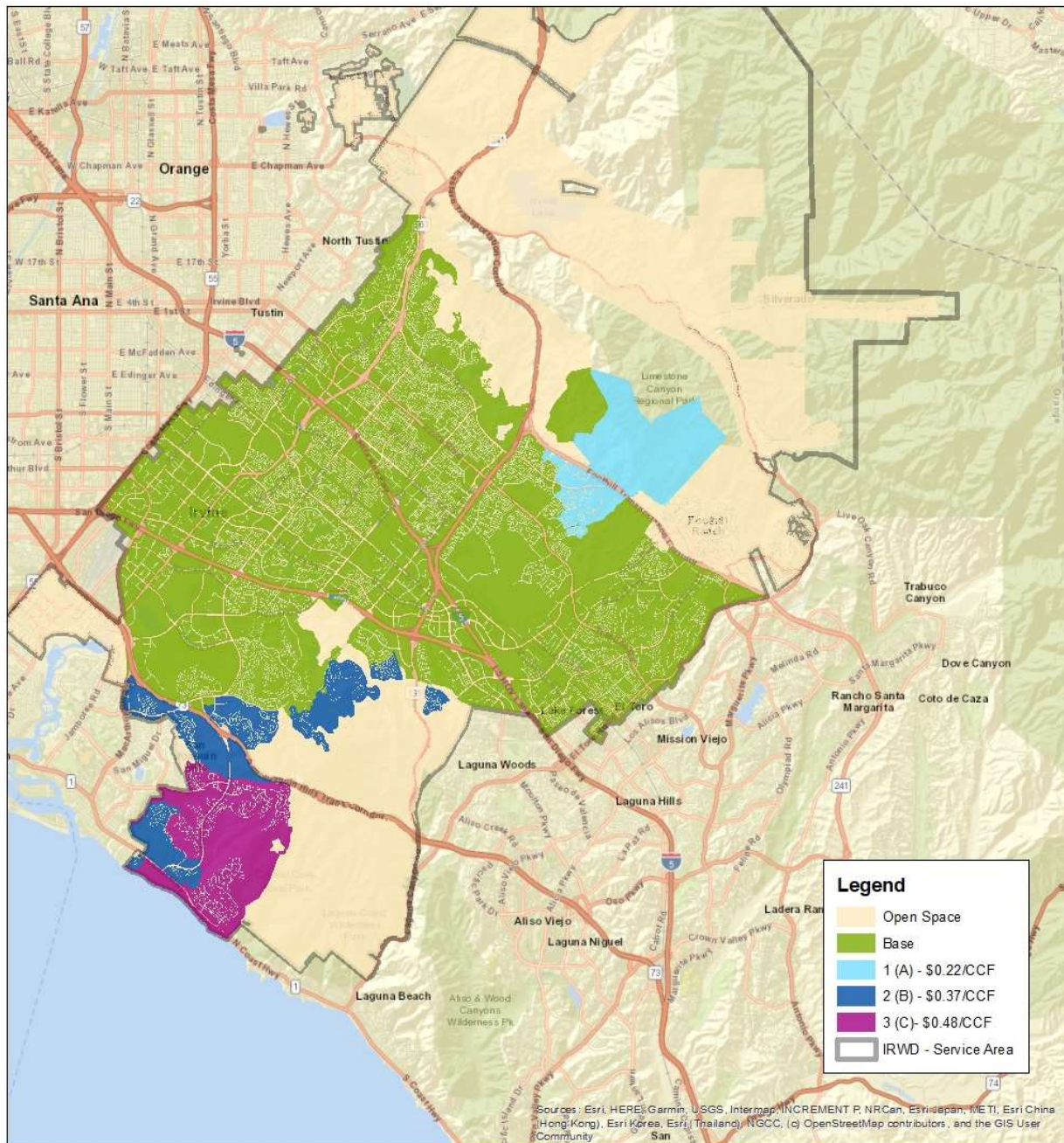
Surcharge area	Current Surcharge Rate	Proposed Surcharge Rate	Change in Surcharge Rate	Average Monthly Change in Bill Amount
Base	\$-	\$-	\$-	\$-
1	\$0.14	\$0.22	+\$0.08	\$18.77
2	\$0.25	\$0.37	+\$0.12	\$20.86
3	\$0.47	\$0.48	+\$0.01	\$1.02

Table 8 shows a comparison of current recycled water pumping surcharge rates to the proposed rates. Recycled water rates are expected to increase by \$0.01 to \$0.12 per ccf. Average monthly pumping surcharge bill amounts are expected to increase between \$1.02 to \$20.86 depending on the customer Pumping Surcharge Area assignment.



## Recycled System Pumping Surcharge Area Assignment Map

The map shown in Figure 3 below indicates the proposed pumping surcharge area assignments:



**Figure 3. Proposed Recycled (Non-Potable) Pumping Surcharge Areas**

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Exhibit "D"

**IRVINE RANCH WATER DISTRICT**

**Protest Letters received as of June 22, 2023**

	<b>Name</b>	<b>Address</b>
1	Craig Palm	24971 Heartwood Circle Lake Forest
2	Jared Bliese	2603 Elden Ave # B Costa Mesa
3	Kayla Wong / Viet Truong	23 Umbria Lake Forest
4	Ed Personius	24552 Via Del Rio Lake Forest
5	Robert Elliot	38 Marsala Irvine
6	Jon Constantine Saclolo	21156 River Glen Lake Forest

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# Exhibit "E"

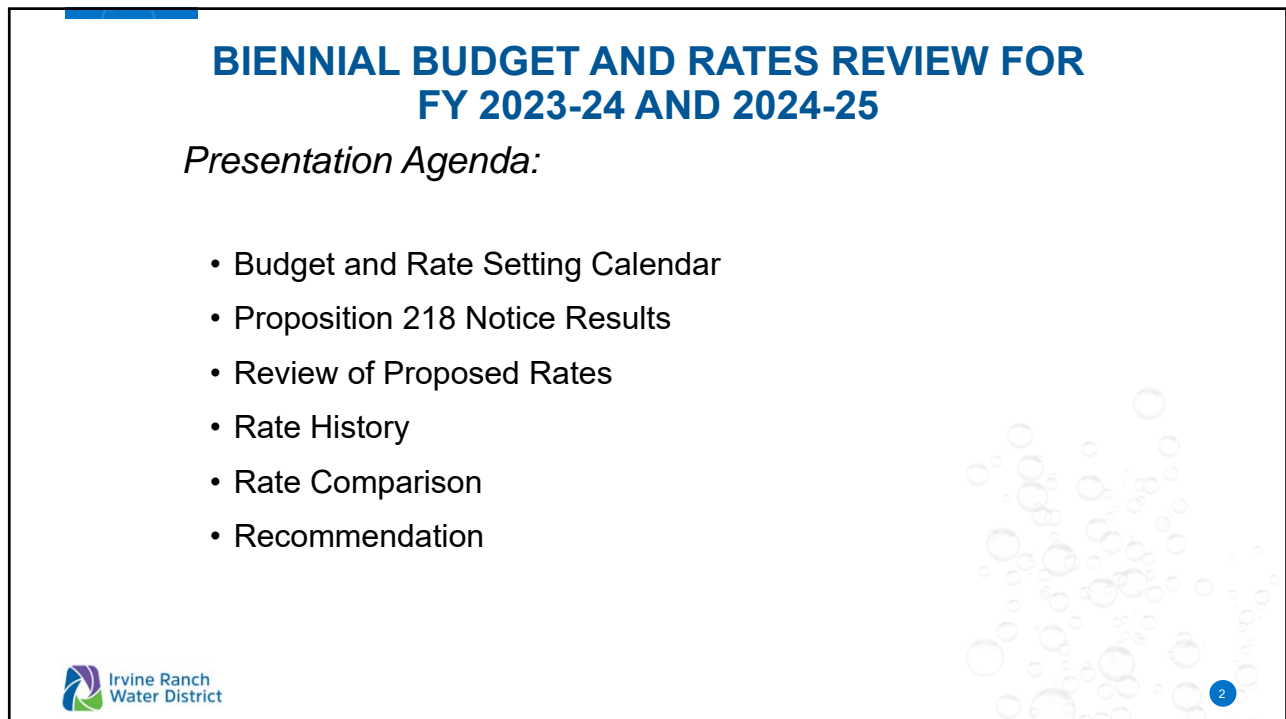


**FY 2023-24 & 2024-25  
APPROVAL OF PROPOSED  
RATES AND CHARGES**

**IRWD BOARD OF DIRECTORS MEETING**  
**JUNE 26, 2023**





1



**BIENNIAL BUDGET AND RATES REVIEW FOR  
FY 2023-24 AND 2024-25**

*Presentation Agenda:*

- Budget and Rate Setting Calendar
- Proposition 218 Notice Results
- Review of Proposed Rates
- Rate History
- Rate Comparison
- Recommendation



2

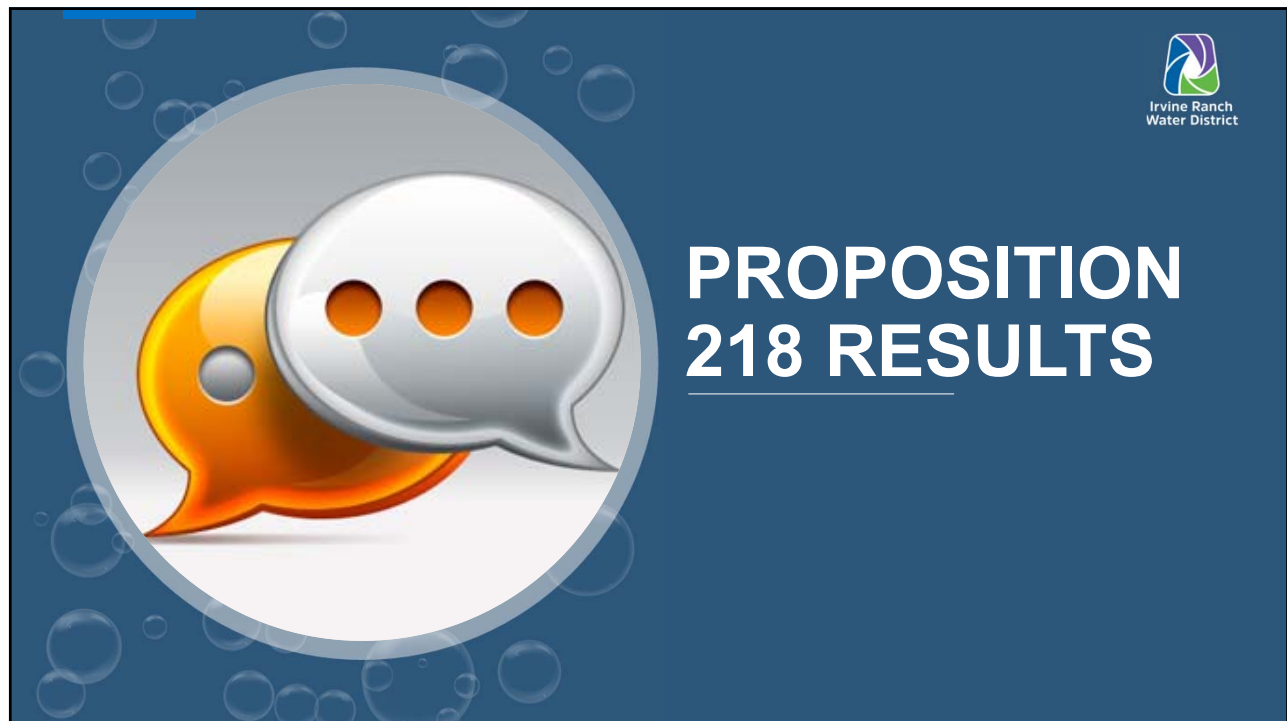
## SCHEDULE FOR BUDGET AND RATE ADOPTION

- Mar 06 Finance Committee Mtg / Budget Review and Preliminary Rate Recommendations
- Mar 22 Special Finance Committee Mtg - Budget Book Review with Directors and Rate Review
- Apr 04 Finance Committee Mtg / Budget Review and Rate Recommendations
- Apr 10 Public Workshop #1
- Apr 24 Public Workshop #2- Approval of Operating Budgets and Prop 218 Notices
- May 12 Mail Prop 218 Notices
- Jun 26 Public Hearing- Rates Adopted/Effective for FY 2023-24 and 2024-25
- Jul 01 Implementation date for FY 2023-24 Rates



3

3



The graphic features a dark blue background with a large, circular, 3D-style speech bubble icon on the left. The speech bubble is white with a grey shadow and contains three orange dots. To the right of the icon, the text "PROPOSITION 218 RESULTS" is written in large, white, bold, sans-serif capital letters. In the top right corner, the Irvine Ranch Water District logo is visible.

# PROPOSITION 218 RESULTS

4

## PROPOSITION 218 NOTICES

### Noticing Procedure & Results

May 11, 2023- 123,278 notices mailed

Separate notices for:

Residential, Non-residential (CII), Landscape/Agricultural, & Newport North

As of June 22, 2023, 6 response letters received

Verification of protest letter counts by the District's independent auditors (Davis Farr)



5

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## PROPOSITION 218 NOTICES

### Primary issues raised by the protest letters:

- 2 letter - Simple protest of the rate increase
- 1 letter - Hard to afford increased cost from inflation
- 3 letters - Request solutions for increased costs that do not include rate increases



6

6

# REVIEW OF PROPOSED RATES



7

## PROPOSED POTABLE WATER RATES

Proposed Variable Water Rates per ccf					
Tier	Current	FY 2023-24		FY 2024-25	
	Rates	Effective July 1, 2023	Change	Effective July 1, 2024	Change
Low Volume	\$ 1.53	\$ 1.75	\$ 0.22	\$ 1.99	\$ 0.24
Base	\$ 2.42	\$ 2.52	\$ 0.10	\$ 2.65	\$ 0.13
Inefficient	\$ 5.15	\$ 6.25	\$ 1.10	\$ 6.55	\$ 0.30
Wasteful	\$ 14.64	\$ 15.49	\$ 0.85	\$ 16.46	\$ 0.97



8

8

## PROPOSED STANDARD RATES

Proposed Water Service Fixed Monthly Charges for System Operation and Maintenance			
Meter size	Current Rates	Effective July 1, 2023	Effective July 1, 2024
5/8 x 3/4"	\$10.75	\$11.85	\$13.20
3/4" disc	\$16.15	\$17.80	\$19.80
1" disc	\$26.90	\$29.65	\$33.00
1 1/2" disc	\$64.50	\$71.10	\$79.20
2" disc	\$86.00	\$94.80	\$105.60
2" turbo	\$134.40	\$148.15	\$165.00
3" turbo	\$349.40	\$385.15	\$429.00
4" turbo	\$671.90	\$740.65	\$825.00
6" turbo	\$1,343.75	\$1,481.25	\$1,650.00
8" turbo	\$2,526.25	\$2,784.75	\$3,102.00
Residential master meter (shared) apartments and condominiums 5/8" x 3/4" meter	\$10.75	\$11.85	\$13.20



## PROPOSED STANDARD RATES

Proposed Sewer Service Fixed Monthly Charges for System Operations and Maintenance			
Usage	Current Rates	Effective July 1, 2023	Effective July 1, 2024
Average water usage exceeds 10 ccfs per month	\$29.75	\$33.24	\$36.79
Average water usage falls between 5 and 10 ccfs	\$25.50	\$28.78	\$31.86
Average water usage falls below 5 ccfs	\$20.45	\$23.10	\$25.70
<b>Commercial, Industrial, &amp; Public Authority</b>			
Quantity Service Charge (beyond 10 ccf)	\$2.19/ccf	\$3.00/ccf	\$3.07/ccf
Proposed Sewer Service Fixed Monthly Charges for Collection or Treatment Only			
Usage	Current Rates	Effective July 1, 2023	Effective July 1, 2024
Service Charge (Collection only)	\$9.25	\$10.95	\$11.55
Service Charge (Treatment only)	\$16.25	\$19.70	\$20.50



## PROPOSED RECYCLED WATER RATES

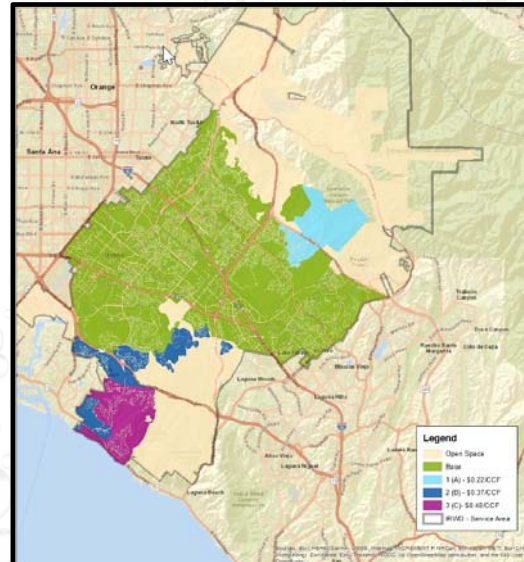
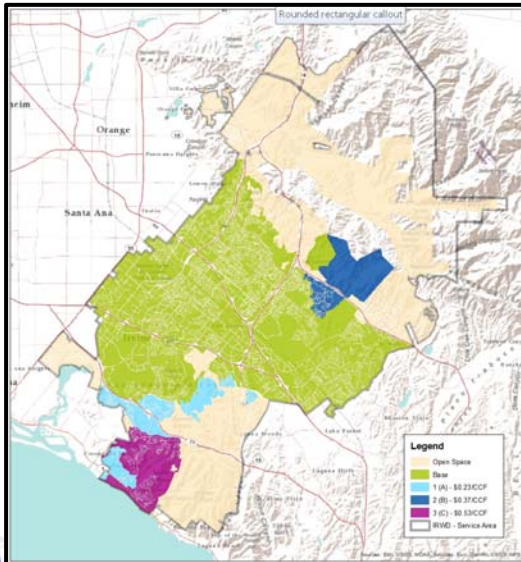
Proposed Variable Recycled Water Rates per ccf					
Tier	Current Rates	FY 2023-24		FY 2024-25	
		Effective July 1, 2023	Change	Effective July 1, 2024	Change
Low Volume	\$ 1.23	\$ 1.39	\$ 0.16	\$ 1.43	\$ 0.04
Base Rate	\$ 2.16	\$ 2.36	\$ 0.20	\$ 2.47	\$ 0.11
Inefficient	\$ 4.03	\$ 5.25	\$ 1.22	\$ 5.27	\$ 0.02
Wasteful	\$ 7.20	\$ 9.20	\$ 2.00	\$ 9.27	\$ 0.07



## PUMPING SURCHARGE AREAS - RECYCLED

PREVIOUS

UPDATED





## PROPOSED PUMPING SURCHARGE RATES

Proposed Potable Surcharge Rates per ccf					
Area	Current Rates	FY 2023-24		FY 2024-25	
		Effective July 1, 2023	Change	Effective July 1, 2024	Change
1	\$ 0.33	\$ 0.38	\$ 0.05	\$ 0.41	\$ 0.03
2	\$ 0.46	\$ 0.67	\$ 0.21	\$ 0.73	\$ 0.06
3	\$ 0.79	\$ 0.90	\$ 0.11	\$ 0.98	\$ 0.08
4	NA	\$ 1.72	NA	\$ 1.88	\$ 0.16

Proposed Recycled Surcharge Rates per ccf					
Area	Current Rates	FY 2023-24		FY 2024-25	
		Effective July 1, 2023	Change	Effective July 1, 2024	Change
A	\$ 0.14	\$ 0.23	\$ 0.09	\$ 0.25	\$ 0.02
B	\$ 0.25	\$ 0.37	\$ 0.12	\$ 0.40	\$ 0.03
C	\$ 0.47	\$ 0.53	\$ 0.06	\$ 0.58	\$ 0.05



13

13

## WSCP RATES

### FY 2023-24

LEVEL	Current	0	1	2	3	4	5	6
Low Volume	\$1.53	<b>\$1.75</b>	\$1.76	\$1.76	\$1.77	\$1.78	\$1.79	\$1.82
Base	\$2.42	<b>\$2.52</b>	\$2.59	\$2.69	\$2.79	\$2.95	\$3.24	\$3.64
Inefficient	\$5.15	<b>\$6.25</b>	\$6.41	\$6.68	\$6.81	\$6.92	\$7.50	\$8.49
Wasteful	\$14.64	<b>\$15.49</b>	\$16.28	\$17.07	\$17.98	\$19.09	\$21.25	\$24.30

### FY 2024-25

LEVEL	FY 23-24	0	1	2	3	4	5	6
Low Volume	\$1.75	<b>\$1.99</b>	\$1.99	\$2.00	\$2.00	\$2.01	\$2.02	\$2.05
Base	\$2.52	<b>\$2.65</b>	\$2.72	\$2.84	\$2.94	\$3.11	\$3.41	\$3.79
Inefficient	\$6.25	<b>\$6.55</b>	<b>\$6.66</b>	<b>\$6.74</b>	<b>\$6.82</b>	<b>\$6.93</b>	<b>\$7.43</b>	<b>\$8.38</b>
Wasteful	\$15.49	<b>\$16.46</b>	<b>\$17.25</b>	<b>\$18.06</b>	<b>\$18.97</b>	<b>\$20.05</b>	<b>\$22.18</b>	<b>\$25.18</b>



14

14

## OPERATING BUDGET AND RATES REVIEW

Typical Residential Customer	Current Rate	Proposed Rate	Change		Proposed Rate	Change	
	FY 2022-23	FY 2023-24	Rate	%	FY 2024-25	Rate	%
<b>Water</b>							
Service Charge *	\$10.75	\$11.85	\$1.10		\$13.20	\$1.35	
Commodity Charge **	<u>24.59</u>	<u>26.39</u>	<u>1.80</u>		<u>28.50</u>	<u>2.11</u>	
<i>Total Water Charge</i>	\$35.34	\$38.24	\$2.90		\$41.70	\$3.46	
<b>Sewer</b>							
Service Charge *	<u>\$20.45</u>	<u>\$23.10</u>	<u>\$2.65</u>		<u>\$25.70</u>	<u>\$2.60</u>	
<b>Total Typical Residential Monthly Bill</b>	<b>\$55.79</b>	<b>\$61.34</b>	<b>\$5.55</b>	<b>9.9%</b>	<b>\$67.40</b>	<b>\$6.06</b>	<b>9.9%</b>

\* Treated water service charge assumes a 5/8" x 3/4" meter. Both the water and sewer service charges include components for enhancement and replacement capital. No additions have been included for either fund.

\*\* Commodity charges for a typical residential customer are based on 12 ccf (District average).  
 Current Rates: Low Volume \$1.53 Base \$2.42  
 Proposed FY 2023-24: Low Volume \$1.75 Base \$2.52  
 Proposed FY 2024-25: Low Volume \$1.99 Base \$2.65







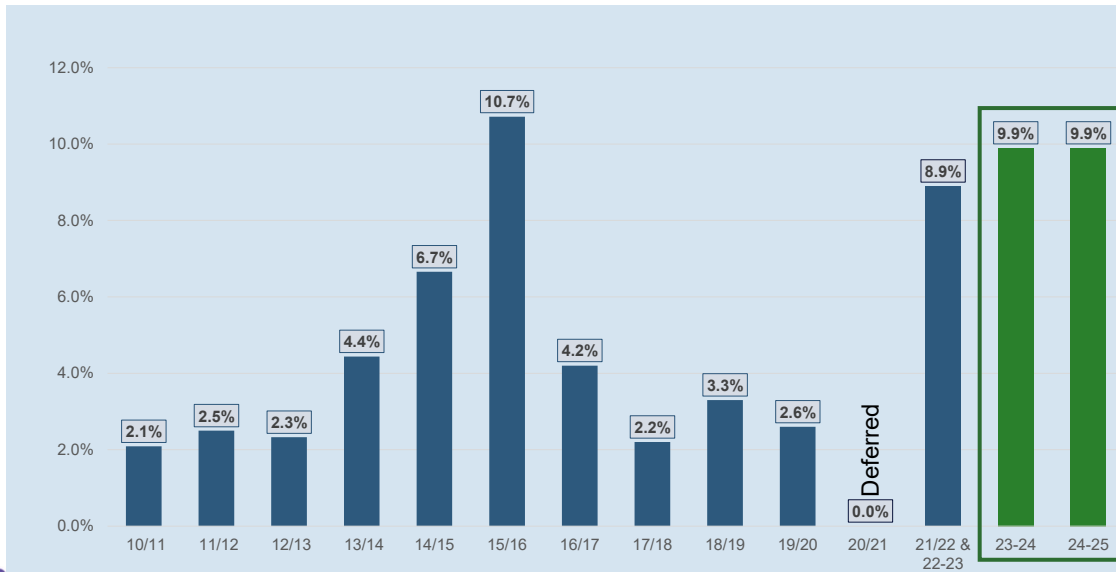
## RATE HISTORY AND COMPARISON




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## AVERAGE YEARLY RATE INCREASE HISTORY

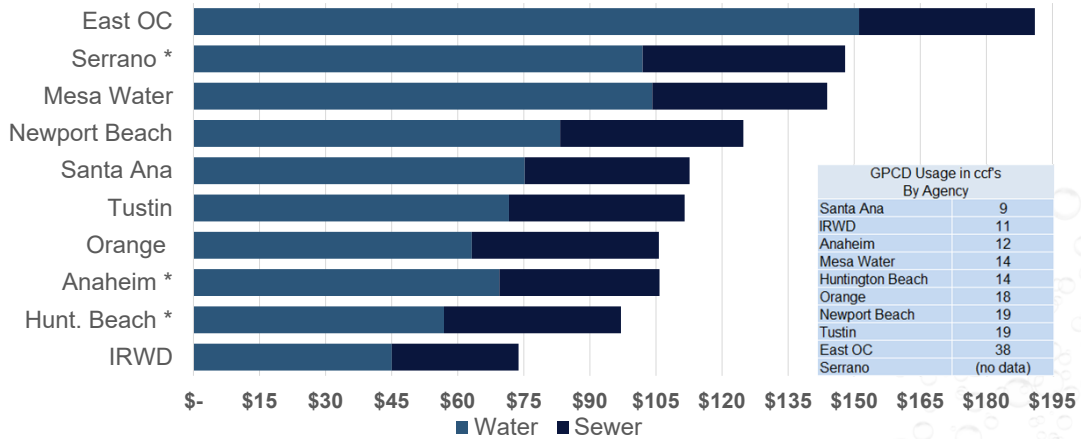


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## RATES COMPARISON FOR FY 2023-24

Monthly Water & Sewer Bill Based on 15 ccf of Usage and Groundwater Availability



\* Updated rates are not available at this time.

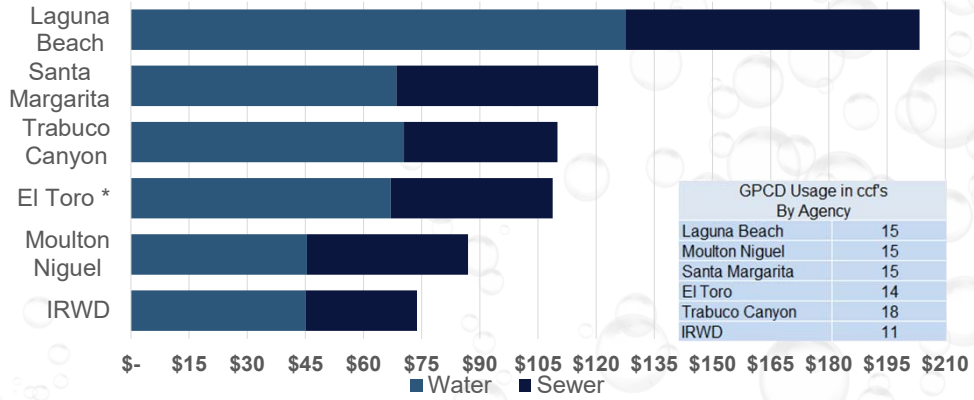


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18

## RATES COMPARISON FOR FY 2023-24

Monthly Water & Sewer Bill Based on 15 ccf Usage and Imported Water




\* Updated rates are not available at this time.



## RECOMMENDATION

That the Board adopt the proposed Rates and Charges effective July 1, 2023.

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June 26, 2023  
Prepared and  
submitted by: L. Bonkowski  
Approved by: Paul A. Cook 

CONSENT CALENDAR

BOARD MEETING MINUTES

SUMMARY:

Provided are the minutes of the May 22, 2023 Regular Board meeting for approval.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

Not applicable.

RECOMMENDATION:

THAT THE MINUTES OF THE MAY 22, 2023 REGULAR BOARD MEETING BE APPROVED AS PRESENTED.

LIST OF EXHIBITS:

Exhibit "A" – May 22, 2023 Minutes

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Exhibit "A"

MINUTES OF REGULAR MEETING –MAY 22, 2023

The regular meeting of the Board of Directors of the Irvine Ranch Water District (IRWD) was called to order at 5:00 p.m. by President McLaughlin on May 22, 2023 at the District offices, 15600 Sand Canyon Avenue, Irvine.

Directors Present: Withers, Reinhart, Swan, and McLaughlin

Directors Absent: LaMar

Also Present: General Manager Cook, Executive Director of Operations Chambers, Executive Director of Technical Services Burton, Executive Director of Water Policy Weghorst, Executive Director of Finance and Administration Clary, Director of Strategic Communications and Advocacy / Deputy General Counsel Compton, Director of Water Resources Sanchez, Director of Human Resources Mitcham, Director of Water Quality and Regulatory Compliance Colston, Director of Safety and Security Choi, Director of Maintenance Manning, Director of Treasury Morris, Director of Information Services Kaneshiro, Secretary Bonkowski, Assistant Secretary Swan, General Counsel Collins, and members of the staff and public.

Written Communications: None

Oral Communications: Director Swan requested that staff schedule a Board workshop to review the feasibility and projected increased costs for the proposed Syphon Reservoir Improvement Project.

Items too late to be agendized: None

PRESENTATION

4. SCIENCE FAIR WINNERS

Community Relations staff members Dawn Jordan and Julie Bendzick-Sin recognized students for their water-related projects entered in this year's 42<sup>nd</sup> annual Irvine Unified School District Science Fair Project program.

WORKSHOP

5. BOARD MEMBER VIRTUAL MEETING PARTICIPATION OPTIONS

Legal Counsel Collins reviewed the three options for participation in Brown Act meetings and the circumstances in which they may be used by Board members.

CONSENT CALENDAR

Following an inquiry by Director Swan on a water resources bill, Director of Strategic Communications and Advocacy / Deputy General Counsel Compton said she would research it for him. There being no further comments, on MOTION by Reinhart, seconded by Swan and unanimously carried, CONSENT CALENDAR ITEMS 6 THROUGH 14 WERE APPROVED AS FOLLOWS:

CONSENT CALENDAR (CONTINUED)

6. BOARD MEETING MINUTES

Recommendation: That the minutes of the April 24, 2023 Regular Board meeting be approved as presented.

7. 2023 LEGISLATIVE AND REGULATORY UPDATE

Recommendation: That the Board adopt a “Support” position on AB 334 (Blanca Rubio and SCR 52 (Alvarado-Gil); an “Oppose Unless Amended” position on AB 249 (Holden); and a “Watch” position on AB SB 48 (Becker) and SB 414 (Allen).

8. ACWA 2023 ELECTION FOR THE 2024-2025 TERM

Recommendation: That the Board designate Director Steve LaMar as IRWD’s voting representative for both the ACWA presidential and vice-presidential election and for the election of the Region 10 Board of Directors and authorize staff to submit the “Authorized Voting Representative” form to ACWA designating Director LaMar as the District’s authorized voting representatives for the upcoming presidential and vice-presidential election.

9. APRIL 2023 TREASURY REPORT

Recommendation: That the Board receive and file the Treasurer’s Investment Summary report, the summary of fixed and variable rate debt, and the disclosure report of reimbursements to Board members and staff, approve the April 2023 summary of payroll ACH payments in the total amount of \$2,333,367, and approve the April 2023 accounts payable disbursement summary of warrants 435047 through 435568, Workers’ Compensation distributions, ACH payments, virtual card payments, wire transfers, payroll withholding distributions and voided checks in the total amount of \$22,765,058.

10. WATER EFFICIENCY TACTICAL INCENTIVE FUNDING AUTHORIZATION

Recommendation: That the Board authorize the General Manager to allocate \$526,000 in funding to the FY 2023-24 rebate programs administered through the Water Conservation Participation Agreement between MWDOC and IRWD; and to execute addenda to the agreement as may be necessary to allocate funds to specific programs and modify device incentive levels based on customer participation rates and regional program funding levels.

11. WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS, AND PROGRAMS

Recommendation: That the Board authorize the General Manager to execute a letter agreement with Dudley Ridge Water District to facilitate the delivery and exchange / transfer of up to 6,000 AF of IRWD Article 21 water to the IRWD Water Bank for the benefit of IRWD based on the draft terms presented, subject to changes approved by IRWD legal counsel.



CONSENT CALENDAR (CONTINUED)

12. REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF IRVINE FOR THE FISCAL YEAR 2022-23 ANNUAL STREET REHABILITATION AND SLURRY SEAL PROJECT

Recommendation: That the Board authorize the General Manager to execute the Reimbursement Agreement between IRWD and the City of Irvine for Adjustment of Street Utilities to Grade for the FY 2022-23 Annual Street Rehabilitation and Slurry Seal Project, subject to non-substantive changes.

13. THE MEADOWS LAKE FOREST TOLL BROTHERS CAPITAL FACILITIES

Recommendation: That the Board authorize the General Manager to execute a reimbursement agreement with Toll Brothers, Inc. for The Meadows Lake Forest Capital Domestic Water, Sanitary Sewer, and Recycled Water Improvements; and authorize the General Manager to accept Toll Brothers, Inc.'s construction contract with FYDAQ Company Inc. in the amount of \$1,355,413 for The Meadows Lake Forest Capital Domestic Water, Sanitary Sewer and Recycled Water Improvements, Projects 10096, 11749, and 11582.

14. PLANNING AREA 51 HERITAGE FIELDS CAPITAL FACILITIES

Recommendation: That the Board authorize the General Manager to accept Heritage Fields' construction contract with FYDAQ Company Inc. in the amount of \$250,775.38 for the District 5 Cadence and Treble Capital Domestic Water and Recycled Water Improvements, Projects 10796 and 10804.

ACTION CALENDAR

15. MICHELSON WATER RECYCLING PLANT TERTIARY FILTER IMPROVEMENTS BUDGET INCREASE, CONSULTANT SELECTION, AND CONSTRUCTION AWARD

Executive Director of Technical Services Burton reported that in April 2021, IRWD retained HDR to design improvements to replace obsolete equipment and infrastructure at the tertiary filter tanks area, air scour blower area, and the backwash supply pumps area including valves, slide gates, instrumentation, above-ground piping, air compressor, air scour blower, backwash supply pumps, a programmable logic controller, electrical equipment, and conduits. Mr. Burton said that the scope also includes the construction of a new electrical building, concrete replacement at the backwash supply tank, detailed construction sequencing, temporary backwash supply pumping, and temporary instrumentation and control systems to allow the work to proceed while maintaining operation of the tertiary filters.

Mr. Burton said that HDR completed the design at a fee of \$1,250,000 and at staff's request submitted a fee proposal in the amount of \$1,086,550 to provide construction phase engineering services. He said that the proposal includes attending project construction meetings and site visits, responding to contractor requests for information, making plan revisions, reviewing shop

drawings, maintaining an online document management system, assisting with commissioning and startup, and preparing final record drawings. Staff reviewed the proposal and found the scope of construction phase engineering support is commensurate with the requirements of the project and the fee to be fair and reasonable.

Mr. Burton said that this project was advertised to a select bidders list of 22 mechanical contractors on February 24, 2023. The bid opening occurred on May 9, 2023, with three bids received with Innovative Construction Solutions as the apparent low bidder with a bid of \$18,100,000. He said that the bids ranged from one to 11 percent higher than the engineer's estimate of \$17,899,000. Innovative Construction Solutions has experience with mechanical projects and is currently constructing the District's MWRP Fueling Facility.

Director Reinhart said that the consultant selection was reviewed by the Engineering and Operations Committee on May 16, 2023, and on MOTION by Reinhart, seconded by Withers and unanimously carried, THE BOARD AUTHORIZED A BUDGET INCREASE FOR PROJECT 07892 IN THE AMOUNT OF \$14,500,000, FROM \$9,875,600 TO \$24,375,600; AUTHORIZED THE GENERAL MANAGER TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT IN THE AMOUNT OF \$1,086,550 WITH HDR ENGINEERING, INC. FOR CONSTRUCTION PHASE ENGINEERING SERVICES; AND AUTHORIZED THE GENERAL MANAGER TO EXECUTE A CONSTRUCTION CONTRACT WITH INNOVATIVE CONSTRUCTION SOLUTIONS IN THE AMOUNT OF \$18,100,000 FOR THE MICHELSON WATER RECYCLING PLANT TERTIARY FILTER IMPROVEMENTS, PROJECT 07892.

16. GEOGRAPHIC INFORMATION SYSTEM MASTER PLAN AND ENTERPRISE AGREEMENT

Using a PowerPoint Presentation, Engineering Manager Akiyoshi, using charts and graphs, reviewed data management, maintenance, and ownership, staffing and interdepartmental coordination, and optimizing the Geographic Information System (GIS) for IRWD's needs.

Mr. Akiyoshi responded to several inquiries by Director Swan relative to the benefits of upgrading the system and costs and noting that there will not be any updates or patches available for the existing GIS system after March 2024. Director Reinhart reported that this item was reviewed and approved by the Engineering and Operations Committee on May 16, 2023, and on MOTION by Reinhart, seconded by Withers, and carried (Reinhart, Withers, and McLaughlin voting ayes, and Swan voting no) (3-1 vote), THE BOARD AUTHORIZED THE GENERAL MANAGER TO EXECUTE AN ENTERPRISE AGREEMENT WITH ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE IN THE TOTAL AMOUNT OF \$480,000 FOR A TERM OF THREE YEARS.

17. GENERAL MANAGER'S REPORT

General Manager Cook said that the District received a J.D. Powers Award for the "highest customer satisfaction" for residential water service in the western United States for 2023.

18. COMMUNITY UPDATES

General Manager Cook said that he spoke with Consultant Newell and all is well in the canyon.

19. DIRECTORS' COMMENTS

Director Swan said that he attended the meetings on the list except for the MWDOC Special Board Meeting and its Administration and Finance Committee meeting.

Director Reinhart reported that he attended the meetings on the list except for the MWDOC Special Board meetings, an OCWD Board meeting and two OCWD Committee meetings, and a SOCWA Board meeting.

Director Withers reported on the meetings on the list along with a VerdeXchange meeting on May 1.

Director McLaughlin reported on her attendance at a SCWD Legislative Task Force, but said she was unable to attend the WACO meeting.

20. ADJOURNMENT

President McLaughlin adjourned the meeting at 6:39 p.m.

APPROVED and SIGNED this 26th day of June 2023.

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President, IRVINE RANCH WATER DISTRICT

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Secretary, IRVINE RANCH WATER DISTRICT

APPROVED AS TO FORM:

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Claire Hervey Collins, General Counsel  
Hanson Bridgett LLP

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June 26, 2023

Prepared by: O. Mendoza / J. Davis

Submitted by: K. Morris / C. Clary

Approved by: Paul A. Cook



## CONSENT CALENDAR

### MAY 2023 TREASURY REPORT

#### SUMMARY:

The following is submitted for the Board's information and approval:

- A. The May 2023 Investment Summary Report. This Investment Summary Report conforms with the 2023 Investment Policy and provides sufficient liquidity to meet estimated expenditures during the next six months, as outlined in Exhibit "A";
- B. The Summary of Fixed and Variable Rate Debt as of May 31, 2023, as outlined in Exhibit "B";
- C. The Monthly Interest Rate Swap Summary as of May 31, 2023, as outlined in Exhibit "C";
- D. The May 31, 2023 Disbursement Summary of warrants 435569 through 436185, Workers' Compensation distributions, ACH payments, virtual card payments, wire transfers, payroll withholding distributions, and voided checks in the total amount of \$16,472,620, as outlined in Exhibit "D";
- E. The Summary of Payroll ACH payments in the total amount of \$2,331,458 as outlined in Exhibit "E"; and
- F. The Disclosure Report of Reimbursements to Board members and staff for May 2023, detailing payments or reimbursements for individual charges of \$100 or more per transaction, as outlined in Exhibit "F".

#### FISCAL IMPACTS:

As of May 31, 2023, the book value of the investment portfolio was \$381,254,886, with a 3.52% rate of return and a market value of \$377,943,531. Based on IRWD's March 31, 2023, quarterly real estate investment rate of return of 15.01%, the weighted average return for the fixed income and real estate investments was 5.85%.

As of May 31, 2023, the outstanding principal amount of fixed and variable rate debt was \$604,890,000. The monthly weighted average all-in variable rate was 3.01%. Including IRWD's weighted average fixed rate bond issues of 3.72% and the negative cash accruals from fixed payer interest rate swaps, which hedge a portion of the District's variable rate debt, the total average debt rate was 3.53%.

Payroll ACH payments totaled \$2,331,458 and wire transfers, all other ACH payments, and checks issued for debt service, accounts payable, payroll, water purchases, and voided checks for May totaled \$16,472,620.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

All items in this report were not submitted to a Committee; the investment and debt reports are submitted to the Finance and Personnel Committee monthly.

RECOMMENDATION:

THAT THE BOARD RECEIVE AND FILE THE TREASURER'S INVESTMENT SUMMARY REPORT, THE SUMMARY OF FIXED AND VARIABLE RATE DEBT, AND THE DISCLOSURE REPORT OF REIMBURSEMENTS TO BOARD MEMBERS AND STAFF, APPROVE THE MAY 2023 SUMMARY OF PAYROLL ACH PAYMENTS IN THE TOTAL AMOUNT OF \$2,331,458, AND APPROVE THE MAY 2023 ACCOUNTS PAYABLE DISBURSEMENT SUMMARY OF WARRANTS 435569 THROUGH 436185, WORKERS' COMPENSATION DISTRIBUTIONS, ACH PAYMENTS, VIRTUAL CARD PAYMENTS, WIRE TRANSFERS, PAYROLL WITHHOLDING DISTRIBUTIONS AND VOIDED CHECKS IN THE TOTAL AMOUNT OF \$16,472,620.

LIST OF EXHIBITS:

Exhibit "A" – Investment Summary Report

Exhibit "B" – Summary of Fixed and Variable Debt

Exhibit "C" – Monthly Interest Rate Swap Summary

Exhibit "D" – Monthly Summary of District Disbursements

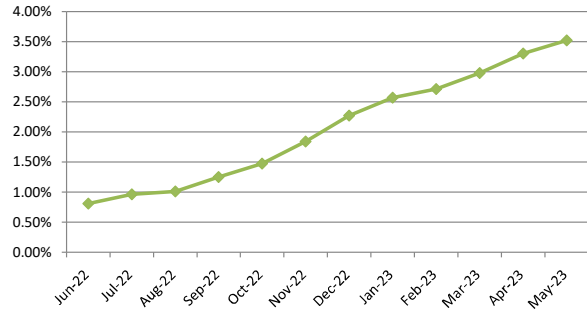
Exhibit "E" – Monthly Payroll ACH Summary

Exhibit "F" – Disclosure of Reimbursements to Board Members and Staff

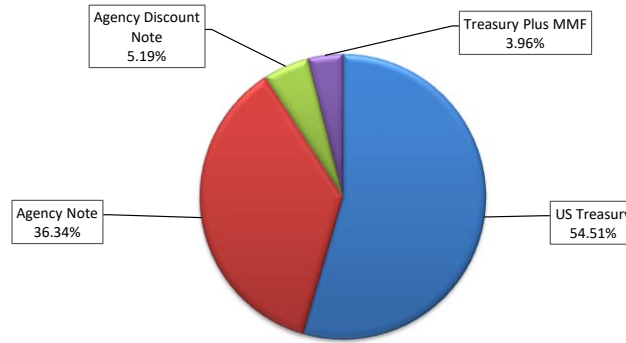
# Exhibit "A"

## Irvine Ranch Water District Investment Portfolio Summary May 2023

**Monthly Fixed Income Yield**



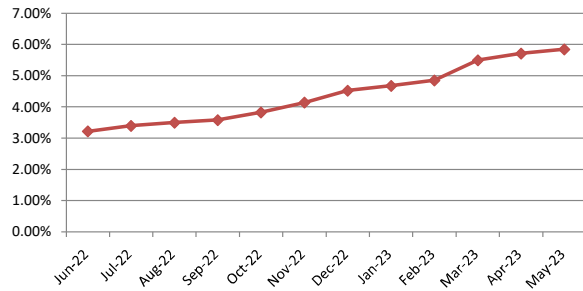
**Portfolio Distribution**



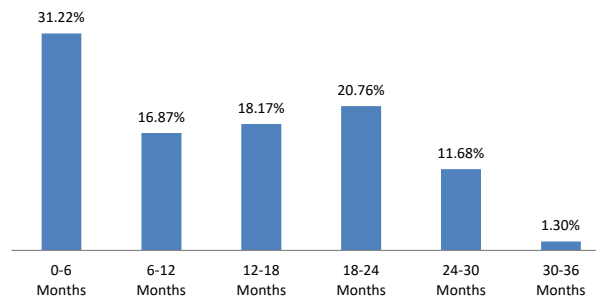
**Investment Summary**

Type	PAR	Book Value	Market Value
US Treasury	210,000,000	207,932,214	205,887,850
Agency Note	140,000,000	138,263,192	137,009,600
Agency Discount	20,000,000	19,790,849	19,777,450
Treasury Plus MMF	15,268,631	15,268,631	15,268,631
<b>Grand Total</b>	<b>385,268,631</b>	<b>381,254,886</b>	<b>377,943,531</b>

**Weighted Average Return Including Real Estate Portfolio**



**Maturity Distribution**



**Top Issuers**

Issuer	PAR	% Portfolio
US Treasury	210,000,000	54.51%
Fed Home Loan Bank	85,000,000	22.06%
Fed Farm Credit Bank	55,000,000	14.28%
Wells Fargo / Allspring	15,268,631	3.96%
Fed Home Loan Mortgage Corp	15,000,000	3.89%
Fed Natl Mortgage Assoc	5,000,000	1.30%
<b>Grand Total</b>	<b>385,268,631</b>	<b>100.00%</b>

IRVINE RANCH WATER DISTRICT  
INVESTMENT SUMMARY REPORT

05/31/23

SETTLMT	Call Schedule	Initial Call	Maturity Date	Rating	INVESTMENT TYPE	INSTITUTION / ISSUER	PAR Amount	COUPON DISCOUNT	YIELD	ORIGINAL COST	CARRY VALUE	MARKET VALUE <sup>(1)</sup> 5/31/2023	UNREALIZED <sup>(2)</sup> GAIN/(LOSS)
04/06/23			06/01/23		LAIF	State of California Tsy.	\$0.00		2.994%	\$0.00	\$0.00	0.00	0.00
05/31/23			06/01/23		Treasury Plus MMF	Wells Fargo / Allspring	15,268,631.11		4.982%	\$15,268,631.11	\$15,268,631.11	15,268,631.11	0.00
02/28/23	NA	NA	06/15/23	NR	FHLB - Discount Note	Fed Home Loan Bank	5,000,000	4.770%	4.906%	4,929,112.50	4,990,725.00	4,991,450.00	725.00
05/05/23	NA	NA	06/22/23	Aaa/NR/AAA	Treasury - Bill	US Treasury	5,000,000	5.110%	5.217%	4,965,933.33	4,985,095.83	4,985,300.00	204.17
12/29/21	NA	NA	06/30/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	0.563%	4,967,187.50	4,998,263.57	4,979,550.00	(18,713.57)
04/21/22	NA	NA	06/30/23	Aaa/AA/AAA	Treasury - Note	US Treasury	10,000,000	1.375%	2.107%	9,914,062.50	9,994,270.83	9,968,900.00	(25,370.83)
01/24/23	NA	NA	07/12/23	NR	FHLB - Discount Note	Fed Home Loan Bank	5,000,000	4.685%	4.857%	4,890,032.64	4,973,321.53	4,971,650.00	(1,671.53)
03/31/23	NA	NA	07/19/23	NR	FHLB - Discount Note	Fed Home Loan Bank	5,000,000	4.675%	4.809%	4,928,576.39	4,968,833.33	4,966,800.00	(2,033.33)
04/21/23	NA	NA	07/20/23	Aaa/NR/AAA	Treasury - Bill	US Treasury	10,000,000	4.930%	5.061%	9,876,750.00	9,932,897.22	9,930,800.00	(2,097.22)
01/11/22	NA	NA	07/31/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	0.710%	4,954,882.81	4,995,217.26	4,956,850.00	(38,367.26)
02/28/22	NA	NA	07/31/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	1.408%	4,909,960.94	4,989,570.77	4,956,850.00	(32,720.77)
03/31/23	NA	NA	08/03/23	Aaa/NR/AAA	Treasury - Bill	US Treasury	5,000,000	4.570%	4.708%	4,920,659.70	4,960,012.49	4,954,850.00	(5,162.49)
01/13/22	NA	NA	08/15/23	Aaa/AA/AAA	Treasury - Note	US Treasury	10,000,000	0.125%	0.769%	9,898,437.50	9,986,844.24	9,893,100.00	(93,744.24)
02/15/22	NA	NA	08/31/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	1.473%	4,898,046.88	4,983,491.58	4,934,550.00	(48,941.58)
08/23/22	NA	NA	09/15/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	3.154%	4,842,968.75	4,957,099.71	4,924,600.00	(32,499.71)
11/26/21	NA	NA	09/30/23	Aaa/AA/AAA	Treasury - Note	US Treasury	10,000,000	0.250%	0.572%	9,941,015.63	9,989,395.08	9,831,600.00	(157,795.08)
01/13/23	NA	NA	10/03/23	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	4.750%	4.809%	4,998,200.00	4,999,151.33	4,995,350.00	(3,801.33)
03/31/22	NA	NA	10/31/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	1.625%	2.155%	4,958,984.38	4,989,232.51	4,923,850.00	(65,382.51)
04/21/22	NA	NA	10/31/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	1.625%	2.380%	4,943,750.00	4,984,677.42	4,923,850.00	(60,827.42)
03/31/22	NA	NA	11/30/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.500%	2.210%	4,860,742.19	4,958,382.72	4,881,450.00	(76,932.72)
04/21/22	NA	NA	11/30/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.500%	2.462%	4,846,093.75	4,952,362.35	4,881,450.00	(70,912.35)
08/31/22	NA	NA	12/08/23	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	3.375%	3.576%	4,987,445.00	4,994,858.94	4,953,350.00	(41,508.94)
04/14/22	NA	NA	12/15/23	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.125%	2.213%	4,829,687.50	4,944,997.44	4,863,100.00	(81,897.44)
01/17/23	NA	NA	01/12/24	NR	FHLB - Discount Note	Fed Home Loan Bank	5,000,000	4.545%	4.771%	4,772,750.00	4,857,968.75	4,847,550.00	(10,418.75)
03/22/22	NA	NA	01/31/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	0.875%	2.013%	4,896,484.38	4,962,856.16	4,856,050.00	(106,806.16)
08/31/22	NA	NA	01/31/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.500%	3.445%	4,935,156.25	4,969,455.84	4,910,150.00	(59,305.84)
12/16/22	NA	NA	02/15/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.750%	4.531%	4,899,804.69	4,939,083.13	4,911,550.00	(27,533.13)
03/22/22	NA	NA	02/29/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	1.500%	2.020%	4,950,781.25	4,981,048.35	4,862,100.00	(118,948.35)
03/10/22	NA	NA	03/08/24	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	10,000,000	1.875%	1.680%	10,038,080.00	10,014,678.30	9,745,600.00	(269,078.30)
04/21/22	NA	NA	04/30/24	Aaa/AA/AAA	Treasury - Note	US Treasury	10,000,000	2.000%	2.600%	9,882,421.88	9,946,930.96	9,709,000.00	(237,930.96)
05/31/22	NA	NA	05/31/24	Aaa/AA+/AAA	Treasury - Note	US Treasury	10,000,000	2.500%	2.560%	9,988,281.25	9,994,148.64	9,737,900.00	(256,248.64)
08/17/22	NA	NA	06/14/24	Aaa/AA+/AAA	FHLB - Note	Fed Home Loan Bank	5,000,000	3.125%	3.315%	4,983,200.00	4,990,453.97	4,904,200.00	(86,253.97)
12/16/22	NA	NA	06/14/24	Aaa/AA+/AAA	FHLB - Note	Fed Home Loan Bank	5,000,000	4.875%	4.611%	5,018,300.00	5,012,702.75	4,978,450.00	(34,252.75)
12/01/22	NA	NA	07/02/24	Aaa/AA+/AAA	FNMA - Note	Fed Natl Mortgage Assoc	5,000,000	1.750%	4.450%	4,795,376.45	4,859,696.81	4,838,850.00	(20,846.81)
08/17/22	NA	NA	07/31/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	3.000%	3.249%	4,976,562.50	4,986,016.28	4,884,400.00	(101,616.28)
08/31/22	NA	NA	08/26/24	Aaa/AA+/NR	FFCB - Note	Fed Farm Credit Bank	5,000,000	3.375%	3.500%	4,988,050.00	4,992,560.06	4,905,500.00	(87,060.06)
S 09/09/22	One Time	11/28/2022	08/28/24	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	4.000%	3.950%	4,995,000.00	4,996,842.84	4,941,850.00	(54,992.84)
02/28/23	One Time	8/28/2023	08/28/24	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	5.250%	5.338%	4,993,750.00	4,994,812.61	4,973,850.00	(20,962.61)
08/31/22	NA	NA	09/13/24	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	3.250%	3.530%	4,972,750.00	5,004,998.99	4,894,200.00	(110,798.99)
09/30/22	NA	NA	09/13/24	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	3.250%	4.340%	4,898,930.00	4,933,469.33	4,894,200.00	(39,269.33)
09/30/22	NA	NA	09/26/24	Aaa/AA+/NR	FFCB - Note	Fed Farm Credit Bank	5,000,000	4.250%	4.334%	4,957,100.00	4,997,151.44	4,957,100.00	(37,651.44)
10/17/22	NA	NA	10/17/24	Aaa/AA+/NR	FFCB - Note	Fed Farm Credit Bank	10,000,000	4.375%	4.535%	9,969,800.00	9,979,178.11	9,918,600.00	(60,578.11)
10/31/22	NA	NA	11/15/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.250%	4.489%	4,783,984.38	4,845,661.76	4,822,650.00	(23,011.76)
12/22/22	NA	NA	11/18/24	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	5,000,000	0.875%	4.260%	4,693,316.75	4,717,050.00	4,717,050.00	(47,107.50)
10/31/22	NA	NA	12/31/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.250%	4.471%	4,773,046.88	4,834,083.51	4,813,850.00	(20,233.51)
10/31/22	NA	NA	12/31/24	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.250%	4.483%	4,771,875.00	4,833,226.80	4,813,850.00	(19,376.80)
10/31/22	NA	NA	01/15/25	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	1.125%	4.476%	4,651,562.50	4,743,529.28	4,724,800.00	(18,729.28)
10/31/22	NA	NA	01/31/25	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.500%	4.483%	4,789,843.75	4,845,312.50	4,829,100.00	(16,212.50)
02/13/23	NA	NA	02/13/25	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	5.020%	5.020%	5,000,000.00	5,000,000.00	4,952,550.00	(47,450.00)
02/07/23	NA	NA	02/14/25	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	5,000,000	1.750%	4.500%	4,737,350.00	4,777,921.95	4,764,600.00	(13,321.95)
12/30/22	NA	NA	02/28/25	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	2.750%	4.317%	4,839,453.13	4,870,507.08	4,848,450.00	(22,057.08)
02/07/23	NA	NA	03/14/25	Aaa/AA+/NR	FHLB - Note	Fed Home Loan Bank	5,000,000	4.250%	4.518%	4,973,050.00	4,977,060.84	4,967,000.00	(10,060.84)
12/30/22	NA	NA	03/15/25	Aaa/AA/AAA	Treasury - Note	US Treasury	5,000,000	1.750%	4.329%	4,731,250.00	4,782,265.82	4,760,350.00	(21,915.82)
04/12/23	NA	NA	03/31/25	Aaa/AA/AAA	Treasury - Note	US Treasury	20,000,000	3.875%	4.073%	19,925,781.25	19,930,942.50	19,771,200.00	(159,742.50)



IRVINE RANCH WATER DISTRICT  
INVESTMENT SUMMARY REPORT

05/31/23

SETTLMT	Call Schedule	Initial Call	Maturity Date	Rating	INVESTMENT TYPE	INSTITUTION / ISSUER	PAR Amount	COUPON DISCOUNT	YIELD	ORIGINAL COST	CARRY VALUE	MARKET VALUE <sup>(1)</sup> 5/31/2023	UNREALIZED <sup>(2)</sup> GAIN/(LOSS)
12/22/22	NA	NA	04/01/25	Aaa/AA+/AAA	FHLB - Note	Fed Home Loan Bank	5,000,000	4.200%	4.160%	5,004,550.00	5,003,668.47	4,972,000.00	(31,668.47)
12/08/22	Quarterly	02/12/2023	05/12/25	Aaa/AA+/AAA	FHLMC - Note	Fed Home Loan Mortgage Corp	5,000,000	3.050%	4.427%	4,843,000.00	4,874,010.16	4,818,500.00	(55,510.16)
01/11/23	NA	NA	05/15/25	Aaa/AA+/AAA	Treasury - Note	US Treasury	5,000,000	2.750%	4.148%	4,845,312.50	4,870,822.37	4,842,200.00	(28,622.37)
12/13/22	NA	NA	06/13/25	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	5,000,000	4.250%	4.340%	4,989,400.00	4,991,373.71	4,972,600.00	(18,773.71)
12/13/22	NA	NA	06/13/25	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	5,000,000	4.250%	4.352%	4,988,000.00	4,990,234.39	4,972,600.00	(17,634.39)
04/24/23	NA	NA	07/24/25	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	10,000,000	4.250%	4.253%	10,000,000.00	10,000,000.00	9,959,500.00	(40,500.00)
04/21/23	NA	NA	09/23/25	Aaa/AA+/AAA	FHLMC - Note	Fed Home Loan Mortgage Corp	10,000,000	0.375%	4.127%	9,143,400.00	9,183,039.50	9,128,100.00	(54,939.50)
12/01/22	NA	NA	10/15/25	Aaa/AA+/AAA	Treasury - Note	US Treasury	5,000,000	4.250%	4.298%	4,993,359.38	4,994,511.52	4,999,600.00	5,088.48
12/01/22	Continuous after	9/12/2023	12/12/25	Aaa/AA+/AAA	FFCB - Note	Fed Farm Credit Bank	5,000,000	4.125%	4.694%	4,920,500.00	4,933,570.46	4,884,000.00	(49,570.46)
SUB-TOTAL							<u>\$385,268,631</u>			<u>\$378,876,775.17</u>	<u>\$381,254,885.70</u>	<u>\$377,943,531.11</u>	<u>(\$3,311,354.59)</u>
TOTAL INVESTMENTS							<u>\$385,268,631</u>			<u>\$378,876,775.17</u>	<u>\$381,254,885.70</u>	<u>\$377,943,531.11</u>	<u>(\$3,311,354.59)</u>
					Petty Cash					3,400.00			
					Ck Balance	Bank of America		ECR	1.72%	1,259,901.72			
					Ck Balance	Wells Fargo		ECR	1.65%	0.00			
										<u>\$380,140,076.89</u>			

<sup>(1)</sup> LAIF market value is as of the most recent quarter-end as reported by LAIF. Security market values are determined using Bank of New York ("Trading Prices"), Bloomberg and/or broker dealer pricing. <sup>(2)</sup> Gain (loss) calculated against carry value using the trading value provided by Bank of New York/or Brokers <sup>(3)</sup> Real estate rate of return is based on most recent quarter end return *S - Step up  This Investment Summary Report is in conformity with the 2023 Investment Policy and provides sufficient liquidity to meet the next six months estimated expenditures.	Outstanding Variable Rate Debt \$225,200,000 Net Outstanding Variable Rate Debt (Less \$60 million fixed-payer swaps) \$165,200,000 Investment Balance: \$380,140,077 Investment to Variable Rate Debt Ratio: 230% Portfolio - Average Number of Days To Maturity 374															
	<table border="1"> <thead> <tr> <th></th> <th>Investment Portfolio</th> <th>Real Estate<sup>(3)</sup> Portfolio</th> <th>Weighted Avg. Return</th> </tr> </thead> <tbody> <tr> <td>May</td> <td>3.52%</td> <td>15.01%</td> <td>5.85%</td> </tr> <tr> <td>April</td> <td>3.30%</td> <td>15.01%</td> <td>5.72%</td> </tr> <tr> <td>Change</td> <td>0.22%</td> <td>0.00%</td> <td>0.13%</td> </tr> </tbody> </table>		Investment Portfolio	Real Estate <sup>(3)</sup> Portfolio	Weighted Avg. Return	May	3.52%	15.01%	5.85%	April	3.30%	15.01%	5.72%	Change	0.22%	0.00%
	Investment Portfolio	Real Estate <sup>(3)</sup> Portfolio	Weighted Avg. Return													
May	3.52%	15.01%	5.85%													
April	3.30%	15.01%	5.72%													
Change	0.22%	0.00%	0.13%													

IRVINE RANCH WATER DISTRICT  
SUMMARY OF MATURITIES

05/31/23

DATE	TOTAL	%	LAIF	Agency Notes	Agency Discount Notes	Municipal Bonds	US Treasury	Investment Sweep
5/23	15,268,631	3.96%						15,268,631
6/23	25,000,000	6.49%			5,000,000		20,000,000	
7/23	30,000,000	7.79%			10,000,000		20,000,000	
8/23	20,000,000	5.19%					20,000,000	
9/23	15,000,000	3.89%					15,000,000	
10/23	15,000,000	3.89%		5,000,000			10,000,000	
11/23	10,000,000	2.60%					10,000,000	
12/23	10,000,000	2.60%		5,000,000			5,000,000	
1/24	15,000,000	3.89%			5,000,000		10,000,000	
2/24	10,000,000	2.60%					10,000,000	
3/24	10,000,000	2.60%		10,000,000				
4/24	10,000,000	2.60%					10,000,000	
SUB-TOTAL	\$185,268,631	48.09%		20,000,000	20,000,000		130,000,000	15,268,631

13 Months - 3 YEARS								
5/01/2024 - 07/31/2024	\$30,000,000	7.79%		15,000,000			15,000,000	
8/01/2024 - 10/31/2024	\$40,000,000	10.38%		40,000,000				
11/01/2024 - 01/31/2025	\$30,000,000	7.79%		5,000,000			25,000,000	
02/01/2025 - 4/30/2025	\$50,000,000	12.98%		20,000,000			30,000,000	
05/01/2025 - 07/31/2025	\$30,000,000	7.79%		25,000,000			5,000,000	
8/01/2025 - 10/31/2025	\$15,000,000	3.89%		10,000,000			5,000,000	
11/01/2025 - 01/31/2026	\$5,000,000	1.30%		5,000,000				
02/01/2026 - 4/30/2026								
05/01/2026 +								
SUB-TOTAL	\$200,000,000	51.91%		\$120,000,000			\$80,000,000	
TOTALS	\$385,268,631	100.00%		\$140,000,000	\$20,000,000		\$210,000,000	\$15,268,631

% OF PORTFOLIO	36.34%	5.19%	54.51%	3.96%
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Irvine Ranch Water District  
Summary of Real Estate - Income Producing Investments  
3/31/2023

	ACQUISITION DATE	PROPERTY TYPE	OWNERSHIP INTEREST	ORIGINAL COST	MARKET VALUE 6/30/2022	ANNUALIZED RATE OF RETURN QUARTER ENDED 3/31/2023
Sycamore Canyon	Dec-92	Apartments	Fee Simple	\$ 43,550,810	\$ 174,250,000	23.85%
Wood Canyon Villas	Jun-91	Apartments	Limited Partner	\$ 6,000,000	\$ 34,194,459	8.50%
ITC (230 Commerce)	Jul-03	Office Building	Fee Simple	\$ 5,739,845	\$ 12,240,000	10.45%
Waterworks Business Pk.	Nov-08	Research & Dev.	Fee Simple	\$ 8,630,577	\$ 11,832,000	8.61%
Sand Canyon Professional Center - Medical Office	Jul-12	Medical Office	Fee Simple	\$ 8,648,594	\$ 12,138,000	7.95%
Sand Canyon Professional Center - General Office	Sep-20	Office Building	Fee Simple	\$ 25,985,968	\$ 33,915,000	7.18%
<b>Total - Income Properties</b>				<b>\$ 98,555,794</b>	<b>\$ 278,569,459</b>	<b>15.01%</b>

**IRVINE RANCH WATER DISTRICT INVESTMENT SUMMARY REPORT**  
**INVESTMENT ACTIVITY<sup>(1)</sup>**  
**May-23**

**MATURITIES/SALES/CALLS**

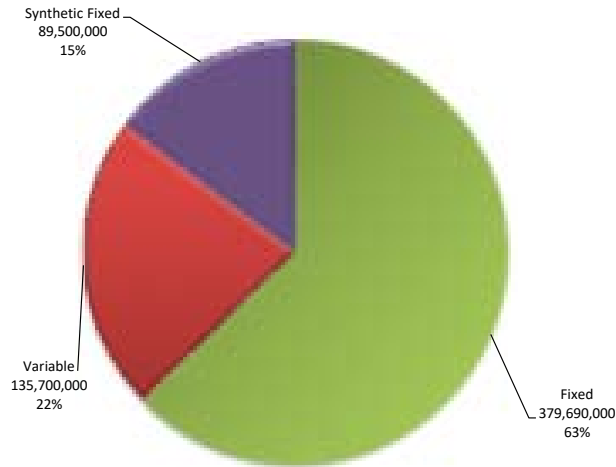
**PURCHASES**

DATE	SECURITY TYPE	PAR	YIELD	Settlement Date	Maturity Date	SECURITY TYPE	PAR	YIELD TO MATURITY
5/5/2023	FHLMC - Note	\$5,000,000	3.32%	5/5/2023	6/22/2023	Treasury - Bill	\$5,000,000	5.22%
5/31/2023	Treasury - Note	\$10,000,000	0.39%					

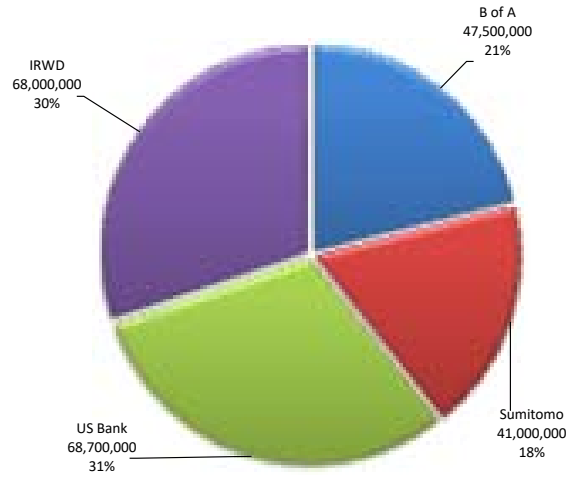
(1) Italicized entries indicate securities that are scheduled but not yet matured, sold, called, or purchased. There may be additional investment purchases if there are pending maturities for the month.

Exhibit "B"  
**Irvine Ranch Water District**  
**Summary of Fixed and Variable Rate Debt**  
**May 2023**

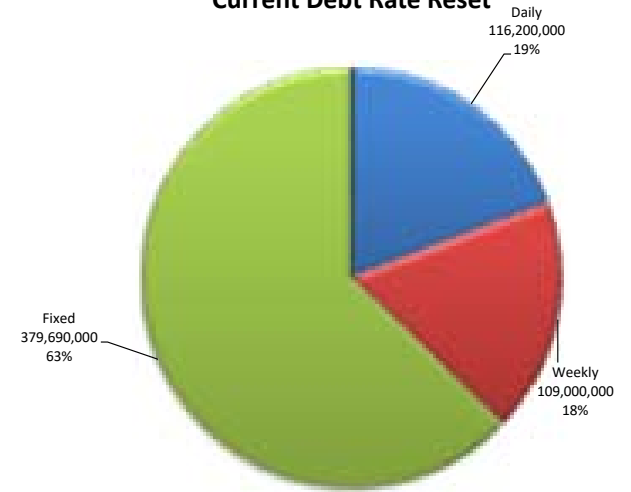
**Current Debt Mix By Type**



**Letters of Credit / Support**



**Current Debt Rate Reset**



**Outstanding Par by Series**

Series	Issue Date	Maturity Date	Remaining Principal	Percent	Letter of Credit/Support	Rmkt Agent	Mode	Reset
Series 1993	05/19/93	04/01/33	\$21,200,000	3.50%	US Bank	BAML	Variable	Daily
Series 2008-A Refunding	04/24/08	07/01/35	\$41,000,000	6.78%	Sumitomo	BAML	Variable	Weekly
Series 2011-A-1 Refunding	04/15/11	10/01/37	\$40,800,000	6.75%	IRWD	Goldman	Variable	Weekly
Series 2011-A-2 Refunding	04/15/11	10/01/37	\$27,200,000	4.50%	IRWD	Goldman	Variable	Weekly
Series 2009 - A	06/04/09	10/01/41	\$47,500,000	7.85%	US Bank	US Bank	Variable	Daily
Series 2009 - B	06/04/09	10/01/41	\$47,500,000	7.85%	B of A	Goldman	Variable	Daily
2016 COPS	09/01/16	03/01/46	\$105,710,000	17.48%	N/A	N/A	Fixed	Fixed
2010 Build America Taxable Bond	12/16/10	05/01/40	\$175,000,000	28.93%	N/A	N/A	Fixed	Fixed
Series 2016	10/12/16	02/01/46	\$98,980,000	16.36%	N/A	N/A	Fixed	Fixed
<b>Total</b>			<b>\$604,890,000</b>	<b>100.00%</b>				

**IRVINE RANCH WATER DISTRICT**  
**SUMMARY OF FIXED & VARIABLE RATE DEBT**

May-23

ITN		GENERAL BOND INFORMATION																		LETTER OF CREDIT INFORMATION										TRUSTEE INFORMATION				
Daily		VARIABLE RATE ISSUES																		Letter of Credit										Rmkt Agent				
Weekly		Issue Date	Maturity Date	Principal Payment Date	Payment Date	Original Par Amount	Remaining Principal	Letter of Credit	Reimbursement Agreement Date	L/C Exp. Date	MOODY'S	S&P	FITCH	LOC Stated Amount	LOC Fee	Annual LOC Cost	Rmkt Agent	Reset	Rmkt Fees	Annual Cost	Trustee													
		05/19/93	04/01/33	Apr 1	5th Bus. Day	\$38,300,000	\$21,200,000	US BANK	05/07/15	05/01/25	Aa3/VMIG1	AA-/A-1+	N/R	\$21,485,764	0.3000%	\$64,457	BAML	DAILY	0.10%	\$21,200	BANK OF NY													
		04/24/08	07/01/35	Jul 1	5th Bus. Day	\$60,215,000	\$41,000,000	SUMITOMO	04/01/11	05/28/25	A1/P-1	A-/A-1	A/F1	\$41,606,575	0.3150%	\$131,061	BAML	WED	0.07%	\$28,700	BANK OF NY													
		04/15/11	10/01/37	Oct 1	1st Bus. Day	\$60,545,000	\$40,800,000	N/A	N/A	N/A	Aa1/VMIG1	A-1+	AAA/F1+	N/A	N/A	N/A	Goldman	WED	0.13%	\$51,000	BANK OF NY													
		04/15/11	10/01/37	Oct 1	1st Bus. Day	\$40,370,000	\$27,200,000	N/A	N/A	N/A	Aa1/VMIG1	A-1+	AAA/F1+	N/A	N/A	N/A	Goldman	WED	0.13%	\$34,000	BANK OF NY													
		06/04/09	10/01/41	Oct 1	1st Bus. Day	\$75,000,000	\$47,500,000	US BANK	04/01/11	05/01/25	Aa2/VMIG1	AA-/A-1+	AA/F1+	\$48,030,959	0.3000%	\$144,093	US Bank	DAILY	0.07%	\$33,250	US BANK													
		06/04/09	10/01/41	Oct 1	1st Bus. Day	\$75,000,000	\$47,500,000	B of A	04/01/11	04/21/25	Aa2/VMIG1	A-/A-1	A1/F1+	\$48,030,959	0.2800%	\$134,487	Goldman	DAILY	0.10%	\$47,500	US BANK													
<b>\$349,430,000</b>							<b>\$225,200,000</b>	<b>SUB-TOTAL VARIABLE RATE DEBT</b>										<b>\$159,154,258</b>	<b>0.2979%</b>	<b>\$474,098</b>														
																		(Wt. Avg)			(Wt. Avg)													
FIXED RATE ISSUES																																		
		12/16/10	05/01/40	May (2025)	May/Nov	\$175,000,000	\$175,000,000	N/A	N/A	N/A	Aa1	AAA	NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	US BANK													
		09/01/16	03/01/46	Mar 1	Mar/Sept	\$116,745,000	\$105,710,000	N/A	N/A	N/A	NR	AAA	AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	US BANK													
		10/12/16	02/01/46	Feb 1	Feb/Aug	\$103,400,000	\$98,980,000	N/A	N/A	N/A	NR	AAA	AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	BANK OF NY													
<b>\$395,145,000</b>							<b>\$379,690,000</b>	<b>SUB-TOTAL FIXED RATE DEBT</b>																										
<b>\$744,575,000</b>							<b>\$604,890,000</b>	<b>TOTAL - FIXED &amp; VARIABLE RATE DEBT</b>																										

Remarketing Agents			GO VS COP's		
Goldman	115,500,000	51%	GO:	499,180,000	83%
BAML	62,200,000	28%	COPS:	105,710,000	17%
US Bank	47,500,000	21%	Total	<u>604,890,000</u>	
	<u>225,200,000</u>				

LOC Banks		Breakdown Between Variable & Fixed Rate Mode	
SUMITOMO	41,000,000	Daily Issues	116,200,000 19%
BANK OF AMERICA	47,500,000	Weekly Issues	41,000,000 7%
US BANK	68,700,000	ITN Issues	68,000,000 11%
	<u>157,200,000</u>	Sub-Total	<u>225,200,000</u>
		Fixed Rate Issues	\$379,690,000 63%
		Sub-Total - Fixed	<u>379,690,000</u>
		TOTAL DEBT	
		FIXED & VAR.	<u>604,890,000</u> 100%

SUMMARY OF DEBT RATES  
May-23

Rmkt Agent Mode	GOLDMAN DAILY	GOLDMAN WEEKLY	GOLDMAN WEEKLY	MERRILL LYNCH DAILY	MERRILL LYNCH WEEKLY	US BANK DAILY
Bond Issue	2009 - B	2011 A-1	2011 A-2	1993	2008-A	2009-A
Par Amount	47,500,000	40,800,000	27,200,000	21,200,000	41,000,000	47,500,000
LOC Bank	BOFA	(SIFMA + 5)	(SIFMA + 5)	US BANK	Sumitomo	US BANK
Reset		Wednesday	Wednesday		Wednesday	
5/1/2023	2.75%	3.91%	3.91%	3.18%	3.55%	2.85%
5/2/2023	2.50%	3.91%	3.91%	2.71%	3.55%	2.60%
5/3/2023	2.20%	3.91%	3.91%	2.46%	3.55%	2.35%
5/4/2023	2.00%	3.50%	3.50%	2.43%	3.05%	2.45%
5/5/2023	2.00%	3.50%	3.50%	2.40%	3.05%	2.50%
5/6/2023	2.00%	3.50%	3.50%	2.40%	3.05%	2.50%
5/7/2023	2.00%	3.50%	3.50%	2.40%	3.05%	2.50%
5/8/2023	1.95%	3.50%	3.50%	2.40%	3.05%	2.30%
5/9/2023	1.70%	3.50%	3.50%	2.05%	3.05%	2.30%
5/10/2023	1.80%	3.50%	3.50%	2.15%	3.05%	2.20%
5/11/2023	1.85%	3.09%	3.09%	2.25%	2.50%	2.40%
5/12/2023	1.85%	3.09%	3.09%	2.35%	2.50%	2.40%
5/13/2023	1.85%	3.09%	3.09%	2.35%	2.50%	2.40%
5/14/2023	1.85%	3.09%	3.09%	2.35%	2.50%	2.40%
5/15/2023	1.65%	3.09%	3.09%	2.18%	2.50%	2.30%
5/16/2023	1.60%	3.09%	3.09%	2.05%	2.50%	2.15%
5/17/2023	1.60%	3.09%	3.09%	2.00%	2.50%	2.05%
5/18/2023	1.60%	2.98%	2.98%	2.10%	2.37%	2.05%
5/19/2023	1.70%	2.98%	2.98%	2.30%	2.37%	2.20%
5/20/2023	1.70%	2.98%	2.98%	2.30%	2.37%	2.20%
5/21/2023	1.70%	2.98%	2.98%	2.30%	2.37%	2.20%
5/22/2023	1.85%	2.98%	2.98%	2.37%	2.37%	2.20%
5/23/2023	1.95%	2.98%	2.98%	2.39%	2.37%	2.30%
5/24/2023	2.00%	2.98%	2.98%	2.39%	2.37%	2.50%
5/25/2023	2.35%	3.46%	3.46%	2.64%	3.01%	2.65%
5/26/2023	2.70%	3.46%	3.46%	3.04%	3.01%	2.75%
5/27/2023	2.70%	3.46%	3.46%	3.04%	3.01%	2.75%
5/28/2023	2.70%	3.46%	3.46%	3.04%	3.01%	2.75%
5/29/2023	2.70%	3.46%	3.46%	3.04%	3.01%	2.75%
5/30/2023	3.00%	3.46%	3.46%	3.00%	3.01%	3.05%
5/31/2023	2.85%	3.46%	3.46%	2.95%	3.01%	3.05%
Avg Interest Rates	2.09%	3.32%	3.32%	2.48%	2.81%	2.45%
Rmkt Fee	0.10%	0.13%	0.13%	0.10%	0.07%	0.07%
LOC Fee	0.28%			0.30%	0.32%	0.30%
<b>All-In Rate</b>	<b>2.47%</b>	<b>3.45%</b>	<b>3.45%</b>	<b>2.88%</b>	<b>3.20%</b>	<b>2.82%</b>
Par Amount	88,300,000		27,200,000	62,200,000		47,500,000

Interest Rate Mode	Percent of Total Variable Rate Debt	Par Outstanding	Weighted All-In Average Rate	Base Rate Average
Daily	51.60%	116,200,000	2.69%	2.31%
Weekly	48.40%	109,000,000	3.35%	3.13%
	100.00%	<b>\$225,200,000</b>	3.01%	2.71%
<b>Fixed</b>				
COPS 2016	27.84%	105,710,000	2.90%	
BABS 2010	46.09%	175,000,000	4.44%	(1)
SERIES 2016	26.07%	98,980,000	3.32%	
	100.00%	<b>\$379,690,000</b>	3.72%	
<b>All-In Debt Rate Including \$60 Million Notional Amount of Swaps</b>				<b>3.53%</b>

(1) Rate adjusted up from 4.35% as a result of sequestration reducing BAB's subsidy by 5.7%

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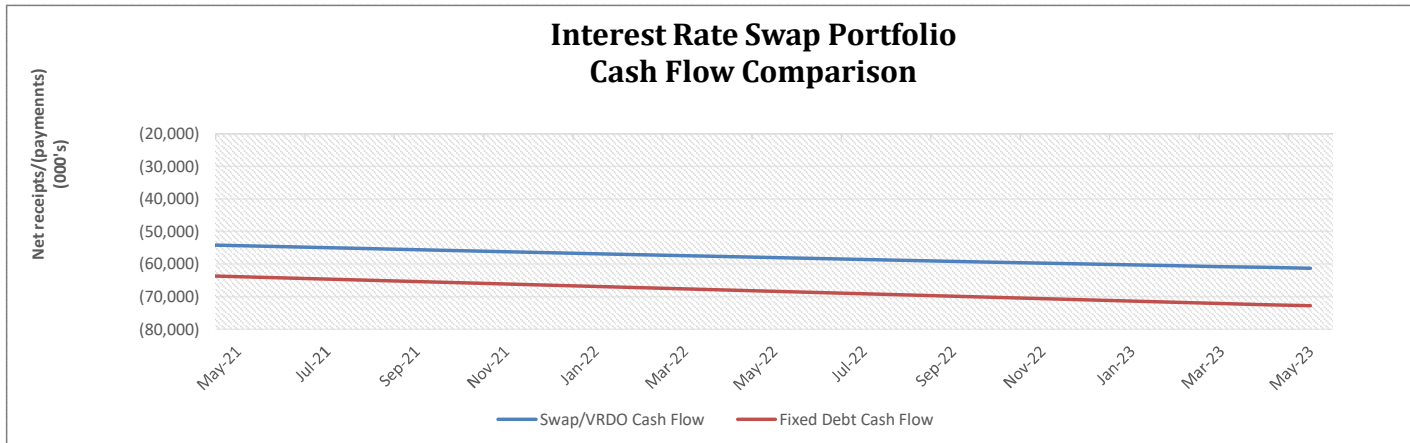
Exhibit "C"  
**Irvine Ranch Water District**  
**Interest Rate Swap Summary**  
**May 2023**

	Prior Mo.	Current Mo.	12-Mo Avg
LIBOR Avg %	4.97%	5.13%	3.68%

Current Fiscal Year Active Swaps								Cash Flow				Mark to Market	
Effective Date	Maturity Date	Years to Maturity	Counter Party	Notional Amt	Type	Base Index	Fixed Rate	Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference
<b>Fixed Payer Swaps - By Effective Date</b>													
3/10/2007	3/10/2029	5.8	ML	30,000,000	FXP	LIBOR	5.687%	(14,941)	(18,164)	(532,548)	(21,915,112)	26,743,124	(3,256,876)
3/10/2007	3/10/2029	5.8	CG	30,000,000	FXP	LIBOR	5.687%	(14,941)	(18,164)	(532,548)	(21,915,112)	26,743,809	(3,256,191)
Totals/Weighted Avgs				5.8	\$ 60,000,000		5.687%	\$ (29,882)	\$ (36,328)	\$ (1,065,096)	\$ (43,830,223)	\$ 53,486,933	\$ (6,513,067)
Total Current Year Active Swaps				\$ 60,000,000				\$ (29,882)	\$ (36,328)	\$ (1,065,096)	\$ (43,830,223)	\$ 53,486,933	\$ (6,513,067)

Current Fiscal Year Terminated Swaps								Cash Flow				Mark to Market	
Effective Date	Maturity Date		Counter Party	Notional Amt	Type	Base Index	Fixed Rate	Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference
Total Current Year Terminated Swaps								\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Current Fiscal Year - Total Swaps								Cash Flow				Mark to Market		
								Prior Month	Current Month	Fiscal YTD	Cumulative Net Accrual	Current Mark to Market	Notional Difference	
Total Current Year Active & Terminated Swaps								\$ 60,000,000	\$ (29,882)	\$ (36,328)	\$ (1,065,096)	\$ (43,830,223)	\$ 53,486,933	\$ (6,513,067)



Cash Flow Comparison	
Synthetic Fixed vs. Fixed Rate Debt	
Cash Flow to Date	
Synthetic Fixed =	\$61,266,419
Fixed Rate =	\$72,821,741
<b>Assumptions:</b>	
- Fixed rate debt issued at 4.93% in Mar-07 (estimated TE rate - Bloomberg)	
- 'Synthetic' includes swap cash flow + interest + fees to date	

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# Exhibit "D"

## IRVINE RANCH WATER DISTRICT AP DISBURSEMENTS AND VOIDS FOR MAY 2023

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435569	4-May-23	A.C. SPRAGGINS ENGINEERING & UNDERGROUND INC.	1,638.01	IRWD Wells Fargo Check No Print	Reconciled
435570	4-May-23	ACCUSTANDARD INC	39.69	IRWD Wells Fargo Check No Print	Reconciled
435571	4-May-23	AIRGAS, INC.	2,657.56	IRWD Wells Fargo Check No Print	Reconciled
435572	4-May-23	ALL AMERICAN ASPHALT	186,612.93	IRWD Wells Fargo Check No Print	Reconciled
435573	4-May-23	ALLIBALOGUN, OLA	25.45	IRWD Wells Fargo Check No Print	Negotiable
435574	4-May-23	ANDRITZ SEPARATION, INC.	1,894.89	IRWD Wells Fargo Check No Print	Reconciled
435575	4-May-23	AT&T CORP	3,989.26	IRWD Wells Fargo Check No Print	Reconciled
435576	4-May-23	AT&T CORP	120.62	IRWD Wells Fargo Check No Print	Reconciled
435577	4-May-23	AT&T CORP	59.83	IRWD Wells Fargo Check No Print	Reconciled
435578	4-May-23	AUTOZONE PARTS, INC.	707.29	IRWD Wells Fargo Check No Print	Reconciled
435579	4-May-23	BAGDONAS, SAUL & AUSRA	8.82	IRWD Wells Fargo Check No Print	Reconciled
435580	4-May-23	BAYLEY CONSTRUCTION, LP	288.03	IRWD Wells Fargo Check No Print	Reconciled
435581	4-May-23	BEACHWALK INC	38.42	IRWD Wells Fargo Check No Print	Reconciled
435582	4-May-23	BRIAN HOMSY	10,799.92	IRWD Wells Fargo Check No Print	Reconciled
435583	4-May-23	BROOKFIELD RESIDENTIAL	314.23	IRWD Wells Fargo Check No Print	Reconciled
435584	4-May-23	C WELLS PIPELINE MATERIALS INC	21,370.06	IRWD Wells Fargo Check No Print	Reconciled
435585	4-May-23	CALIFORNIA PACIFIC HOMES	605.72	IRWD Wells Fargo Check No Print	Reconciled
435586	4-May-23	CANON SOLUTIONS AMERICA, INC.	902.63	IRWD Wells Fargo Check No Print	Reconciled
435587	4-May-23	CERNEA, ALICE	230.23	IRWD Wells Fargo Check No Print	Negotiable
435588	4-May-23	CHAE, HAEJIN	40.84	IRWD Wells Fargo Check No Print	Negotiable
435589	4-May-23	CHARLES P CROWLEY COMPANY INC	110,185.01	IRWD Wells Fargo Check No Print	Reconciled
435590	4-May-23	CHEM SERVICE INC.	257.80	IRWD Wells Fargo Check No Print	Reconciled
435591	4-May-23	CHEM TECH INTERNATIONAL INC	11,358.90	IRWD Wells Fargo Check No Print	Reconciled
435592	4-May-23	CLA-VAL COMPANY	2,707.76	IRWD Wells Fargo Check No Print	Reconciled
435593	4-May-23	COUNTY OF ORANGE	11,563.50	IRWD Wells Fargo Check No Print	Reconciled
435594	4-May-23	COVER, JOSEPH	33.97	IRWD Wells Fargo Check No Print	Reconciled
435595	4-May-23	COWAN XC LLC	755.78	IRWD Wells Fargo Check No Print	Reconciled
435596	4-May-23	COX COMMUNICATIONS, INC.	275.04	IRWD Wells Fargo Check No Print	Reconciled
435597	4-May-23	CRAMER, JAMES W	16.63	IRWD Wells Fargo Check No Print	Negotiable
435598	4-May-23	CURATIVE I.T. LLC	141.61	IRWD Wells Fargo Check No Print	Reconciled
435599	4-May-23	DAVIS FARR LLP	8,830.00	IRWD Wells Fargo Check No Print	Reconciled
435600	4-May-23	DCSE, INC.	47,428.00	IRWD Wells Fargo Check No Print	Reconciled
435601	4-May-23	DIRECTV INC	305.98	IRWD Wells Fargo Check No Print	Reconciled
435602	4-May-23	EAST ORANGE COUNTY WATER DISTRICT	2,003.16	IRWD Wells Fargo Check No Print	Reconciled
435603	4-May-23	ELITE AUTOMOTIVE SERVICE, LLC	358.23	IRWD Wells Fargo Check No Print	Reconciled
435604	4-May-23	ENVIRONMENTAL EXPRESS INC	1,272.44	IRWD Wells Fargo Check No Print	Reconciled
435605	4-May-23	ENVIRONMENTAL RESOURCE ASSOCIATES	1,971.30	IRWD Wells Fargo Check No Print	Reconciled
435606	4-May-23	EUROFINS EATON ANALYTICAL, INC.	9,383.75	IRWD Wells Fargo Check No Print	Reconciled
435607	4-May-23	FARRELL & ASSOCIATES	109.23	IRWD Wells Fargo Check No Print	Reconciled
435608	4-May-23	FASTBLUE COMMUNICATIONS INC.	1,988.72	IRWD Wells Fargo Check No Print	Reconciled
435609	4-May-23	FISHER SCIENTIFIC COMPANY LLC	14,766.72	IRWD Wells Fargo Check No Print	Reconciled
435610	4-May-23	FLW, INC.	1,562.51	IRWD Wells Fargo Check No Print	Reconciled
435611	4-May-23	FRONTIER CALIFORNIA INC.	528.74	IRWD Wells Fargo Check No Print	Reconciled
435612	4-May-23	GRAFF, MICHELLE	56.78	IRWD Wells Fargo Check No Print	Reconciled
435613	4-May-23	GRAINGER	19,825.05	IRWD Wells Fargo Check No Print	Reconciled
435614	4-May-23	GRAYBAR ELECTRIC COMPANY	42.93	IRWD Wells Fargo Check No Print	Reconciled
435615	4-May-23	HACH COMPANY	5,997.01	IRWD Wells Fargo Check No Print	Reconciled
435616	4-May-23	HERITAGE FIELDS LLC	101,402.54	IRWD Wells Fargo Check No Print	Reconciled
435617	4-May-23	HI-LINE INC	1,635.84	IRWD Wells Fargo Check No Print	Reconciled
435618	4-May-23	HOME DEPOT USA INC	358.83	IRWD Wells Fargo Check No Print	Reconciled
435619	4-May-23	HOME DEPOT USA INC	450.99	IRWD Wells Fargo Check No Print	Reconciled
435620	4-May-23	HORTON, ERIC	15.86	IRWD Wells Fargo Check No Print	Negotiable
435621	4-May-23	HUANG, NINGNING	439.82	IRWD Wells Fargo Check No Print	Negotiable
435622	4-May-23	HUBER TECHNOLOGY INC.	52,845.62	IRWD Wells Fargo Check No Print	Reconciled
435623	4-May-23	INDUSTRIAL METAL SUPPLY CO	1,555.03	IRWD Wells Fargo Check No Print	Reconciled
435624	4-May-23	INFOSEND, INC.	600.00	IRWD Wells Fargo Check No Print	Reconciled
435625	4-May-23	INLAND POTABLE SERVICES, INC.	27,074.00	IRWD Wells Fargo Check No Print	Reconciled
435626	4-May-23	INNOVATIVE CONSTRUCTION SOLUTIONS	303,693.12	IRWD Wells Fargo Check No Print	Reconciled
435627	4-May-23	IRVINE COMPANY APARTMENT DEVELOPMENT	1,218.73	IRWD Wells Fargo Check No Print	Reconciled
435628	4-May-23	JACK RUBIN & SONS, INC	141.39	IRWD Wells Fargo Check No Print	Reconciled
435629	4-May-23	JEW, ROBERT	49.24	IRWD Wells Fargo Check No Print	Reconciled
435630	4-May-23	KAESER COMPRESSORS, INC.	1,523.94	IRWD Wells Fargo Check No Print	Reconciled
435631	4-May-23	KB HOMES	318.65	IRWD Wells Fargo Check No Print	Reconciled
435632	4-May-23	KIMBALL MIDWEST	1,030.89	IRWD Wells Fargo Check No Print	Reconciled
435633	4-May-23	KONG, LINGQI	26.40	IRWD Wells Fargo Check No Print	Negotiable
435634	4-May-23	LEE & RO, INC.	5,333.00	IRWD Wells Fargo Check No Print	Reconciled
435635	4-May-23	LEE, SEUNGU	25.76	IRWD Wells Fargo Check No Print	Negotiable

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435636	4-May-23	LENNAR HOMES OF CALIFORNIA, INC.	629.15	IRWD Wells Fargo Check No Print	Reconciled
435637	4-May-23	LIN, CHARLES	33.83	IRWD Wells Fargo Check No Print	Negotiable
435638	4-May-23	LINDE GAS & EQUIPMENT INC.	2,031.60	IRWD Wells Fargo Check No Print	Reconciled
435639	4-May-23	MATTHEW & ALEXANDER RASOULI	18.66	IRWD Wells Fargo Check No Print	Negotiable
435640	4-May-23	MEYLING, DEBRA	382.98	IRWD Wells Fargo Check No Print	Reconciled
435641	4-May-23	MICHAEL LOMONACO	19,850.00	IRWD Wells Fargo Check No Print	Reconciled
435642	4-May-23	MILES CHEMICAL COMPANY, INC.	8,746.13	IRWD Wells Fargo Check No Print	Reconciled
435643	4-May-23	MSC INDUSTRIAL SUPPLY CO	1,595.77	IRWD Wells Fargo Check No Print	Reconciled
435644	4-May-23	NALCO COMPANY LLC	1,329.54	IRWD Wells Fargo Check No Print	Reconciled
435645	4-May-23	NATIONAL READY MIXED CONCRETE SALES, LLC	642.20	IRWD Wells Fargo Check No Print	Reconciled
435646	4-May-23	NATSCHEH, NEAL	572.10	IRWD Wells Fargo Check No Print	Reconciled
435647	4-May-23	NINYO & MOORE	5,075.77	IRWD Wells Fargo Check No Print	Reconciled
435648	4-May-23	NORTHWOOD PLACE APTS	36.57	IRWD Wells Fargo Check No Print	Reconciled
435649	4-May-23	NRD, LLC	100.00	IRWD Wells Fargo Check No Print	Reconciled
435650	4-May-23	ONESOURCE DISTRIBUTORS LLC	110.28	IRWD Wells Fargo Check No Print	Reconciled
435651	4-May-23	ORACLE AMERICA, INC.	2,744.50	IRWD Wells Fargo Check No Print	Reconciled
435652	4-May-23	PAYMENTUS CORPORATION	73,482.51	IRWD Wells Fargo Check No Print	Reconciled
435653	4-May-23	PEARSE, MARION E	30.17	IRWD Wells Fargo Check No Print	Negotiable
435654	4-May-23	POIRIER, SERGE	219.96	IRWD Wells Fargo Check No Print	Reconciled
435655	4-May-23	QUADIENT FINANCE USA, INC.	1,000.00	IRWD Wells Fargo Check No Print	Reconciled
435656	4-May-23	QUINN COMPANY	231.44	IRWD Wells Fargo Check No Print	Reconciled
435657	4-May-23	R.F. MACDONALD CO.	1,652.50	IRWD Wells Fargo Check No Print	Reconciled
435658	4-May-23	REFRIGERATION SUPPLIES DISTRIBUTOR	9,544.28	IRWD Wells Fargo Check No Print	Reconciled
435659	4-May-23	RICHARD C. SLADE & ASSOCIATES LLC	24,807.48	IRWD Wells Fargo Check No Print	Reconciled
435660	4-May-23	ROSEMOUNT INC.	2,290.49	IRWD Wells Fargo Check No Print	Reconciled
435661	4-May-23	RUCKER, KEITH	507.54	IRWD Wells Fargo Check No Print	Negotiable
435662	4-May-23	SCHUNDLER, DARWATI	51.97	IRWD Wells Fargo Check No Print	Reconciled
435663	4-May-23	SEAL ANALYTICAL INC	126.54	IRWD Wells Fargo Check No Print	Reconciled
435664	4-May-23	SERVERSUPPLY.COM INC	12,053.67	IRWD Wells Fargo Check No Print	Reconciled
435665	4-May-23	SHAMROCK SUPPLY CO INC	342.07	IRWD Wells Fargo Check No Print	Reconciled
435666	4-May-23	SHAW, ALEXANDRA ASHLEY	64.88	IRWD Wells Fargo Check No Print	Reconciled
435667	4-May-23	SIDDHARTH, RAMANI	118.87	IRWD Wells Fargo Check No Print	Reconciled
435668	4-May-23	SIGNATURE ONE REALTY	53.71	IRWD Wells Fargo Check No Print	Reconciled
435669	4-May-23	SIRIUS COMPUTER SOLUTIONS INC	96,383.48	IRWD Wells Fargo Check No Print	Reconciled
435670	4-May-23	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	620.61	IRWD Wells Fargo Check No Print	Reconciled
435671	4-May-23	SOUTH COAST BOBCAT	304.50	IRWD Wells Fargo Check No Print	Reconciled
435672	4-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	227,442.51	IRWD Wells Fargo Check No Print	Reconciled
435673	4-May-23	SOUTHERN COUNTIES LUBRICANTS LLC	5,700.74	IRWD Wells Fargo Check No Print	Reconciled
435674	4-May-23	SPARKLETTS	24.80	IRWD Wells Fargo Check No Print	Reconciled
435675	4-May-23	SS MECHANICAL CONSTRUCTION CORP	20,071.22	IRWD Wells Fargo Check No Print	Reconciled
435676	4-May-23	STETSON ENGINEERS INC.	1,494.00	IRWD Wells Fargo Check No Print	Reconciled
435677	4-May-23	STREAKWAVE WIRELESS, INC.	2,076.40	IRWD Wells Fargo Check No Print	Reconciled
435678	4-May-23	SUMMIT AT TURTLE RIDGE	9,153.45	IRWD Wells Fargo Check No Print	Reconciled
435679	4-May-23	TALLEY INC	44.84	IRWD Wells Fargo Check No Print	Reconciled
435680	4-May-23	TANKVISIONS, INC	30.00	IRWD Wells Fargo Check No Print	Reconciled
435681	4-May-23	TAWFIK, NADINE	28.25	IRWD Wells Fargo Check No Print	Negotiable
435682	4-May-23	TK ELEVATOR CORPORATION	226.02	IRWD Wells Fargo Check No Print	Reconciled
435683	4-May-23	TOLL BROS., INC.	654.30	IRWD Wells Fargo Check No Print	Reconciled
435684	4-May-23	TORRES, DORIS	1,466.84	IRWD Wells Fargo Check No Print	Reconciled
435685	4-May-23	TRAFFIC MANAGEMENT, INC	1,290.00	IRWD Wells Fargo Check No Print	Reconciled
435686	4-May-23	TRENCH SHORING COMPANY	551.50	IRWD Wells Fargo Check No Print	Reconciled
435687	4-May-23	TURTLE ROCK CREST COMMUNITY ASSOCIATION	695.57	IRWD Wells Fargo Check No Print	Reconciled
435688	4-May-23	TYSON, THOMAS J	1,272.45	IRWD Wells Fargo Check No Print	Reconciled
435689	4-May-23	ULINE INC	807.15	IRWD Wells Fargo Check No Print	Reconciled
435690	4-May-23	UNITED PARCEL SERVICE INC	30.00	IRWD Wells Fargo Check No Print	Reconciled
435691	4-May-23	UNITED WATER WORKS, INC.	2,063.98	IRWD Wells Fargo Check No Print	Reconciled
435692	4-May-23	UNIVERSITY MEDICAL PRODUCTS	28.26	IRWD Wells Fargo Check No Print	Reconciled
435693	4-May-23	VERIZON WIRELESS SERVICES LLC	15,290.96	IRWD Wells Fargo Check No Print	Reconciled
435694	4-May-23	VISTA PAINT CORPORATION	188.83	IRWD Wells Fargo Check No Print	Reconciled
435695	4-May-23	WAGNER, STEVEN & ANN	103.62	IRWD Wells Fargo Check No Print	Reconciled
435696	4-May-23	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	6,702.24	IRWD Wells Fargo Check No Print	Reconciled
435697	4-May-23	WATERLINE TECHNOLOGIES INC	19,674.88	IRWD Wells Fargo Check No Print	Reconciled
435698	4-May-23	WAXIE'S ENTERPRISES, INC	277.52	IRWD Wells Fargo Check No Print	Reconciled
435699	4-May-23	WEST COAST SAND & GRAVEL INC.	2,039.04	IRWD Wells Fargo Check No Print	Reconciled
435700	4-May-23	WEST YOST & ASSOCIATES, INC.	5,888.23	IRWD Wells Fargo Check No Print	Reconciled
435701	4-May-23	WILLIAMS, SIDNEY F	675.72	IRWD Wells Fargo Check No Print	Negotiable
435702	4-May-23	WU, BRANDON	1,495.47	IRWD Wells Fargo Check No Print	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435703	4-May-23	WU, YUKANG	82.90	IRWD Wells Fargo Check No Print	Negotiable
435704	4-May-23	XYLEM WATER SOLUTIONS USA, INC.	1,697.07	IRWD Wells Fargo Check No Print	Reconciled
435705	4-May-23	YANG, EDDIE	17.00	IRWD Wells Fargo Check No Print	Negotiable
435706	4-May-23	YIN, ZONGBO	27.29	IRWD Wells Fargo Check No Print	Reconciled
435707	4-May-23	ZHANG, MINGXIN	59.88	IRWD Wells Fargo Check No Print	Negotiable
435708	4-May-23	ZHENG, HUI	635.39	IRWD Wells Fargo Check No Print	Reconciled
435709	4-May-23	Bonkowski, Leslie A (Leslie)	122.28	IRWD Wells Fargo Check	Reconciled
435710	4-May-23	Breiter, Michelle	40.67	IRWD Wells Fargo Check	Reconciled
435711	4-May-23	Cortez, Malcolm A (Malcolm)	58.95	IRWD Wells Fargo Check	Reconciled
435712	4-May-23	Gautschi, Lauren	25.94	IRWD Wells Fargo Check	Reconciled
435713	4-May-23	Hatch, Lauren	100.00	IRWD Wells Fargo Check	Reconciled
435714	4-May-23	IRWD-PETTY CASH CUSTODIAN	1,205.03	IRWD Wells Fargo Check	Reconciled
435715	4-May-23	James, Willie S	91.70	IRWD Wells Fargo Check	Negotiable
435716	4-May-23	Kanoff, Debbie G (Debbie)	178.87	IRWD Wells Fargo Check	Reconciled
435717	4-May-23	Lindsay, Marina D	22.00	IRWD Wells Fargo Check	Reconciled
435718	4-May-23	Melendez, Isabel	95.00	IRWD Wells Fargo Check	Reconciled
435719	4-May-23	Orozco, Linda	302.75	IRWD Wells Fargo Check	Negotiable
435720	4-May-23	Reed, James W (James)	100.00	IRWD Wells Fargo Check	Reconciled
435721	4-May-23	Reinhart, Douglas J	58.74	IRWD Wells Fargo Check	Reconciled
435722	4-May-23	Withers, John B	528.53	IRWD Wells Fargo Check	Reconciled
435723	4-May-23	Zamora, Victor A	45.37	IRWD Wells Fargo Check	Reconciled
435724	11-May-23	8X8 INC	11,213.22	IRWD Wells Fargo Check No Print	Reconciled
435725	11-May-23	A&A WIPING CLOTH CO	1,939.50	IRWD Wells Fargo Check No Print	Reconciled
435726	11-May-23	ABC ICE, INC	157.75	IRWD Wells Fargo Check No Print	Reconciled
435727	11-May-23	AGILENT TECHNOLOGIES, INC.	621.73	IRWD Wells Fargo Check No Print	Reconciled
435728	11-May-23	AIRGAS, INC.	3,614.15	IRWD Wells Fargo Check No Print	Reconciled
435729	11-May-23	AMALFI APARTMENT HOMES	254.87	IRWD Wells Fargo Check No Print	Reconciled
435730	11-May-23	AT&T CORP	1,044.90	IRWD Wells Fargo Check No Print	Reconciled
435731	11-May-23	AT&T CORP	1,564.65	IRWD Wells Fargo Check No Print	Reconciled
435732	11-May-23	ATHENS SERVICES	13,053.45	IRWD Wells Fargo Check No Print	Reconciled
435733	11-May-23	AUTOZONE PARTS, INC.	240.53	IRWD Wells Fargo Check No Print	Reconciled
435734	11-May-23	BEARTECH ALLOYS, INC.	1,351.76	IRWD Wells Fargo Check No Print	Reconciled
435735	11-May-23	BEST DRILLING AND PUMP, INC.	102,600.00	IRWD Wells Fargo Check No Print	Reconciled
435736	11-May-23	C WELLS PIPELINE MATERIALS INC	808.13	IRWD Wells Fargo Check No Print	Reconciled
435737	11-May-23	CANON SOLUTIONS AMERICA, INC.	10.57	IRWD Wells Fargo Check No Print	Reconciled
435738	11-May-23	CENTROID SYSTEMS, INC.	5,750.00	IRWD Wells Fargo Check No Print	Reconciled
435739	11-May-23	CHAIREL CUSTOM HAY, INC.	11,682.83	IRWD Wells Fargo Check No Print	Reconciled
435740	11-May-23	CHARLES P CROWLEY COMPANY INC	51,155.51	IRWD Wells Fargo Check No Print	Reconciled
435741	11-May-23	CHEM TECH INTERNATIONAL INC	20,204.27	IRWD Wells Fargo Check No Print	Reconciled
435742	11-May-23	CHENG, HORNG	25.00	IRWD Wells Fargo Check No Print	Negotiable
435743	11-May-23	CHO DESIGN ASSOCIATES, INC	1,200.00	IRWD Wells Fargo Check No Print	Reconciled
435744	11-May-23	CLA-VAL COMPANY	12,903.07	IRWD Wells Fargo Check No Print	Reconciled
435745	11-May-23	CLIFFORD MORIYAMA	10,000.00	IRWD Wells Fargo Check No Print	Reconciled
435746	11-May-23	COMMERCIAL DOOR OF ORANGE COUNTY, INC.	1,271.22	IRWD Wells Fargo Check No Print	Reconciled
435747	11-May-23	CORELOGIC INC	143.06	IRWD Wells Fargo Check No Print	Reconciled
435748	11-May-23	COX COMMUNICATIONS, INC.	283.30	IRWD Wells Fargo Check No Print	Reconciled
435749	11-May-23	CR & R INCORPORATED	495.83	IRWD Wells Fargo Check No Print	Reconciled
435750	11-May-23	CS-AMSCO	7,966.33	IRWD Wells Fargo Check No Print	Reconciled
435751	11-May-23	CURATIVE I.T. LLC	74.06	IRWD Wells Fargo Check No Print	Reconciled
435752	11-May-23	D & H WATER SYSTEMS INC.	1,119.35	IRWD Wells Fargo Check No Print	Reconciled
435753	11-May-23	DAVIS, JUDITH	219.57	IRWD Wells Fargo Check No Print	Reconciled
435754	11-May-23	DCSE, INC.	19,937.00	IRWD Wells Fargo Check No Print	Reconciled
435755	11-May-23	DE NICOLA, GREGG	4,258.41	IRWD Wells Fargo Check No Print	Negotiable
435756	11-May-23	DELL MARKETING LP	1,254.80	IRWD Wells Fargo Check No Print	Reconciled
435757	11-May-23	DEPARTMENT OF INDUSTRIAL RELATIONS STATE OF CALIFORNIA	800.00	IRWD Wells Fargo Check No Print	Reconciled
435758	11-May-23	DG INVESTMENT INTERMEDIATE HOLDINGS 2, INC.	877.00	IRWD Wells Fargo Check No Print	Reconciled
435759	11-May-23	DILYTICS INC	5,330.00	IRWD Wells Fargo Check No Print	Reconciled
435760	11-May-23	DISCOVERY SCIENCE CENTER OF ORANGE COUNTY	10,494.76	IRWD Wells Fargo Check No Print	Reconciled
435761	11-May-23	DRIVELINES INC	547.79	IRWD Wells Fargo Check No Print	Reconciled
435762	11-May-23	E.J. MEYER COMPANY	31,989.98	IRWD Wells Fargo Check No Print	Reconciled
435763	11-May-23	ENVIRONMENTAL RESOURCE ASSOCIATES	504.32	IRWD Wells Fargo Check No Print	Reconciled
435764	11-May-23	EXECUTIVE LIGHTING & ELECTRIC	281.10	IRWD Wells Fargo Check No Print	Reconciled
435765	11-May-23	FISHER SCIENTIFIC COMPANY LLC	4,220.65	IRWD Wells Fargo Check No Print	Reconciled
435766	11-May-23	FOUGHT, CYNTHIA J.	2,593.70	IRWD Wells Fargo Check No Print	Reconciled
435767	11-May-23	GALLAGHER BENEFIT SERVICES, INC.	13,040.84	IRWD Wells Fargo Check No Print	Reconciled
435768	11-May-23	GARY BALE REDI-MIX CONCRETE, INC.	733.14	IRWD Wells Fargo Check No Print	Reconciled
435769	11-May-23	GEA MECHANICAL EQUIPMENT US, INC.	23,312.99	IRWD Wells Fargo Check No Print	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435770	11-May-23	GEIGER BROS	2,530.46	IRWD Wells Fargo Check No Print	Reconciled
435771	11-May-23	GRAINGER	6,292.42	IRWD Wells Fargo Check No Print	Reconciled
435772	11-May-23	GRAYBAR ELECTRIC COMPANY	187.80	IRWD Wells Fargo Check No Print	Reconciled
435773	11-May-23	GSRP ST SOLAR I LLC	13,492.03	IRWD Wells Fargo Check No Print	Reconciled
435774	11-May-23	GUIDA SURVEYING INC.	7,477.20	IRWD Wells Fargo Check No Print	Reconciled
435775	11-May-23	HACH COMPANY	449.18	IRWD Wells Fargo Check No Print	Reconciled
435776	11-May-23	HDR ENGINEERING INC	15,296.50	IRWD Wells Fargo Check No Print	Reconciled
435777	11-May-23	HERITAGE FIELDS LLC	163,047.12	IRWD Wells Fargo Check No Print	Reconciled
435778	11-May-23	HI-LINE INC	1,510.93	IRWD Wells Fargo Check No Print	Reconciled
435779	11-May-23	HILLCREST CONTRACTING, INC.	843.67	IRWD Wells Fargo Check No Print	Reconciled
435780	11-May-23	HOME DEPOT USA INC	1,156.01	IRWD Wells Fargo Check No Print	Reconciled
435781	11-May-23	HOME DEPOT USA INC	1,060.68	IRWD Wells Fargo Check No Print	Reconciled
435782	11-May-23	INDUSTRIAL HEAT TECHNOLOGIES, INC.	1,576.02	IRWD Wells Fargo Check No Print	Reconciled
435783	11-May-23	INFOSEND, INC.	54,670.17	IRWD Wells Fargo Check No Print	Reconciled
435784	11-May-23	INTERPRO SOLUTIONS, LLC.	80,712.40	IRWD Wells Fargo Check No Print	Reconciled
435785	11-May-23	IRON MOUNTAIN INFORMATION MANAGEMENT INC	940.36	IRWD Wells Fargo Check No Print	Reconciled
435786	11-May-23	KAESER COMPRESSORS, INC.	4,566.07	IRWD Wells Fargo Check No Print	Reconciled
435787	11-May-23	KILL-N-BUGS TERMITE AND PEST CONTROL SERVICES	2,600.00	IRWD Wells Fargo Check No Print	Reconciled
435788	11-May-23	KIMBALL MIDWEST	1,169.38	IRWD Wells Fargo Check No Print	Reconciled
435789	11-May-23	LEE & RO, INC.	2,294.50	IRWD Wells Fargo Check No Print	Reconciled
435790	11-May-23	LINDE GAS & EQUIPMENT INC.	17,787.17	IRWD Wells Fargo Check No Print	Reconciled
435791	11-May-23	LINDSAY POLIC CONSULTING, INC.	3,100.00	IRWD Wells Fargo Check No Print	Negotiable
435792	11-May-23	LINE-X OF SOUTH COAST	10,940.00	IRWD Wells Fargo Check No Print	Reconciled
435793	11-May-23	LINKEDIN CORPORATION	827.08	IRWD Wells Fargo Check No Print	Reconciled
435794	11-May-23	MAP COMMUNICATIONS, INC.	1,566.80	IRWD Wells Fargo Check No Print	Reconciled
435795	11-May-23	MC FADDEN-DALE INDUSTRIAL	1,346.48	IRWD Wells Fargo Check No Print	Reconciled
435796	11-May-23	MEGGITT SENSING SYSTEMS	1,055.93	IRWD Wells Fargo Check No Print	Negotiable
435797	11-May-23	MICHAEL LOMONACO	2,200.00	IRWD Wells Fargo Check No Print	Reconciled
435798	11-May-23	MICROSOFT CORPORATION	24.00	IRWD Wells Fargo Check No Print	Reconciled
435799	11-May-23	MISSION COMMUNICATIONS, LLC	3,249.00	IRWD Wells Fargo Check No Print	Reconciled
435800	11-May-23	MORSCO SUPPLY, LLC	6,460.73	IRWD Wells Fargo Check No Print	Reconciled
435801	11-May-23	NAKAE & ASSOCIATES INC	524.32	IRWD Wells Fargo Check No Print	Reconciled
435802	11-May-23	NATIONAL READY MIXED CONCRETE SALES, LLC	1,314.00	IRWD Wells Fargo Check No Print	Reconciled
435803	11-May-23	NETWORK INTEGRATION COMPANY PARTNERS	40,151.70	IRWD Wells Fargo Check No Print	Reconciled
435804	11-May-23	NORIMA CONSULTING US	10,360.00	IRWD Wells Fargo Check No Print	Negotiable
435805	11-May-23	NORTHWOOD PLACE APTS	40.20	IRWD Wells Fargo Check No Print	Reconciled
435806	11-May-23	O'REILLY AUTO ENTERPRISES, LLC	1,135.52	IRWD Wells Fargo Check No Print	Reconciled
435807	11-May-23	OCEAN BLUE ENVIRONMENTAL SERVICES INC	11,192.08	IRWD Wells Fargo Check No Print	Reconciled
435808	11-May-23	ON CALL EVENT RENTALS	1,972.72	IRWD Wells Fargo Check No Print	Reconciled
435809	11-May-23	OPERATIONAL TECHNICAL SERVICES	25,700.00	IRWD Wells Fargo Check No Print	Reconciled
435810	11-May-23	ORANGE COUNTY MOSQUITO AND VECTOR CONTROL DISTRICT	1,425.23	IRWD Wells Fargo Check No Print	Reconciled
435811	11-May-23	PACIFIC HYDROTECH CORPORATION	9,907.05	IRWD Wells Fargo Check No Print	Reconciled
435812	11-May-23	PACIFIC HYDROTECH CORPORATION	4,629.49	IRWD Wells Fargo Check No Print	Reconciled
435813	11-May-23	PACIFIC HYDROTECH CORPORATION	6,121.77	IRWD Wells Fargo Check No Print	Reconciled
435814	11-May-23	PACIFIC HYDROTECH CORPORATION	35,091.33	IRWD Wells Fargo Check No Print	Reconciled
435815	11-May-23	PACIFIC HYDROTECH CORPORATION	1,059,243.08	IRWD Wells Fargo Check No Print	Reconciled
435816	11-May-23	PAYNE & FEARS LLP	337.50	IRWD Wells Fargo Check No Print	Reconciled
435817	11-May-23	PENN ARCHIVE SERVICES	89.07	IRWD Wells Fargo Check No Print	Reconciled
435818	11-May-23	PERKINELMER U.S. LLC	1,662.50	IRWD Wells Fargo Check No Print	Reconciled
435819	11-May-23	PILLSBURY WINTHROP SHAW PITTMAN LLP	2,722.00	IRWD Wells Fargo Check No Print	Reconciled
435820	11-May-23	PLUMBERS DEPOT INC.	1,157.15	IRWD Wells Fargo Check No Print	Reconciled
435821	11-May-23	PORTOLA PLACE APTS	444.83	IRWD Wells Fargo Check No Print	Reconciled
435822	11-May-23	PRUDENTIAL OVERALL SUPPLY	10,404.17	IRWD Wells Fargo Check No Print	Reconciled
435823	11-May-23	PSOMAS	17,683.50	IRWD Wells Fargo Check No Print	Reconciled
435824	11-May-23	QUICKEL PAVING	452.98	IRWD Wells Fargo Check No Print	Reconciled
435825	11-May-23	R C FOSTER CORPORATION	607,762.50	IRWD Wells Fargo Check No Print	Reconciled
435826	11-May-23	REFRIGERATION SUPPLIES DISTRIBUTOR	62.58	IRWD Wells Fargo Check No Print	Reconciled
435827	11-May-23	ROBERTSONS	1,229.25	IRWD Wells Fargo Check No Print	Reconciled
435828	11-May-23	ROCKWELL SOLUTIONS, INC.	94,494.25	IRWD Wells Fargo Check No Print	Reconciled
435829	11-May-23	SANTA MARGARITA FORD	404.89	IRWD Wells Fargo Check No Print	Reconciled
435830	11-May-23	SCA OF CA, LLC	2,983.75	IRWD Wells Fargo Check No Print	Reconciled
435831	11-May-23	SCHINDLER ELEVATOR CORPORATION	280.02	IRWD Wells Fargo Check No Print	Reconciled
435832	11-May-23	SECURITAS SECURITY SERVICES USA, INC.	75,978.86	IRWD Wells Fargo Check No Print	Reconciled
435833	11-May-23	SHEA HOMES LIMITED PARTNERSHIP	202.31	IRWD Wells Fargo Check No Print	Reconciled
435834	11-May-23	SIERRA VISTA APTS	567.51	IRWD Wells Fargo Check No Print	Reconciled
435835	11-May-23	SIGNATURE FLOORING, INC	1,998.00	IRWD Wells Fargo Check No Print	Reconciled
435836	11-May-23	SITMATIC	441.24	IRWD Wells Fargo Check No Print	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435837	11-May-23	SOUTH COAST WATER CO.	95.00	IRWD Wells Fargo Check No Print	Reconciled
435838	11-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	381,379.25	IRWD Wells Fargo Check No Print	Reconciled
435839	11-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	500.00	IRWD Wells Fargo Check No Print	Reconciled
435840	11-May-23	SOUTHERN COUNTIES LUBRICANTS LLC	4,293.39	IRWD Wells Fargo Check No Print	Reconciled
435841	11-May-23	STANTEC ARCHITECTURE INC	8,081.90	IRWD Wells Fargo Check No Print	Reconciled
435842	11-May-23	STANTEC CONSULTING SERVICES INC.	1,425.00	IRWD Wells Fargo Check No Print	Reconciled
435843	11-May-23	STETSON ENGINEERS INC.	749.00	IRWD Wells Fargo Check No Print	Reconciled
435844	11-May-23	STEVEN WELCH	240.00	IRWD Wells Fargo Check No Print	Reconciled
435845	11-May-23	STRADLING YOCCA CARLSON & RAUTH	1,064.00	IRWD Wells Fargo Check No Print	Reconciled
435846	11-May-23	SWIATKOWSKI, DARIUSZ	53.63	IRWD Wells Fargo Check No Print	Negotiable
435847	11-May-23	TAIT ENVIRONMENTAL SERVICES, INC.	459.25	IRWD Wells Fargo Check No Print	Reconciled
435848	11-May-23	TALLEY INC	811.11	IRWD Wells Fargo Check No Print	Reconciled
435849	11-May-23	TAPIA, FERNANDO	112.46	IRWD Wells Fargo Check No Print	Negotiable
435850	11-May-23	TAPPAN INVESTMENTS SC LLC	999.69	IRWD Wells Fargo Check No Print	Reconciled
435851	11-May-23	TEKDRAULICS	14,555.18	IRWD Wells Fargo Check No Print	Reconciled
435852	11-May-23	THE BOYD GROUP US INC	370.00	IRWD Wells Fargo Check No Print	Reconciled
435853	11-May-23	TIC-RETAIL PROPERTIES	99.09	IRWD Wells Fargo Check No Print	Reconciled
435854	11-May-23	TOLL BROS., INC.	321.77	IRWD Wells Fargo Check No Print	Reconciled
435855	11-May-23	TOM'S TRUCK CENTER NORTH COUNTY, LLC	714.64	IRWD Wells Fargo Check No Print	Reconciled
435856	11-May-23	TOXGUARD FLUID TECHNOLOGIES	616.10	IRWD Wells Fargo Check No Print	Reconciled
435857	11-May-23	TUTTLE-CLICK TUSTIN INC	31.26	IRWD Wells Fargo Check No Print	Reconciled
435858	11-May-23	U.S. VENTURE, INC	140.30	IRWD Wells Fargo Check No Print	Reconciled
435859	11-May-23	UNITED PARCEL SERVICE INC	143.34	IRWD Wells Fargo Check No Print	Reconciled
435860	11-May-23	UNIVAR SOLUTIONS USA INC.	11,101.40	IRWD Wells Fargo Check No Print	Reconciled
435861	11-May-23	VEGALAND COMPANY LLC	50.99	IRWD Wells Fargo Check No Print	Reconciled
435862	11-May-23	VERIZON WIRELESS SERVICES LLC	6,162.03	IRWD Wells Fargo Check No Print	Reconciled
435863	11-May-23	VWR INTERNATIONAL, LLC	6,081.49	IRWD Wells Fargo Check No Print	Reconciled
435864	11-May-23	WAGNER, STEVEN & ANN	128.36	IRWD Wells Fargo Check No Print	Reconciled
435865	11-May-23	WANG, QI	34.50	IRWD Wells Fargo Check No Print	Negotiable
435866	11-May-23	WARD, WILLIAM P JR.	1,451.28	IRWD Wells Fargo Check No Print	Reconciled
435867	11-May-23	WASTE MANAGEMENT COLLECTIONS AND RECYCLING, INC.	6,155.14	IRWD Wells Fargo Check No Print	Reconciled
435868	11-May-23	WAXIE'S ENTERPRISES, INC	1,761.81	IRWD Wells Fargo Check No Print	Reconciled
435869	11-May-23	WIJNHAMER, SETH	43.96	IRWD Wells Fargo Check No Print	Negotiable
435870	11-May-23	WISCONSIN STATE LABORATORY OF HYGIENE	690.00	IRWD Wells Fargo Check No Print	Reconciled
435871	11-May-23	ZEBRON CONTRACTING INC	12,180.00	IRWD Wells Fargo Check No Print	Reconciled
435872	11-May-23	Berry, Wyatt	365.00	IRWD Wells Fargo Check	Reconciled
435873	11-May-23	Carter, Cheryl L (Cheryl)	17.21	IRWD Wells Fargo Check	Reconciled
435874	11-May-23	Cho, Harry K (Harry)	180.00	IRWD Wells Fargo Check	Reconciled
435875	11-May-23	Compton, Christine A	33.02	IRWD Wells Fargo Check	Reconciled
435876	11-May-23	Daniel, Matthew (Matthew)	297.00	IRWD Wells Fargo Check	Reconciled
435877	11-May-23	FRANCHISE TAX BOARD	2,032.26	IRWD Wells Fargo Check	Negotiable
435878	11-May-23	INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS LOCAL 47	6,058.04	IRWD Wells Fargo Check	Reconciled
435879	11-May-23	IRWD-PETTY CASH CUSTODIAN	907.40	IRWD Wells Fargo Check	Reconciled
435880	11-May-23	LaMar, Steven E	2,237.90	IRWD Wells Fargo Check	Reconciled
435881	11-May-23	Nelson, Mark D (Mark)	105.00	IRWD Wells Fargo Check	Reconciled
435882	11-May-23	Pan, Jenny W (Jenny)	75.87	IRWD Wells Fargo Check	Reconciled
435883	11-May-23	Perez, David M (David)	155.00	IRWD Wells Fargo Check	Reconciled
435884	11-May-23	PERS LONG TERM CARE	716.23	IRWD Wells Fargo Check	Reconciled
435885	11-May-23	Swan, Peer	4,361.76	IRWD Wells Fargo Check	Reconciled
435886	11-May-23	Yue, Andrew R (Andrew)	125.00	IRWD Wells Fargo Check	Reconciled
435887	11-May-23	Zamora, Victor A	25.28	IRWD Wells Fargo Check	Reconciled
435888	18-May-23	11:11 SYSTEMS INC.	15,242.48	IRWD Wells Fargo Check No Print	Reconciled
435889	18-May-23	ABC ICE, INC	389.85	IRWD Wells Fargo Check No Print	Reconciled
435890	18-May-23	ACCUSTANDARD INC	394.25	IRWD Wells Fargo Check No Print	Reconciled
435891	18-May-23	AGILENT TECHNOLOGIES, INC.	54.20	IRWD Wells Fargo Check No Print	Reconciled
435892	18-May-23	AIRGAS, INC.	1,057.59	IRWD Wells Fargo Check No Print	Reconciled
435893	18-May-23	AMAYA SOLUTIONS INC.	5,430.52	IRWD Wells Fargo Check No Print	Reconciled
435894	18-May-23	AMBROSIA QSR BEEF	25.00	IRWD Wells Fargo Check No Print	Negotiable
435895	18-May-23	ANDRITZ SEPARATION, INC.	12,519.77	IRWD Wells Fargo Check No Print	Reconciled
435896	18-May-23	AQUA-METRIC SALES COMPANY	57,056.33	IRWD Wells Fargo Check No Print	Reconciled
435897	18-May-23	AT&T CORP	148.10	IRWD Wells Fargo Check No Print	Reconciled
435898	18-May-23	AT&T CORP	4,801.67	IRWD Wells Fargo Check No Print	Reconciled
435899	18-May-23	AT&T CORP	165.13	IRWD Wells Fargo Check No Print	Reconciled
435900	18-May-23	ATI RESTORATION, LLC	21,031.06	IRWD Wells Fargo Check No Print	Reconciled
435901	18-May-23	AUSTIN HARDWOODS, INC	2,225.35	IRWD Wells Fargo Check No Print	Reconciled
435902	18-May-23	AUTOZONE PARTS, INC.	550.03	IRWD Wells Fargo Check No Print	Reconciled
435903	18-May-23	BADGER METER INC.	104,569.22	IRWD Wells Fargo Check No Print	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435904	18-May-23	BAKH, SHERRY	59.92	IRWD Wells Fargo Check No Print	Negotiable
435905	18-May-23	BEST MANAGEMENT CONSTRUCTION INC	1,525.50	IRWD Wells Fargo Check No Print	Reconciled
435906	18-May-23	BRIGHTLY SOFTWARE, INC.	8,874.72	IRWD Wells Fargo Check No Print	Reconciled
435907	18-May-23	BURNHAM BENEFITS INSURANCE SERVICES, LLC	5,833.33	IRWD Wells Fargo Check No Print	Reconciled
435908	18-May-23	C WELLS PIPELINE MATERIALS INC	1,859.77	IRWD Wells Fargo Check No Print	Reconciled
435909	18-May-23	CANON FINANCIAL SERVICES, INC	8,332.74	IRWD Wells Fargo Check No Print	Reconciled
435910	18-May-23	CHEM TECH INTERNATIONAL INC	8,192.25	IRWD Wells Fargo Check No Print	Reconciled
435911	18-May-23	CITY OF TUSTIN	209,566.00	IRWD Wells Fargo Check No Print	Reconciled
435912	18-May-23	CLEAN ENERGY	9,711.17	IRWD Wells Fargo Check No Print	Reconciled
435913	18-May-23	COAST PLUMBING HEATING AND AIR, INC	2,997.00	IRWD Wells Fargo Check No Print	Reconciled
435914	18-May-23	COLENO, MARIAH	4.78	IRWD Wells Fargo Check No Print	Reconciled
435915	18-May-23	CS-AMSCO	995.65	IRWD Wells Fargo Check No Print	Reconciled
435916	18-May-23	CURATIVE I.T. LLC	499.47	IRWD Wells Fargo Check No Print	Negotiable
435917	18-May-23	D & H WATER SYSTEMS INC.	901.01	IRWD Wells Fargo Check No Print	Reconciled
435918	18-May-23	DDB ENGINEERING, INC.	1,505.00	IRWD Wells Fargo Check No Print	Reconciled
435919	18-May-23	DELL MARKETING LP	9,052.88	IRWD Wells Fargo Check No Print	Reconciled
435920	18-May-23	DG INVESTMENT INTERMEDIATE HOLDINGS 2, INC.	8,738.65	IRWD Wells Fargo Check No Print	Reconciled
435921	18-May-23	DMS FACILITY SERVICES, LLC	34,965.17	IRWD Wells Fargo Check No Print	Reconciled
435922	18-May-23	DONG, JIAHUI	30.35	IRWD Wells Fargo Check No Print	Negotiable
435923	18-May-23	DUONG, JACQUELINE	14.74	IRWD Wells Fargo Check No Print	Negotiable
435924	18-May-23	E SOURCE COMPANIES LLC	17,435.20	IRWD Wells Fargo Check No Print	Reconciled
435925	18-May-23	EAGLE PRINT DYNAMICS	4,115.72	IRWD Wells Fargo Check No Print	Reconciled
435926	18-May-23	EMD MILLIPORE CORP.	6,348.45	IRWD Wells Fargo Check No Print	Reconciled
435927	18-May-23	ENTERPRISE INFORMATION SYSTEMS, INC.	6,840.00	IRWD Wells Fargo Check No Print	Reconciled
435928	18-May-23	ENVIRONMENTAL RESOURCE ASSOCIATES	1,908.12	IRWD Wells Fargo Check No Print	Negotiable
435929	18-May-23	EUROFINS EATON ANALYTICAL, INC.	3,362.50	IRWD Wells Fargo Check No Print	Reconciled
435930	18-May-23	EXECUTIVE LIGHTING & ELECTRIC	334.26	IRWD Wells Fargo Check No Print	Reconciled
435931	18-May-23	FAIRBANKS BUSINESS PARK	5,870.48	IRWD Wells Fargo Check No Print	Reconciled
435932	18-May-23	FEDEX	169.81	IRWD Wells Fargo Check No Print	Reconciled
435933	18-May-23	FISHER SCIENTIFIC COMPANY LLC	2,373.98	IRWD Wells Fargo Check No Print	Reconciled
435934	18-May-23	FITCH RATINGS, INC.	8,000.00	IRWD Wells Fargo Check No Print	Reconciled
435935	18-May-23	FOUGHT, CYNTHIA J.	494.85	IRWD Wells Fargo Check No Print	Reconciled
435936	18-May-23	FRONTIER CALIFORNIA INC.	57.94	IRWD Wells Fargo Check No Print	Reconciled
435937	18-May-23	GALLADE CHEMICAL INC	1,734.78	IRWD Wells Fargo Check No Print	Reconciled
435938	18-May-23	GEA MECHANICAL EQUIPMENT US, INC.	12,198.12	IRWD Wells Fargo Check No Print	Reconciled
435939	18-May-23	GEI CONSULTANTS INC	1,146.50	IRWD Wells Fargo Check No Print	Reconciled
435940	18-May-23	GRAINGER	12,233.64	IRWD Wells Fargo Check No Print	Reconciled
435941	18-May-23	GRAYBAR ELECTRIC COMPANY	557.36	IRWD Wells Fargo Check No Print	Reconciled
435942	18-May-23	HACH COMPANY	1,386.63	IRWD Wells Fargo Check No Print	Reconciled
435943	18-May-23	HAMILTON, KURT	518.08	IRWD Wells Fargo Check No Print	Negotiable
435944	18-May-23	HARCO MANUFACTURING COMPANY	4,256.02	IRWD Wells Fargo Check No Print	Reconciled
435945	18-May-23	HDR ENGINEERING INC	56,667.25	IRWD Wells Fargo Check No Print	Reconciled
435946	18-May-23	HENSEL PHELPS CONSTRUCTION CO	1,649.60	IRWD Wells Fargo Check No Print	Negotiable
435947	18-May-23	HERITAGE FIELDS LLC	129,415.02	IRWD Wells Fargo Check No Print	Reconciled
435948	18-May-23	HI-LINE INC	659.05	IRWD Wells Fargo Check No Print	Reconciled
435949	18-May-23	HILLCREST CONTRACTING, INC.	821.25	IRWD Wells Fargo Check No Print	Reconciled
435950	18-May-23	HOME DEPOT USA INC	1,406.86	IRWD Wells Fargo Check No Print	Reconciled
435951	18-May-23	HORIZON ENGINEERING SYSTEMS LLC	20,540.00	IRWD Wells Fargo Check No Print	Reconciled
435952	18-May-23	HOYA OPTICAL LABS OF AMERICA, INC.	226.00	IRWD Wells Fargo Check No Print	Reconciled
435953	18-May-23	IGOE & COMPANY, INCORPORATED	125.00	IRWD Wells Fargo Check No Print	Negotiable
435954	18-May-23	IMPERIAL SPRINKLER SUPPLY, INC.	113.41	IRWD Wells Fargo Check No Print	Reconciled
435955	18-May-23	INDUSTRIAL METAL SUPPLY CO	1,207.96	IRWD Wells Fargo Check No Print	Reconciled
435956	18-May-23	INSITE TELECOM, LLC	9,610.00	IRWD Wells Fargo Check No Print	Reconciled
435957	18-May-23	JBR ENGINEERING INC.	774.79	IRWD Wells Fargo Check No Print	Reconciled
435958	18-May-23	JOSE MARTINEZ TREE SERVICE INC.	1,800.00	IRWD Wells Fargo Check No Print	Reconciled
435959	18-May-23	KIMBALL MIDWEST	37.72	IRWD Wells Fargo Check No Print	Reconciled
435960	18-May-23	LA QUINTA MOTOR INN #663	1,142.24	IRWD Wells Fargo Check No Print	Negotiable
435961	18-May-23	LILLESTRAND LEADERSHIP CONSULTING, INC.	7,702.50	IRWD Wells Fargo Check No Print	Negotiable
435962	18-May-23	LINDE GAS & EQUIPMENT INC.	3,908.23	IRWD Wells Fargo Check No Print	Reconciled
435963	18-May-23	MARK THOMAS & COMPANY, INC.	3,715.54	IRWD Wells Fargo Check No Print	Reconciled
435964	18-May-23	MEGGITT DEFENSE SYSTEMS, INC	9,000.00	IRWD Wells Fargo Check No Print	Reconciled
435965	18-May-23	MOODY'S INVESTORS SERVICE INC	10,000.00	IRWD Wells Fargo Check No Print	Reconciled
435966	18-May-23	MSA SAFETY INCORPORATED	8,811.80	IRWD Wells Fargo Check No Print	Reconciled
435967	18-May-23	MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	89,508.82	IRWD Wells Fargo Check No Print	Reconciled
435968	18-May-23	MYERS & SONS HI-WAY SAFETY, INC.	4,177.43	IRWD Wells Fargo Check No Print	Reconciled
435969	18-May-23	NATIONAL READY MIXED CONCRETE SALES, LLC	930.56	IRWD Wells Fargo Check No Print	Reconciled
435970	18-May-23	NATURES IMAGE INC	5,320.00	IRWD Wells Fargo Check No Print	Reconciled



**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
435971	18-May-23	NEW DIMENSION GENERAL CONSTRUCTION	30,079.15	IRWD Wells Fargo Check No Print	Reconciled
435972	18-May-23	NEWPORT BEACH CHAMBER OF COMMERCE	1,500.00	IRWD Wells Fargo Check No Print	Negotiable
435973	18-May-23	ONESOURCE DISTRIBUTORS LLC	322.45	IRWD Wells Fargo Check No Print	Reconciled
435974	18-May-23	OPERATIONAL TECHNICAL SERVICES	7,293.00	IRWD Wells Fargo Check No Print	Reconciled
435975	18-May-23	OZAKI, CARLIE	45.68	IRWD Wells Fargo Check No Print	Negotiable
435976	18-May-23	PAYNE & FEARS LLP	540.00	IRWD Wells Fargo Check No Print	Reconciled
435977	18-May-23	PLUMBERS DEPOT INC.	1,971.18	IRWD Wells Fargo Check No Print	Reconciled
435978	18-May-23	PROTEUS CONSULTING	7,875.00	IRWD Wells Fargo Check No Print	Reconciled
435979	18-May-23	PROVOST & PRITCHARD ENGINEERING GROUP, INC.	136.00	IRWD Wells Fargo Check No Print	Reconciled
435980	18-May-23	PRUDENTIAL OVERALL SUPPLY	377.76	IRWD Wells Fargo Check No Print	Reconciled
435981	18-May-23	PSOMAS	43,495.00	IRWD Wells Fargo Check No Print	Reconciled
435982	18-May-23	QUINN COMPANY	7,361.44	IRWD Wells Fargo Check No Print	Reconciled
435983	18-May-23	RENTOKIL NORTH AMERICA, INC	17,133.40	IRWD Wells Fargo Check No Print	Reconciled
435984	18-May-23	ROBINS BORGHEI LLP	150.00	IRWD Wells Fargo Check No Print	Reconciled
435985	18-May-23	SAFETY-KLEEN SYSTEMS, INC	377.50	IRWD Wells Fargo Check No Print	Reconciled
435986	18-May-23	SANTA MARGARITA FORD	456.01	IRWD Wells Fargo Check No Print	Reconciled
435987	18-May-23	SHAMROCK SUPPLY CO INC	2,886.50	IRWD Wells Fargo Check No Print	Reconciled
435988	18-May-23	SHOETERIA	271.79	IRWD Wells Fargo Check No Print	Reconciled
435989	18-May-23	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	1,379.07	IRWD Wells Fargo Check No Print	Reconciled
435990	18-May-23	SOUTH COAST WATER DISTRICT	977.75	IRWD Wells Fargo Check No Print	Reconciled
435991	18-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	56.86	IRWD Wells Fargo Check No Print	Reconciled
435992	18-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	71,295.57	IRWD Wells Fargo Check No Print	Reconciled
435993	18-May-23	SOUTHERN CALIFORNIA GAS COMPANY	22,573.00	IRWD Wells Fargo Check No Print	Reconciled
435994	18-May-23	SOUTHERN CALIFORNIA SECURITY CENTERS, INC.	592.75	IRWD Wells Fargo Check No Print	Negotiable
435995	18-May-23	SOUTHERN COUNTIES LUBRICANTS LLC	434.67	IRWD Wells Fargo Check No Print	Reconciled
435996	18-May-23	STANTEC ARCHITECTURE INC	18,178.04	IRWD Wells Fargo Check No Print	Reconciled
435997	18-May-23	SUPPORT PRODUCT SERVICES, INC	1,047.75	IRWD Wells Fargo Check No Print	Reconciled
435998	18-May-23	SUZANNA CHOI	5,000.00	IRWD Wells Fargo Check No Print	Negotiable
435999	18-May-23	SYNAGRO-WWT, INC.	92,293.34	IRWD Wells Fargo Check No Print	Reconciled
436000	18-May-23	TAIT ENVIRONMENTAL SERVICES, INC.	3,632.50	IRWD Wells Fargo Check No Print	Negotiable
436001	18-May-23	TASSIN SCIENTIFIC SERVICES, LLC.	1,259.25	IRWD Wells Fargo Check No Print	Reconciled
436002	18-May-23	THOMAS HARDER & CO	4,261.13	IRWD Wells Fargo Check No Print	Reconciled
436003	18-May-23	TIERRA VERDE INDUSTRIES	460.64	IRWD Wells Fargo Check No Print	Reconciled
436004	18-May-23	TONY DEMARIA ELECTRIC, INC (DBA TDE)	31,190.00	IRWD Wells Fargo Check No Print	Reconciled
436005	18-May-23	TRI POINTE HOMES HOLDINGS, INC.	1,332.32	IRWD Wells Fargo Check No Print	Negotiable
436006	18-May-23	UNITED PARCEL SERVICE INC	178.08	IRWD Wells Fargo Check No Print	Reconciled
436007	18-May-23	UNITED SITE SERVICES OF CALIFORNIA INC	1,165.19	IRWD Wells Fargo Check No Print	Reconciled
436008	18-May-23	USA WASTE OF CALIFORNIA, INC.	639.60	IRWD Wells Fargo Check No Print	Reconciled
436009	18-May-23	V&A CONSULTING ENGINEERS	580.50	IRWD Wells Fargo Check No Print	Reconciled
436010	18-May-23	VEOLIA NORTH AMERICA, INC.	1,042.88	IRWD Wells Fargo Check No Print	Reconciled
436011	18-May-23	VWR INTERNATIONAL, LLC	3,181.86	IRWD Wells Fargo Check No Print	Reconciled
436012	18-May-23	WANG, YI	10.04	IRWD Wells Fargo Check No Print	Negotiable
436013	18-May-23	WARD, WILLIAM P JR.	693.14	IRWD Wells Fargo Check No Print	Reconciled
436014	18-May-23	WATERLINE TECHNOLOGIES INC	3,794.00	IRWD Wells Fargo Check No Print	Reconciled
436015	18-May-23	WAXIE'S ENTERPRISES, INC	1,607.23	IRWD Wells Fargo Check No Print	Reconciled
436016	18-May-23	WEST YOST & ASSOCIATES, INC.	14,376.75	IRWD Wells Fargo Check No Print	Reconciled
436017	18-May-23	WESTERN AV	12,867.51	IRWD Wells Fargo Check No Print	Reconciled
436018	18-May-23	WIERKS, JON	22.40	IRWD Wells Fargo Check No Print	Negotiable
436019	18-May-23	YUNMI MARTIN	7,500.00	IRWD Wells Fargo Check No Print	Reconciled
436020	18-May-23	ANTHEM BLUE CROSS	306.93	IRWD Wells Fargo Check	Reconciled
436021	18-May-23	Arellano, Charles	161.25	IRWD Wells Fargo Check	Negotiable
436022	18-May-23	CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE	850.00	IRWD Wells Fargo Check	Negotiable
436023	18-May-23	Colston, James	1,238.14	IRWD Wells Fargo Check	Reconciled
436024	18-May-23	Fehser, Noah (Noah)	100.00	IRWD Wells Fargo Check	Reconciled
436025	18-May-23	FOOTHILL BUSINESS ASSN	576.22	IRWD Wells Fargo Check	Reconciled
436026	18-May-23	HUMANA INSURANCE COMPANY	150.60	IRWD Wells Fargo Check	Reconciled
436027	18-May-23	IRWD-PETTY CASH CUSTODIAN	1,169.90	IRWD Wells Fargo Check	Reconciled
436028	18-May-23	Nowak, Joshua	100.00	IRWD Wells Fargo Check	Reconciled
436029	18-May-23	Pan, Jenny W (Jenny)	156.50	IRWD Wells Fargo Check	Reconciled
436030	18-May-23	STATE WATER RESOURCES CONTROL BOARD	1,300.80	IRWD Wells Fargo Check	Reconciled
436031	18-May-23	UNITED HEALTHCARE INSURANCE COMPANY	694.00	IRWD Wells Fargo Check	Reconciled
436032	18-May-23	Welch, Kelly A (Kellie)	223.61	IRWD Wells Fargo Check	Reconciled
436033	18-May-23	Zamora, Victor A	93.19	IRWD Wells Fargo Check	Reconciled
436034	23-May-23	CALIFORNIA DEPARTMENT OF TAX AND FEE ADMINISTRATION	430.00	IRWD Wells Fargo Check	Reconciled
436035	25-May-23	ABC ICE, INC	314.36	IRWD Wells Fargo Check No Print	Reconciled
436036	25-May-23	AERZEN USA CORP	3,706.20	IRWD Wells Fargo Check No Print	Negotiable
436037	25-May-23	AGILENT TECHNOLOGIES, INC.	1,593.14	IRWD Wells Fargo Check No Print	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
436038	25-May-23	AIR TECHNOLOGY LABORATORIES	1,167.00	IRWD Wells Fargo Check No Print	Reconciled
436039	25-May-23	AIRGAS, INC.	416.58	IRWD Wells Fargo Check No Print	Negotiable
436040	25-May-23	AMERICAN WATER WORKS ASSOC	629.16	IRWD Wells Fargo Check No Print	Negotiable
436041	25-May-23	ANTHONY N. LARSEN	550.00	IRWD Wells Fargo Check No Print	Negotiable
436042	25-May-23	AQUA-METRIC SALES COMPANY	26,678.75	IRWD Wells Fargo Check No Print	Reconciled
436043	25-May-23	AT&T CORP	7,267.36	IRWD Wells Fargo Check No Print	Negotiable
436044	25-May-23	AT&T CORP	6,657.00	IRWD Wells Fargo Check No Print	Negotiable
436045	25-May-23	AUTOZONE PARTS, INC.	1,099.04	IRWD Wells Fargo Check No Print	Negotiable
436046	25-May-23	B&K VALVES & EQUIPMENT, INC.	6,386.34	IRWD Wells Fargo Check No Print	Negotiable
436047	25-May-23	BAYVIEW COMMERCIAL ASSN	1,121.37	IRWD Wells Fargo Check No Print	Negotiable
436048	25-May-23	BENNETT, WINI	2,320.66	IRWD Wells Fargo Check No Print	Negotiable
436049	25-May-23	BOIKE, SHERYCE	39.44	IRWD Wells Fargo Check No Print	Reconciled
436050	25-May-23	BORCHARD SURVEYING & MAPPING, INC.	5,770.00	IRWD Wells Fargo Check No Print	Reconciled
436051	25-May-23	BROWN AND CALDWELL	8,446.29	IRWD Wells Fargo Check No Print	Reconciled
436052	25-May-23	BURLINGTON SAFETY LABORATORY OF CALIFORNIA INC	3,366.59	IRWD Wells Fargo Check No Print	Reconciled
436053	25-May-23	CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION	15,406.00	IRWD Wells Fargo Check No Print	Reconciled
436054	25-May-23	CALIFORNIA NEWSPAPERS PARTNERSHIP	2,293.76	IRWD Wells Fargo Check No Print	Reconciled
436055	25-May-23	CALIFORNIA PACIFIC HOMES	126.21	IRWD Wells Fargo Check No Print	Negotiable
436056	25-May-23	CARUTHERS, JIM	16.77	IRWD Wells Fargo Check No Print	Negotiable
436057	25-May-23	CENTROID SYSTEMS, INC.	45,691.00	IRWD Wells Fargo Check No Print	Negotiable
436058	25-May-23	CHEM TECH INTERNATIONAL INC	5,553.90	IRWD Wells Fargo Check No Print	Reconciled
436059	25-May-23	CITY OF ORANGE	227.02	IRWD Wells Fargo Check No Print	Reconciled
436060	25-May-23	D & G SIGNS	199.34	IRWD Wells Fargo Check No Print	Negotiable
436061	25-May-23	D & H WATER SYSTEMS INC.	3,185.58	IRWD Wells Fargo Check No Print	Negotiable
436062	25-May-23	DE VAUL PAINT COMPANY	1,122.75	IRWD Wells Fargo Check No Print	Negotiable
436063	25-May-23	DENALI WATER SOLUTIONS LLC	15,758.92	IRWD Wells Fargo Check No Print	Negotiable
436064	25-May-23	DIRECTV INC	159.24	IRWD Wells Fargo Check No Print	Negotiable
436065	25-May-23	DRAEGER, INC.	1,438.89	IRWD Wells Fargo Check No Print	Negotiable
436066	25-May-23	EAGLE PRINT DYNAMICS	3,340.27	IRWD Wells Fargo Check No Print	Reconciled
436067	25-May-23	EAST ORANGE COUNTY WATER DISTRICT	1,996.13	IRWD Wells Fargo Check No Print	Negotiable
436068	25-May-23	ECO SERVICES LLC	6,444.58	IRWD Wells Fargo Check No Print	Negotiable
436069	25-May-23	ELECTRABOND	3,924.94	IRWD Wells Fargo Check No Print	Negotiable
436070	25-May-23	ENDRESS AND HAUSER INC	1,297.47	IRWD Wells Fargo Check No Print	Negotiable
436071	25-May-23	ENGINEERING/REMEDIATION RESOURCES GROUP, INC.	1,620.00	IRWD Wells Fargo Check No Print	Reconciled
436072	25-May-23	ENTERPRISE HOLDINGS, INC.	16,399.19	IRWD Wells Fargo Check No Print	Reconciled
436073	25-May-23	ENVIRONMENTAL RESOURCE ASSOCIATES	2,044.66	IRWD Wells Fargo Check No Print	Negotiable
436074	25-May-23	ENVIRONMENTAL SCIENCE ASSOCIATES	1,148.45	IRWD Wells Fargo Check No Print	Reconciled
436075	25-May-23	FARRELL & ASSOCIATES	155.57	IRWD Wells Fargo Check No Print	Negotiable
436076	25-May-23	FEDEX	705.82	IRWD Wells Fargo Check No Print	Reconciled
436077	25-May-23	FIRST CHOICE SERVICES	3,336.40	IRWD Wells Fargo Check No Print	Negotiable
436078	25-May-23	FISHER SCIENTIFIC COMPANY LLC	626.22	IRWD Wells Fargo Check No Print	Reconciled
436079	25-May-23	FLW, INC.	1,507.07	IRWD Wells Fargo Check No Print	Reconciled
436080	25-May-23	FRONTIER CALIFORNIA INC.	492.89	IRWD Wells Fargo Check No Print	Negotiable
436081	25-May-23	GEORGE T. HALL CO., INC.	81,350.00	IRWD Wells Fargo Check No Print	Reconciled
436082	25-May-23	GRAINGER	10,058.26	IRWD Wells Fargo Check No Print	Negotiable
436083	25-May-23	GRAYBAR ELECTRIC COMPANY	12.81	IRWD Wells Fargo Check No Print	Reconciled
436084	25-May-23	GREATER IRVINE CHAMBER OF COMMERCE	1,800.00	IRWD Wells Fargo Check No Print	Negotiable
436085	25-May-23	HABITAT RESTORATION SCIENCES INC	710.67	IRWD Wells Fargo Check No Print	Negotiable
436086	25-May-23	HACH COMPANY	11,532.93	IRWD Wells Fargo Check No Print	Negotiable
436087	25-May-23	HDR ENGINEERING INC	26,424.28	IRWD Wells Fargo Check No Print	Negotiable
436088	25-May-23	HI-LINE INC	213.11	IRWD Wells Fargo Check No Print	Negotiable
436089	25-May-23	HOME DEPOT USA INC	720.61	IRWD Wells Fargo Check No Print	Negotiable
436090	25-May-23	HOME DEPOT USA INC	620.64	IRWD Wells Fargo Check No Print	Negotiable
436091	25-May-23	IMPERIAL SPRINKLER SUPPLY, INC.	155.15	IRWD Wells Fargo Check No Print	Reconciled
436092	25-May-23	INDUSTRIAL METAL SUPPLY CO	23.87	IRWD Wells Fargo Check No Print	Reconciled
436093	25-May-23	INTEGRITY MUNICIPAL SERVICES LLC	8,932.25	IRWD Wells Fargo Check No Print	Negotiable
436094	25-May-23	J & R CONCRETE PRODUCTS, INC.	6,330.31	IRWD Wells Fargo Check No Print	Reconciled
436095	25-May-23	JOSE MARTINEZ TREE SERVICE INC.	8,800.00	IRWD Wells Fargo Check No Print	Reconciled
436096	25-May-23	JUST ENERGY SOLUTIONS INC.	3.97	IRWD Wells Fargo Check No Print	Reconciled
436097	25-May-23	KAYMAK, CEMAL	270.27	IRWD Wells Fargo Check No Print	Negotiable
436098	25-May-23	KIDMAN GAGEN LAW, LLP	750.00	IRWD Wells Fargo Check No Print	Negotiable
436099	25-May-23	LAYTON-BELLING & ASSOCIATES	417.96	IRWD Wells Fargo Check No Print	Negotiable
436100	25-May-23	LEE & RO, INC.	29,040.50	IRWD Wells Fargo Check No Print	Negotiable
436101	25-May-23	LINDE GAS & EQUIPMENT INC.	1,853.38	IRWD Wells Fargo Check No Print	Negotiable
436102	25-May-23	LSA ASSOCIATES INC	12,616.45	IRWD Wells Fargo Check No Print	Negotiable
436103	25-May-23	MAXWELL, KRISTEN	17.56	IRWD Wells Fargo Check No Print	Negotiable
436104	25-May-23	MBC AQUATIC SCIENCES, INC.	1,400.00	IRWD Wells Fargo Check No Print	Negotiable

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

<b>CHECK OR ELECTRONIC #</b>	<b>PAYMENT DATE</b>	<b>SUPPLIERS</b>	<b>PAYMENT AMOUNT</b>	<b>PAYMENT METHOD</b>	<b>STATUS</b>
436105	25-May-23	MC FADDEN-DALE INDUSTRIAL	303.08	IRWD Wells Fargo Check No Print	Reconciled
436106	25-May-23	MICHAEL K. NUNLEY & ASSOCIATES, INC.	26,178.50	IRWD Wells Fargo Check No Print	Reconciled
436107	25-May-23	MIRZADA, FAISAL	211.86	IRWD Wells Fargo Check No Print	Negotiable
436108	25-May-23	MISSION COMMUNICATIONS, LLC	5,754.60	IRWD Wells Fargo Check No Print	Negotiable
436109	25-May-23	MOFFAT, ROBERT	46.10	IRWD Wells Fargo Check No Print	Reconciled
436110	25-May-23	MOULTON NIGUEL WATER DISTRICT	4,000.00	IRWD Wells Fargo Check No Print	Reconciled
436111	25-May-23	MR CRANE INC	1,470.00	IRWD Wells Fargo Check No Print	Reconciled
436112	25-May-23	MSC INDUSTRIAL SUPPLY CO	1,563.67	IRWD Wells Fargo Check No Print	Negotiable
436113	25-May-23	NAKAE & ASSOCIATES INC	361.05	IRWD Wells Fargo Check No Print	Reconciled
436114	25-May-23	NATIONAL READY MIXED CONCRETE SALES, LLC	1,107.27	IRWD Wells Fargo Check No Print	Reconciled
436115	25-May-23	NATURES IMAGE INC	13,925.50	IRWD Wells Fargo Check No Print	Negotiable
436116	25-May-23	NETWORK INTEGRATION COMPANY PARTNERS	8,586.25	IRWD Wells Fargo Check No Print	Negotiable
436117	25-May-23	NEW DIMENSION GENERAL CONSTRUCTION	20,500.00	IRWD Wells Fargo Check No Print	Negotiable
436118	25-May-23	OCEAN BLUE ENVIRONMENTAL SERVICES INC	5,767.07	IRWD Wells Fargo Check No Print	Negotiable
436119	25-May-23	ORACLE AMERICA, INC.	28,448.00	IRWD Wells Fargo Check No Print	Reconciled
436120	25-May-23	OUTSOURCE TECHNICAL LLC	3,575.00	IRWD Wells Fargo Check No Print	Negotiable
436121	25-May-23	PACIFIC MECHANICAL SUPPLY	587.10	IRWD Wells Fargo Check No Print	Negotiable
436122	25-May-23	PATTEN SYSTEMS, INC.	948.68	IRWD Wells Fargo Check No Print	Negotiable
436123	25-May-23	PILAR ONATE	11,600.00	IRWD Wells Fargo Check No Print	Negotiable
436124	25-May-23	PINNACLE TOWERS LLC	876.47	IRWD Wells Fargo Check No Print	Negotiable
436125	25-May-23	PLUMBERS DEPOT INC.	905.96	IRWD Wells Fargo Check No Print	Negotiable
436126	25-May-23	PUBLIC POLICY INSTITUTE OF CALIFORNIA	10,000.00	IRWD Wells Fargo Check No Print	Negotiable
436127	25-May-23	QUAIL MEADOW APARTMENTS	185.52	IRWD Wells Fargo Check No Print	Negotiable
436128	25-May-23	RANCHO MADERAS APTS	22.33	IRWD Wells Fargo Check No Print	Negotiable
436129	25-May-23	REAL WATER CONSULTANTS INC.	5,451.00	IRWD Wells Fargo Check No Print	Reconciled
436130	25-May-23	RHINO SAFETY SOLUTIONS, INC	3,900.00	IRWD Wells Fargo Check No Print	Negotiable
436131	25-May-23	RS HUGHES COMPANY, INC.	2,792.44	IRWD Wells Fargo Check No Print	Reconciled
436132	25-May-23	SAFETY CENTER INCORPORATED	1,680.00	IRWD Wells Fargo Check No Print	Reconciled
436133	25-May-23	SANTA MARGARITA FORD	392.14	IRWD Wells Fargo Check No Print	Reconciled
436134	25-May-23	SERRANO WATER DISTRICT	44,583.75	IRWD Wells Fargo Check No Print	Reconciled
436135	25-May-23	SITMATIC	656.20	IRWD Wells Fargo Check No Print	Negotiable
436136	25-May-23	SMOG TIME	73.25	IRWD Wells Fargo Check No Print	Negotiable
436137	25-May-23	SO CAL SANDBAGS INC	1,559.62	IRWD Wells Fargo Check No Print	Negotiable
436138	25-May-23	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	1,379.07	IRWD Wells Fargo Check No Print	Negotiable
436139	25-May-23	SOUTH COAST BOBCAT	967.14	IRWD Wells Fargo Check No Print	Reconciled
436140	25-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	312,908.41	IRWD Wells Fargo Check No Print	Reconciled
436141	25-May-23	SOUTHERN CALIFORNIA EDISON COMPANY	2,925.00	IRWD Wells Fargo Check No Print	Negotiable
436142	25-May-23	SOUTHERN CALIFORNIA GAS COMPANY	3,700.28	IRWD Wells Fargo Check No Print	Negotiable
436143	25-May-23	SPARKLETTS	258.79	IRWD Wells Fargo Check No Print	Negotiable
436144	25-May-23	STEVEN WELCH	411.00	IRWD Wells Fargo Check No Print	Reconciled
436145	25-May-23	TAYLOR MORRISON OF CALIFORNIA, LLC	180.46	IRWD Wells Fargo Check No Print	Negotiable
436146	25-May-23	TIC-RESORT PROPERTIES	20,706.52	IRWD Wells Fargo Check No Print	Negotiable
436147	25-May-23	TOLL BROS., INC.	661.23	IRWD Wells Fargo Check No Print	Reconciled
436148	25-May-23	TONY DEMARIA ELECTRIC, INC (DBA TDE)	39,000.00	IRWD Wells Fargo Check No Print	Negotiable
436149	25-May-23	TRUONG, HONGHOA	4.44	IRWD Wells Fargo Check No Print	Negotiable
436150	25-May-23	ULINE INC	1,128.80	IRWD Wells Fargo Check No Print	Negotiable
436151	25-May-23	UNITED PARCEL SERVICE INC	38.93	IRWD Wells Fargo Check No Print	Negotiable
436152	25-May-23	UNITED PARCEL SERVICE INC	30.00	IRWD Wells Fargo Check No Print	Negotiable
436153	25-May-23	UNITED RENTALS (NORTH AMERICA), INC.	2,861.53	IRWD Wells Fargo Check No Print	Reconciled
436154	25-May-23	UNIVAR SOLUTIONS USA INC.	11,451.00	IRWD Wells Fargo Check No Print	Negotiable
436155	25-May-23	UNOCAL SERVICE STATION	26,965.48	IRWD Wells Fargo Check No Print	Negotiable
436156	25-May-23	URBAN WATER INSTITUTE INC	3,250.00	IRWD Wells Fargo Check No Print	Reconciled
436157	25-May-23	V&A CONSULTING ENGINEERS	34,827.50	IRWD Wells Fargo Check No Print	Reconciled
436158	25-May-23	VALERIO, RAMON	17.39	IRWD Wells Fargo Check No Print	Negotiable
436159	25-May-23	VEOLIA NORTH AMERICA, INC.	4,099.50	IRWD Wells Fargo Check No Print	Negotiable
436160	25-May-23	VEOLIA WATER TECHNOLOGIES TREATMENT SOLUTIONS USA INC.	14,810.99	IRWD Wells Fargo Check No Print	Negotiable
436161	25-May-23	VERTEX INC	7,527.00	IRWD Wells Fargo Check No Print	Negotiable
436162	25-May-23	VULCAN MATERIALS COMPANY	2,188.51	IRWD Wells Fargo Check No Print	Reconciled
436163	25-May-23	WATEREUSE ASSOCIATION	8,500.00	IRWD Wells Fargo Check No Print	Negotiable
436164	25-May-23	WAXIE'S ENTERPRISES, INC	377.38	IRWD Wells Fargo Check No Print	Reconciled
436165	25-May-23	WEST YOST & ASSOCIATES, INC.	16,985.00	IRWD Wells Fargo Check No Print	Negotiable
436166	25-May-23	WU, JONATHAN	6.13	IRWD Wells Fargo Check No Print	Negotiable
436167	25-May-23	YEBO INCORPORATED	817.86	IRWD Wells Fargo Check No Print	Negotiable
436168	25-May-23	YORK RISK SERVICES GROUP, INC.	8,756.00	IRWD Wells Fargo Check No Print	Reconciled
436169	25-May-23	Akiyoshi, Eric S (Eric)	1,696.09	IRWD Wells Fargo Check	Reconciled
436170	25-May-23	Aryan, Stephen	60.00	IRWD Wells Fargo Check	Reconciled
436171	25-May-23	Bonkowski, Leslie A (Leslie)	110.36	IRWD Wells Fargo Check	Negotiable

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
436172	25-May-23	Bornhoff, Mike (Mike)	2,124.89	IRWD Wells Fargo Check	Reconciled
436173	25-May-23	Clinton, Bryan R (Bryan)	775.79	IRWD Wells Fargo Check	Reconciled
436174	25-May-23	Daniel, Matthew (Matthew)	105.00	IRWD Wells Fargo Check	Reconciled
436175	25-May-23	Davis, Jennifer R (Jennifer)	1,134.69	IRWD Wells Fargo Check	Reconciled
436176	25-May-23	FRANCHISE TAX BOARD	1,542.72	IRWD Wells Fargo Check	Negotiable
436177	25-May-23	HARTFORD LIFE AND ACCIDENT INSURANCE COMPANY	50.88	IRWD Wells Fargo Check	Negotiable
436178	25-May-23	Hatch, Lauren	90.00	IRWD Wells Fargo Check	Negotiable
436179	25-May-23	INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS LOCAL 47	6,123.59	IRWD Wells Fargo Check	Reconciled
436180	25-May-23	IRWD-PETTY CASH CUSTODIAN	1,493.77	IRWD Wells Fargo Check	Reconciled
436181	25-May-23	McQuown, Devin Christina	200.00	IRWD Wells Fargo Check	Reconciled
436182	25-May-23	Mendoza, Oliver	984.85	IRWD Wells Fargo Check	Reconciled
436183	25-May-23	Orozco, Gustavo A (Gus)	120.00	IRWD Wells Fargo Check	Negotiable
436184	25-May-23	PERS LONG TERM CARE	716.23	IRWD Wells Fargo Check	Reconciled
436185	31-May-23	US BANK NAT'L ASSOCIATION NORTH DAKOTA	72,179.80	IRWD Wells Fargo Check	Negotiable
<b>SUB-TOTAL IRWD WELLS FARGO CHECK AND IRWD WELLS FARGO CHECK NO PRINT DISBURSEMENTS</b>			<b>7,567,558.00</b>		
1000794	1-May-23	JCI JONES CHEMICALS INC	9,897.45	IRWD Wells Fargo ACH	Reconciled
1000795	4-May-23	ADAM'S FALCONRY SERVICE, LLC	3,300.00	IRWD Wells Fargo ACH	Reconciled
1000796	4-May-23	AMAZON CAPITAL SERVICES, INC.	1,120.61	IRWD Wells Fargo ACH	Reconciled
1000797	4-May-23	BOWMAN DESIGN, INC.	70,657.00	IRWD Wells Fargo ACH	Reconciled
1000798	4-May-23	CALIFORNIA BARRICADE RENTAL, INC.	28,708.00	IRWD Wells Fargo ACH	Reconciled
1000799	4-May-23	CDW GOVERNMENT LLC	579.25	IRWD Wells Fargo ACH	Reconciled
1000800	4-May-23	CITY OF IRVINE	4,965.32	IRWD Wells Fargo ACH	Reconciled
1000801	4-May-23	CONSTELLATION NEWENERGY, INC.	72,251.60	IRWD Wells Fargo ACH	Reconciled
1000802	4-May-23	COTTONS POINT DESIGN, INC.	3,346.54	IRWD Wells Fargo ACH	Reconciled
1000803	4-May-23	CV TECHNOLOGY, INC.	13,800.00	IRWD Wells Fargo ACH	Reconciled
1000804	4-May-23	DEMARIA ELECTRIC MOTOR SERVICES, INC.	19,505.29	IRWD Wells Fargo ACH	Reconciled
1000805	4-May-23	DRAKE TRAFFIC CONTROL SERVICES INC	8,625.00	IRWD Wells Fargo ACH	Reconciled
1000806	4-May-23	ENVIRONMENTAL ENGINEERING AND CONTRACTING, INC.	13,791.25	IRWD Wells Fargo ACH	Reconciled
1000807	4-May-23	EUROFINS ENVIRONMENT TESTING AMERICA HOLDINGS, INC.	2,475.00	IRWD Wells Fargo ACH	Reconciled
1000808	4-May-23	FLUID SOUND, INC.	3,650.00	IRWD Wells Fargo ACH	Reconciled
1000809	4-May-23	GANAHL LUMBER CO.	360.66	IRWD Wells Fargo ACH	Reconciled
1000810	4-May-23	HAAKER EQUIPMENT COMPANY	196.03	IRWD Wells Fargo ACH	Reconciled
1000811	4-May-23	HELPMATES STAFFING SERVICES LLC	7,987.58	IRWD Wells Fargo ACH	Reconciled
1000812	4-May-23	HILL BROTHERS CHEMICAL COMPANY	16,459.87	IRWD Wells Fargo ACH	Reconciled
1000813	4-May-23	JCI JONES CHEMICALS INC	7,935.62	IRWD Wells Fargo ACH	Reconciled
1000814	4-May-23	LANDCARE HOLDINGS, INC.	90,670.70	IRWD Wells Fargo ACH	Reconciled
1000815	4-May-23	LIEBERT CASSIDY WHITMORE	42.50	IRWD Wells Fargo ACH	Reconciled
1000816	4-May-23	O.C. SUPERIOR CUSTOM CLEANING	4,612.00	IRWD Wells Fargo ACH	Reconciled
1000817	4-May-23	OLIN CORPORATION	39,081.70	IRWD Wells Fargo ACH	Reconciled
1000818	4-May-23	ORANGE COUNTY AUTO PARTS CO	4,738.48	IRWD Wells Fargo ACH	Reconciled
1000819	4-May-23	PACIFIC PARTS & CONTROLS INC	9,230.02	IRWD Wells Fargo ACH	Reconciled
1000820	4-May-23	PAPER DEPOT DOCUMENT DESTRUCTION LLC	330.00	IRWD Wells Fargo ACH	Reconciled
1000821	4-May-23	RINCON TRUCK CENTER INC.	187.83	IRWD Wells Fargo ACH	Reconciled
1000822	4-May-23	SPATIAL WAVE, INC.	7,880.00	IRWD Wells Fargo ACH	Reconciled
1000823	4-May-23	SUKLE ADVERTISING INC.	5,382.43	IRWD Wells Fargo ACH	Reconciled
1000824	4-May-23	VERTECH INDUSTRIAL SYSTEMS, LLC	1,125.00	IRWD Wells Fargo ACH	Reconciled
1000825	4-May-23	VSS SALES INC	45,760.00	IRWD Wells Fargo ACH	Reconciled
1000826	4-May-23	YORKE ENGINEERING, LLC	271.50	IRWD Wells Fargo ACH	Reconciled
1000827	11-May-23	AECOM TECHNICAL SERVICES, INC.	6,655.00	IRWD Wells Fargo ACH	Reconciled
1000828	11-May-23	ALEXANDER'S CONTRACT SERVICES, INC.	133,493.15	IRWD Wells Fargo ACH	Reconciled
1000829	11-May-23	ALSTON & BIRD LLP	8,354.55	IRWD Wells Fargo ACH	Reconciled
1000830	11-May-23	AMAZON CAPITAL SERVICES, INC.	11,012.69	IRWD Wells Fargo ACH	Reconciled
1000831	11-May-23	AURORA SYSTEMS CONSULTING, INC	48,942.32	IRWD Wells Fargo ACH	Reconciled
1000832	11-May-23	BIGWIG MONSTER, LLC	19,350.00	IRWD Wells Fargo ACH	Reconciled
1000833	11-May-23	BRENTAG PACIFIC INC	7,031.56	IRWD Wells Fargo ACH	Reconciled
1000834	11-May-23	CITY OF IRVINE	348.48	IRWD Wells Fargo ACH	Reconciled
1000835	11-May-23	COASTAL OCCUPATIONAL MEDICAL GROUP, INC.	535.00	IRWD Wells Fargo ACH	Reconciled
1000836	11-May-23	CONSTELLATION NEWENERGY, INC.	148,603.33	IRWD Wells Fargo ACH	Reconciled
1000837	11-May-23	COTTONS POINT DESIGN, INC.	3,370.42	IRWD Wells Fargo ACH	Reconciled
1000838	11-May-23	DRAKE TRAFFIC CONTROL SERVICES INC	5,450.00	IRWD Wells Fargo ACH	Reconciled
1000839	11-May-23	E.J. MEYER COMPANY	607,809.47	IRWD Wells Fargo ACH	Reconciled
1000840	11-May-23	EHS INTERNATIONAL, INC	1,320.00	IRWD Wells Fargo ACH	Reconciled
1000841	11-May-23	FLUID SOUND, INC.	55,908.55	IRWD Wells Fargo ACH	Reconciled
1000842	11-May-23	GM SAGER CONSTRUCTION CO, INC.	19,100.00	IRWD Wells Fargo ACH	Reconciled
1000843	11-May-23	HELPMATES STAFFING SERVICES LLC	4,000.00	IRWD Wells Fargo ACH	Reconciled
1000844	11-May-23	HILL BROTHERS CHEMICAL COMPANY	22,463.96	IRWD Wells Fargo ACH	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
1000845	11-May-23	KRONICK MOSKOVITZ TIEDEMANN & GIRARD	14,175.00	IRWD Wells Fargo ACH	Reconciled
1000846	11-May-23	LABWORKS, LLC	2,750.00	IRWD Wells Fargo ACH	Reconciled
1000847	11-May-23	LANDCARE HOLDINGS, INC.	67,995.00	IRWD Wells Fargo ACH	Reconciled
1000848	11-May-23	LIEBERT CASSIDY WHITMORE	1,389.50	IRWD Wells Fargo ACH	Reconciled
1000849	11-May-23	OLIN CORPORATION	101,755.32	IRWD Wells Fargo ACH	Reconciled
1000850	11-May-23	ORANGE COUNTY AUTO PARTS CO	1,988.59	IRWD Wells Fargo ACH	Reconciled
1000851	11-May-23	PACIFIC PARTS & CONTROLS INC	5,129.41	IRWD Wells Fargo ACH	Reconciled
1000852	11-May-23	PYRO-COMM SYSTEMS INC	955.00	IRWD Wells Fargo ACH	Reconciled
1000853	11-May-23	RAM AIR ENGINEERING INC	3,138.09	IRWD Wells Fargo ACH	Reconciled
1000854	11-May-23	RED WING SHOE STORE	450.00	IRWD Wells Fargo ACH	Reconciled
1000855	11-May-23	RLG ENTERPRISES, INC	531.85	IRWD Wells Fargo ACH	Reconciled
1000856	11-May-23	SADDLEBACK SURVEYS, INC.	1,730.00	IRWD Wells Fargo ACH	Reconciled
1000857	11-May-23	SI TESTING	3,475.00	IRWD Wells Fargo ACH	Reconciled
1000858	11-May-23	SUNSHINE SUPPLY COMPANY, INC.	3,528.23	IRWD Wells Fargo ACH	Reconciled
1000859	11-May-23	TOTAL RESOURCE MANAGEMENT, INC	285.00	IRWD Wells Fargo ACH	Reconciled
1000860	11-May-23	VERTECH INDUSTRIAL SYSTEMS, LLC	36,103.81	IRWD Wells Fargo ACH	Reconciled
1000861	11-May-23	WATER TREATMENT CHEMICALS INC	19,764.00	IRWD Wells Fargo ACH	Reconciled
1000862	11-May-23	WESTAMERICA COMMUNICATIONS, INC.	4,039.85	IRWD Wells Fargo ACH	Reconciled
1000863	11-May-23	WOODARD & CURRAN INC	40,840.00	IRWD Wells Fargo ACH	Reconciled
1000864	11-May-23	WORKFORCE SAFETY LLC	1,500.00	IRWD Wells Fargo ACH	Reconciled
1000865	11-May-23	REACH EMPLOYEE ASSISTANCE INC	1,083.60	IRWD Wells Fargo ACH	Reconciled
1000866	15-May-23	SUKLE ADVERTISING INC.	9,773.25	IRWD Wells Fargo ACH	Reconciled
1000867	18-May-23	ALLIANCE RESOURCE CONSULTING LLC	16,000.00	IRWD Wells Fargo ACH	Reconciled
1000868	18-May-23	AMAZON CAPITAL SERVICES, INC.	1,584.72	IRWD Wells Fargo ACH	Reconciled
1000869	18-May-23	AMERICAN FAMILY LIFE ASSURANCE COMPANY OF COLUMBUS	1,771.12	IRWD Wells Fargo ACH	Reconciled
1000870	18-May-23	CALIFORNIA BARRICADE RENTAL, INC.	14,611.20	IRWD Wells Fargo ACH	Reconciled
1000871	18-May-23	CAROLLO ENGINEERS, INC	9,652.50	IRWD Wells Fargo ACH	Reconciled
1000872	18-May-23	CITY OF IRVINE	797.94	IRWD Wells Fargo ACH	Reconciled
1000873	18-May-23	CITY OF IRVINE	1,992.18	IRWD Wells Fargo ACH	Reconciled
1000874	18-May-23	CONSERV CONSTRUCTION INC.	887.50	IRWD Wells Fargo ACH	Reconciled
1000875	18-May-23	CONSTELLATION NEWENERGY, INC.	77,913.19	IRWD Wells Fargo ACH	Reconciled
1000876	18-May-23	COTTONS POINT DESIGN, INC.	11,239.75	IRWD Wells Fargo ACH	Reconciled
1000877	18-May-23	DATA CLEAN CORPORATION	600.00	IRWD Wells Fargo ACH	Reconciled
1000878	18-May-23	DRAKE TRAFFIC CONTROL SERVICES INC	13,402.50	IRWD Wells Fargo ACH	Reconciled
1000879	18-May-23	EHS INTERNATIONAL, INC	1,320.00	IRWD Wells Fargo ACH	Reconciled
1000880	18-May-23	EUROFINS ENVIRONMENT TESTING AMERICA HOLDINGS, INC.	2,058.00	IRWD Wells Fargo ACH	Reconciled
1000881	18-May-23	GEOPENTECH, INC.	2,000.00	IRWD Wells Fargo ACH	Reconciled
1000882	18-May-23	HANSON BRIDGETT LLP	82,083.61	IRWD Wells Fargo ACH	Reconciled
1000883	18-May-23	HELPMATES STAFFING SERVICES LLC	6,038.56	IRWD Wells Fargo ACH	Reconciled
1000884	18-May-23	HILL BROTHERS CHEMICAL COMPANY	4,297.00	IRWD Wells Fargo ACH	Reconciled
1000885	18-May-23	HINSILBLON LTD	25,873.00	IRWD Wells Fargo ACH	Reconciled
1000886	18-May-23	KERN COUNTY WATER AGENCY	30,000.00	IRWD Wells Fargo ACH	Reconciled
1000887	18-May-23	LANDCARE HOLDINGS, INC.	63,963.91	IRWD Wells Fargo ACH	Reconciled
1000888	18-May-23	MARK KADESH	10,506.00	IRWD Wells Fargo ACH	Reconciled
1000889	18-May-23	MCR TECHNOLOGIES INC	1,388.50	IRWD Wells Fargo ACH	Reconciled
1000890	18-May-23	OLIN CORPORATION	61,166.84	IRWD Wells Fargo ACH	Reconciled
1000891	18-May-23	ORANGE COUNTY AUTO PARTS CO	886.27	IRWD Wells Fargo ACH	Reconciled
1000892	18-May-23	RAM AIR ENGINEERING INC	23,729.07	IRWD Wells Fargo ACH	Reconciled
1000893	18-May-23	RED WING SHOE STORE	400.00	IRWD Wells Fargo ACH	Reconciled
1000894	18-May-23	RESOLUTE COMPANY	5,800.00	IRWD Wells Fargo ACH	Reconciled
1000895	18-May-23	RINCON TRUCK CENTER INC.	1,519.13	IRWD Wells Fargo ACH	Reconciled
1000896	18-May-23	SMITH SYSTEM DRIVER IMPROVEMENT INSTITUTE, INC.	4,557.50	IRWD Wells Fargo ACH	Reconciled
1000897	18-May-23	VSS SALES INC	40,040.00	IRWD Wells Fargo ACH	Reconciled
1000898	18-May-23	WATERSMART SOFTWARE INC	15,925.11	IRWD Wells Fargo ACH	Reconciled
1000899	18-May-23	WORKFORCE SAFETY LLC	3,000.00	IRWD Wells Fargo ACH	Reconciled
1000900	23-May-23	MERRIMAC PETROLEUM, INC.	33,647.73	IRWD Wells Fargo ACH	Reconciled
1000901	25-May-23	ORANGE COUNTY SANITATION DISTRICT	14,601.82	IRWD Wells Fargo ACH	Reconciled
1000903	25-May-23	AMAZON CAPITAL SERVICES, INC.	1,810.18	IRWD Wells Fargo ACH	Reconciled
1000904	25-May-23	AMERICAN FAMILY LIFE ASSURANCE COMPANY OF COLUMBUS	5,154.06	IRWD Wells Fargo ACH	Reconciled
1000905	25-May-23	ARAG NORTH AMERICA, INC.	529.50	IRWD Wells Fargo ACH	Reconciled
1000906	25-May-23	ARDURRA GROUP, INC.	28,300.00	IRWD Wells Fargo ACH	Reconciled
1000907	25-May-23	AUVIK NETWORKS INC.	9,695.70	IRWD Wells Fargo ACH	Reconciled
1000908	25-May-23	CALIFORNIA BARRICADE RENTAL, INC.	17,009.00	IRWD Wells Fargo ACH	Reconciled
1000909	25-May-23	CAROLLO ENGINEERS, INC	70,392.00	IRWD Wells Fargo ACH	Reconciled
1000910	25-May-23	CDW GOVERNMENT LLC	6,827.77	IRWD Wells Fargo ACH	Reconciled
1000911	25-May-23	CENTURY PAVING, INC.	23,044.00	IRWD Wells Fargo ACH	Reconciled
1000912	25-May-23	CITY OF IRVINE	10,152.28	IRWD Wells Fargo ACH	Reconciled

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

<b>CHECK OR ELECTRONIC #</b>	<b>PAYMENT DATE</b>	<b>SUPPLIERS</b>	<b>PAYMENT AMOUNT</b>	<b>PAYMENT METHOD</b>	<b>STATUS</b>
1000913	25-May-23	CITY OF IRVINE	1,994.37	IRWD Wells Fargo ACH	Reconciled
1000914	25-May-23	COASTAL OCCUPATIONAL MEDICAL GROUP, INC.	240.00	IRWD Wells Fargo ACH	Reconciled
1000915	25-May-23	COLONIAL LIFE & ACCIDENT INSURANCE CO.	652.98	IRWD Wells Fargo ACH	Reconciled
1000916	25-May-23	CONSTELLATION NEWENERGY, INC.	258.63	IRWD Wells Fargo ACH	Reconciled
1000917	25-May-23	DIGITAL SCEPTER CORPORATION	82,758.56	IRWD Wells Fargo ACH	Reconciled
1000918	25-May-23	DRAKE TRAFFIC CONTROL SERVICES INC	6,745.00	IRWD Wells Fargo ACH	Reconciled
1000919	25-May-23	EHS INTERNATIONAL,INC	1,320.00	IRWD Wells Fargo ACH	Reconciled
1000920	25-May-23	ENVIRONMENTAL ENGINEERING AND CONTRACTING, INC.	11,052.50	IRWD Wells Fargo ACH	Reconciled
1000921	25-May-23	EUROFINS ENVIRONMENT TESTING AMERICA HOLDINGS, INC.	1,002.75	IRWD Wells Fargo ACH	Reconciled
1000922	25-May-23	FIDELITY SECURITY LIFE INSURANCE COMPANY	8,328.97	IRWD Wells Fargo ACH	Reconciled
1000923	25-May-23	FLUID SOUND, INC.	539.63	IRWD Wells Fargo ACH	Reconciled
1000924	25-May-23	GANAHL LUMBER CO.	2,191.53	IRWD Wells Fargo ACH	Reconciled
1000925	25-May-23	HAAKER EQUIPMENT COMPANY	3,415.33	IRWD Wells Fargo ACH	Reconciled
1000926	25-May-23	HELPMATES STAFFING SERVICES LLC	1,403.06	IRWD Wells Fargo ACH	Reconciled
1000927	25-May-23	HILL BROTHERS CHEMICAL COMPANY	25,494.66	IRWD Wells Fargo ACH	Reconciled
1000928	25-May-23	INDUSTRIAL NETWORKING SOLUTIONS	1,080.72	IRWD Wells Fargo ACH	Reconciled
1000929	25-May-23	JCI JONES CHEMICALS INC	4,830.90	IRWD Wells Fargo ACH	Reconciled
1000930	25-May-23	KERN COUNTY WATER AGENCY	75,000.00	IRWD Wells Fargo ACH	Reconciled
1000931	25-May-23	LABWORKS, LLC	3,987.50	IRWD Wells Fargo ACH	Reconciled
1000932	25-May-23	LAGUNA BEACH COUNTY WATER DISTRICT	4,803.00	IRWD Wells Fargo ACH	Reconciled
1000933	25-May-23	LCS TECHNOLOGIES, INC.	3,375.00	IRWD Wells Fargo ACH	Reconciled
1000934	25-May-23	MBF CONSULTING, INC.	3,861.37	IRWD Wells Fargo ACH	Reconciled
1000935	25-May-23	MICHAEL BAKER INTERNATIONAL, INC.	8,972.00	IRWD Wells Fargo ACH	Reconciled
1000936	25-May-23	NEWPORT WINDOW MAINTENANCE INC	1,920.00	IRWD Wells Fargo ACH	Reconciled
1000937	25-May-23	OLIN CORPORATION	111,918.52	IRWD Wells Fargo ACH	Reconciled
1000938	25-May-23	OLSON REMCHO LLP	880.00	IRWD Wells Fargo ACH	Reconciled
1000939	25-May-23	ORANGE COUNTY AUTO PARTS CO	457.44	IRWD Wells Fargo ACH	Reconciled
1000940	25-May-23	ORIGIN CONSULTING LLC	12,845.00	IRWD Wells Fargo ACH	Reconciled
1000941	25-May-23	PACIFIC PARTS & CONTROLS INC	3,745.94	IRWD Wells Fargo ACH	Reconciled
1000942	25-May-23	PAULUS ENGINEERING, INC.	41,888.59	IRWD Wells Fargo ACH	Reconciled
1000943	25-May-23	RAM AIR ENGINEERING INC	6,000.00	IRWD Wells Fargo ACH	Reconciled
1000944	25-May-23	RED WING SHOE STORE	200.00	IRWD Wells Fargo ACH	Reconciled
1000945	25-May-23	SMARTFISH CORP	4,937.69	IRWD Wells Fargo ACH	Reconciled
1000946	25-May-23	SUKLE ADVERTISING INC.	40,000.00	IRWD Wells Fargo ACH	Reconciled
1000947	25-May-23	WESTAMERICA COMMUNICATIONS, INC.	3,663.74	IRWD Wells Fargo ACH	Reconciled
1000948	25-May-23	WOODARD & CURRAN INC	17,717.85	IRWD Wells Fargo ACH	Reconciled
1000949	26-May-23	ALCOR SOLUTIONS, INC	49,608.00	IRWD Wells Fargo ACH	Reconciled
<b>SUB-TOTAL IRWD WELLS FARGO ACH DISBURSEMENTS</b>			<b>3,232,313.58</b>		
2000274	4-May-23	ABSOLUTE STANDARDS, INC.	395.00	IRWD Wells Fargo PC	Cleared
2000275	4-May-23	AMERICAN GEOTECHNICAL, INC.	7,545.00	IRWD Wells Fargo PC	Cleared
2000276	4-May-23	BIOMAGIC INC	9,163.32	IRWD Wells Fargo PC	Cleared
2000277	4-May-23	FERGUSON ENTERPRISES, LLC	16,521.22	IRWD Wells Fargo PC	Cleared
2000278	4-May-23	FLEET SOLUTIONS LLC	5,418.38	IRWD Wells Fargo PC	Cleared
2000279	4-May-23	HARRINGTON INDUSTRIAL PLASTICS LLC	8,244.33	IRWD Wells Fargo PC	Cleared
2000280	4-May-23	INNOVATIVE MACHINE TOOL REPAIR LLC	1,363.80	IRWD Wells Fargo PC	Cleared
2000281	4-May-23	NCL OF WISCONSIN INC	659.32	IRWD Wells Fargo PC	Cleared
2000282	4-May-23	WECK LABORATORIES INC	300.00	IRWD Wells Fargo PC	Cleared
2000283	11-May-23	ABSOLUTE STANDARDS, INC.	572.50	IRWD Wells Fargo PC	Cleared
2000284	11-May-23	ACCUSOURCE, INC.	152.40	IRWD Wells Fargo PC	Negotiable
2000286	11-May-23	ATLAS COPCO USA HOLDINGS, INC	6,882.83	IRWD Wells Fargo PC	Cleared
2000287	11-May-23	FERGUSON ENTERPRISES, LLC	13,748.26	IRWD Wells Fargo PC	Cleared
2000288	11-May-23	HARRINGTON INDUSTRIAL PLASTICS LLC	19,571.09	IRWD Wells Fargo PC	Cleared
2000289	11-May-23	POLYDYNE INC	500,430.27	IRWD Wells Fargo PC	Cleared
2000290	11-May-23	S & J SUPPLY CO INC	4,622.48	IRWD Wells Fargo PC	Cleared
2000291	11-May-23	THOMPSON & PHIPPS INC	13,623.16	IRWD Wells Fargo PC	Cleared
2000292	11-May-23	UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA	4,372.75	IRWD Wells Fargo PC	Cleared
2000293	18-May-23	ACCUSOURCE, INC.	200.00	IRWD Wells Fargo PC	Cleared
2000294	18-May-23	AMERICAN GEOTECHNICAL, INC.	1,101.25	IRWD Wells Fargo PC	Cleared
2000295	18-May-23	FERGUSON ENTERPRISES, LLC	1,692.19	IRWD Wells Fargo PC	Cleared
2000296	18-May-23	FLEET SOLUTIONS LLC	5,318.38	IRWD Wells Fargo PC	Cleared
2000297	18-May-23	GOLF COURSE SOLUTIONS, LLC	200.00	IRWD Wells Fargo PC	Cleared
2000299	18-May-23	INNOVATIVE MACHINE TOOL REPAIR LLC	2,697.69	IRWD Wells Fargo PC	Cleared
2000300	18-May-23	POLYDYNE INC	27,211.19	IRWD Wells Fargo PC	Cleared
2000301	18-May-23	THOMPSON & PHIPPS INC	3,789.76	IRWD Wells Fargo PC	Cleared
2000302	18-May-23	WATERBORNE, INC	390.00	IRWD Wells Fargo PC	Cleared
2000303	18-May-23	WECK LABORATORIES INC	2,415.00	IRWD Wells Fargo PC	Cleared

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

CHECK OR ELECTRONIC #	PAYMENT DATE	SUPPLIERS	PAYMENT AMOUNT	PAYMENT METHOD	STATUS
2000304	25-May-23	FERGUSON ENTERPRISES, LLC	58,926.15	IRWD Wells Fargo PC	Cleared
2000305	25-May-23	FERGUSON ENTERPRISES, LLC	455.58	IRWD Wells Fargo PC	Cleared
2000306	25-May-23	INNOVATIVE MACHINE TOOL REPAIR LLC	1,187.75	IRWD Wells Fargo PC	Cleared
2000307	25-May-23	PARKHOUSE TIRE INC	2,798.78	IRWD Wells Fargo PC	Cleared
2000308	25-May-23	POLYDYNE INC	63,492.77	IRWD Wells Fargo PC	Cleared
2000309	25-May-23	RESTEK CORPORATION	210.95	IRWD Wells Fargo PC	Cleared
2000310	25-May-23	THOMPSON & PHIPPS INC	18,753.49	IRWD Wells Fargo PC	Negotiable
2000311	25-May-23	WECK LABORATORIES INC	1,292.00	IRWD Wells Fargo PC	Cleared
<b>SUB-TOTAL IRWD WELLS FARGO PC</b>			<b>805,719.04</b>		
100009	19-May-23	MUNICIPAL WATER DISTRICT OF ORANGE COUNTY	692,856.87	IRWD Wells Fargo Wire	Negotiable
100010	22-May-23	SAN REMO APTS	35.18	IRWD Wells Fargo Wire	Negotiable
100011	22-May-23	XU, ZIHE	46.77	IRWD Wells Fargo Wire	Negotiable
100012	22-May-23	BROWN, EDWARD	54.05	IRWD Wells Fargo Wire	Negotiable
100013	22-May-23	TIWARI, VIPIN	8.36	IRWD Wells Fargo Wire	Negotiable
100014	22-May-23	HARVARD COURT APARTMENTS	66.41	IRWD Wells Fargo Wire	Negotiable
100015	22-May-23	PULTE GROUP	57.64	IRWD Wells Fargo Wire	Negotiable
100016	22-May-23	BECERRA, FERNANDO	35.11	IRWD Wells Fargo Wire	Negotiable
100017	22-May-23	SONG, FEIXIA	54.15	IRWD Wells Fargo Wire	Negotiable
100018	22-May-23	PENMATSA, RAJEEV	22.23	IRWD Wells Fargo Wire	Negotiable
100019	22-May-23	NEW WAY, LLC	17.91	IRWD Wells Fargo Wire	Negotiable
100020	22-May-23	DORETTI, TAYLOR	32.76	IRWD Wells Fargo Wire	Negotiable
100021	22-May-23	LAI, KAREN	23.54	IRWD Wells Fargo Wire	Negotiable
100022	22-May-23	LORI BORLAND AND PHILIP R. HUIZAR JR.	42.41	IRWD Wells Fargo Wire	Negotiable
100023	22-May-23	WOODBIDGE WILLOWS APARTMENTS	50.10	IRWD Wells Fargo Wire	Negotiable
100024	22-May-23	FEDEX	39.69	IRWD Wells Fargo Wire	Negotiable
100025	22-May-23	FEDEX	69.81	IRWD Wells Fargo Wire	Negotiable
100026	30-May-23	CITY OF LAKE FOREST	40,489.00	IRWD Wells Fargo Wire	Negotiable
100027	31-May-23	CITY OF LAKE FOREST	160,000.00	IRWD Wells Fargo Wire	Negotiable
<b>SUB-TOTAL IRWD WELLS FARGO WIRE DISBURSEMENTS</b>			<b>894,001.99</b>		
15445	5-May-23	CHARD SNYDER & ASSOCIATES, INC.	3,034.57	IRWD Wire	Negotiable
15446	5-May-23	CHARD SNYDER & ASSOCIATES, INC.	17,786.35	IRWD Wire	Negotiable
15447	5-May-23	YORK RISK SERVICES GROUP, INC.	10,025.17	IRWD Wire	Negotiable
15448	10-May-23	CALPERS	4,072.60	IRWD Wire	Negotiable
15449	10-May-23	CALPERS	649,535.46	IRWD Wire	Negotiable
15450	15-May-23	CHARD SNYDER & ASSOCIATES, INC.	2,822.23	IRWD Wire	Negotiable
15451	15-May-23	CHARD SNYDER & ASSOCIATES, INC.	5,997.97	IRWD Wire	Negotiable
15452	16-May-23	INTERNAL REVENUE SERVICE	261,211.25	IRWD Wire	Negotiable
15453	16-May-23	FRANCHISE TAX BOARD	80,063.34	IRWD Wire	Negotiable
15454	16-May-23	EMPOWER RETIREMENT, LLC	204,806.09	IRWD Wire	Negotiable
15455	16-May-23	EMPLOYMENT DEVELOPMENT DEPARTMENT	16,151.21	IRWD Wire	Negotiable
15456	16-May-23	CALIFORNIA DEPARTMENT OF CHILD SUPPORT SERVICES	3,864.53	IRWD Wire	Negotiable
15457	16-May-23	EMPLOYMENT DEVELOPMENT DEPARTMENT	3,241.90	IRWD Wire	Negotiable
15458	19-May-23	YORK RISK SERVICES GROUP, INC.	3,324.04	IRWD Wire	Negotiable
15459	19-May-23	YORK RISK SERVICES GROUP, INC.	5,390.72	IRWD Wire	Negotiable
15460	19-May-23	YORK RISK SERVICES GROUP, INC.	5,499.09	IRWD Wire	Negotiable
15461	19-May-23	CHARD SNYDER & ASSOCIATES, INC.	1,354.76	IRWD Wire	Negotiable
15462	19-May-23	CHARD SNYDER & ASSOCIATES, INC.	4,462.21	IRWD Wire	Negotiable
15463	19-May-23	BANK OF NEW YORK MELLON TRUST COMPANY NA	158,151.23	IRWD Wire	Negotiable
15464	19-May-23	U.S. BANK NATIONAL ASSOCIATION	90,705.54	IRWD Wire	Negotiable
15465	19-May-23	BANK OF AMERICA	87,204.81	IRWD Wire	Negotiable
15466	19-May-23	U.S. BANK NATIONAL ASSOCIATION	42,562.63	IRWD Wire	Negotiable
15467	19-May-23	SUMITOMO MITSUI BANKING CORPORATION	89,986.58	IRWD Wire	Negotiable
15468	19-May-23	CALPERS	1,025.38	IRWD Wire	Negotiable
15469	19-May-23	CALPERS	274,166.61	IRWD Wire	Negotiable
15470	19-May-23	CALPERS	0.01	IRWD Wire	Negotiable
15471	19-May-23	CHARD SNYDER & ASSOCIATES, INC.	1,484.70	IRWD Wire	Negotiable
15472	19-May-23	FIRKS, STEVEN B	6.73	IRWD Wire	Negotiable
15473	19-May-23	LBA REALTY BPCC, LLC	23.20	IRWD Wire	Negotiable
15474	19-May-23	BRETZMANN, SAM	1.99	IRWD Wire	Negotiable
15476	19-May-23	LBA REALTY BPCC, LLC	23.20	IRWD Wire	Negotiable
15477	19-May-23	LBA REALTY BPCC, LLC	23.20	IRWD Wire	Negotiable
15478	19-May-23	LBA REALTY BPCC, LLC	23.20	IRWD Wire	Negotiable
15479	19-May-23	PULTE GROUP	27.20	IRWD Wire	Negotiable
15480	19-May-23	FANG, LAN	33.35	IRWD Wire	Negotiable
15488	19-May-23	COSTES, JENNIFER	12.57	IRWD Wire	Negotiable

**IRVINE RANCH WATER DISTRICT  
AP DISBURSEMENTS AND VOIDS FOR MAY 2023**

<b>CHECK OR ELECTRONIC #</b>	<b>PAYMENT DATE</b>	<b>SUPPLIERS</b>	<b>PAYMENT AMOUNT</b>	<b>PAYMENT METHOD</b>	<b>STATUS</b>
15495	22-May-23	CHARD SNYDER & ASSOCIATES, INC.	5,260.52	IRWD Wire	Negotiable
15496	22-May-23	CHARD SNYDER & ASSOCIATES, INC.	4,722.30	IRWD Wire	Negotiable
15497	24-May-23	INTERNAL REVENUE SERVICE	256,879.46	IRWD Wire	Negotiable
15498	24-May-23	FRANCHISE TAX BOARD	80,196.33	IRWD Wire	Negotiable
15499	24-May-23	EMPOWER RETIREMENT, LLC	201,664.19	IRWD Wire	Negotiable
15500	24-May-23	CALIFORNIA DEPARTMENT OF CHILD SUPPORT SERVICES	4,240.10	IRWD Wire	Negotiable
15501	24-May-23	EMPLOYMENT DEVELOPMENT DEPARTMENT	16,069.38	IRWD Wire	Negotiable
15502	25-May-23	CALPERS	274,524.72	IRWD Wire	Negotiable
15503	25-May-23	GROUNDWATER BANKING JOINT POWERS AUTHORITY	1,000,000.00	IRWD Wire	Negotiable
15504	30-May-23	YORK RISK SERVICES GROUP, INC.	2,887.02	IRWD Wire	Negotiable
15505	31-May-23	CHARD SNYDER & ASSOCIATES, INC.	2,197.33	IRWD Wire	Negotiable
15506	31-May-23	CHARD SNYDER & ASSOCIATES, INC.	3,205.59	IRWD Wire	Negotiable
15507	31-May-23	YORK RISK SERVICES GROUP, INC.	728.37	IRWD Wire	Negotiable
<b>TOTAL</b>			<b>3,880,680.93</b>		
<b>SUB-TOTAL BOFA AND WELLS FARGO CHECK AND ELECTRONIC DISBURSEMENTS</b>			<b>16,380,273.54</b>		
15475	19-May-23	PULTE GROUP	57.64	IRWD Wire	Voided
15481	19-May-23	SAN REMO APTS	35.18	IRWD Wire	Voided
15482	19-May-23	XU, ZIHE	46.77	IRWD Wire	Voided
15483	19-May-23	WOODBIDGE WILLOWS APARTMENTS	50.10	IRWD Wire	Voided
15484	19-May-23	BROWN, EDWARD	54.05	IRWD Wire	Voided
15485	19-May-23	TIWARI, VIPIN	8.36	IRWD Wire	Voided
15486	19-May-23	HARVARD COURT APARTMENTS	66.41	IRWD Wire	Voided
15487	19-May-23	LAI, KAREN	23.54	IRWD Wire	Voided
15489	19-May-23	BECERRA, FERNANDO	35.11	IRWD Wire	Voided
15490	19-May-23	SONG, FEIXIA	54.15	IRWD Wire	Voided
15491	19-May-23	PENMATSA, RAJEEV	22.23	IRWD Wire	Voided
15492	19-May-23	LORI BORLAND AND PHILIP R. HUIZAR JR.	42.41	IRWD Wire	Voided
15493	19-May-23	NEW WAY, LLC	17.91	IRWD Wire	Voided
15494	19-May-23	DORETTI, TAYLOR	32.76	IRWD Wire	Voided
123937	22-May-23	WOODBIDGE WILLOWS APARTMENTS	50.10	IRWD Wells Fargo Wire	Voided
123945	22-May-23	LORI BORLAND AND PHILIP R. HUIZAR JR.	42.41	IRWD Wells Fargo Wire	Voided
1000902	25-May-23	ALCOR SOLUTIONS, INC	49,608.00	IRWD Wells Fargo ACH	Voided
2000285	11-May-23	ALCOR SOLUTIONS, INC	38,808.00	IRWD Wells Fargo PC	Voided
2000298	18-May-23	IDEXX DISTRIBUTION, INC	3,291.57	IRWD Wells Fargo PC	Voided
<b>SUB-TOTAL BOFA AND WELLS FARGO CHECK AND ELECTRONIC ISSUED AND VOIDED IN MAY 2023</b>			<b>92,346.70</b>		
<b>TOTAL</b>			<b>16,472,620.24</b>		



Exhibit "E"

**MONTHLY SUMMARY OF PAYROLL ACH PAYMENTS**

**May  
2023**

	AMOUNT	VENDOR	PURPOSE
5/5/2023	1,169,242.33	BANK OF AMERICA	ACH Payments for Payroll
5/19/2023	1,162,215.56	BANK OF AMERICA	ACH Payments for Payroll
	<u><u>\$2,331,457.89</u></u>		

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## Exhibit "F"


**IRWD Gov Code 53065.5 Disclosure Report**

Payment or Reimbursements for Individual charges of \$100 or more per transaction for services or product received.

01-MAY-23 to 31-MAY-23

NAME	CHECK NO.	CHECK DATE	AMOUNT	ITEM DESCRIPTION	EXPENSE JUSTIFICATION
Arellano, Charles	436021	18-May-23	161.25	Lunch <30	Safety lunch meeting for 11 people
Berry, Wyatt	435872	11-May-23	100.00	Certification	CWEA Mechanical Technologist Grade II
Berry, Wyatt	435872	11-May-23	265.00	Certification	CWEA Mechanical Technologist Grade III
Bonkowski, Leslie	435709	4-May-23	122.28	Other(Misc)	Shadetree Nursery event
Bonkowski, Leslie	436171	25-May-23	110.36	Other(Misc)	Shadetree Nursery event
Cho, Harry	435874	11-May-23	180.00	Certification	Principle Engineer's license renewal
Colston, James	436023	18-May-23	326.81	Lodging	2023 ACWA Spring Conference & Expo, Monterey, CA - May 8, 2023
Colston, James	436023	18-May-23	326.81	Lodging	2023 ACWA Spring Conference & Expo, Monterey, CA - May 9, 2023
Colston, James	436023	18-May-23	326.81	Lodging	2023 ACWA Spring Conference & Expo, Monterey, CA - May 10, 2023
Colston, James	436023	18-May-23	132.35	Parking Fee	2023 ACWA Spring Conference & Expo, Monterey, CA - May 8-10, 2023 Overnight airport parking
Daniel, Matthew	435876	11-May-23	202.00	Membership	CWEA membership
Daniel, Matthew	436174	25-May-23	105.00	Certification	SWRCB Water Distribution Grade IV
Davis, Jennifer	436175	25-May-23	272.80	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 26, 2023
Davis, Jennifer	436175	25-May-23	272.80	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 27, 2023
Davis, Jennifer	436175	25-May-23	272.80	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 28, 2023
Davis, Jennifer	436175	25-May-23	100.00	Dinner <50	CMTA 2023 Annual Conference, San Mateo, CA - Dinner with Oliver Mendoza
Fehser, Noah	436024	18-May-23	100.00	Certification	AWWA CA-NV Section - Cross-connection Control Specialist
Hatch, Lauren	435713	4-May-23	100.00	Certification	AWWA CA-NV Section - Cross-connection Control Specialist
LaMar, Steven	435880	11-May-23	213.11	Lodging	ACWA Executive Committee & Board of Directors Workshop, Sacramento, CA - February 2, 2023
LaMar, Steven	435880	11-May-23	435.66	Lodging	ACWA 2023 Annual Washington, D.C. Conference, Washington, DC - February 27, 2023
LaMar, Steven	435880	11-May-23	435.66	Lodging	ACWA 2023 Annual Washington, D.C. Conference, Washington, DC - February 28, 2023
LaMar, Steven	435880	11-May-23	435.66	Lodging	ACWA 2023 Annual Washington, D.C. Conference, Washington, DC - March 1, 2023
LaMar, Steven	435880	11-May-23	224.61	Lodging	ACWA Executive Committee & Board of Directors Workshop, Sacramento, CA - March 31, 2023
McQuown, Devin Christina	436181	25-May-23	200.00	Other(Misc)	Safety shoe allowance
Mendoza, Oliver	436182	25-May-23	242.00	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 26, 2023
Mendoza, Oliver	436182	25-May-23	242.00	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 27, 2023
Mendoza, Oliver	436182	25-May-23	242.00	Lodging	CMTA 2023 Annual Conference, San Mateo, CA - April 28, 2023
Nelson, Mark	435881	11-May-23	105.00	Certification	Mark Nelson Water Treatment Grade IV Renewal Reimbursement
Nowak, Joshua	436028	18-May-23	100.00	Certification	AWWA CA-NV Section - Cross-connection Control Specialist
Orozco, Gustavo	436183	25-May-23	120.00	Certification	SWRCB Water Distribution Grade III
Pan, Jenny	436029	18-May-23	156.50	Lunch <30	Welcome Lunch For Shawn Dang, Senior Accounting Clerk
Perez, David	435883	11-May-23	155.00	Certification	SWRCB Water Distribution Grade V
Reed, James W	435720	4-May-23	100.00	Certification	AWWA CA-NV Section - Cross-connection Control Specialist
Swan, Peer	435885	11-May-23	284.74	Lodging	CASA 2023 Annual Winter Conference, Palm Springs, CA - January 25, 2023
Swan, Peer	435885	11-May-23	296.41	Lodging	CASA 2023 Annual Winter Conference, Palm Springs, CA - January 26, 2023
Swan, Peer	435885	11-May-23	210.48	Lodging	Urban Water Institute Annual Spring Conference, Palm Springs, CA - February 22, 2023
Swan, Peer	435885	11-May-23	210.48	Lodging	Urban Water Institute Annual Spring Conference, Palm Springs, CA - February 23, 2023
Swan, Peer	435885	11-May-23	137.55	Other(Misc)	Roundtrip mileage from Orange County to Palm Springs, attending Urban Water Institute Annual Spring Conference
Swan, Peer	435885	11-May-23	1,205.55	Airfare	Roundtrip from Orange County to Washington, D.C, attending CASA & ACWA 2023 Annual Conferences
Swan, Peer	435885	11-May-23	378.19	Lodging	CASA 2023 Annual Conference, Washington, D.C. - February 26, 2023
Swan, Peer	435885	11-May-23	378.19	Lodging	CASA 2023 Annual Conference, Washington, D.C. - February 27, 2023
Swan, Peer	435885	11-May-23	435.66	Lodging	ACWA 2023 Annual Conference, Washington., D.C. - February 28, 2023
Swan, Peer	435885	11-May-23	435.66	Lodging	ACWA 2023 Annual Conference, Washington., D.C. - March 1, 2023
Welch, Kellie	436032	18-May-23	134.63	Auto Rental	April 2023 Sites Joint Reservoir Committee & Authority Board Committee, Maxwell, CA
Withers, John	435722	4-May-23	210.48	Lodging	Urban Water Institute Annual Spring Conference, Palm Springs, CA - February 23, 2023
Withers, John	435722	4-May-23	131.00	Other(Misc)	Roundtrip mileage from Orange County to Palm Springs, attending Urban Water Institute Annual Spring Conference
Yue, Andrew	435886	11-May-23	125.00	Other(Misc)	Safety shoe allowance
<b>Total Amount:</b>			<b>\$11,458.29</b>		

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June 26, 2023  
Prepared and  
Submitted by: K. Morris / C. Clary  
Approved by: Paul A. Cook 

## CONSENT CALENDAR

### ADDENDUM TO AMENDED AND RESTATED LICENSE FOR USE OF THE IRWD SAN JOAQUIN MARSH PROPERTY

#### SUMMARY:

The current license agreements permitting the use of IRWD's San Joaquin Marsh property by the San Joaquin Wildlife Sanctuary, Inc. and the Sea and Sage Audubon Society, Inc. are scheduled to expire on July 5, 2023. The Third Amended and Restated License between IRWD and the Sanctuary and the Third Amended and Restated Sublicense between the Sanctuary and the Sea and Sage Audubon Society, Inc. included a three-year option to extend, with no changes to any other terms. On April 27, 2020, the IRWD Board approved Addendum No. 1 to the Third Amended and Restated License between IRWD and the Sanctuary, which extended the term to July 5, 2023.

Staff recommends that the IRWD Board approve Addendum No. 2 to the Third Amended and Restated License between Irvine Ranch Water District and the San Joaquin Wildlife Sanctuary, extending the term for one-year ending July 5, 2024.

#### BACKGROUND:

In 1999, IRWD entered into a license for use of site, facilities, and accessways with the San Joaquin Wildlife Sanctuary, which was extended by subsequent agreements. The most recent license, the Third Amended and Restated License, was executed in May 2016 and Addendum No. 1 extended the term of use from July 5, 2020 to July 5, 2023. The Sanctuary, in turn, entered into sublicense agreements with Sea and Sage Audubon Society, including, most recently, the Addendum No. 1 to the Third Amended and Restated Sublicense in May 2016, which extended the term of use to July 5, 2023.

Section 3 of both the license and the sublicense provides for an option to extend the term for an additional period, with no changes to any other terms, upon mutually executing an addendum. The proposed Addendum, No. 2 to the Third Amended and Restated License between IRWD and the San Joaquin Wildlife Sanctuary is attached as Exhibit "A".

Staff recommends that the IRWD Board approve Addendum No. 2 to the Third Amended and Restated License between Irvine Ranch Water District and the San Joaquin Wildlife Sanctuary for a one-year term ending July 5, 2024 as provided in Exhibit "A". A San Joaquin Wildlife Sanctuary Board meeting will be scheduled with Audubon for executing Addendum No. 2 to the Third Amended and Restated Sublicense.

#### FISCAL IMPACTS:

The annual payment from the Sanctuary to IRWD under the Addendum will remain at \$1.00.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act (CEQA), Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

This item was reviewed by the Engineering and Operations Committee on June 20, 2023.

RECOMMENDATION:

THAT THE BOARD APPROVE ADDENDUM NO. 2 TO THE THIRD AMENDED AND RESTATED LICENSE BETWEEN IRVINE RANCH WATER DISTRICT AND THE SAN JOAQUIN WILDLIFE SANCTUARY, INC.

LIST OF EXHIBITS:

Exhibit "A" – Addendum No. 2 to the Third Amended and Restated License between Irvine Ranch Water District and the San Joaquin Wildlife Sanctuary, Inc.

EXHIBIT "A"

ADDENDUM NO. 2  
TO  
THIRD AMENDED AND RESTATED  
LICENSE FOR USE OF  
SITE, FACILITIES, AND ACCESSWAYS

THIS ADDENDUM NO. 2 TO THIRD AMENDED AND RESTATED LICENSE FOR USE OF SITE, FACILITIES AND ACCESSWAYS, dated as of July \_\_\_\_, 2023 (the "**Effective Date**") is between IRVINE RANCH WATER DISTRICT, a California water district organized and existing under Section 34000 et seq. of the California Water Code, as licensor (the "**Licensor**") and the SAN JOAQUIN WILDLIFE SANCTUARY, INC., a non-profit public benefit corporation, organized and existing under the laws of the State of California, as licensee (the "**Licensee**").

A. Licensor owns certain land and improvements located within the San Joaquin Marsh (the "**Premises**") which Licensor operates and maintains in conjunction with its adjacent Michelson Water Recycling Plant.

B. Licensor and Licensee have entered into the *Third Amended and Restated License for Use of Site, Facilities and Accessways*, dated May 23, 2016 (the "**License**"), to provide to Licensee an exclusive license as to the Licensed Buildings (subject to the reservations set forth in the License) and a non-exclusive license as to the License Area other than the Licensed Buildings (such capitalized terms having the definitions given them in the License), in carrying out activities in furtherance of its educational purposes related to the San Joaquin Marsh ecology, environment, natural history, birds and wildlife.

C. Licensee's proposed activities and use of the License Area will continue to benefit Licensor, who has an interest in promoting education, awareness, and understanding of the marsh environment of which its properties and facilities are a part, as well as water conservation and reclamation.

D. The proposed activities and uses of Licensee can be carried out on the License Area in a manner consistent with Licensor's operations within the Premises.

E. Licensor and Licensee entered into *Addendum No. 1 to the Third Amended and Restated License for Use of Site, Facilities and Accessways*, dated April 27, 2020 ("**Addendum No. 1**") which extended the term for a three-year period, and will terminate on July 5, 2023.

F. Licensor and Licensee now intend to renew the term of the License for one year through July 5, 2024.

The Parties therefore agree as follows:

Section 1. Extension of License Term. The term of the License is hereby extended for one year, to end at 11:59pm on July 5, 2024, unless further extended or terminated prior to that date pursuant to the terms of the License.

Section 2. Compensation. Licensee shall pay to Licensor, upon execution and delivery of this Addendum, the sum of One Dollar (\$1.00) as compensation to Licensor for the use of the License Area. As additional consideration, the Licensee shall perform all of its promises, covenants, and obligations under the License.

Section 3. Miscellaneous. All other terms and provisions of the License remain unmodified and in full force and effect. This Addendum No. 2 may be executed in counterparts, each of which, when taken together, shall constitute one fully executed original. Electronically transmitted signatures will be binding for all purposes of this Addendum No. 2.

This Addendum No. 2 has been executed by Licensor and Licensee as of the Effective Date.

**Licensor:**

IRVINE RANCH WATER DISTRICT

By: \_\_\_\_\_  
President

By: \_\_\_\_\_  
Secretary

**Licensee:**

SAN JOAQUIN WILDLIFE SANCTUARY, INC.

By: \_\_\_\_\_  
President

By: \_\_\_\_\_  
Secretary

APPROVED AS TO FORM:  
Hanson Bridgett LLP

By: \_\_\_\_\_  
IRWD General Counsel



June 26, 2023  
Prepared by: L. Srader  
Submitted by: T. Mitcham  
Approved by: Paul A. Cook

## CONSENT CALENDAR

### ADOPTION OF REVISED IRWD SCHEDULE OF POSITIONS AND SALARY RATE RANGES FOR FISCAL YEAR 2023-24

#### SUMMARY:

Staff recommends the Board approve the Schedule of Revised Positions and Salary Grades based on a Cost-of-Living Adjustment (COLA) of 3.8% and adopt a resolution superseding Resolution No. 2022-14.

#### BACKGROUND:

For Fiscal Year 2023-24, the proposed changes to the IRWD Salary Grade Schedules incorporate:

- A 3.8% Cost of Living Adjustment for Managers, Exempt Supervisors, Confidential and Exempt Employees;
- A 3.8% Cost of Living Adjustment for the General Employee Unit (as provided for in Article IX of the Memorandum of Understanding for the General Employee Unit); and
- A 3.8% Cost of Living Adjustment for the Non-Exempt Supervisor Unit (as provided for in Article IX of the Memorandum of Understanding for the Non-Exempt Supervisors Unit).

The proposed COLAs are based on the 12-month change in the Consumer Price Index (CPI) posted by the Bureau of Labor Statistics for the Los Angeles-Long Beach-Anaheim areas. A resolution adopting the proposed changes to the IRWD Salary Grade Schedules is provided as Exhibit "A."

Staff recommends that the Board adopt a resolution superseding Resolution No. 2022-14 and adopting a revised Schedule of Positions and Salary Rate Ranges effective July 1, 2023.

#### FISCAL IMPACTS:

A COLA of 6.0% was included in the Fiscal Year 2023-2024 Operating Budget approved by the Board on April 24, 2023.

#### ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

COMMITTEE STATUS:

This item was not reviewed by a Committee.

RECOMMENDATION:

THAT THE BOARD APPROVE THE REVISED SALARY GRADE SCHEDULE AND  
ADOPT THE FOLLOWING RESOLUTION BY TITLE:

RESOLUTION NO. 2023-10

RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
IRVINE RANCH WATER DISTRICT SUPERSEDING  
RESOLUTION NO. 2022-14 AND ADOPTING A REVISED  
SCHEDULE OF POSITIONS AND SALARY RATE RANGES  
FOR THE GENERAL UNIT, NON-EXEMPT SUPERVISOR  
UNIT, AND FOR MANAGERS, EXEMPT SUPERVISORS,  
CONFIDENTIAL AND EXEMPT EMPLOYEES

LIST OF EXHIBITS:

Exhibit "A" – Resolution of the Board of Directors of the Irvine Ranch Water District adopting  
a new Schedule of Positions and Salary Rate Ranges and Salary Grade Schedule

Exhibit "A"

RESOLUTION NO. 2022-10

RESOLUTION OF THE BOARD OF DIRECTORS OF  
IRVINE RANCH WATER DISTRICT, SUPERSEDING  
RESOLUTION NO. 2022-14 AND ADOPTING A REVISED  
SCHEDULE OF POSITIONS AND SALARY RATE RANGES

The Board of Directors of Irvine Ranch Water District, by adoption of Resolution No. 2022-14 on October 24, 2022, established a Schedule of Positions and Salary Rate Ranges of the Irvine Ranch Water District; and

The Board of Directors of Irvine Ranch Water District have reviewed the Schedule of Positions and Salary Rate Ranges and desires to make revisions thereto.

The Board of Directors of Irvine Ranch Water District does hereby resolve, determine and order as follows:

Section 1. That the Schedule of Positions and Salary Rate Ranges adopted by Resolution No. 2022-14 on October 24, 2022, is hereby superseded effective July 1, 2023.

Section 2. That the revised Schedule of Positions and Salary Rate Ranges for the Irvine Ranch Water District attached to this Resolution, and is effective July 1, 2023, for all classifications, is hereby approved and adopted.

ADOPTED, SIGNED and APPROVED on June 26, 2023.

\_\_\_\_\_  
President, IRVINE RANCH WATER DISTRICT  
and of the Board of Directors thereof

\_\_\_\_\_  
Secretary, IRVINE RANCH WATER DISTRICT  
and of the Board of Directors thereof

APPROVED AS TO FORM:  
Hanson Bridgett LLP

By: \_\_\_\_\_  
District Counsel

**IRVINE RANCH WATER DISTRICT**  
**MONTHLY SALARY GRADE SCHEDULE**  
Managers, Exempt Supervisors, Confidential & Exempt Employees  
**Effective July 1, 2023**

	MINIMUM	MAXIMUM
<b><u>NON-EXEMPT</u></b>		
Salary Grade U1.N	\$3,545	\$4,614
Salary Grade U2.N	\$3,621	\$4,742
Salary Grade U3.N	\$3,697	\$4,872
Salary Grade U4.N	\$3,767	\$5,015
Salary Grade U5.N	\$3,853	\$5,153
Salary Grade U6.N	\$3,928	\$5,301
Salary Grade U7.N	\$4,007	\$5,448
Salary Grade U8.N	\$4,094	\$5,604
Salary Grade U9.N	\$4,170	\$5,760
Salary Grade U10.N	\$4,257	\$5,919
Salary Grade U11.N	\$4,342	\$6,070
Salary Grade U12.N	\$4,425	\$6,247
Salary Grade U13.N	\$4,510	\$6,425
Salary Grade U14.N	\$4,611	\$6,609
Salary Grade U15.N	\$4,709	\$6,784
Salary Grade U16.N	\$4,822	\$6,973
Salary Grade U17.N	\$4,923	\$7,148
Salary Grade U18.N	\$5,032	\$7,339
Salary Grade U19.N	\$5,146	\$7,524
Safety Assistant		
Salary Grade U20.N	\$5,283	\$7,769

	<b>MINIMUM</b>	<b>MAXIMUM</b>
Salary Grade U21.N	\$5,434	\$8,003
Salary Grade U22.N	\$5,581	\$8,256
Executive Secretary Human Resources Assistant		
Salary Grade U23.N	\$5,730	\$8,505
Salary Grade U24.N	\$5,892	\$8,769
Salary Grade U25.N	\$6,048	\$9,038
Human Resources Technician		
Salary Grade U26.N	\$6,235	\$9,310
Executive Assistant		
Salary Grade U27.N	\$6,412	\$9,582
Salary Grade U28.N	\$6,601	\$9,864
Salary Grade U29.N	\$6,800	\$10,152
Safety & Security Specialist Safety Specialist Senior Executive Assistant		
Salary Grade U30.N	\$7,004	\$10,455
Salary Grade U31.N	\$7,211	\$10,767
Salary Grade U32.N	\$7,419	\$11,086
Salary Grade U33.N	\$7,635	\$11,409
Salary Grade U34.N	\$7,862	\$11,724
Salary Grade U35.N	\$8,100	\$12,078
Network Administrator User Support Administrator		

	MINIMUM	MAXIMUM
<b>EXEMPT</b>		
Salary Grade U1.E	\$5,701	\$7,691
Salary Grade U2.E	\$5,892	\$7,989
Salary Grade U3.E	\$6,080	\$8,286
Salary Grade U4.E	\$6,270	\$8,605
Salary Grade U5.E	\$6,461	\$8,923
Salary Grade U6.E	\$6,683	\$9,269
Salary Grade U7.E	\$6,896	\$9,613
Salary Grade U8.E	\$7,122	\$9,988
Salary Grade U9.E	\$7,340	\$10,355
Salary Grade U10.E	\$7,583	\$10,746
Asset Systems Analyst Assistant Engineer Digital Communications Specialist Management Analyst Risk Analyst		
Salary Grade U11.E	\$7,827	\$11,143
Customer Service Supervisor Human Resources Analyst Purchasing Supervisor		
Salary Grade U12.E	\$8,080	\$11,572
Senior Accountant		
Salary Grade U13.E	\$8,341	\$11,990
Communications Analyst/Deputy PIO Environmental Compliance Analyst Financial Analyst GIS Supervisor Legislative Aide Legislative Analyst Regulatory Compliance Administrator Right of Way Agent Senior Human Resources Analyst Senior Water Efficiency Analyst Treasury Analyst Water Resources Planner		

	MINIMUM	MAXIMUM
Salary Grade U14.E	\$8,611	\$12,453
Accounting Supervisor Associate Engineer District Secretary QA/QC Compliance Administrator Water Efficiency Supervisor		
Salary Grade U15.E	\$8,886	\$12,920
Applications Analyst Automation Programmer Senior Legislative Aide Senior Network Administrator Senior Regulatory Compliance Administrator Senior SCADA Network Administrator Senior User Support Administrator		
Salary Grade U16.E	\$9,183	\$13,407
Laboratory Supervisor		
Salary Grade U17.E	\$9,475	\$13,901
Construction Inspection Manager Construction Inspection Assistant Manager Engineer Facilities/Fleet Manager Safety Manager Senior Energy and Water Resources Planner		
Salary Grade U18.E	\$9,783	\$14,429
Collection Systems Manager Communications Manager Customer Service Manager Cybersecurity Analyst Field Services Manager Purchasing Manager Senior Applications Analyst Senior Applications Developer Senior Database Administrator Water Efficiency Manager		
Salary Grade U19.E	\$10,092	\$14,962
Construction Services Manager Electrical and Instrumentation Manager Manager of Risk & Contracts Administration Mechanical Services Manager Natural Resources Manager Recycled Water Development Manager Regulatory Compliance Manager Treasury Manager Water Quality Manager		

	<b>MINIMUM</b>	<b>MAXIMUM</b>
Salary Grade U20.E	\$10,407	\$15,518
Senior Engineer User Support Manager Water Resources Manager		
Salary Grade U21.E	\$10,724	\$16,079
Controller External Affairs Manager Manager of Biosolids & Energy Recovery Operations Manager of Strategic Planning and Analysis Operations Manager		
Salary Grade U22.E	\$11,068	\$16,675
Automation Manager Applications Manager Network and Cybersecurity Manager Reliability Manager		
Salary Grade U23.E	\$11,418	\$17,281
Salary Grade U24.E	\$11,728	\$17,977
Engineering Manager		
Salary Grade U25.E	\$12,091	\$18,655
Salary Grade U26.E	\$12,643	\$19,641
Salary Grade U27.E	\$13,221	\$20,683
Director of Field Operations Director of Human Resources Director of Information Services Director of Maintenance Director of Strategic Communications & Advocacy/Dep. General Counsel Director of Recycling Operations Director of Safety & Security Director of Water Quality & Regulatory Compliance Director of Water Resources Director of Treasury		
Salary Grade U28.E	\$13,828	\$21,772
Salary Grade U29.E	\$14,460	\$22,924



	<b>MINIMUM</b>	<b>MAXIMUM</b>
Salary Grade U30.E	\$15,128	\$24,143
Executive Director of Finance Executive Director of Technical Services Executive Director of Operations Executive Director of Water Policy		
Salary Grade U31.E	\$15,880	\$25,511
Salary Grade U32.E	\$16,675	\$26,963
Salary Grade U33.E	\$17,506	\$28,494
Salary Grade U34.E	\$18,384	\$31,551
General Manager		

**IRVINE RANCH WATER DISTRICT**  
**MONTHLY SALARY GRADE SCHEDULE**  
**Non-Exempt Supervisors Unit**  
**Effective July 1, 2023**

	MINIMUM	MAXIMUM
<b><u>NON-EXEMPT</u></b>		
Salary Grade S26.N	\$6,235	\$9,310
Salary Grade S27.N	\$6,412	\$9,582
Salary Grade S28.N	\$6,601	\$9,864
Salary Grade S29.N	\$6,800	\$10,152
Salary Grade S30.N	\$7,004	\$10,454
Salary Grade S31.N	\$7,211	\$10,769
Salary Grade S32.N Facilities Services Supervisor Fleet Supervisor	\$7,419	\$11,088
Salary Grade S33.N Cross Connection Supervisor Collection Systems Supervisor	\$7,635	\$11,407
Salary Grade S34.N Construction Inspection Supervisor Mechanical Services Supervisor Water Maintenance Supervisor	\$7,862	\$11,724
Salary Grade S35.N Water Monitoring Supervisor	\$8,100	\$12,078
Salary Grade S36.N Automation Supervisor Electrical & Instrumentation Supervisor Operations Supervisor	8,611	12,452

**IRVINE RANCH WATER DISTRICT**  
**MONTHLY SALARY GRADE SCHEDULE**  
**General Employees Unit**  
**Effective July 1, 2023**

	MINIMUM	MAXIMUM
<b><u>NON-EXEMPT</u></b>		
Salary Grade 1.N	\$3,539	\$4,609
Salary Grade 2.N	\$3,614	\$4,732
Salary Grade 3.N	\$3,692	\$4,864
Salary Grade 4.N	\$3,760	\$5,006
Salary Grade 5.N	\$3,841	\$5,141
Salary Grade 6.N	\$3,921	\$5,290
Office Assistant		
Salary Grade 7.N	\$3,995	\$5,437
Mail Coordinator		
Salary Grade 8.N	\$4,085	\$5,597
Salary Grade 9.N	\$4,167	\$5,751
Salary Grade 10.N	\$4,248	\$5,905
Salary Grade 11.N	\$4,330	\$6,058
Material Control Clerk I Utility Worker		
Salary Grade 12.N	\$4,417	\$6,233
Salary Grade 13.N	\$4,500	\$6,415
Customer Service Specialist I		
Salary Grade 14.N	\$4,602	\$6,595
Salary Grade 15.N	\$4,699	\$6,769
Collection Systems Technician I Office Specialist		

	MINIMUM	MAXIMUM
Salary Grade 16.N	\$4,812	\$6,961
Accounting Clerk Metering Systems Technician I Water Maintenance Technician I		
Salary Grade 17.N	\$4,912	\$7,131
Customer Service Field Technician		
Salary Grade 18.N	\$5,020	\$7,325
Customer Service Specialist II Material Control Clerk II		
Salary Grade 19.N	\$5,134	\$7,511
Senior Office Specialist		
Salary Grade 20.N	\$5,273	\$7,751
Construction Compliance Specialist Development Services Specialist Engineering Technician Purchasing Coordinator Senior Accounting Clerk		
Salary Grade 21.N	\$5,420	\$7,987
Collection Systems Technician II Customer Service Specialist III Senior Customer Service Field Technician		
Salary Grade 22.N	\$5,573	\$8,237
Metering Systems Technician II Operator I Senior Purchasing Coordinator Water Maintenance Technician II		
Salary Grade 23.N	\$5,718	\$8,488
Collection Systems CCTV Technician Facilities Services Technician Maintenance Mechanic Vehicle/Equipment Mechanic		

	MINIMUM	MAXIMUM
Salary Grade 24.N Recycled Water Specialist Water Loss Prevention Specialist Wetlands Specialist	\$5,878	\$8,755
Salary Grade 25.N Buyer GIS Technician Senior Collection Systems CCTV Technician	\$6,034	\$9,022
Salary Grade 26.N Cross Connection Specialist Metering Systems Technician III Water Efficiency Specialist Water Maintenance Technician III Water Resources Specialist	\$6,219	\$9,291
Salary Grade 27.N Accountant Operator II Senior Maintenance Mechanic Senior Water Loss Prevention Specialist	\$6,399	\$9,565
Salary Grade 28.N Electrical & Instrumentation Technician Landscape Contracts Administrator Senior Facilities Services Technician Senior Vehicle/Equipment Maintenance Mechanic	\$6,587	\$9,849
Salary Grade 29.N Communications Specialist Construction Inspector Senior GIS Technician QA/OC Compliance Specialist Scientist Senior Buyer Senior Recycled Water Specialist Senior Wetlands Specialist	\$6,783	\$10,135
Salary Grade 30.N Community Relations Specialist Graphic Design Specialist Operator III	\$6,991	\$10,433

	<b>MINIMUM</b>	<b>MAXIMUM</b>
Salary Grade 31.N	\$7,195	\$10,748
Information Services Coordinator		
Payroll Administrator		
Recycled Water Project Specialist		
Senior Construction Inspector		
Senior Electrical & Instrumentation Technician		
Senior Water Efficiency Specialist		
Salary Grade 32.N	\$7,401	\$11,066
Asset Maintenance Coordinator		
Senior Scientist		
Wetlands Scientist		
Salary Grade 33.N	\$7,620	\$11,386
Water Efficiency Analyst		
Salary Grade 34.N	\$7,845	\$11,703
Automation Specialist		
Salary Grade 35.N	\$8,083	\$12,052

June 26, 2023  
Prepared and  
submitted by: T. Mitcham  
Approved by: Paul Cook

## CONSENT CALENDAR

### 2023 AMENDED AND RESTATED RETIREE HEALTH COSTS REIMBURSEMENT PLAN

#### SUMMARY:

On February 27, 2023, the Board approved an enhancement to the Retiree Health Costs Reimbursement Plan (RHCRP) for eligible employees who retire on or after July 1, 2023. Staff recommends that the Board approve the amended and restated RHCRP document reflecting the enhancement.

#### BACKGROUND:

In July 2002, the District added the RHCRP to its benefits program. The program provides a monthly payment to retirees ranging from 36 to 60 months based on the number of years of service provided to IRWD. Disbursements under the program have been tax-free to the recipients, provided they substantiate that the monies are spent on qualified medical expenses.

On February 27, 2023, the Board approved an enhancement to the RHCRP by increasing each tier by \$200 for eligible employees who retire from (and become eligible retirees of) the District on or after July 1, 2023. The amended restatement marked as Exhibit "A" applies only to these employees. The benefits provided to individuals who retired before July 1, 2023, are governed by the version of the RHCRP or other governing documentation in effect upon the individual's retirement.

#### FISCAL IMPACTS:

The cost to implement the increase to the RHCRP for Fiscal Year 2023-2024 is approximately \$100,000. There are sufficient funds in the Fiscal Year 2023-2024 operating budget to implement the recommended action.

#### ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

#### COMMITTEE STATUS:

This item was not reviewed by a Committee.

RECOMMENDATION:

THAT THE BOARD AUTHORIZE IMPLEMENTATION OF THE 2023 AMENDED AND RESTATED RETIREE HEALTH COSTS REIMBURSEMENT PLAN.

LIST OF EXHIBITS:

Exhibit "A" – Amended and Restated Retiree Health Costs Reimbursement Plan



Exhibit “A”

**IRVINE RANCH WATER DISTRICT  
RETIREE HEALTH COSTS REIMBURSEMENT PLAN**

As Amended and Restated Effective July 1, 2023

**TABLE OF CONTENTS**

	<b>Page</b>
ARTICLE I Introduction.....	1
1.1 Amendment and Restatement of Plan.....	1
1.2 Legal Status.....	1
ARTICLE II Definitions.....	1
2.1 “Account” .....	1
2.2 “Benefit Period” .....	1
2.3 “Benefits” .....	1
2.4 “Child” .....	2
2.5 “COBRA” .....	2
2.6 “Code” .....	2
2.7 “Dependent” .....	2
2.8 “District” .....	2
2.9 “Domestic Partner” .....	2
2.10 “Effective Date” .....	2
2.11 “Eligible Retiree” .....	2
2.12 “Employee” .....	2
2.13 “Enrollment Form” .....	2
2.14 “Medical Care Expenses” .....	2
2.15 “Participant” .....	3
2.16 “Plan” .....	3
2.17 “Plan Administrator” .....	3
2.18 “Plan Year” .....	3
2.19 “Privacy Official” .....	3
2.20 “Spouse” .....	3
2.21 “Years of Service” .....	3
ARTICLE III Eligibility and Participation.....	3
3.1 Eligibility to Participate .....	3
3.2 Termination of Participation.....	3
3.3 Extension of Benefit Period.....	4
3.4 Reemployment as Non-Regular Employee.....	4

ARTICLE IV Method and Timing of Enrollment .....	4
ARTICLE V Benefits and Funding .....	4
5.1 Benefits Offered.....	4
5.2 Contributions.....	4
5.3 Funding.....	4
ARTICLE VI Health Reimbursement Benefits .....	5
6.1 Benefits .....	5
6.2 Eligible Medical Care Expenses .....	5
6.3 Maximum Benefits.....	5
6.4 Establishment of Account.....	6
6.5 Reimbursement Procedure .....	6
6.6 Reimbursements After Termination .....	7
6.7 Death.....	7
ARTICLE VII HIPAA Privacy and Security.....	7
7.1 District’s Certification of Compliance.....	7
7.2 Permitted Disclosure of Enrollment/Disenrollment Information .....	7
7.3 Permitted Uses and Disclosures of Summary Health Information.....	7
7.4 Permitted and Required Uses and Disclosure of Protected Health Information for Plan Administration Purposes.....	7
7.5 Restrictions on District’s Use and Disclosure of Protected Health Information .....	8
7.6 Adequate Separation Between the District and the Plan .....	9
7.7 Security Measures for Electronic Protected Health Information.....	9
7.8 Notification of Security Incident .....	9
7.9 Breach Notification.....	9
7.10 Definitions.....	10
ARTICLE VIII Claims Procedure .....	11
8.1 Claim.....	11
8.2 Claim Denials.....	11
8.3 Claim Appeals.....	11
ARTICLE IX Recordkeeping and Administration .....	11
9.1 Plan Administrator .....	11
9.2 Powers of the Plan Administrator .....	11
9.3 Reliance on Participant, Tables, etc.....	13

9.4 Provision for Third-Party Plan Service Providers .....	13
9.5 Fiduciary Liability .....	13
9.6 Compensation of Plan Administrator.....	13
9.7 Bonding.....	13
9.8 Inability to Locate Payee .....	13
9.9 Effect of Mistake.....	13
ARTICLE X General Provisions .....	13
10.1 Expenses .....	13
10.2 Amendment and Termination .....	14
10.3 Governing Law .....	14
10.4 Code Compliance.....	14
10.5 No Guarantee of Tax Consequences.....	14
10.6 Indemnification of District.....	14
10.7 Non-Assignability of Rights .....	14
10.8 Written Communications .....	14
10.9 Headings .....	14
10.10 Plan Provisions Controlling.....	15
10.11 Severability .....	15

Appendix A

**IRVINE RANCH WATER DISTRICT  
RETIREE HEALTH COSTS REIMBURSEMENT PLAN**

As Amended and Restated Effective July 1, 2023

**ARTICLE I**

**Introduction**

**1.1 Amendment and Restatement of Plan** Irvine Ranch Water District (“the District”) maintains the Irvine Ranch Water District Retiree Health Costs Reimbursement Plan (“the Plan”). The Plan, which was originally effective July 1, 2002, is hereby amended and restated effective as of July 1, 2023 (“Effective Date”) as set forth below. Unless otherwise indicated, capitalized terms used in this Plan have the meanings set forth in Article II, Definitions.

This restatement applies only to eligible employees who retire from (and become Eligible Retirees of) the District on or after the Effective Date. Benefits provided to individuals who retired before the Effective Date are governed by the version of the Plan or other governing documentation in effect upon the individual’s retirement.

This Plan is intended to permit Participants to receive nontaxable reimbursements of Medical Care Expenses from their Accounts under the Plan.

**1.2 Legal Status** This Plan covers only retirees or reemployed retired annuitants who are not regular Employees; retired annuitants’ benefits under the Plan are designed to satisfy the integration method (minimum value required) described in IRS Notice 2013-54. Accordingly, the Plan is exempt from many of the requirements of the Patient Protection and Affordable Care Act (ACA). The Plan is also intended to qualify as a health reimbursement arrangement as defined under IRS Notice 2002-45, and will be interpreted accordingly. The Medical Care Expenses reimbursed under the Plan are intended to be eligible for exclusion from Participants’ gross income under Code Section 105(b).

**ARTICLE II**

**Definitions**

**2.1 “Account”** means an account established under the Plan to record a Participant’s interest. The Account will be credited with Benefit allocations in accordance with Appendix A, and will be debited for Benefit disbursements (i.e., reimbursements for Medical Care Expenses).

**2.2 “Benefit Period”** means the period, spanning 12, 24, 36, 48, or 60 months, as determined under Appendix A based on the Participant’s Years of Service. The Benefit Period begins on the date an Eligible Retiree becomes a Participant and ends on the last day of the applicable period.

**2.3 “Benefits”** means the reimbursement benefits for Medical Care Expenses described under Article VI.

**2.4 “Child”** means (i) a Participant’s child through birth or adoption or placement for adoption, stepchild, or eligible foster child; or (ii) a Domestic Partner’s child through birth, adoption or placement for adoption, or eligible foster child, who does not qualify as the Participant’s child under the definition in (i).

**2.5 “COBRA”** means the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended.

**2.6 “Code”** means the Internal Revenue Code of 1986, as amended.

**2.7 “Dependent”** means a Participant’s (i) Spouse or Domestic Partner; (ii) Child under age 27 on the first day of the relevant Plan Year; (iii) Child, regardless of age, who became disabled before age 27, is unable to earn a living due to his or her disability, and depends on the Participant or the Participant’s Spouse or Domestic Partner for primary support and maintenance; or (iv) Child required to be covered under a Qualified Medical Child Support Order.

**2.8 “District”** means Irvine Ranch Water District.

**2.9 “Domestic Partner”** means a person with whom a Participant has established a domestic partnership by filing a Declaration of Domestic Partnership with the California Secretary of State.

**2.10 “Effective Date”** means July 1, 2023.

**2.11 “Eligible Retiree”** means

- (a) An Employee of the District who, upon termination of his or her District employment, (i) is at least 55 years old, (ii) has completed at least three (3) Years of Service in employment with Irvine Ranch Water District, and (iii) retires under CalPERS, the California Public Employees’ Retirement System.
- (b) If an Employee’s District employment terminates due to disability or other extenuating circumstances before the Employee has satisfied the requirements of Section 2.11(a) (i) and/or (ii), the Plan Administrator, in its sole discretion, may classify the Employee as an Eligible Retiree, thereby enabling the former Employee to receive Benefits. Any such determinations will be applied on a uniform, nondiscriminatory basis. In addition, for purposes of the benefit calculation under Appendix A, a former Employee who is so deemed to be an Eligible Retiree will be treated as having Years of Service equal to the greater of (i) three Years of Service, or (ii) his or her actual Years of Service.

**2.12 “Employee”** means a person employed by the District.

**2.13 “Enrollment Form”** means the form (or forms) provided by the Plan Administrator for the purpose of allowing an Eligible Retiree to participate in this Plan.

**2.14 “Medical Care Expenses”** is defined in Section 6.2(b).

**2.15 “Participant”** means a person who has satisfied the requirements of Section 3.1 to participate in the Plan and whose participation has not ceased under Section 3.2.

**2.16 “Plan”** means this Irvine Ranch Water District Retiree Health Costs Reimbursement Plan, as amended from time to time.

**2.17 “Plan Administrator”** means Irvine Ranch Water District or such other person or committee, as may be appointed by the District to administer the Plan.

**2.18 “Plan Year”** means the 12-month period commencing January 1st and ending on December 31st.

**2.19 “Privacy Official”** means the District’s Director of Human Resources, or any other person or position whom the District appoints as Privacy Official for purposes of this Plan.

**2.20 “Spouse”** means a person who is legally married to a Participant (and who is treated as a spouse under the Code).

**2.21 “Years of Service”** means a person’s total years of completed service (including paid leave periods) with the District as a regular Employee. A total of 12 full months of such employment constitutes one Year of Service. For this purpose, nonconsecutive periods of employment will be aggregated. Partial years will be reduced to the nearest whole number; for example, 21.9 years of District service as a regular Employee equates to 21 Years of Service.

## **ARTICLE III**

### **Eligibility and Participation**

**3.1 Eligibility to Participate** A person may participate in the Plan only if described below:

- (a) Each person who was a Participant after the close of business on June 30, 2023, will remain a Participant on the Effective Date.
- (b) To become a Participant, a person who becomes an Eligible Retiree on or after the Effective Date must complete and submit the Enrollment Form in accordance with Article IV. An Eligible Retiree who satisfies this requirement will become a Participant on the day after his or her District employment terminates.

**3.2 Termination of Participation** A person will cease to be a Participant upon the earliest of the following:

- (a) the termination of this Plan;
- (b) the Participant’s death;
- (c) the date on which he or she is reemployed by the District as a regular Employee;

- (d) the date on which all amounts in the Participant's Account are fully disbursed and the Participant is not entitled to any further credit allocations to his or her Account; or
- (e) the last day of the Participant's Benefit Period.

**3.3 Extension of Benefit Period** An Eligible Retiree may, on or before his or her last day of District employment, elect on the Enrollment Form described in Section 3.1(b) (or any other form deemed acceptable by the Plan Administrator) to extend the Benefit Period for up to 12 months. The election must be made in the manner determined by the Plan Administrator in its sole discretion. Upon close of business of the last day of the Eligible Retiree's District employment, his or her election to extend (or to not extend) the Benefit Period is irrevocable. If an Eligible Retiree elects to extend his or her Benefit Period, credit allocations to the Eligible Retiree's under Appendix A will be prorated over the extended period.

**3.4 Reemployment as Retired Annuitant.** If a Participant is reemployed by the District as a Retired Annuitant, the Participant's participation in the Plan will continue in accordance with its terms. However, in accordance with IRS Notice 2013-54, while the Participant is a Retired Annuitant, (a) to receive benefits under the Plan, the Participant must be enrolled in a group health plan that provides minimum value in accordance with Code Section 36B(c)(2)(C)(ii), which plan may, but need not be, sponsored by the District, and (b) at least annually, the Participant may elect to permanently opt out of and waive future benefits under the Plan.

## ARTICLE IV

### Method and Timing of Enrollment

To participate in the Plan, an Eligible Retiree must complete the Enrollment Form on or before the last day of his or her District employment, in the manner prescribed by the Plan Administrator. In extenuating circumstances, the Plan Administrator may in its sole discretion extend the deadline for completing the Enrollment Form. Once the Eligible Retiree becomes a Participant, his or her participation will continue until participation ceases under Section 3.2.

## ARTICLE V

### Benefits and Funding

**5.1 Benefits Offered** When an Eligible Retiree becomes a Participant, an Account will be established for such Participant to receive Benefits in the form of reimbursements for Medical Care Expenses, as described in Article VI. In no event will Benefits be provided in any form other than reimbursement for Medical Care Expenses.

**5.2 Contributions** The District is solely liable for paying Benefits owed under the Plan. No contributions by Employees or Participants are required or accepted.

**5.3 Funding** Benefits under the Plan may be paid from the District's general assets or from any other source as determined by the District in its sole discretion. Nothing herein will be construed



to require the District or the Plan Administrator to maintain any fund or to segregate any amount for the benefit of any Participant, and no Participant or other person will have any claim against, right to, or security or other interest in any fund, account or asset of the District from which any payment under this Plan may be made.

## ARTICLE VI

### Health Reimbursement Benefits

**6.1 Benefits** The Plan will reimburse Participants for Medical Care Expenses up to the unused amount in the Participant's Account, as set forth and adjusted under Section 6.3.

**6.2 Eligible Medical Care Expenses** A Participant may receive reimbursements from his or her Account for Medical Care Expenses incurred during the Participant's Benefit Period. If a Medical Care Expense amount exceeds the Account balance when the reimbursement is made, then unless the Participant requests otherwise, the excess will be automatically reimbursed from future credits to the Participant's Account as soon as administratively practicable after the credits are allocated to the Account. Reimbursements due for Medical Care Expenses incurred by the Participant and his or her Dependents will be charged against the Participant's Account.

- (a) *Incurred.* A Medical Care Expense is incurred at the time the medical care or service giving rise to the expense is furnished, and not when the individual incurring the expense is formally billed for, is charged for, or pays for the medical care. Medical Care Expenses incurred before a Participant first becomes covered by the Plan are not eligible.
- (b) *Medical Care Expenses.* "Medical Care Expenses" means eligible out-of-pocket medical expenses that meet the definition of medical care under Code § 213(d) for the Participant and his or her Dependents, such as premiums for coverage under an employer group health plan or under an individually-owned health insurance policy, co-pays, deductibles, prescriptions, COBRA premiums, long-term care insurance, and medical expenses that are not covered under other insurance or any other accident or health plan.
- (c) *Limitations on Reimbursed Expenses.* Medical Care Expenses may be reimbursed from a Participant's Account only to the extent that the expense is not reimbursed (or reimbursable) through other insurance or any other accident or health plan. Further, to the extent a Participant's Spouse or Domestic Partner pays for coverage premiums with salary deductions under a cafeteria plan within the meaning of Code § 125, those payments may not be reimbursed under the Plan.

**6.3 Maximum Benefits** Total credits to a Participant's Account may not exceed the applicable amount specified in Appendix A. If a Participant has elected to extend his or her Benefit Period in accordance with Section 3.3, then his or her future Account credits will be pro-rated accordingly so that the Participant receives the same total credits that would have applied if not for the extension.

**6.4 Establishment of Account** The Plan Administrator will establish and maintain an Account for each Participant. The Account so established will merely be a recordkeeping account with the purpose of keeping track of contributions and available reimbursement amounts.

- (a) *Crediting of Accounts.* During the Benefit Period, a Participant's Account will be credited on a monthly basis with the applicable amount specified in Appendix A.
- (b) *Debiting of Accounts.* A Participant's Account will be debited for any reimbursement of Medical Care Expenses incurred during the Benefit Period.
- (c) *Available Amount.* The amount available for reimbursement of Medical Care Expenses (i.e., the Account balance) is the total amount credited to the Participant's Account (subsection (a)) less the total debits to the Account for reimbursements paid (subsection (b)).

### **6.5 Reimbursement Procedure**

- (a) *Timing.* Within 45 days after the Plan Administrator receives a Participant's claim for Benefits, the District will do one of the following:
  - (i) If the Plan Administrator approves the claim, reimburse the Participant for the Medical Care Expenses.
  - (ii) If the Participant's claim is incomplete, notify the Participant of the issue and explain the information needed to perfect the claim.
  - (iii) Following the procedure set out under Section 8.2, notify the Participant that his or her claim has been denied.
- (b) *Claims Substantiation.* A Participant who seeks Benefits may apply for reimbursement by submitting a request in writing to the Plan Administrator at the time and in the manner as the Plan Administrator may prescribe, but in no event later than three months after the Participant's participation in the Plan ceases. The Participant's request must include the following information:
  - (i) the individual(s) on whose behalf Medical Care Expenses have been incurred;
  - (ii) the nature and date of the Medical Care Expenses so incurred;
  - (iii) the amount of the requested reimbursement;
  - (iv) other such details about the expenses that may be requested by the Plan Administrator in the reimbursement request form or otherwise (e.g., a statement from a medical practitioner that the expense is to treat a specific medical condition, or a more detailed certification from the Participant).

The request must be accompanied by bills, invoices, or other statements from an independent third party showing that the Medical Care Expenses have been incurred and

the amounts of such Medical Care Expenses, together with any additional documentation that the Plan Administrator may request.

**6.6 Reimbursements After Termination** If a Participant ceases to be a Participant under Section 3.2, then the Participant will have three months from the date his or her participation ceased to submit for reimbursements of Medical Care Expenses incurred during the Benefit Period. If any balance remains in the Account after all reimbursable claims are paid, the balance will be forfeited.

**6.7 Death** If a Participant dies before the end of his or her Benefit Period, then the Benefits that would have otherwise been provided to the Participant during his or her Benefit Period will be provided to the Participant's surviving Spouse or Domestic Partner (or if no Spouse or Domestic Partner, the surviving Dependent(s)) at the same time, manner, and amount as if the Spouse or Domestic Partner (or Dependent(s)) were the Participant. If the Participant is survived by multiple Dependents but no Spouse or Domestic Partner, the Participant's Benefit will be divided among the Dependents in the manner determined by the Plan Administrator in its sole discretion.

## ARTICLE VII

### **HIPAA Privacy and Security**

**7.1 District's Certification of Compliance** The Plan may not disclose Protected Health Information to the District unless the District certifies that the Plan document incorporates the provisions of 45 CFR § 164.504(f)(2)(ii) and the District agrees to conditions of disclosure set forth in this Article.

**7.2 Permitted Disclosure of Enrollment/Disenrollment Information** The Plan may disclose to the District information on whether an individual is a Participant in the Plan.

**7.3 Permitted Uses and Disclosures of Summary Health Information** The Plan may disclose Summary Health Information to the District, provided that the District requests the Summary Health Information for the purpose of modifying, amending, or terminating the Plan.

**7.4 Permitted and Required Uses and Disclosure of Protected Health Information for Plan Administration Purposes** Unless otherwise permitted by law, the Plan may disclose a Covered Individual's Protected Health Information to the District, provided that the District will use or disclose such Protected Health Information only for Plan administration purposes. "Plan administration purposes" means administration functions performed by the District on behalf of the Plan, such as quality assurance, claims processing (including appeals), auditing, and monitoring. Plan administration functions do not include functions performed by the District in connection with any other benefit or benefit plan of the District, and they do not include any employment-related functions. Any disclosure to and use by the District of a Covered Individual's Protected Health Information will be subject to and consistent with the provisions of this Article (including, but not limited to, the restrictions on the Employer's use and disclosure described in Section 7.5) and the specifications and requirements of the administrative simplification provisions of HIPAA and its implementing regulations at 45 CFR Parts 160-64.

## **7.5 Restrictions on District's Use and Disclosure of Protected Health Information**

- (a)** The District will neither use nor further disclose a Covered Individual's Protected Health Information, except as permitted or required by the Plan document, or as required by law.
- (b)** The District will ensure that any agent, including any subcontractor, to which it provides a Covered Individual's Protected Health Information or Electronic Protected Health Information received from the Plan, agrees to the restrictions, conditions, and security measures of the Plan document that apply to Employer with respect to the Protected Health Information or Electronic Protected Health Information, respectively.
- (c)** The District will not use or disclose a Covered Individual's Protected Health Information for employment-related actions or decisions, or in connection with any other benefit or employee benefit plan of the District.
- (d)** The District will report to the Plan any use or disclosure of a Covered Individual's Protected Health Information, including electronic Protected Health Information, that is inconsistent with the uses and disclosures allowed under the Plan document, or any Security Incident, of which the District becomes aware.
- (e)** The District will make Protected Health Information available to the Plan or to the Covered Individual who is the subject of the information in accordance with 45 CFR § 164.524.
- (f)** The District will make a Covered Individual's Protected Health Information available for amendment, and will on notice amend a Covered Individual's Protected Health Information, in accordance with 45 CFR § 164.526.
- (g)** The District will track disclosures it may make of a Covered Individual's Protected Health Information that are accountable under 45 CFR § 164.528 so that it can make available the information required for the Plan to provide an accounting of disclosures in accordance with 45 CFR § 164.528.
- (h)** The District will make its internal practices, books, and records relating to its use and disclosure of a Covered Individual's Protected Health Information received from the plan available to the Plan and to the U.S. Department of Health and Human Services to determine compliance with the HIPAA Privacy Rule at 45 CFR Part 164, Subpart E ("Privacy Rule").
- (i)** The District will, if feasible, return or destroy all Protected Health Information of a Covered Individual, in whatever form or medium, received from the Plan, including all copies thereof and all data, compilations, or other works derived therefrom that allow identification of any Covered Individual who is the subject of the Protected Health Information, when the Covered Individual's Protected Health Information is no longer

needed for the plan administration functions for which the disclosure was made. If it is not feasible to return or destroy all such Protected Health Information, the District will limit the use or disclosure of any Covered Individual's Protected Health Information that cannot feasibly be returned or destroyed to those purposes that make the return or destruction of the information infeasible.

- (j) The District will ensure that the adequate separation between the Plan and the District (i.e., the "firewall"), required in 45 CFR § 504(f)(2)(iii), is satisfied.

#### **7.6 Adequate Separation Between the District and the Plan**

- (a) Only the following employees or classes of employees or other workforce members under the control of the District may be given access to a Covered Individual's Protected Health Information or Electronic Protected Health Information received from the Plan or a business associate servicing the Plan:
  - (i) Privacy Official;
  - (ii) Employees in the District's Human Resources Department;
  - (iii) Employees in the District's Office of General Counsel; and
  - (iv) Any other class of employees designated in writing by the Privacy Official.
- (b) The employees, classes of employees, or other workforce members identified in Section 7.6(a) will have access to a Covered Individual's Protected Health Information or Electronic Protected Health Information only to perform the plan administration functions that the District provides for the Plan, as specified in Section 7.4.
- (c) The employees, classes of employees, or other workforce members identified in Section 7.6(a) will be subject to disciplinary action and sanctions pursuant to the District's employee discipline and termination procedures, for any use or disclosure of a Covered Individual's Protected Health Information or Electronic Protected Health Information in breach or violation of or noncompliance with the provisions of this Article.

**7.7 Security Measures for Electronic Protected Health Information** The District will implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of a Covered Individual's Electronic Protected Health Information that the District creates, receives, maintains, or transmits on the Plan's behalf.

**7.8 Notification of Security Incident** The District will report to the Plan any attempted or successful unauthorized access, use, disclosure, modification, or destruction of information, or interference with system operations in the District's information systems, of which the District becomes aware.

**7.9 Breach Notification** Following the discovery of a Breach of Unsecured Protected Health Information, the Plan will notify each individual whose Unsecured Protected Health Information

has been, or is reasonably believed to have been, accessed, acquired, or disclosed as a result of the Breach, in accordance with 45 CFR § 164.404, and the Secretary of Health and Human Services in accordance with 45 CFR § 164.408. For a Breach of Unsecured Protected Health Information involving more than 500 residents of a state or jurisdiction, the Plan will notify the media in accordance with 45 CFR § 164.406.

**7.10 Definitions** Capitalized terms used in this Article VII that are not defined in Article I have the following meanings:

- (a) **“Breach”** means the acquisition, access, use, or disclosure of an individual’s Protected Health Information in a manner not permitted under the HIPAA Privacy Rule, as more particularly defined in 45 CFR § 164.402.
- (b) **“Covered Individual”** means, a Participant, Spouse or Dependent.
- (c) **“Electronic Protected Health Information”** has the meaning described in 45 C.F.R. Section 160.103 and generally includes Protected Health Information that is transmitted by electronic media or maintained in electronic media. Unless otherwise specifically noted, Electronic Protected Health Information does not include enrollment/disenrollment information and summary health information.
- (d) **“HIPAA”** means the Health Insurance Portability and Accountability Act of 1996, as amended.
- (e) **“HITECH”** means the Health Information Technology for Economic and Clinical Health Act.
- (f) **“Protected Health Information”** (PHI) has the meaning described in 45 C.F.R. Section 160.103 and generally includes individually identifiable health information held by, or on behalf of, the Plan.
- (g) **“Security Incident”** means the attempted or successful unauthorized access, use, disclosure, modification, or destruction of information or interference with system operations in an information system.
- (h) **“Summary Health Information”** means information (i) that summarizes the claims history, claims expenses, or type of claims experienced by individuals for whom a plan sponsor had provided health benefits under a health plan; and (ii) from which the information described at 42 CFR § 164.514(b)(2)(i) has been deleted, except that the geographic information described in 42 CFR § 164.514(b)(2)(i)(B) need only be aggregated to the level of a five-digit ZIP code.
- (i) **“Unsecured Protected Health Information”** means Protected Health Information that is not secured through the use of a technology or methodology specified in regulations or other guidance issued by the Secretary of Health and Human Services.

## ARTICLE VIII

### Claims Procedure

**8.1 Claim.** Claims for Benefits under this Plan must be made in accordance with the procedure set out in Section 6.5.

**8.2 Claim Denials.** If any claim for Benefits is denied in whole or in part, the Plan Administrator shall promptly furnish the claimant with a written notice:

- (a) setting forth the reason for the denial;
- (b) citing the Plan provisions upon which such denial is based;
- (c) describing any additional material or information from the claimant that is necessary for the claimant to perfect his or her claim and why; and
- (d) explaining the claim review procedure set forth herein.

The Plan Administrator's failure to respond to a claim for Benefits by the 45<sup>th</sup> day after the claim filing will be deemed a denial.

**8.3 Claim Appeals.** Within 60 days after a claimant's claim is denied, the claimant may file a written appeal with the Plan Administrator. The claimant will be entitled to examine all pertinent documents relating to the Benefit, and to submit issues and comments in writing. Within 60 days after receiving the appeal, the Plan Administrator shall render a decision on review and notify the Participant in writing; and if the Plan Administrator denies the appeal, the notice will state the reason for the decision and cite the Plan provisions upon which it is based.

## ARTICLE IX

### Recordkeeping and Administration

**9.1 Plan Administrator** The administration of this Plan will be under the supervision of the Plan Administrator. It is the principal duty of the Plan Administrator to see that this Plan is carried out, in accordance with its terms, for the exclusive benefit of persons entitled to participate in this Plan without discrimination among them.

**9.2 Powers of the Plan Administrator** The Plan Administrator will have such duties and powers as it considers necessary or appropriate to discharge its duties. The Plan Administrator will have the exclusive right to interpret the Plan and to decide all matters thereunder, and all determinations of the Plan Administrator with respect to any matter hereunder will be conclusive and binding on all persons. Without limiting the generality of the foregoing, the Plan Administrator has the following discretionary authority:

- (a) to construe and interpret this Plan, including all possible ambiguities, inconsistencies, and omissions in the Plan and related documents, and to decide all questions of fact, questions relating to eligibility and participation, and questions of benefits under this Plan;



- (b)** to prescribe procedures to be followed and the forms to be used by Eligible Retirees and Participants to enroll in and submit claims pursuant to this Plan;
- (c)** to prepare and distribute information explaining this Plan and the benefits under this Plan in such manner as the Plan Administrator determines to be appropriate;
- (d)** to request and receive from all Eligible Retirees and Participants such information as the Plan Administrator from time to time determines to be necessary for the proper administration of this Plan;
- (e)** to furnish each Participant with such reports with respect to the administration of this Plan as the Plan Administrator determines to be reasonable and appropriate;
- (f)** to receive, review, and keep on file such reports and information regarding the benefits covered by this Plan as the Plan Administrator determines from time to time to be necessary and proper;
- (g)** to employ any agents, attorneys, accountants or other parties (who may also be employed by the District) and to allocate or delegate to them such powers or duties as is necessary to assist in the proper and efficient administration of the Plan, provided that such allocation or delegation and the acceptance thereof is in writing;
- (h)** to appoint and employ such individuals or entities to assist in the administration of this Plan as it determines to be necessary or advisable, including legal counsel and benefit consultants;
- (i)** to sign documents for the purposes of administering this Plan, or to designate an individual or individuals to sign documents for the purposes of administering this Plan;
- (j)** to secure independent medical or other advice and require such evidence as it deems necessary to decide any claim or appeal;
- (k)** to maintain the books of accounts, records, and other data in the manner necessary for proper administration of this Plan and to meet any applicable disclosure and reporting requirements; and
- (l)** to report to the District, or any party designated by the District, after the end of each Plan Year regarding the administration of the Plan, and to report any significant problems as to the administration of the Plan and to make recommendations for modifications as to procedures and benefits, or any other change which might ensure the efficient administration of the Plan.

However, nothing in this Section is meant to confer upon the Plan Administrator any powers to amend the Plan or change any administrative procedure or adopt any other procedure involving the Plan without the express written approval of the District regarding any amendment or change in administrative procedure.



**9.3 Reliance on Participant, Tables, etc.** The Plan Administrator may rely upon the information submitted by a Participant as being proper under the Plan and is not responsible for any act or failure to act because of a direction or lack of direction by a Participant. The Plan Administrator will also be entitled, to the extent permitted by law, to rely conclusively on all tables, valuations, certificates, opinions, and reports that are furnished by accountants, attorneys, or other experts employed or engaged by the Plan Administrator.

**9.4 Provision for Third-Party Plan Service Providers** The Plan Administrator, subject to approval of the District, may employ the services of such persons as it may deem necessary or desirable in connection with the operation of the Plan. Unless otherwise provided in the service agreement, obligations under this Plan will remain the obligation of the District.

**9.5 Fiduciary Liability** To the extent permitted by law, the Plan Administrator will not incur any liability for any acts or for failure to act except for the Plan Administrator's own willful misconduct or willful breach of this Plan.

**9.6 Compensation of Plan Administrator** Unless otherwise determined by the District and permitted by law, any Plan Administrator that is also an Employee of the District will serve without compensation for services rendered in such capacity, but all reasonable expenses incurred in the performance of the Plan Administrator's duties will be paid by the District.

**9.7 Bonding** Fiduciaries will be bonded if and to the extent required by applicable law.

**9.8 Inability to Locate Payee** If the Plan Administrator is unable to make payment to any Participant or other person to whom a payment is due under the Plan because it cannot ascertain the identity or whereabouts of such Participant or other person after reasonable efforts have been made to identify or locate such person, then such payment and all subsequent payments otherwise due to such Participant or other person will be forfeited following a reasonable time after the date any such payment first became due.

**9.9 Effect of Mistake** In the event of a mistake as to the eligibility or participation of an Eligible Retiree, the allocations made to the Account of any Participant, or the amount of Benefits paid or to be paid to a Participant or other person, the Plan Administrator will, to the extent that it deems administratively possible and otherwise permissible under Code section 105, the regulations issued thereunder or other applicable law, cause to be allocated or cause to be withheld or accelerated, or otherwise make adjustment of, such amounts as it will in its judgment accord to such Participant or other person the credits to the Account or distributions to which he or she is properly entitled under the Plan.

## ARTICLE X

### General Provisions

**10.1 Expenses** All reasonable expenses incurred in administering the Plan are currently paid by the District.

**10.2 Amendment and Termination** This Plan has been established with the intent of being maintained for an indefinite period of time. Nonetheless, the District explicitly reserves the right to modify, change, amend or terminate all or any part of this Plan at any time for any reason by resolution of the District's Board of Directors or by any person or persons authorized by the Board of Directors to take such action. Nothing contained herein will be deemed to give any Participant or Dependent or any other individual a vested right to any benefit under this Plan.

**10.3 Governing Law** This Plan shall be construed, administered and enforced according to the laws of the State of California to the extent not superseded by the Code or any other federal law.

**10.4 Code Compliance** It is intended that this Plan meet all applicable requirements of the Code and of all regulations issued thereunder. This Plan will be construed, operated and administered accordingly, and in the event of any conflict between any part, clause or provision of this Plan and the Code, the provisions of the Code will be deemed controlling, and any conflicting part, clause or provision of this Plan will be deemed superseded to the extent of the conflict.

To the extent applicable, the Plan will provide coverage and benefits in accordance with the requirements of all applicable laws, including COBRA, HIPAA, NMHPA, WHCRA, FMLA, MHPA, MHPAEA, HITECH, Michelle's Law, GINA, and ACA.

**10.5 No Guarantee of Tax Consequences** Neither the Plan Administrator nor the District makes any commitment or guarantee that any amounts paid to or for the benefit of a Participant under this Plan will be excludable from the Participant's gross income for federal, state or local income tax purposes. It is the obligation of each Participant to determine whether each payment under this Plan is excludable from the Participant's gross income for federal, state and local income tax purposes, and to notify the Plan Administrator if the Participant has any reason to believe that such payment is not so excludable.

**10.6 Indemnification of District** If any Participant receives one or more payments or reimbursements under this Plan on a tax-free basis, and such payments do not qualify for such treatment under the Code, such Participant must indemnify and reimburse the District for any liability it may incur for failure to withhold federal income taxes, state income taxes, or other taxes from such payments or reimbursements.

**10.7 Non-Assignability of Rights** The right of any Participant to receive any reimbursement under this Plan is not alienable by the Participant by assignment or any other method and is not subject to claims by the Participant's creditors by any process whatsoever. Any attempt to cause such right to be so subjected will not be recognized, except to such extent as may be required by law.

**10.8 . Written Communications** Whenever the words "written," "in writing," or "form" are used in the Plan, those words will include not only paper mediums, but also email communication to the extent permitted by the Plan Administrator.

**10.9 Headings** All headings and titles are for convenience only, and are not to be regarded as part of this Plan or as indicating or controlling the meaning or construction of any provision.

**10.10 Plan Provisions Controlling** In the event that the terms or provisions of any summary or description of this Plan, or of any other instrument, are in any construction interpreted as being in conflict with the provisions of this Plan as set forth in this document, the provisions of this Plan will control.

**10.11 Severability** Should any part of this Plan subsequently be invalidated by a court of competent jurisdiction, the remainder of the Plan will be given effect to the maximum extent possible.

\* \* \*

IN WITNESS WHEREOF, to reflect the District's adoption of the Irvine Ranch Water District Retiree Health Costs Reimbursement Plan, as amended and restated effective July 1, 2023, the District has caused this document to be executed on this \_\_\_\_ day of \_\_\_\_\_, 2023.

**District:**

Irvine Ranch Water District

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name and title

APPROVED AS TO FORM:  
Pillsbury Winthrop Shaw Pittman LLP

By: \_\_\_\_\_  
Marcus Wu, Partner


**Appendix A**  
**Schedule of Account Credits**

For Participants Who Become Eligible Retirees On or After July 1, 2023<sup>1</sup>

This Appendix A applies to each Participant who becomes an Eligible Retiree on or after July 1, 2023. For each month after the Eligible Retiree becomes a Participant, the District will credit the Participant's Account with the applicable dollar amount below for the applicable number of months below. The applicable dollar amount and time period will be determined according to the Participant's total Years of Service as follows:

Years of Service	Months of Credits				
	12	24	36	48	60
25+					\$800
24					\$780
23					\$760
22					\$740
21					\$720
20					\$700
19				\$680	
18				\$660	
17				\$640	
16				\$620	
15				\$600	
14			\$580		
13			\$560		
12			\$540		
11			\$520		
10			\$500		
9		\$480			
8		\$460			
7	\$440				
6	\$420				
5	\$400				
4	\$380				
3	\$360				

<sup>1</sup> For individuals who became Eligible Retirees before July 1, 2023, the individual's benefit (if any) will be determined under the version of the Plan or other governing documentation in effect upon the individual's retirement.

June 26, 2023  
Prepared by: E. Lin  
Submitted by: C. Clary  
Approved by: Paul A. Cook 

CONSENT CALENDAR

LUMP SUM PAYMENT OPTION FOR EMPLOYER CONTRIBUTIONS  
FOR FISCAL YEAR 2023-24 TO THE CALIFORNIA  
PUBLIC EMPLOYEES' RETIREMENT SYSTEM

SUMMARY:

IRWD typically chooses to pay the Annual Unfunded Accrued Liability (UAL) “Prepayment Option” in order to reduce overall costs to the District. In alignment with this practice, staff recommends the Board approve a lump sum payment option for employer contributions to the California Public Employees’ Retirement System (CalPERS) by making a one-time contribution of \$7,469,526 to CalPERS for IRWD’s Fiscal Year (FY) 2023-24.

BACKGROUND:

The total minimum required employer contribution to CalPERS is the sum of the CalPERS Plan’s Employer Normal Cost Rate (expressed as a percentage of payroll) plus the employer Unfunded Accrued Liability (UAL) contribution amount (billed monthly in dollars). Beginning in FY 2009-10, IRWD elected to utilize the lump sum payment option for the total minimum required employer contribution as the District benefits from not incurring interest expense at the assumed actuarial interest rate, which is currently 6.80%.

Beginning six years ago, CalPERS changed its rules so that only the UAL portion of the employer contribution can be prepaid in full no later than July 31 of each year. The normal cost contributions for IRWD, estimated to be \$4.2 million, will be made as part of the bi-weekly payroll reporting process. CalPERS has indicated that IRWD’s UAL lump sum payment for FY 2023-24 will be \$7,469,526, as shown in Exhibit “A”. The total UAL cost of choosing the monthly payments option is approximately \$7,719,313, so the lump sum payment option saves IRWD approximately \$249,787 this fiscal year.

FISCAL IMPACTS:

IRWD’s approved operating budget for FY 2023-24 includes normal and UAL employer contributions of \$13.1 million and repayment of replacement fund loan of \$0.5 million. The payments are consistent with the impacts identified in setting rates for FY 2023-24. The Operating Fund will fund this UAL lump sum payment.

ENVIRONMENTAL COMPLIANCE:

This item is not a project as defined in the California Environmental Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

Consent Calendar: Lump Sum Payment Option for Employer Contributions for FY 2023-24 to the California Public Employees' Retirement System

June 26, 2023

Page 2

COMMITTEE STATUS:

This item was reviewed by the Finance and Personnel Committee on June 13, 2023.

RECOMMENDATION:

THAT THE BOARD APPROVE THE LUMP SUM PAYMENT FOR EMPLOYER CONTRIBUTIONS TO THE CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM (CALPERS) BY MAKING A ONE-TIME CONTRIBUTION OF \$7,469,526 FOR IRWD'S FY 2023-24 EMPLOYER UNFUNDED ACCRUED LIABILITY (UAL) CONTRIBUTION.

LIST OF EXHIBITS:

Exhibit "A" – Letter from CalPERS Regarding Lump Sum Prepayment Amount

# Exhibit "A"

CalPERS Actuarial Valuation - June 30, 2021  
 Miscellaneous Plan of the Irvine Ranch Water District  
 CalPERS ID: 5161985321

## Required Contributions

	Fiscal Year
<b>Required Employer Contributions</b>	<b>2023-24</b>
Employer Normal Cost Rate	10.16%
<i>Plus</i>	
Required Payment on Amortization Bases	\$7,719,313
<i>Paid either as</i>	
1) Monthly Payment	\$643,276
<i>Or</i>	
2) <b>Annual Prepayment Option*</b>	<b>\$7,469,526</b>
<b>Required PEPRAs Member Contribution Rate</b>	<b>7.50%</b>
<i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).</i>	
<i>* Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31).</i>	
<i>For additional detail regarding the determination of the required contribution for PEPRAs members, see "PEPRAs Member Contribution Rates" in the "Liabilities and Contributions" section. Required member contributions for Classic members can be found in Appendix B.</i>	

	Fiscal Year 2022-23	Fiscal Year 2023-24
<b>Normal Cost Contribution as a Percentage of Payroll</b>		
Total Normal Cost	16.47%	17.82%
Employee Contribution <sup>1</sup>	7.28%	7.66%
Employer Normal Cost <sup>2</sup>	9.19%	10.16%
Projected Annual Payroll for Contribution Year	\$40,859,881	\$41,715,619
<b>Estimated Employer Contributions Based On Projected Payroll</b>		
Total Normal Cost	\$6,729,622	\$7,433,723
Employee Contribution	2,974,599	3,195,416
<b>Employer Normal Cost</b>	3,755,023	<b>4,238,307</b>
<b>Unfunded Liability Contribution</b>	8,097,704	<b>7,719,313</b>
% of Projected Payroll (illustrative only)	19.82%	18.50%
Estimated Total Employer Contribution	\$11,852,727	\$11,957,620
% of Projected Payroll (illustrative only)	29.01%	28.66%

<sup>1</sup> For classic members, this is the percentage specified in the Public Employees' Retirement Law, net of any reduction from the use of a modified formula or other factors. For PEPRAs members, the member contribution rate is based on 50% of the normal cost. A development of PEPRAs member contribution rates can be found in the "Liabilities and Contributions" section. Employee cost sharing is not shown in this report.

<sup>2</sup> The Employer Normal Cost is a blended rate for all benefit groups in the plan. For a breakout of normal cost by benefit group, see "Normal Cost by Benefit Group" in the "Liabilities and Contributions" section.

## Actuarial Assumptions

In 2021, CalPERS completed its most recent asset liability management study incorporating actuarial assumptions and strategic asset allocation. In November 2021, the board adopted changes to the asset allocation that increased the expected volatility of returns. The adopted asset allocation was expected to have a long-term blended return that continued to support a discount rate assumption of 6.80%. The board also approved several changes to the demographic assumptions that more closely aligned with actual experience.

For more details and additional rationale for the selection of the actuarial assumptions, please refer to the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021 that can be found on the CalPERS website under: Forms and Publications. Click on "View All" and search for Experience Study.

All actuarial assumptions (except the discount rates used for the hypothetical termination liability) represent an estimate of future experience rather than observations of the estimates inherent in market data.

### ***Economic Assumptions***

#### **Discount Rate**

The prescribed discount rate assumption, adopted by the board on November 17, 2021, is 6.80% compounded annually (net of investment and administrative expenses) as of June 30, 2021.

#### **Termination Liability Discount Rate**

The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date.

The hypothetical termination liabilities in this report are calculated using an observed range of market interest rates. This range is based on the lowest and highest 20-year Treasury bond observed during an approximate 19-month period from 12 months before the valuation date to seven months after. The 20-year Treasury bond has a similar duration to most plan liabilities and serves as a good proxy for the termination discount rate. The 20-year Treasury yield was 2.00% on June 30, 2021.





# BENEFITS AND EMPLOYMENT TAX

## HEALTH INSURANCE AND EMPLOYER CONTRIBUTIONS FY 2023-24

	FY 2022-23	FY 2023-24	Change
<b>Insurance and Benefits</b>			
Health Ins Actives	\$ 7,450	\$ 7,050	\$ (400)
Paid Time Off	5,559	4,024	(1,535)
Dental Premiums	524	672	148
Wrkrs Comp Premiums	825	830	5
Wrkrs Comp Paid Claims	772	500	(272)
Life Ins Actives	180	297	117
LT Disability Premiums	174	148	(26)
Medical Premiums - Retirees	425	531	106
Vision Benefit Premiums	98	116	18
RHCAP Payments - OPEB	351	505	154
Life Ins Retirees	13	33	20
Other	187	208	21
	<u>\$ 16,558</u>	<u>\$ 14,914</u>	<u>\$ (1,644)</u>
<b>Employment Tax and PERS</b>			
PERS Employer Portion *	\$ 13,302	\$ 13,583	\$ 281
401A Employer Match Portion	1,052	1,116	64
401A Employer Direct Portion	421	400	(21)
Medicare Tax	598	686	88
St Unemployment Tax	50	55	5
	<u>\$ 15,423</u>	<u>\$ 15,840</u>	<u>\$ 417</u>
<b>Total Insurance, Benefits, and Taxes</b>	<u>\$ 31,981</u>	<u>\$ 30,754</u>	<u>\$ (1,227)</u>


\* Prior year restated to include PERS in Excess of ARC, which is now included in PERS Employer Portion

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June 26, 2023

Prepared by: J. Moeder

Submitted by: K. Burton

Approved by: Paul A. Cook 

## CONSENT CALENDAR

### PRIMARY DISINFECTION FACILITY SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM FINAL ACCEPTANCE

#### SUMMARY:

IRWD's Primary Disinfection Facility (PDF) Sodium Hypochlorite Storage and Feed System project included removal of the chlorine gas system and installation of a sodium hypochlorite system to provide disinfection requirements for the Dyer Road Wellfield. IRWD's contractor for this project, Pacific Hydrotech Corporation (PHC), completed the required work and all punch list items. The project has received final inspection and acceptance of construction is recommended.

#### BACKGROUND:

Since 1996, the PDF provided final disinfection of groundwater from the Dyer Road Wellfield using chlorine gas and aqueous ammonia. In 2020, the District discontinued the use of chlorine gas, marking the complete removal of the chemical at its facilities. This project included the removal of the existing chlorine gas system and related appurtenances, and the installation of a new sodium hypochlorite storage and feed system within the existing chlorination building. The project also included various other facility improvements and the installation of a new carbon dioxide storage and feed system to maintain current water quality characteristics.

Staff completed the design in February 2020. The construction Notice of Award was issued to PHC on June 23, 2020, and PHC completed construction of all improvements on April 26, 2023. The project extended beyond the original construction duration largely due to supply chain issues as a result of the pandemic and electrical subcontractor performance issues. In November 2022, PHC replaced the electrical subcontractor and after doing so continued to progress the project at a steady pace.

Eleven change orders were issued during construction. IRWD-requested change order items included deleting battery backup exit signs, renegotiating the sole-sourced chemical feed pumps to a lower price, rotating the orientation of the electrical switchboard and carbon dioxide storage and feed system in the yard, and adding a replacement diesel fuel tank fill station panel. Additional change orders to address unknown conditions included removing a thicker concrete floor to construct the chemical containment area, enlarging the sodium hypochlorite storage tank foundation, and additional effort to clean the aqueous ammonia system. Some of the change orders were the result of design oversights including additional effort to pull electrical conductors from PDF to Dyer Road through several vaults that were not shown on the drawings and piping material changes. A summary of construction change orders is provided as Exhibit "A".

Project Title:	Primary Disinfection Facility Sodium Hypochlorite Storage and Feed System
Project No.:	06214
Design Engineer:	Carollo Engineers
Construction Management by:	IRWD Staff
Contractor:	Pacific Hydrotech Corporation
Original Contract Cost:	\$5,537,800.00
Final Contract Cost:	\$5,904,460.70
Original Contract Days:	730
Final Contract Days:	1084
Final Change Order Approved On:	June 1, 2023

**FISCAL IMPACTS:**

Project 06214 is included in the FY 2023-24 Capital Budget and was funded 78.6% by the regional potable water fund and 21.4% by the water replacement fund. Staff developed the customized split by categorizing portions of the improvements as replacement of aging infrastructure rather than strictly enhancement of existing facilities.

**ENVIRONMENTAL COMPLIANCE:**

This project is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15301 which provides exemption for minor alterations of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. A Notice of Exemption for the project was filed with the County of Orange on October 9, 2018.

**COMMITTEE STATUS:**

This item was not reviewed by a Committee.

**RECOMMENDATION:**

THAT THE BOARD ACCEPT CONSTRUCTION OF THE PRIMARY DISINFECTION FACILITY SODIUM HYPOCHLORITE STORAGE AND FEED SYSTEM PROJECT, AUTHORIZE THE GENERAL MANAGER TO FILE A NOTICE OF COMPLETION, AND AUTHORIZE THE PAYMENT OF THE RETENTION 35 DAYS AFTER THE DATE OF RECORDING THE NOTICE OF COMPLETION FOR PROJECT 06214.

**LIST OF EXHIBITS:**

Exhibit "A" – Construction Change Order Summary

## Exhibit "A"

### PDF Sodium Hypochlorite Storage and Feed System

PR 06214

#### Construction Change Order Summary

Date: May 18, 2023  
 Contractor: Pacific Hydrotech Corporation  
 Design Engineer: Carollo Engineers

			Contract Amount						Contract Days				Original Completion Date:
			Original Contract Amount: \$5,537,800.00						Original Days: 730				6/23/2022
Change Order No.	Description	Category	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Order Days	Cum. Change Order Days	Revised Total Contract Days	Revised Completion Date
1	Approved by Executive Director of Technical Services Approved on 6/23/2021 <u>CR 01</u> : Revised Proposal for Chemical Feed Pumps <u>CR 03</u> : Concrete Floor Thickness <u>CR 04</u> : Enlarged Hypo Tank Pedestals <u>CR 06</u> : Pipe Schedule Modifications <u>CR 07</u> : Additional Structural Gusset Plate	A B B D B	(\$40,650.68) \$10,157.68 \$14,498.73 \$37,034.49 \$3,257.67	\$24,297.89	\$ -	\$24,297.89	0.44%	\$5,562,097.89	11 0 0 11 0	0	11	741	7/4/2022
2	Approved by Executive Director of Technical Services Approved on 7/28/21 <u>CR 05</u> : CO2 Tank Mods and Grading Adjustments	D	\$67,024.98	\$67,024.98	\$24,297.89	\$91,322.87	1.65%	\$5,629,122.87	9 9	11	20	750	7/13/2022
3	Approved by Executive Director of Technical Services Approved on 9/28/21 <u>CR 08</u> : Electrical Changes per Design Clarification No. 6 <u>CR 09</u> : Additional Soil Amending <u>CR 10</u> : Addition of Irrigation Backflow Preventer	A B D	\$4,539.27 \$9,469.02 \$1,287.12	\$15,295.41	\$91,322.87	\$106,618.28	1.93%	\$5,644,418.28	5 5 0 0	20	25	755	7/18/2022
4	Approved by Executive Director of Technical Services Approved on 3/20/22 <u>CR 11</u> : Welding Removable Bollards <u>CR 13</u> : Ammonia Tank SS Ball Valves <u>CR 14</u> : Concrete Landing for CO2 Enclosure <u>CR 15</u> : Additional Traffic Control	C D A D	\$1,326.55 \$3,174.76 \$2,238.17 \$8,545.75	\$15,285.23	\$106,618.28	\$121,903.51	2.20%	\$5,659,703.51	4 0 0 1 3	25	29	759	7/22/2022
5	Approved by Executive Director of Technical Services Approved on 4/28/22 <u>CR 16</u> : CP-100 Additional Components <u>CR 17</u> : DC-10 Exit Signs <u>CR 19</u> : DC-12 Manual Air Release Valve	A A D	\$2,213.26 (\$20,396.34) \$2,784.20	(\$15,398.88)	\$121,903.51	\$106,504.63	1.92%	\$5,644,304.63	3 0 0 3	29	32	762	7/25/2022
6	Approved by Executive Director of Technical Services Approved on 8/20/2022 <u>CR 12</u> : Changes to CP-285 Enclosure <u>CR 20</u> : Additional Security Camera Conduits <u>CR 21</u> : Door Intrusion Switch Relocation <u>CR 24</u> : Cable Extension for AIT-360	A A D D	\$2,246.42 \$1,521.82 \$2,500.87 \$2,008.25	\$8,277.36	\$106,504.63	\$114,781.99	2.07%	\$5,652,581.99	4 2 1 1 0	32	36	766	7/29/2022
7	Approved by Executive Director of Technical Services Approved on 9/21/2022 <u>CR 26</u> : DC 13 Analyzer Piping Revisions <u>CR 27</u> : Ammonia Calibration Column	D B	\$22,288.89 \$1,521.10	\$23,809.99	\$114,781.99	\$138,591.98	2.50%	\$5,676,391.98	12 12 0	36	48	778	8/10/2022
8	Approved by Executive Director of Technical Services Approved on 1/25/23 <u>CR 30</u> : Ammonia Vault Modification <u>CR 33</u> : Panel LP-100 New Conductors <u>CR 34</u> : CO2 Fill Station Analog Displays	A D C	\$7,175.52 \$35,848.58 \$8,482.29	\$51,506.39	\$138,591.98	\$190,098.37	3.43%	\$5,727,898.37	13 1 7 5	48	61	791	8/23/2022

**PR 06214  
Construction Change Order Summary**

Date: May 18, 2023  
 Contractor: Pacific Hydrotech Corporation  
 Design Engineer: Carollo Engineers

			Contract Amount						Contract Days				Original Completion Date:
			Original Contract Amount: \$5,537,800.00						Original Days: 730				6/23/2022
Change Order No.	Description	Category	Change Order Line Item Amount	Change Order Amount	Previous Change Orders	Cumulative Total of Change Orders	% of Original Contract Amount	Revised Contract Amount	Change Order Days	Previous Change Order Days	Cum. Change Order Days	Revised Total Contract Days	Revised Completion Date
9	Approved by Executive Director of Technical Services Approved on 3/23/23 <u>CR 31</u> : MCC-100 to DP-100 wire size increase <u>CR 32</u> : Replacing LIT on Ammonia Tank No. 2 <u>CR 35</u> : DC-14 CO2 Fill Station Modification <u>CR 36</u> : Barbed Wire Post Painting	A A C A	\$3,620.83 \$665.05 \$24,431.85 \$2,844.60	\$31,562.33	\$190,098.37	\$221,660.70	4.00%	\$5,759,460.70	9 2 1 6 0	61	70	800	9/1/2022
10	Approved by Executive Director of Technical Services Approved on 5/10/23 <u>CR 02</u> : Delta 1 & Delta 2 Revisions <u>CR 23</u> : HVAC System Thermostats - Conduit & Wiring Additions (ACSE) <u>CR 29</u> : Ammonia Activity 2-5 extra work <u>CR 37</u> : CP-100 Panel Modifications <u>CR 39</u> : Ladder Relocation on roof <u>CR 40</u> : Additional Painting of Back-flow-preventer	A D B A D A	\$7,698.00 \$8,589.69 \$12,239.59 \$2,650.80 \$4,867.77 \$2,697.31	\$38,743.16	\$221,660.70	\$260,403.86	4.70%	\$5,798,203.86	21 6 5 4 0 4 2	70	91	821	9/22/2022
11	Approved by Executive Director of Technical Services Approved on 6/1/23 <u>CR 18</u> : DC-07 Generator Fuel Tank (LEED) <u>CR 25</u> : DC-09 Ammonia Room and MCC Revisions (LEED) <u>CR 38</u> : 480VAC Feeder to MCP-1 Additional Work Non-compensatory time extension	A A D	\$40,000.00 \$41,000.00 \$25,256.84 \$0.00	\$106,256.84	\$260,403.86	\$366,660.70	6.62%	\$5,904,460.70	263 13 7 7 236	91	354	1,084	6/12/2023

Category	Total Amount	Contract
A - Owner Directed Change	\$60,064.03	1.08%
B - Differing/Unknown Condition	\$51,143.79	0.92%
C - External Agency, Regulatory, and/or Permit Required Change	\$34,240.69	0.62%
D - Design Oversight	\$221,212.19	3.99%
<b>Total Change Order Amount (A + B + C + D)</b>	<b>\$366,660.70</b>	<b>6.62%</b>