



## NOTICE OF THE REGULAR BI-MONTHLY MEETING OF THE BOARD OF DIRECTORS

**MEETING DATE:** May 16, 2023

**TIME:** 6:30 p.m.

**LOCATIONS:** This meeting will be held virtually and in-person.

<b>Open Session</b>	<b>Virtually</b>
Marin Water Board Room 220 Nellen Avenue Corte Madera, CA 94925	<b>URL:</b> <a href="https://us06web.zoom.us/j/88134852296">https://us06web.zoom.us/j/88134852296</a> <b>Webinar ID:</b> 881 3485 2296 <b>Phone Call:</b> 1-669-444-9171

**EMAILED PUBLIC COMMENTS:** Submit your comments in advance of the meeting to [BoardComment@MarinWater.org](mailto:BoardComment@MarinWater.org). All emailed comments received by 3:00 p.m. on the day of the meeting will be provided to the Board of Directors prior to the meeting. Please do not include personal information in your comment such as phone numbers and home addresses.

### PARTICIPATION DURING THE MEETING:

**In-person Attendee:** Fill out a speaker card and place it next to the board secretary. List the number of the agenda item(s), for which you would like to provide a comment. Once you're called, proceed to the lectern to make your comment.

**Virtual Attendee:** Click on the "raise hand" button on the bottom of the Zoom screen. If you are joining by phone and would like to comment, press \*9 and staff will call on you by the last four digits of your phone number.

*(Note: The board president may shorten the amount of time for public comment due to large numbers of both in-person and virtual attendees.)*

AGENDA ITEMS	RECOMMENDATIONS
Call to Order and Roll Call*	
Adoption of Agenda	Approve

**AGENDA ITEMS****RECOMMENDATIONS****Public Comment - Items Not on the Agenda**

Members of the public may comment on any items not listed on the agenda during this time. Comments will be limited to three (3) minutes per speaker, and time limits may be reduced by the board president to accommodate the number of speakers and ensure that the meeting is conducted in an efficient manner.

**Directors' and General Manager's Announcements**

*(6:40 p.m. – Time Approximate)*

**Consent Calendar *(6:45 p.m. – Time Approximate)***

All matters listed on the consent calendar are considered to be routine and will be enacted by a single action of the Board, unless specific items are removed from the consent calendar by the Board during adoption of the agenda for separate discussion and action.

1. Minutes of the Board of Directors' Special Meetings of May 2, 2023 and May 3, 2023	<i>Approve</i>
2. General Manager's Report April 2023	<i>Approve</i>
3. Authorizing the General Manager to Negotiate and Execute Agreements for the Purchase of Water Treatment Chemicals	<i>Approve</i>

**Regular Calendar**

4. Future Meeting Schedule & Agenda Items	<i>Information</i>
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**Public Hearing *(6:50 p.m. – Time Approximate)***

5. Conduct a Public Hearing on the Proposed Increases to Customer Water Service Rates, Fees and Charges; and, Adopt Ordinance No. 464 Amending Title 6 Pertaining to the Water Service Rates and Charges of the Marin Municipal Water District Code	<i>Approve</i>
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**Adjournment**

**ADA NOTICE AND HEARING IMPAIRED PROVISIONS:**

In accordance with the Americans with Disabilities Act (ADA) and California Law, it is Marin Water’s policy to offer its public programs, services, and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are an individual with a disability and require a copy of a public hearing notice, an agenda, and/or agenda packet in an appropriate alternative format, or if you require other accommodations, please contact Board Secretary Terrie Gillen at 415.945.1448, at least two days in advance of the meeting. Advance notification will enable Marin Water to make reasonable arrangements to ensure accessibility.

INFORMATION AGENDAS ARE AVAILABLE FOR REVIEW AT THE CIVIC CENTER LIBRARY, CORTE MADERA LIBRARY, FAIRFAX LIBRARY, MILL VALLEY LIBRARY, MARIN WATER OFFICE, AND ON THE MARIN WATER WEBSITE (MARINWATER.ORG)

**FUTURE BOARD AND COMMITTEE MEETINGS:**

<b>Dates</b>	<b>Meetings</b>
Friday, May 19, 2023 9:30 a.m.	<ul style="list-style-type: none"><li>• Operations Committee Meeting &amp; Special Meeting of the Board of Directors (Operations)</li></ul>
Tuesday, May 23, 2023 5 p.m.	<ul style="list-style-type: none"><li>• Special Meeting of the Board of Directors (Closed Session)</li></ul>
Thursday, May 25, 2023 9:30 a.m.	<ul style="list-style-type: none"><li>• Finance &amp; Administration Committee Meeting &amp; Special Meeting of the Board of Directors (Finance &amp; Administration)</li></ul>
Tuesday, May 30, 2023 9:30 a.m.	<ul style="list-style-type: none"><li>• Communications &amp; Water Efficiency Committee Special Meeting &amp; Special Meeting of the Board of Directors (Communications &amp; Water Efficiency)</li></ul>

  
Board Secretary



## Approval Item

### TITLE

Minutes of the May 2, 2023 and May 3, 2023 Special Meetings of the Board of Directors

### RECOMMENDATION

Approve the adoption of the minutes

### SUMMARY

The Board of Directors held special meetings on May 2 and May 3. The minutes of both meetings are attached.

### DISCUSSION

None

### FISCAL IMPACT

None

### ATTACHMENT(S)

1. Minutes of the Board of Directors' Special Meeting of May 2, 2023
2. Minutes of the Board of Directors' Special Meeting of May 3, 2023

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Communications & Public Affairs Department	 Terrie Gillen Board Secretary	 Ben Horenstein General Manager

**MARIN MUNICIPAL WATER DISTRICT  
BOARD OF DIRECTORS**

**SPECIAL MEETING MINUTES**

**Tuesday, May 2, 2023**

**Remotely and In-Person**

**Open Session Locations:** Marin Water, Board Room, 220 Nellen Avenue, Corte Madera, CA 94925; Director Schmitt - Dye Creek Preserve, Headquarters Building, 26855 Foothill Rd., Los Molinos, CA 96055; and Director Russell - AC Marriott Hotel, 250 W Santa Clara Street, Room 221, San Jose, CA 95113

**Closed Session Location:** Marin Water, Mt. Tam Conference Room, 220 Nellen Avenue Corte Madera, California 94925

**CALL TO ORDER AND ROLL CALL**

Vice President Ranjiv Khush called the meeting to order at 5:00 p.m. in the Board Room.

**Directors Present:** Larry Russell, Matt Samson, Jed Smith, Ranjiv Khush, and Monty Schmitt

**Directors Absent:** None

**ADOPTION OF AGENDA**

On motion made by Director Smith and seconded by Director Samson, the board adopted the agenda.

Ayes: Directors Russell, Samson, Smith, Khush, and Schmitt  
Noes: None

There were no public comments on the *Adoption of the Agenda*.

**PUBLIC COMMENT – ONLY ON ITEM ON THE CLOSED SESSION**

There were no public comments on the Closed Session item.

**CONVENE TO CLOSED SESSION**

The directors convened to Closed Session at 5:02 p.m. and went to the Mt. Tam Conference Room.

## **CLOSED SESSION ITEM**

1. **Public Employee Performance Evaluation**  
(California Government Code Section § 54957)

Title: General Manager

## **RECONVENE TO OPEN SESSION**

The Board adjourned the closed session and went back to the Board Room.

Vice President Khush reconvened the Open Session at 6:30 p.m.

## **CLOSED SESSION REPORT OUT**

Vice President Khush announced that the Closed Session adjourned at 6:15 p.m. and there were no reportable actions taken.

## **PUBLIC COMMENT – ITEMS NOT ON THE AGENDA**

There were three (3) public comments on items not on the agenda.

## **DIRECTORS' AND GENERAL MANAGER'S ANNOUNCEMENTS & COMMITTEE REPORTS**

- Director Smith reported that he joined Finance Director Bret Uppendahl at the Sausalito Rotary Club to discuss the proposed rates and joined Water Resources Director Paul Sellier at the monthly Sonoma WAC meeting and provided highlights of what was discussed. He also recognized Annie Layzer and all the Watershed volunteers for their contributions.
- Director Samson reported that he attended the Tomales Bay Technical Advisory Committee Meeting on April 20 to learn the work they do, including monitoring water quality, attended the Watershed Recreation Management Planning Community Workshop, and met with Watershed staff.
- Vice President Khush reported that the California Department of Water Resources announced six (6) piloted research projects with the National Alliance for Water Innovation regarding desalination and reuse, and would like to see this group provide a presentation at a future Board retreat on what type of water technology to expect in the future.

- General Manager Ben Horenstein announced that the District was awarded a grant of \$723,000 from the Bureau of Reclamation for three (3) years of implementation of water efficiency programs through the Sonoma-Marin partnership. A funding agreement of the grant would go back to the board at a future meeting for grant approval.

#### **CONSENT CALENDAR (ITEMS 2-4)**

**Item 2 Minutes of the Board of Directors' Regular Meetings of April 4, 2023 and April 18, 2023**

**Item 3 Amendment to Legal Services Agreement with Bertrand, Fox, Elliot, Osman & Wenzel for Litigation Support Services**

**Item 4 Request to Fill Information Technology Manager Position in the Engineering Division**

On motion made by Director Smith and seconded by President Schmitt, the board approved the Consent Calendar.

Ayes: Directors Russell, Samson, Smith, Schmitt, and Khush  
Noes: None

There were no public comments.

#### **REGULAR CALENDAR (ITEM 5)**

**Item 5 Future Meeting Schedule and Agenda Items**

The board secretary reported on upcoming internal and external meetings.

There were no public comments.

This was an informational item. The board did not take any formal action.

#### **BUDGET STUDY SESSION**

**Item 6 FY 2023/24 and FY 2024/25 Budget**

Finance Director Bret Uppendahl presented a budget overview and budget goals of the District, as well as an overview of his division.

Operations Division Manager Darren Machado, Watershed Resources Manager Shaun Horne, Water Resources Division Manager Paul Sellier, and Engineering Division Manager Crystal Yezman each provided overviews of their divisions, division priorities, and preliminary budgets.

The Engineering Planning Manager, Elysha Irish, presented the Capital Improvement Projects (CIP) Budget, which included a baseline CIP budget and enhancements to water supply projects and watershed, increased water system improvements, as well as an overview of larger capital projects to be considered for future funding allocations.

Sometime during the CIP presentation Director Russell left the meeting.

Finance Manager Uppendahl then concluded by recapping that there would be an overall 22% increase to the District's budget, and explained that revenues needed to support the operating and capital budgets were incorporated in the proposed rate increases, and the final budget proposals would be presented to the Board in June 2023.

Discussion ensued.

There were three (3) public comments.

The Board did not take any formal action.

#### **ADJOURNMENT**

There being no further business, the Board of Directors' Special Meeting of May 2, 2023, adjourned at 9:05 p.m.

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Board Secretary



**MARIN MUNICIPAL WATER DISTRICT  
SPECIAL MEETING OF THE BOARD OF DIRECTORS**

**MINUTES**

**Wednesday, May 3, 2023**

**Held Virtually and at In-Person Locations**

Marin Water, Board Room, 220 Nellen Avenue, Corte Madera, CA 94925, and  
Marin Water, Mt. Tam Conference Room, 220 Nellen Avenue, Corte Madera, CA 94925

**CALL TO ORDER AND ROLL CALL**

President Monty Schmitt called the meeting to order at 4:00 p.m.

**Directors Present:** Ranjiv Khush, Matt Samson, Jed Smith, and Monty Schmitt

**Directors Absent:** Larry Russell

**ADOPT AGENDA**

On motion made by Director Smith and seconded by Vice President Khush, the Board of Directors adopted the agenda.

Ayes: Directors Khush, Samson, Smith, and Schmitt

Noes: None

Absent: Director Russell

**PUBLIC COMMENT ON CLOSED SESSION ITEMS**

There were no public comments on the Closed Session item.

**CONVENE TO CLOSED SESSION**

The directors convened to Closed Session at 4:02 p.m. and went to the Mt. Tam Conference Room.

**CLOSED SESSION ITEM**

**1. Conference with Labor Negotiators**

(Government Code §54957.6)

**Agency Designated Representative:** Ben Horenstein, General Manager

**Employee Organizations:** Service Employees International Union, Local 1021;  
Unrepresented Employees

**RECONVENE TO OPEN SESSION**

The Board adjourned the closed session and went back to the Board Room.

**CLOSED SESSION REPORT OUT**

President Schmitt announced that the Closed Session adjourned at 5:03 p.m. and there was no reportable action.

**ADJOURNMENT**

There being no further business, the special meeting adjourned at 5:03 p.m.

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Board Secretary



## Approval Item

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### **TITLE**

General Manager's Report April 2023

### **RECOMMENDATION**

Approve Report

### **SUMMARY**

#### **A. HIGHLIGHTS:**

- The daily average net production for the month of April 2023 was 16.3 MGD compared to 17.3 MGD for the month of April 2022. Typical usage for April is 21.5 MGD.
- The daily average flow from Sonoma County Water Agency for the month of April 2023 was 0.3 MGD compared to 10.9 MGD for the month of April 2022 due to the landslide investigation on the North Marin Aqueduct.
- Initiated new capital project to install a new three-valve cluster at the junction of the North Marin Line, Fairfax Transmission and Smith Saddle Tanks to provide operations resiliency to the system. This will allow water to flow between the three zones in an emergency if needed.
- Completed the San Geronimo Treatment Plant Emergency Generator Project
- Executed the notice to proceed for the Azalea Hill Trail Retaining Wall Project
- Installed a chlorine analyzer at Lapachet Pump Station. Lapachet Pump Station is next to Mill Valley Tank. This area of the distribution system requires more frequent monitoring of the total chlorine residual. Water Quality and Operations will use this chlorine analyzer as a pilot to track total chlorine residuals in high detention tanks.
- Repaired an emergency water main break on an 8 inch welded steel pipe below Elda Tank in San Rafael. The water tank had to be isolated and a bypass installed with a portable regulator to connect two different pressure zones within the distribution system to provide water to our customers in the area.
- Crews completed renewal of over 15 plastic services on Schmidt Lane, Chalda Court and Steven Way in San Rafael prior to a County Paving project. This strengthens our infrastructure in the area and saves the District in future paving costs caused from plastic lateral leaks.
- Annual Trout in the Classroom field trips took place with 57 classes, 1660 visitors, at Bon Tempe Lake; first week supervised by Watershed staff. Three community science events were held on Watershed over City Nature Challenge weekend. The District co-hosted the Annual Bald Hill Broom Bust with Marin County Parks. Additionally, one midweek broom pull, engaging a local corporate group was carried out on the watershed in April.

- The District submitted a \$600,000 request for restoration planning and design of five Lagunitas Creek sites to CDFW's Fisheries Restoration Grant Program. Fisheries staff continued daily operation of the Lagunitas Creek smolt trapping and PIT tagging program for ocean-bound juvenile salmon and steelhead - the Coho Salmon numbers thus far have been the highest on record since the District began this monitoring in 2006.
- Watershed maintenance crews in addition to Hanford ARC and California Conservation Corps crews burned 9 days in April for a total of 350+ piles burned on the Pilot Knob Project Area near Lake Lagunitas.

PROJECT DETAILS						REQUIREMENTS		BUDGET	
OPPORTUNITY	FUNDER	FUNDER PRIORITIES	APPLICATION DATE	MATCHING PROJECT	DESCRIPTION	STATUS	PREREQUISITE	FUNDS REQUESTED	MATCH REQUIREMENT %
<b>CURRENT APPLICATIONS</b>								<b>\$73,712,000</b>	
Forest Health	CalFire	Wildfire Prevention	9/9/18	Fuels Reduction on Watershed	Continuing Forest Health projects with another 1000 acres	Not funded	Vegetation plan, CEQA	\$7,000,000	30
Local Water Supply Storage Projects	DWR	Water Supply	1/9/23	Task	Three projects: recycled water, local storage enhancement, and winter water conveyance	Open	UWMP Compliance	\$53,000,000	50
Desal Feasibility Study	USBR	Desalination	2/28/23	Task	Exploring new brackish desal in Petaluma	Open	None	\$200,000	50
Local Storage Supply Enhancement	USBR	Environmental + Water Supply	3/28/23	Task	Evaluating increasing storage locally	Open	None	662,000	50
Prop. 1. Round 2 IRWM Disadvantaged Community	DWR	Water Infrastructure	12/1/22	Marin City/San Rafael Infrastructure	Replacing aging transmission lines and laterals in Marin City and San Rafael's Canal District	Open	IRWM CC Approval	\$6,500,000.00	0
Forestry Corps	CCNB	Vegetation Management	Jan 2023	Ongoing Forestry work	Workforce development; state funding directly to CCNB to fund crews working on the watershed	Open	None	\$500,000.00	0
Pre-application for Coastal Access Projects	State Coastal Conservancy	Recreation/Coastal Access	Dec. 2024	Trail work	Watershed trail improvements	Open	None	\$5,850,000.00	0
Fisheries Restoration Grant Program	CDFW	Fisheries	4/20/23	Lagunitas Creek Restoration	Funding for Phase II site design and CEQA	Open	30% designs	\$723,000.00	5
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	DWR Riverine	Fisheries	11/1/22	Lagunitas Creek Restoration	Gravel augmentation for Lagunitas Creek	Funded	None	\$590,000.00	0

<b>UPCOMING OPPORTUNITIES</b>								<b>\$0</b>	
Hazard Mitigation Program	FEMA	Natural Hazards	Summer 2023	Treatment Plant Clarifiers	Funds to address seismic hazards in water treatment facilities	TBD	NOI APPROVAL	TBD	25
Small Storage Program	USBR	Water Supply	Fall 2023	Phoenix Lake	Funding for new water supply projects	TBD	Approved Feasibility Study	TBD	6
WaterSMART Aquatic Ecosystem Restoration	USBR	Fisheries	6/1/2023	Lagunitas Creek Restoration	Funding for fisheries program	Open	Unknown	TBD	50
Recreational Trails Program	State Parks	Trails	6/15/2023	Recreation Plan	Funding for new trails	Open	Unknown	TBD	0

<b>LONG TERM OPPORTUNITIES (ongoing development)</b>									
2024 Water Bond	State of CA	Water supply projects	Fall 2024	SWSA Water Supply Projects	Currently in Legislature	In legislature	Voter approval; District participation	TBD	0
Water Resources Development Act	Army Corps of Engineers	Water supply projects	FY 2024	SWSA Water Supply Projects	Pursuing for No Regrets and regional projects	In appropriations	Authorization (secured 2022)	\$28,000,000.00	0

**DISCUSSION**

**B. SUMMARY:**

- AF = Acre Feet
- Mg/L = milligrams per liter
- MPN = most probable number
- MPY = mils per year
- MG = million gallons
- NTU = nephelometric turbidity units

**1. Water Production:**

	FY 2022/23		FY 2021/22	
	(million gallons)	(acre-feet)	(million gallons)	(acre-feet)
<b>Potable</b>				
Total production this FY	5,460	16,757	5,343	16,396
Monthly production, April	488	1,498	518	1,589
Daily average, April	16.27	49.93	17.26	52.96
<b>Recycled</b>				
Total production this FY	168.94	518.46	154.73	474.85
Monthly production, April	12.20	37.44	15.55	47.72
Daily average, April	0.41	1.25	0.52	1.59
<b>Raw Water</b>				
Total production this FY	42.81	131.38	30.00	92.07
Monthly production, April	0.00	0.00	2.38	7.30
Daily average, April	0.00	0.00	0.08	0.24
<b>Imported Water</b>				
Total imported this FY	986	3,025	2,154	6,611
Monthly imported, April	8	25	327	1,003
<b>Reservoir Storage</b>				
Total storage, December	25,799	79,173	23,510	72,151
Storage change during April	-128	-393	-141	-432
<b>Stream Releases</b>				
Total releases this FY	1,979	6,073	2,822	8,659
Monthly releases, April	111	341	430	1,319

<b>2. <u>Precipitation:</u></b>	<u>FY 2022/23 (in.)</u>	<u>FY 2021/22 (in.)</u>
Alpine	56.96	47.22
Bon Tempe	56.32	43.64
Kent	54.92	44.11
Lagunitas *	74.44	48.92
Nicasio	45.70	28.35
Phoenix	66.29	49.36
Soulajule	45.27	32.52
* Average to date = 50.30 inches		

**3. Water Quality:**

<u>Laboratory:</u>	<u>FY 2022/23</u>	<u>FY 2021/22</u>
Water Quality Complaints:		
Month of Record	11	19
Fiscal Year to Date	132	134
Water Quality Information Phone Calls:		
Month of Record	7	11
Fiscal Year to Date	80	111

The WQ lab ensured that the water supplied met or surpassed water quality regulations by collecting and analyzing 1,589 analyses on lakes, treatment plants and distribution system samples.

Mild steel corrosion rates averaged 1.45 (0.5 – 2.33) MPY. The AWWA has recommended an operating level of <5 MPY with a goal of <1 MPY.

Complaint Flushing: No flushing events were performed for this month on record.

Tank Survey Program: 17 water storage tank sanitary surveys were performed during the month. 38.37 % planned survey program has been completed for calendar year 2023.

Disinfection Program: 2,313 of new pipeline was disinfected during the month of April. Performed chlorination on 2 water storage tanks to ensure compliance with bacteriological water quality regulations.

Tank Water Quality Monitoring Program: Performed 46 water quality-monitoring events on storage tanks for various water quality parameters this month to help ensure compliance with bacteriological water quality regulations.

Summary:

The lab performed 17 sanitary tank surveys, treated 2 tanks for low chlorine, and checked an additional 46 tanks for low chlorine residual in April 2023.

**4. Water Treatment:**

<u>Treatment Results</u>	<u>San Geronimo</u>		<u>Bon Tempe</u>		<u>Ignacio</u>	
	Average	Monthly Goal	Average	Monthly Goal	Average	Monthly Goal
Turbidity (NTU)	0.07	≤ 0.10	0.04	≤ 0.10	0.05	≤ 0.10
Chlorine residual (mg/L)	2.73	2.75 *	2.84	2.75 *	2.71	2.75 *
Color (units)	0.7	≤ 15	0.4	≤ 15	1.0	≤ 15
pH (units)	7.8	7.8*	7.8	7.8*	8.1	8.1**

- \* Set monthly by Water Quality Lab
- \*\* pH to Ignacio is controlled by SCWA

**5. Capital Improvement:**

- a. Treehaven Pipeline Replacement Project (F21003): This project is a component of the District’s Fire Flow Improvement Program, and will replace nearly 8,000 linear feet of undersized fire flow deficient pipe as old as 95-years with 8-inch and 6-inch welded steel pipe.
  - Project Budget: \$3,654,990
  - Monthly Activities: The project is making strong headway with the Contractor operating two crews simultaneously. Water main installation is complete for 5<sup>th</sup> Avenue, Sirard Lane, Alpine Street and Forbes Avenue. The Contractor is currently connecting the new water main to the existing system at various



strategic locations that minimize water service interruptions, and is also transferring individual water services from the old main to the new main.

- b. Azalea Hill Trail Retaining Wall Project (R17008): This project will excavate approximately 150 cubic yards of hillside, will install a 100 foot long soldier pile retaining wall with concrete lagging, and will perform trail and drainage improvements.
  - Project Budget: \$491,550
  - Monthly Activities: The project was awarded at the April 4 Board of Directors meeting and the contract has been executed. The preconstruction meeting is scheduled for Tuesday May 2, and work will begin early May.

**6. Other:**

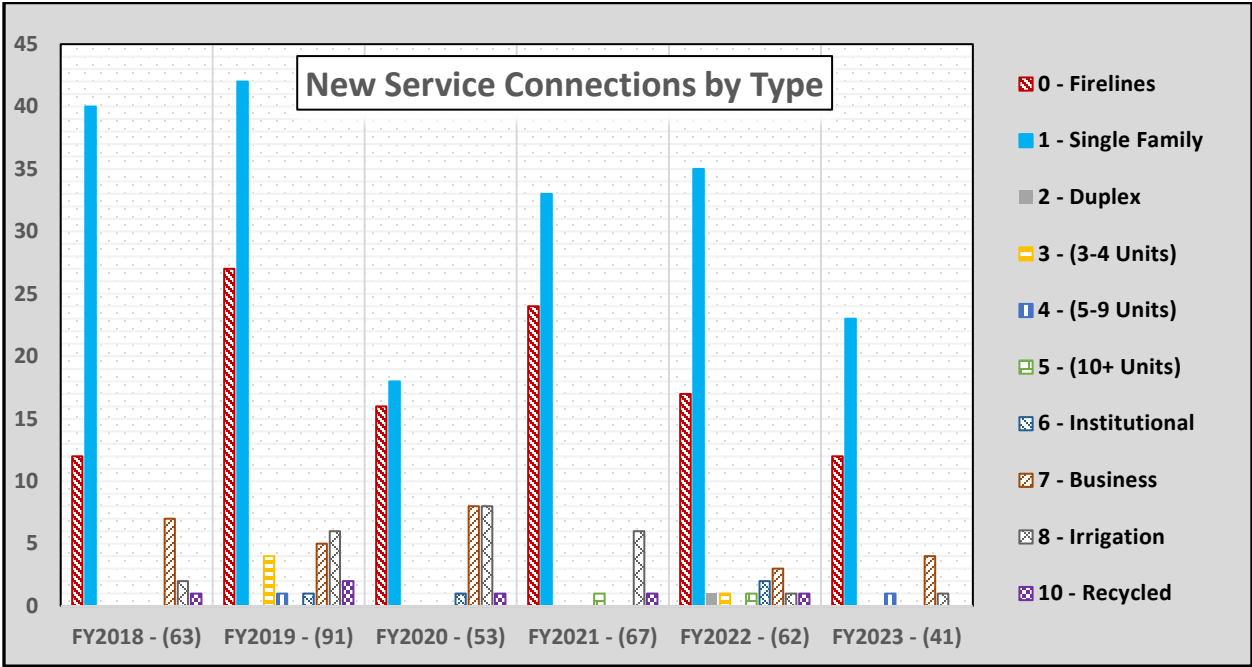
<u>Pipeline Installation</u>	<u>FY2022/23</u>	<u>FY2021/22</u>
Pipe installed during April (feet)	4,002	1,879
Total pipe installed this fiscal year (feet)	12,198	22,139
Total miles of pipeline within the District	908*	908*

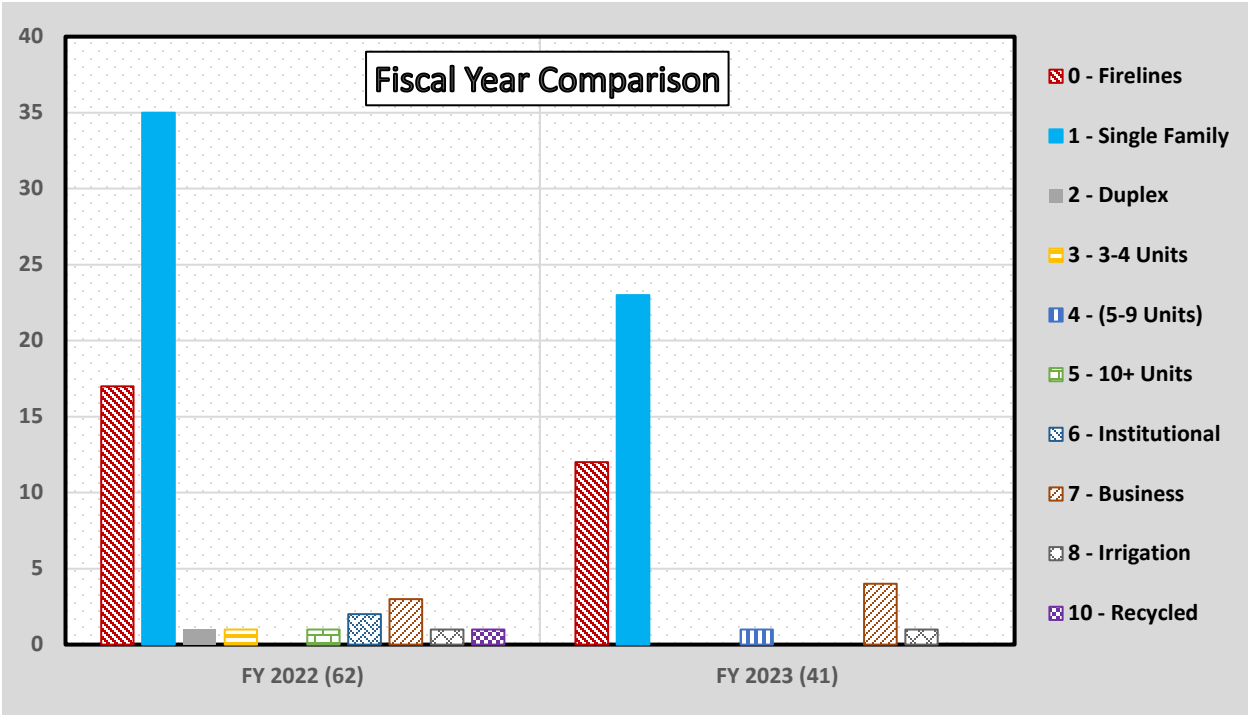
*\* Reflects adjustment for abandoned pipelines*

<u>Pipe Locates (1,631 Responses)</u>	<u>FY2022/23</u>	<u>FY2021/22</u>
Month of April (feet)	15,080	22,333
Total this fiscal year (feet)	210,291	363,724

<u>Main Line Leaks Repaired:</u>	<u>FY2022/23</u>	<u>FY2021/22</u>
Month of April	10	7
Total this fiscal year	153	141

<u>Services:</u>	<u>FY2022/23</u>	<u>FY2021/22</u>
Service upgrades during April	15	8
Total service upgrades this FY	135	131
Service connections installed during April	4	0
Total active services as of April 1, 2023	61,873	61,771





7. **Demand Management:**

	Apr-23	FY 22/23 TOTAL	FY 21/22 TOTAL	FY 20/21 TOTAL
<b>WATER-EFFICIENCY PROGRAMS</b>				
<b>Water-Use Site Surveys</b>				
Conservation Assistance Program (CAP) Consultations				
Residential properties resi 1-2 (single-family)	14	260	731	117
Residential properties resi 3-5 (multi-family units)	0	2	7	5
Non-residential properties resi 6-7 (commercial)	0	2	1	5
Dedicated irrigation accounts resi 8-10 (large landscape)	0	0	3	6
Marin Master Gardeners' Marin-Friendly Garden Walks				
Residential garden walks	2	55	100	129
<b>Public Outreach and Education, Customer Service</b>				
Public outreach events (number of people attending)				
	550	775	1602	0
Public education events (number of participants)				
	0	186	536	398
Customer calls/emails admin staff				
	304	3320	9508	5738
<b>School Education</b>				
School assemblies				
Number of activities				
	0	0	0	0
Number of students reached				
	0	0	0	0
Field trips				
Number of activities				
	4	11	0	0
Number of students reached				
	76	220	0	0
Classroom presentations				
Number of activities				
	2	17	0	1
Number of students reached				
	40	511	0	22
Other (e.g. booth events, school gardens)				
Number of activities				
	1	1	0	0
Number of students reached				
	480	480	0	0
<b>Incentives</b>				
Number of HECWs approved				
	16	85	190	163
Number of Rain Barrel/Cisterns approved				
	1	13	76	19
"Landscape Your Lawn" Turf Replacements approved				
	1	84	402	6
Number of Laundry-to-Landscape Systems approved				
	0	1	27	0
Hot water recirculating system rebates				
	1	27	122	0
Pool Cover rebates				
	3	25	298	0
HET rebates				
	4	18	92	0
Number of Smart Controllers rebates approved				
	0	25	69	85
Number of Smart Home Water Monitor "Flume Direct Distribution" redeemed				
	17	229	1568	1140
Number of Smart Controllers "Rachio Direct Distribution" approved				
	10	47	178	233
<b>Advanced Metering Infrastructure (AMI)</b>				
AMI leak letters sent to customers (>200 GPD)				
	79	968	1050	1601
<b>ORDINANCES</b>				
<b>Water Waste Prevention</b>				
Water Waste Reports Received				
	20	331	4451	589
Water Waste Notifications Sent				
	1	72	0	0
<b>Landscape Plan Review</b>				
Plans submitted				
	2	56	77	94
Plans exempt				
	0	4	1	4
Plans completed				
	0	13	17	19
Plans in workflow (pass & fail)				
	10	111	123	154
<b>Tier 4 Exemption</b>				
Inspections that resulted in a pass				
	0	0	1	1
<b>Graywater Compliance Form</b>				
Applications Received (as of Dec 2019)				
	7	80	57	106
Systems installed				
	1	13	13	7

**8. Watershed Protection:**

**New Ranger Begin Field Training**

On April 12<sup>th</sup>, the Ranger department hired an additional Ranger into the Watershed Department. All newly hired Marin Water Park Rangers must complete the District's Ranger training program prior to working solo patrol as a peace officers. The field training program lasts 10 to 16 weeks and is certified by the California Commission of Peace Officer Standards and Training (POST). The field training program focuses on the law enforcement aspects of the Ranger job.

The law enforcement field training is the first step for a new Ranger to become a fully qualified Watershed field Ranger. The Ranger are also required to be certified (red carded) wildland firefighter, emergency medical technicians, and search and rescue technicians. Additionally, the Ranger must get a Class A or B commercial driver's license. All Rangers must maintain their certificates with on-going training and continuing education in law enforcement, EMS and wildland firefighting.

The new Watershed Ranger is Michael Faus who has worked multiple terms as a temporary Ranger Aide for the District since 2015. Ranger Faus completed Basic Police Academy in 2018, which is required to be hired as a Marin Water Park Ranger and has previous experience working with State Parks as a Senior Park Aide. Ranger Faus will be a valuable addition to the Ranger Department.



Ranger Faus on foot patrol on Kent Trail at Alpine Lake

**April 2023**

Incidents and Events	594
Visitor Assists	203
Warnings	154
Assist Watershed Maintenance	45
Citations	43
Fish and Game Checks	43
Dam Check	32
Vandalism	15
Misc Law Enforcement Calls	11
Medical Aid	11
Illegal Trail Work	6
Suspicious Circumstance	5
Citizen Complaint: Off Leash Dogs	4
Search and Rescue	3
Assist Fire/EMS	2
Assist Other MMWD Work Group	2
Assist Outside Law Enforcement	2
Found Property	2
Illegal Camping	1
Outreach/Interp Event	1
Complaint: Illegal Bike Use	1
Fire Service	1
Citizen Complaint: Camping	1
Assist Outside Agency	1
Citizen Complaint: Graffiti	1
Theft	1
Traffic Court Appearance	1
Illegal Dumping	1
Ranger Callout	1

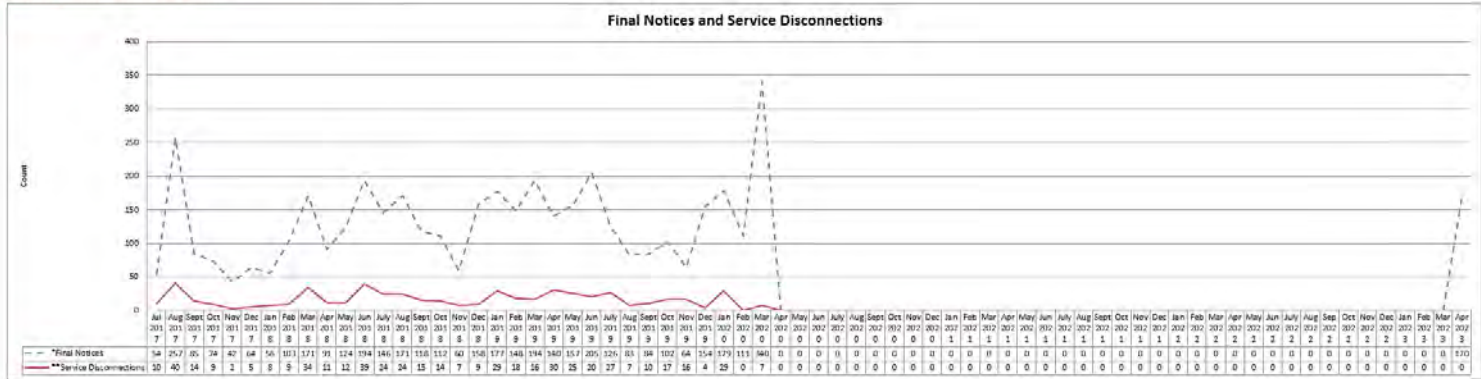
Citations	43
Non-Payment of Parking Fees	33
Obstruct Traffic/Parking within 6' of Center	5
Bike on Trail	2
Illegal Camping	1
Parking After Sunset	1
Parked Wrong Way	1



**9. Shutoff Notices and Disconnections:**


Month	Apr 2023
Final Notices	170
Service Disconnections	0

\* Includes 5 day, 10 day and final notices  
 \*\*3/12/20 Suspended termination of water service for non-payment due to COVID-19  
 \*1/24/20 Suspended Late Fees and Final Notices



**FISCAL IMPACT**  
None

**ATTACHMENT(S)**  
None

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Office of the General Manager	<hr/> Ben Horenstein General Manager	 <hr/> Ben Horenstein General Manager



## Approval Item

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### TITLE

FY 2024 Purchase of Water Treatment Chemicals

### RECOMMENDATION

Authorize the General Manager to negotiate and execute agreements for the purchase of water treatment chemicals agreements in an amount not to exceed \$2,434,676

### SUMMARY

The District annually solicits competitive bids for the supply and delivery of nine bulk water treatment chemicals needed to treat water at our treatment plants and the Ignacio Water Quality pump station. Five of the chemicals were bid through the Bay Area Chemical Consortium (BACC), including Ferric Chloride. Staff solicited competitive bids for four other water treatment chemicals, Zinc Orthophosphate, Cationic Polymer, Anionic Polymer and Ferric Sulfate. The total estimated cost for the eight water treatment chemicals for fiscal year 2024 is \$2,434,676 representing a 42% increase over the prior year bids.

### DISCUSSION

The District utilizes water treatment chemicals to treat water from our reservoirs and water imported from the Sonoma County Water Agency to ensure the water delivered to our customers meets all federal and state water quality requirements. These chemicals help remove sediment from the water, kill disease causing organisms, and reduce corrosion in the District's piping system as well as our customers' household piping, among other benefits.

The District participates in the Bay Area Chemical Consortium (BACC) to obtain bids for the supply and delivery of water treatment chemicals. The BACC is a collection of over 59 water and wastewater agencies around the greater San Francisco Bay Area ranging from Sacramento to Gilroy that work together to leverage their combined purchasing power and achieve better chemical pricing. The District obtains competitive quotes for chemicals (Zinc orthophosphate, Cationic polymer, and Ferric Sulfate) that are not available through the BACC. Staff also have received a quote for a proprietary Anionic Polymer from Nalco, which is not available through the BACC. The bid and quotation results for each water treatment chemical is included in the table below.



**Bid and Quotation Results for Furnishing Water Treatment Chemicals**

**July 1, 2023 – June 30, 2024**

CHEMICAL	COMPANY	ESTIMATED QUANTITY	UNIT PRICE	TOTAL ESTIMATED COST
Aqua Ammonia	Hills Brother Chemical Co.	20,000 gal	\$4.34	\$86,800
Ferric Sulfate	Thatcher Co.	1331 dry tons	\$565.49	\$752,667
Hydrofluorosilicic Acid	Thatcher Co.	28,000 gal	\$3.26	\$91,280
Caustic Soda	Univar USA Inc.	546 dry tons	\$796.88	\$498,847
Sodium Hypochlorite	Hasa, Inc.	220,000 gal	\$2.88	\$633,600
Zinc Orthophosphate	Univar USA Inc.	135 wet tons	\$2,376.47	\$320,823
Cationic Polymer	Nalco Company	40,000 lbs.	\$1.12	\$44,800
Anionic Polymer	Nalco Company	2,790 lbs.	\$2.10	\$5,859
Total Estimated Cost:				\$2,434,676

The total estimated cost of \$2,434,676 is 42% higher than the prior year bids. The cost for last year's chemicals used in the above calculation includes an additional \$24,022 for Polymers not included in last year's staff report.

A brief review and explanation of water treatment chemicals (ferric sulfate, polymers, sodium hypochlorite, ammonia, caustic soda, zinc orthophosphate, and fluoride) used by MMWD follows.

**Specifications and Standards**

In addition to the District's own requirements, standards published by the American Water Works Association are used in the purchase contract. Also, since 1994, California has required that all drinking water "direct additive" products be certified by a testing organization that is accredited by the American National Standards Institute (ANSI). The two major testing organizations are the National Sanitation Foundation (NSF International) and Underwriter's

Laboratory (UL). These organizations provide independent quality control oversight to the producers of drinking water treatment chemicals.

### **Removal of Particulate Matter (Coagulation/Flocculation/Sedimentation)**

Due to supply issues in the Ferric Chloride market, in FY2021 the District switched to Ferric Sulfate. Over the past few years Ferric Chloride availability continues to be impacted by instability in the market place, so for now we continue to bid both Ferric Sulfate and Ferric Chloride. The plants will remain on Ferric Sulfate this year because it works well and is currently more cost effective.

All surface waters contain naturally-occurring suspended and dissolved matter such as clays, decayed organic matter, metal oxides, and minerals like silica. These particles are too small to be removed by gravity settling alone, partly due to the negative charge of the particles which helps keep them in suspension. The District adds a coagulant, ferric sulfate, which acts to disrupt the natural particle charge so that dissolved matter comes out of solution to form particles and these particles and as well as suspended solids are attracted to each other to form larger particles. Flocculation is the process of applying mixing energy to the water containing the small particles to promote particles coming into contact with each other thereby enabling the formation of larger particle groups (called flocs). The floc particle groups are heavy enough to settle and be removed through sedimentation from the drinking water. Each of these processes (coagulation, flocculation and sedimentation) takes place in the large circular clarifiers at District treatment plants.

Ferric sulfate also enables the District to continue meeting the stringent regulations limiting total organic carbon (TOC), a surrogate parameter for the precursors of disinfection by-products. The use of ferric sulfate has significantly reduced TOC and lowered disinfection by-products in treated water and puts the district in good position to continue to meet regulations and reduce concerns about disinfection by-products. As an added benefit, ferric sulfate is less sensitive to changes in raw water conditions typically encountered when changing supply from one reservoir to another.

### **Polymers**

To further control particle charge, and thereby improve the removal of particulates and filtration processes, polymers or polyelectrolytes may be added. Polymers are high molecular weight, long-chained organic compounds. Polymers that create a positive charge are referred to as cationic polymers, and those polymers that create a negative charge are referred to as anionic, and a third variety that provides an overall neutral charge are referred to as nonionic. Polymers added to enhance coagulation are referred to as a *coagulant aid* while those added to enhance filtration are called a *filter aid*.

### **Destruction of Disease Causing Organisms (Disinfectants)**

Chlorine, in the form of sodium hypochlorite (bleach), is used to inactivate disease causing bacteria, viruses, and other pathogens. The District uses two forms of chlorine: free and combined.

Free chlorine is used as the primary disinfectant; with appropriate doses and contact time this strong disinfectant virtually eliminates the risk from pathogens. The use of chlorine in water treatment is largely responsible for the near-elimination of waterborne disease in the U.S. However, free chlorine has some drawbacks such as limited ability to penetrate the thick walls of the *Cryptosporidium* oocyst, which can cause gastrointestinal illness, has little effect on biofilm in the distribution system, creates disinfection by-products with regulatory limits and health concerns by reaction with naturally occurring matter in the water, has poor persistence, and imparts a chlorinous taste and smell to drinking water.

Combined chlorine or chloramine (chlorine combined with ammonia) is too slow-acting to use as a primary disinfectant but is an excellent secondary disinfectant. Chloramine doesn't create THMs or other chlorine by-products, has excellent persistence and ability to penetrate biofilm, and does not have a chlorinous taste or smell.

Free chlorine is used within the treatment plant where its strength and kinetic advantage is needed. Once primary disinfection has been achieved, the free chlorine is converted to chloramine by the addition of ammonia before the water leaves the plant to provide a long-lasting disinfectant residual providing bacterial protection throughout the distribution system and results in better tasting water.

### **Corrosion Control (Caustic Soda & Zinc Orthophosphate)**

The current FY2024 price for Zinc Orthophosphate is \$2,376/wet ton. This represents a 98% increase over the spot market price from the second quarter of 2022.

Corrosion control is important in maintaining the longevity of the District's pipe network as well as consumer household piping and helps to maintain compliance with lead and copper water quality regulations. The District uses two chemicals to provide corrosion control to the water: pH adjustment using caustic soda (sodium hydroxide) and zinc orthophosphate. The two chemicals have a synergistic effect that protects both the customers' and the District's piping without the scale build-up of other techniques. Corrosion control also minimizes the lead and copper that can leach from customers' soldered copper piping and brass faucets. The District has one of the lowest lead/copper corrosion rates in the Bay Area as measured by first-draw testing at customers' faucets. New and existing plumbing components still contain small amounts of lead, therefore the district's corrosion control program is critical to minimizing the amount of lead in drinking water.

**Fluoride**

Fluoride in the form of hydrofluorosilicic acid is added to boost the naturally-occurring fluoride level (0.1 mg/L) to the optimum level for cavity prevention (0.7 mg/L). Fluoride addition was implemented following the passage of a voter initiative in 1972, which was reconfirmed by the District’s voters in 1978. In California, legislation was enacted in 1995 which requires fluoridation after 1997 for all public water agencies serving populations over 10,000 if there is an external source of funding.

**FISCAL IMPACT**

The purchase of water treatment chemicals is essential to the production of safe drinking water and the cost of water treatment chemicals is included in the proposed budget for FY 2024.

**ATTACHMENT(S)**

None

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Operations	 Darren Machado Operations Director	 Ben Horenstein General Manager



**Item Number:** 04  
**Meeting Date:** 05-16-2023  
**Meeting:** Board of Directors

## Informational Item

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**TO:** Board of Directors

**FROM:** Terrie Gillen, Board Secretary

**THROUGH:** Ben Horenstein, General Manager

**DIVISION NAME:** Communications & Public Affairs Department

**ITEM:** Future Meeting Schedule and Agenda Items

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### SUMMARY

Review of the upcoming Board of Directors and Committee meetings

### DISCUSSION

#### ***Meeting Schedule***

Below are the upcoming meetings of the Board of Directors and/or Committees:

#### Internal Meetings

- Friday, May 19, 2023  
Operations Committee Meeting & Special Meeting of the Board of Directors (Operations)  
9:30 a.m.
- Tuesday, May 23, 2023  
Special Meeting of the Board of Directors (Closed Session)  
5:00 p.m.
- Tuesday, May 30, 2023  
Communications & Water Efficiency Committee Quarterly Meeting & Special Meeting of the Board of Directors (Communications & Water Efficiency)  
9:30 a.m.

**External Meetings**

- Friday, June 2, 2023  
North Bay Watershed Association  
Location: TBD  
9:30 a.m.
- Friday, June 2, 2023  
Lagunitas Creek TAC Meeting  
Location: TBD  
9:00 a.m. – 12 p.m.

**FISCAL IMPACT**

None

**ATTACHMENT(S)**

None

## Approval Item

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### TITLE

Public Hearing to adopt proposed Water Rates, Fees and Charges Increases; Changes to Title 6 of the Marin Municipal Water District Code – Water Service Rates and Charges

### RECOMMENDATION

Conduct a Public Hearing on the Proposed Increases to Customer Water Service Rates, Fees and Charges; and, adopt Ordinance No. 464 Amending Title 6 Pertaining to the Water Service Rates and Charges of the Marin Municipal Water District Code

### SUMMARY

The District retained Bartle Wells Associates, a public finance consulting firm with over 50 years of experience providing independent financial advice to public agencies throughout California, to undertake and prepare a cost of service water rate study or cost of service analysis (COSA) for the District. The COSA, which included a review of District policies, customer water demand trends, near term revenue needs analysis and long range financial planning, resulted in rate design recommendations that were presented to the Board on March 14, 2023. The primary objective of the COSA and the development of proposed rate changes was to:

- Recover the costs of providing service, including operating , capital and debt funding needs
- Support the long term operational and financial stability of the district
- Ensure the rate design is proportionate, fair and equitable to all customers
- Comply with substantive requirements of the California Constitution, Article 13D, Section 6 (approved by voters as Proposition 218)

Based on the COSA, the District staff determined that rate increases are necessary to recover current and projected costs of operations; to ensure water supply resiliency; to replace and modernize aging infrastructure; and to accelerate wildfire risk mitigation work and enhance forest health restoration efforts on the Mount Tamalpais Watershed, which is the District's primary source of water supply. The recommended rate changes were comprehensively set forth in a written notice that was mailed to all District customers and property owners and additional information is available on the District's rate setting webpage at [www.marinwater.org/2023RateSetting](http://www.marinwater.org/2023RateSetting). The proposed rates changes are as set forth in proposed Ordinance No. 464, which, if adopted, will become effective thirty (30) days following its adoption and establish rates effective July 1, 2023, 2024, 2025, and 2026.

The recommended changes to the District's rate structure generally include three components. The first is an adjustment to the District's current tiered rate structure to reflect reduced customer demand trends and to better recover the cost of providing water. The proposed changes adjust volumetric unit rates for all customers and reduce Tier 1 and Tier 2 allotments

for duplex and single family residential customers. The second component is a modification to the District's fixed fees, which includes converting the Watershed Management Fee to a uniform volumetric rate and incorporating customer demand metrics into the fixed fee calculation methodology. Finally, the proposed rate changes include drought surcharges that would apply with declared water shortage levels, starting with stage 2, in accordance with the District's Water Shortage Contingency Plan in order to recover the District's lost revenue and increased cost during water supply shortages.

## **BACKGROUND**

The Marin Municipal Water District is a public utility that provides high-quality and safe drinking water to central and southern Marin County, California, excluding west Marin. The District serves over 191,000 residents across a 147-square-mile service area that includes the cities and towns of San Rafael, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Corte Madera, Tiburon, Belvedere, and Sausalito. The District's water system includes 7 reservoirs, 3 treatment plants, 97 pump stations, 130 storage tanks, and 908 miles of pipelines.

Historically, about seventy-five percent of the District's water comes from its 22,000 acres of protected watershed on Mt. Tamalpais and the hills of west Marin. Rainfall on the watershed flows into the District's seven reservoirs and is then treated at the District's potable water treatment plants before being delivered to its customers. The remainder of the District's water supply consists of more costly wholesale water purchased from the Sonoma County Water Agency (Sonoma Water) and recycled water purchased from the Las Gallinas Valley Sanitary District (LGVSD). The water from Sonoma Water originates in Lake Sonoma and Lake Mendocino before flowing into the Russian River. The District also continues to engage in multiple water conservation efforts to reduce customer water demands and preserve supply.

The District has a seasonal demand pattern, with substantially higher usage in the hotter, summer months largely due to landscape irrigation. These increased demands require the District to maintain additional infrastructure (i.e., larger storage tanks, bigger pumps, larger pipes, etc.), increased water supplies and require the District to incur other related costs that would otherwise not be required, except for this increased usage. These additional expenditures required to support increased water usage serve as the basis for the District's tier water rates, and the associated costs vary depending on the level of water usage by individual customers.

Severe conditions brought on by the drought over the last several years have intensified the District's focus on strengthening the reliability of its water supply. The District recently adopted a Strategic Water Supply Assessment Roadmap intended to augment the District's current baseline water supply in the face of climate-change-driven droughts and to evaluate the impact of potential future water management alternatives that could improve the District's long-term water supply resiliency. These efforts identify short-term water supply projects and will help the District ultimately determine which long-term options are viable.



The District, as a financially self-supporting special district which relies almost solely on revenues from water rates, fees and charges (collectively, “rates”) to fund the costs of providing water service, must assure that the District’s rates are adequate to: (a) fund the costs of operating and maintaining the District’s water and recycled water systems, (b) fund necessary capital improvements to keep the District’s infrastructure in good operating condition, (c) maintain the District’s watershed, which includes seven (7) reservoirs and approximately 22,000 acres on Mount Tamalpais and in West Marin, (d) pay for the wholesale costs of imported water supply from Sonoma Water, and (e) meet its annual debt service requirements. Water rates are used to maintain the District’s reservoirs and watershed lands because those resources provide the primary water supply for District customers.

### **RATE SETTING PROCESS**

As part of the District’s 2023 rate setting process, the District held multiple public meetings and a series of public workshops to explain the cost of service analysis, factors being considered in the assessment of the District’s revenue needs, and the rate setting process, including legal requirements.

- On December 12, 2022, at a special meeting of the District’s Board of Directors, the District conducted an initial review of the cost of service analysis and rate setting process.
- On December 22, 2022, at the District’s Finance and Administration Committee/Special Board Meeting, the District introduced Bartle Wells and Associates, its rate consultant, and reviewed the cost of service analysis process, with focus on development of the District’s revenue requirements.
- On January 3, 2023, at the District’s regular Board Meeting, the District provided an update on the rate setting process with a focus on discussion of the District reserve targets and needs as well as a review of the District’s capital investment needs, all of which helped to inform the analysis conducted in the rate setting process.
- On January 26, 2023, at the District’s Finance and Administration Committee/Special Board Meeting, the District reviewed in further detail the capital investment needs of the District and District reserve targets and needs.
- On February 7, 2023, at the District’s regular Board Meeting, the District conducted a thorough review of the rate setting process then underway, including an extensive presentation of District operations, water supply, infrastructure, the several cost drivers experienced by the District, as well as revenue shortfalls due to decreased water demand during the drought, a review of the District’s rate history and current rate structure, all to help inform the cost of service analysis and rate setting process.
- On February 21, 2023, at the District’s regular Board Meeting, the District provided an update on the rate setting process, including a summary of public comments received during the customer workshops.
- On February 23, 2023, at the District’s Finance and Administration Committee/Special Board Meeting, the District presented a detailed picture of the District’s revenue needs

over the upcoming four-years in order to calibrate the District's revenue requirements for continued development of the cost of service analysis and the rate setting process.

- On March 14, 2023, at the District's regular Board Meeting, Bartle Wells and Associates, the District's rate consultant, provided a review of the District's draft Cost of Service Analysis and preliminary rate proposals.

Additionally, in conjunction with the rate study and public meetings, the District held a series of four community workshops in different locations within the District's service area and one virtually, on February 9, 13, 15 and 16, 2023, respectively, to help inform District customers of the significant factors being considered by the District as part of its cost of service study and rate setting and to provide an overview of the process and proposed rate changes, as well as receive public input and feedback. The District also created a dedicated webpage for customers to find all financial planning and rate-setting information in one place. The website includes FAQ's, links to previous presentations, and information on proposed rates. The website can be accessed through the District's homepage or directly at [www.marinwater.org/2023ratesetting](http://www.marinwater.org/2023ratesetting).

## **DISCUSSION**

In conducting an analysis of the District's revenue needs, the District identified several objectives, which are as follows:

### ***Replacing and Modernizing Aging Infrastructure***

Core to the District's mission to provide reliable water every day is maintaining and enhancing its water infrastructure to ensure the reliability of the system that delivers water to each customer. Material and labor costs have soared over the last couple of years, well above the record inflation. The proposed increases will allow the District to catch up on its deferred maintenance, complete its annual infrastructure replacement schedule and pursue additional system improvements that help guarantee water is reliably delivered.

### ***Reducing Wildfire Risk and Enhancing Forest Health Restoration on the Mt. Tam Watershed***

Approximately 75% of the District's annual water supply comes from protected watershed land on Mt. Tamalpais and in the hills of west Marin. Rainfall from these watersheds flows into one of seven reservoirs before being treated and sent through the District's extensive distribution system for delivery. Protecting the ecological health the watershed maintains water quality, biodiversity, and water supply yields. It also reduces the potential impacts of catastrophic wildfire. The proposed rate increase will allow the District to safeguard the continued reliability of the District's primary source of water supply by expanding activities in multi-benefit vegetation management and protecting the high quality of water provided by the mountain streams and their natural systems.

### ***Improving Water Supply Resiliency***

Severe conditions brought on by the drought during the past few years intensified the District's focus on strengthening the resiliency of its water supply. The proposed rate increase will

support implementation of District’s recent Strategic Water Supply Assessment, including near-term capital projects to increase water supply availability and continued efforts to develop longer-term water supply options, including building up reserves for future water supply projects. In combination with investments in the latest technologies and strategies to maximize efficient water use, these actions will ensure effective water demand management and further increase the resiliency of the community’s water supply.

***Keeping Pace with Increased Operating and Capital Expenses***

With 95% of annual expenditures devoted to fixed costs, recent inflationary pressures have significantly impacted the District’s ability to ensure the seamless care and operation of a complex water system. The District is facing increased unit costs for key items such as purchased water from Sonoma County, water treatment chemicals, insurance premiums, welded steel pipe, and construction contracts. Adjustments to the rate structure will reflect current and projected costs for core operations and capital investments.

***Replenishing Reserves to Prepare for Future Emergencies***

The District’s reserves functioned as intended during the response to the recent drought by providing funds to continue daily water service despite a reduction in water sales revenues and increased water supply costs. The proposed rate increase includes funding for the District to replenish those reserve accounts to be ready for the next earthquake, wildfire, drought or other unforeseen emergency.

**WATER RATE RECOMMENDATIONS**

As detailed in the Cost of Service Analysis and set forth in the attached proposed Ordinance No. 464, the proposed rate structure includes a number of structural modifications designed to align rates with the current projected cost of service and customer demand.

**Fixed Fees**

As part of the overall review of the District’s rate structure, it was determined that fixed fees could be adjusted to make up a smaller component of the District’s revenue to promote conservation and allow District customers greater control over their monthly bills, while maintaining compliance with Proposition 218.

***Service Charge***

All customers on metered service pay a bi-monthly service charge based partly upon the size of the meter serving the property and partly on a uniform fixed charge. The Service Charge is calculated to recover a significant portion of the District’s fixed administrative costs. The District is proposing a modification to the calculation methodology that incorporates aggregated consumption data for Single Family and Duplex customer classes to more closely align fixed charges with the proportion of overall system capacity. Other customer classes were evaluated and remain unchanged as the current methodology best aligns with customer use. The impacts of this modification would become effective July 1, 2023 and vary by meter size for

the single family residential and duplex customer class. All Service Charges are proposed to increase by five percent per year in each of the subsequent three years (July 1 2024, 2025 and 2026).

***Capital Maintenance Fee***

All customers on metered service pay a bi-monthly Capital Maintenance Fee based upon the size of the meter serving the property and this charge is calculated to cover a proportionate share of the District’s capital improvement program that maintains infrastructure required for water treatment and distribution. The District is proposing a modification to the calculation methodology that incorporates aggregated consumption data for Single Family and Duplex customer classes to more closely align fixed charges with the proportion of overall system capacity in the same manner discussed above for the Service Charge. Other customer class usage was evaluated and it was determined that the current methodology best aligns with customer use. The impacts of this modification would become effective July 1, 2023. The Capital Maintenance Fee is proposed to increase by five percent per year in each of the subsequent three years (July 1 2024, 2025 and 2026).

***Fire Service Line Charge***

All consumers with a private fire service line where the private fire service line is utilized exclusively for fire suppression purposes pay a bi-monthly Fire Service Line Charge based upon the size of the meter or lateral serving the property to cover their proportionate share of the costs associated with providing the private fire service line. Modifications to the Fire Service Line Charge vary by meter size and are effective July 1, 2023. All Fire Service Line Charges are proposed to increase by five percent per year in each of the subsequent three years (July 1 2024, 2025 and 2026).

***Watershed Management Fee***

The Watershed Management Fee (WMF) is currently a fixed charge based partly on meter size and partly on a uniform charge that was designed to recover a portion of the watershed maintenance and vegetation management costs. The new rates would convert this fixed fee to a volumetric rate so that all customers pay an equal amount in relation to the amount of water they use. Effective July 1, 2023, the volumetric rate for the Watershed Management Fee is proposed to be \$0.61 per CCF; increasing to \$0.62 per CCF on July 1, 2024, \$0.64 per CCF on July 1, 2025 and \$0.66 per CCF on July 1, 2026.

## **VOLUMETRIC RATES**

Volumetric rates, or commodity charges, are based on the amount of water used within each customer class, as well as the type of water purchased, e.g. potable, raw (untreated) or recycled water, all of which are charged based on water consumption on a per one hundred cubic foot or seven hundred forty-eight gallons (hereinafter “CCF”).

### ***Tiered Potable Water Rates***

The rates for different levels of potable water usage are tiered by customer class and calculated to recover a portion of the District’s fixed and variable costs of providing water service. Tier 1 usage is billed at the lowest rate. Additional water use is billed at higher tier rates because higher water use places greater demands on the water system and limited water resources, increasing costs for the District. The District is proposing to modify the current tier structure to recover the current cost of providing water and to reflect customer demand trends. This includes eliminating seasonal tiers for residential customer classes as the District’s tier structure accounts for seasonality because customers placing above-average demands on the water system (which will likely occur more often in hotter months) will be paying rates in higher tiers reflecting the increased costs associated with serving their higher water use demands. This also includes adjustments to tier rates to allocate costs proportionate to customer demands on the system, and to tier breakpoints, the number of CCF assigned within each tier, as realignment of the tier break points reflects current usage patterns, accounts for seasonal variability, and the need for the District to meet peak demand. The impacts of these modifications varies by customer class and water usage.

### ***Metered Raw Water Commodity Charge***

All consumers on metered raw water service pay a bi-monthly commodity charge for raw water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the raw water. As of July 1, 2023, the proposed rate for raw water is \$5.32; increasing to \$6.35 on July 1, 2024, \$7.10 on July 1, 2025 and \$7.53 on July 1, 2026.

### ***Metered Recycled Water Rate***

All consumers on metered recycled water service pay a bi-monthly commodity charge for recycled water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the recycled water. The District is proposing a uniform, single tier for recycled water that reflects the District’s cost structure under the revised agreement with Las Gallinas Valley Sanitary District. As of July 1, 2023, the proposed rate for recycled water is \$5.43; increasing to \$5.63 on July 1, 2024, \$5.84 on July 1, 2025 and \$6.06 on July 1, 2026.

**Drought Surcharges**

In accordance with the District’s Water Shortage Contingency Plan, when the following drought stages are declared, the tiered commodity charges, raw water commodity charges and the volumetric watershed management fee shall be increased per CCF of use by an amount up to the percentages below for the declared drought stage.

Drought Stage	July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026
Stage 1	0%	0%	0%	0%
Stage 2	22%	23%	23%	23%
Stage 3	39%	39%	40%	40%
Stage 4	61%	61%	62%	62%
Stage 5	91%	92%	93%	93%

**ENVIRONMENTAL REVIEW**

The projected increases and changes to the District’s rates, fees and charges has been reviewed for compliance with the California Environmental Quality Act (CEQA). Adoption of the water service rates, fees and charges established by the proposed ordinance are exempt from the requirements of the California Environmental Quality Act pursuant to Section 21080(b) (8) of the Public Resources Code and Section 15273(a) of the State CEQA Guidelines because they are necessary and reasonable to fund the administration, operation, maintenance and improvements of the District water system.

**FISCAL IMPACT**

Approval of the Proposed Changes to Water Service Rates and Charges would provide funding to support the District’s operating and capital requirements from July 2023 to June 2027.

**ATTACHMENT(S)**

1. Proposed Ordinance No. 464
2. Cost of Service Analysis

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Administrative Services	 Bret Uppendahl Finance Director/Treasurer	 Ben Horenstein General Manager

**MARIN MUNICIPAL WATER DISTRICT  
ORDINANCE NO. 464**

**AN ORDINANCE MAKING CHANGES TO  
CHAPTER 6.01 OF THE MARIN MUNICIPAL WATER DISTRICT CODE ENTITLED  
“RATES AND CHARGES” OF TITLE 6 OF THE MARIN MUNICIPAL WATER  
DISTRICT CODE ENTITLED “WATER SERVICE RATES AND CHARGES”**

**BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL  
WATER DISTRICT AS FOLLOWS:**

**SECTION 1. Purpose:** The purpose of this ordinance is to enact changes to the District’s water rates, fees and charges, to become effective July 1, 2023, July 1, 2024, July 1, 2025, and July 1, 2026.

**SECTION 2. Section 6.01.010 of the Marin Municipal Water District Code entitled “General” is hereby deleted and replaced with the following:**

**6.01.010 General.**

The rates, fees and charges set forth in this Chapter 6.01 proportionately recover the District’s costs of providing potable, recycle and raw water service to each parcel in compliance with Article XIII D, Section 6 of the California Constitution, more commonly known as Proposition 218.

**SECTION 3. Section 6.01.020 of the Marin Municipal Water District Code entitled “Service charge” is amended to read as follows:**

**6.01.020 Service Charge.** All customers on metered service, and all customers with off-meter services utilizing an alternate water supply but wishing to maintain a service account with the District, shall pay a bi-monthly service charge based upon the size of the meter serving the property to cover their proportionate share of the District’s operational costs. Except for service charges for private fire service lines, which are specified in Section 6.01.050, and service charges for hydrant meters, which are specified in Section 6.01.030, the bi-monthly rates and effective dates of the service charge for each customer class and Billing Code are as follows:

*Bi-monthly Service Charge for Single Family Residential and Duplex Customers  
Billing Codes 1 and 2 (\$/Meter Size)*

<i><u>Meter Size</u></i>	<i><u>Effective 7/1/2023</u></i>	<i><u>Effective 7/1/2024</u></i>	<i><u>Effective 7/1/2025</u></i>	<i><u>Effective 7/1/2026</u></i>
5/8"	\$48.04	\$50.44	\$52.96	\$55.61
3/4"	61.99	65.09	68.34	71.76
1"	72.46	76.08	79.88	83.87
1-1/2"	142.22	149.33	156.80	164.64
2"	222.45	233.57	245.25	257.51

Bi-monthly Service Charge for all other Billing Codes (except private fire service lines and hydrant meters) (\$/Meter Size)

<u>Meter Size</u>	<u>Effective 7/1/2023</u>	<u>Effective 7/1/2024</u>	<u>Effective 7/1/2025</u>	<u>Effective 7/1/2026</u>
5/8"	\$48.04	\$50.44	\$52.96	\$55.61
3/4"	65.48	68.75	72.19	75.80
1"	100.36	105.38	110.65	116.18
1-1/2"	187.57	196.95	206.80	217.14
2"	292.22	306.83	322.17	338.28
3"	710.82	746.36	783.68	822.86
4"	1,408.48	1,478.90	1,552.85	1,630.49
6"	2,454.97	2,577.72	2,706.61	2,841.94
8"	4,722.38	4,958.50	5,206.43	5,466.75
10"	6,989.78	7,339.27	7,706.23	8,091.54

Notwithstanding the above, customers with properties where use of reclaimed water requires a water meter in addition to the meter required to provide potable water service to the same user shall be exempt from the service charge for the reclaimed water meter.

**SECTION 4. Section 6.01.021 entitled “Watershed Management Fee” is amended to read as follows:**

**6.01.021 Watershed Management Fee.** All customers for Billing Codes 1 through 19, shall pay a bi-monthly volumetric Watershed Management Fee for water consumption on a per one hundred cubic foot or seven hundred forty-eight gallon (hereinafter “CCF”) basis to cover their proportionate share of the District’s watershed maintenance and operational costs necessary to maintain the District’s primary water supply source and provide their water service. The bi-monthly rates and effective dates of the Watershed Management Fee are as follows:

*Volumetric Watershed Management Fee for Billing Codes 1 through 19 (\$/CCF)*

<u>Effective 7/1/2023</u>	<u>Effective 7/1/2024</u>	<u>Effective 7/1/2025</u>	<u>Effective 7/1/2026</u>
\$0.61	\$0.62	\$0.64	\$0.66

**SECTION 5. Section 6.01.022 entitled “Pass-through adjustments” is hereby deleted in its entirety.**

**SECTION 6. Section 6.01.023 entitled “Capital Maintenance Fee” is hereby amended to read as follows:**

**6.01.023 Capital Maintenance Fee.** All customers for Billing Codes 1 through 19, shall pay a Capital Maintenance Fee for each meter serving the property, based upon the size of the meter(s) serving the property, to cover their proportionate share of the District’s capital improvement program that maintains and improves infrastructure required for water service. The Capital Maintenance Fee shall be used to fund the District’s capital improvement program and may also



be used to fund existing and future debt service payments.

*Bi-monthly Capital Maintenance Fee for Single Family Residential and Duplex Customers  
Billing Codes 1 and 2 (\$/Meter Size)*

<u><i>Meter Size</i></u>	<u><i>Effective 7/1/2023</i></u>	<u><i>Effective 7/1/2024</i></u>	<u><i>Effective 7/1/2025</i></u>	<u><i>Effective 7/1/2026</i></u>
5/8"	\$31.50	\$33.08	\$34.73	\$36.47
3/4"	44.11	46.32	48.64	51.07
1"	53.56	56.24	59.05	62.00
1-1/2"	116.57	122.40	128.52	134.95
2"	189.03	198.48	208.40	218.82

*Bi-monthly Capital Maintenance Fee for all other Billing Codes (except private fire service  
lines, Billing Code 0, and hydrant meters) (\$/Meter Size)*

<u><i>Meter Size</i></u>	<u><i>Effective 7/1/2023</i></u>	<u><i>Effective 7/1/2024</i></u>	<u><i>Effective 7/1/2025</i></u>	<u><i>Effective 7/1/2026</i></u>
5/8"	\$31.50	\$33.08	\$34.73	\$36.47
3/4"	47.26	49.62	52.10	54.71
1"	78.76	82.70	86.84	91.18
1-1/2"	157.52	165.40	173.67	182.35
2"	252.04	264.64	277.87	291.76
3"	630.10	661.61	694.69	729.42
4"	1,260.19	1,323.20	1,389.36	1,458.83
6"	2,205.34	2,315.61	2,431.39	2,552.96
8"	4,253.15	4,465.81	4,689.10	4,923.56
10"	6,300.97	6,616.02	6,946.82	7,294.16

**SECTION 7. Section 6.01.024 entitled “Fee Adjustment for Upsized Residential Meters” is hereby retitled and amended to read as follows:**

**6.01.024 Fee adjustment for upsized meters.**

- (a) A customer served by a water meter that has been upsized for non-consumption purposes (i.e., due to private fire suppression system and/or due to low system pressure) may apply for an adjustment to the capital maintenance fee and the bi-monthly service charge under this section.
- (b) A customer shall submit a District-supplied application form and documentation demonstrating that the meter was upsized for non-consumption purposes. The District shall determine whether the documentation supports reducing the capital maintenance fee and bi-monthly service charge and, if so, what meter size is appropriate for calculation of such fees in light of the likely water demand of the property as measured by plumbing fixture count or other data available to the District.
- (c) The General Manager or designee shall determine whether a reduction is warranted under the standards of subsection (b) of this section and issue a written decision. For those property owners qualifying for fee adjustments under this Section 6.01.024, the fee adjustments shall apply from the date the District determines that the customer’s application for an adjustment is complete. If the General Manager or designee denies an application in reliance on evidence other than that submitted by the applicant, he or she shall provide the applicant an opportunity to review, and submit written comment on, that evidence before making a final decision. The decision of the General Manager or designee to grant or deny an application shall be final as to the District, but subject to judicial review under Code of Civil Procedure Section 1094.5.
- (d) To ensure compliance with this section’s purpose to proportionally allocate the cost of water service among District customers, the District may perform a water audit of any property for which an adjustment has been granted pursuant to this section.

**SECTION 8. Section 6.01.025 of the Marin Municipal Water District Code entitled “Tiered commodity charge” is amended to read as follows:**

**6.01.025 Tiered Commodity Charge.** All single-family residential customers on metered service, Billing Code 1, and all single-family residential customers with two legal living units not required to have separate meters pursuant to District Code Section 11.04.070, and duplexes on metered service, Billing Code 2, shall pay a bi-monthly commodity charge for water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the water. The bi-monthly rates and effective dates of the commodity charge are as follows:

*Bi-monthly Commodity Charge for Single Family Residential and Duplexes, Billing Codes 1 and 2 (\$/CCF)*

<u>Tiers</u>	<u>All Use (CCF)</u>	<u>Effective 7/1/2023</u>	<u>Effective 7/1/2024</u>	<u>Effective 7/1/2025</u>	<u>Effective 7/1/2026</u>
1	0-15	\$7.67	\$9.16	\$10.24	\$10.86
2	16-25	10.02	11.96	13.38	14.19
3	26-80	16.19	19.33	21.62	22.92
4	81+	24.77	29.58	33.08	35.07

All other multiple-unit residential customers on metered service, Billing Codes 3, 4 and 5, shall pay a bi-monthly commodity charge for water consumption on a per CCF basis for each living unit to cover their proportionate share of the costs associated with providing the water. The bi-monthly rates and effective dates of the commodity charge are as follows:

*Bi-monthly Commodity Charge for Multi-Unit Residential Customers, Billing Codes 3, 4 and 5 (\$/CCF)*

<u>Tiers</u>	<u>All Use (CCF)</u>	<u>Effective 7/1/2023</u>	<u>Effective 7/1/2024</u>	<u>Effective 7/1/2025</u>	<u>Effective 7/1/2026</u>
1	0-10	\$8.19	\$9.78	\$10.94	\$11.60
2	11-20	10.30	12.30	13.76	14.59
3	21-28	14.94	17.84	19.95	21.15
4	29+	19.69	23.51	26.29	27.87

All nonresidential customers on metered service, Billing Codes 6, 7, 8 and 19, shall pay a bi-monthly commodity charge for water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the water. Pursuant to Sections 11.08.035 and 11.24.050, these customers are provided a bi-monthly allotment of water (water budget) based on their defined water needs and billed based upon their individual baselines. The bi-monthly rates and effective dates of the commodity charge are as follows:

*Bi-Monthly Commodity Charge for Non Residential Customers, Billing Codes 6, 7, 8 and 19 (\$/CCF)*

	<u>Use % of baseline</u>	<u>Effective 7/1/2023</u>	<u>Effective 7/1/2024</u>	<u>Effective 7/1/2025</u>	<u>Effective 7/1/2026</u>
1	0-85%	\$8.42	\$10.05	\$11.24	\$11.92
2	86-150%	15.29	18.26	20.42	21.65
3	over 150%	16.09	19.21	21.28	22.77

**SECTION 9. Section 6.01.050 of the Marin Municipal Water District Code entitled “Fire service line charge” is amended to read as follows:**

**6.01.050 Fire Service Line Charge.** All customers with a private fire service line where the private fire service line is utilized exclusively for fire suppression purposes, Billing Code 0, shall pay a bi-monthly Fire Service Line Charge based upon the size of the meter or lateral serving the property to cover their proportionate share of the costs associated with providing the private fire service line. The bi-monthly rates and effective dates of the Fire Service Line Charge are as follows:

*Fire Service Line Charge (\$/Meter or Lateral Size) Billing Code 0*

<i>Size of Meter or Lateral</i>	<i>Effective 7/1/2023</i>	<i>Effective 7/1/2024</i>	<i>Effective 7/1/2025</i>	<i>Effective 7/1/2026</i>
2"	\$21.41	\$22.48	\$23.60	\$24.78
4"	49.29	51.75	54.34	57.06
6"	95.66	100.44	105.46	110.73
8"	157.55	165.43	173.70	182.39
10"	240.06	252.06	264.66	277.89

In addition, all consumption for testing and/or fire suppression registered on a detector check bypass meter shall be billed at twice the water rates for Billing Code 1 specified in Section 6.01.025.

**SECTION 10. Section 6.01.060 of the Marin Municipal Water District Code entitled “Metered raw water commodity charge” is amended to read as follows:**

**6.01.060 Metered raw water Commodity Charge.** All customers on metered raw water service, Billing Code 9, shall pay a bi-monthly commodity charge for raw water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the raw water. The bi-monthly rates and effective dates of the commodity charge are as follows:

*Commodity Charge (\$/CCF) Billing Code 9*

	<i>Effective 7/1/2023</i>	<i>Effective 7/1/2024</i>	<i>Effective 7/1/2025</i>	<i>Effective 7/1/2026</i>
All Use (\$/CCF)	\$5.32	\$6.35	\$7.10	\$7.53

**SECTION 11. Section 6.01.070 of the Marin Municipal Water District Code entitled “Metered recycled water rate” is amended to read as follows:**

**6.01.070 Metered recycled water rate.** All customers on metered recycled water service, Billing Code 10, shall pay a bi-monthly commodity charge for recycled water consumption on a per CCF basis to cover their proportionate share of the costs associated with providing the recycled water. The bi-monthly rates and effective dates of the commodity charge are as follows:

*Bi-monthly Recycled Water Commodity Charge (\$/CCF) Billing Code 10*

	<i>Effective 7/1/2023</i>	<i>Effective 7/1/2024</i>	<i>Effective 7/1/2025</i>	<i>Effective 7/1/2026</i>
All Use (\$/CCF)	\$5.43	\$5.63	\$5.84	\$6.06

**SECTION 12. Section 6.01.100 of the Marin Municipal Water District Code entitled “Water rate for people with medical disabilities” is amended to read as follows:**

**6.01.100 Water rate for people with medical disabilities.**

(a) A customer may qualify for receipt of the water rate for people with medical disabilities, if the person shows proof of a medical disability requiring heightened water use related to the disability and of having installed low flow shower heads, WaterSense labeled high-efficiency toilets and low flow faucet aerators. Upon qualifying for the water rate for people with medical disabilities, the following apply:

- (1) Tier 1 allotment of water for separately metered District single-family and multi-unit residential customers, not served through a master meter, will be increased by 12 CCFs for each qualifying individual residing at a water service, for each billing period, for use as specified in Section 6.01.025 Tiered Commodity Charge of the Billing Code for Billing Code 1. The Tier 2 through Tier 4 allotments for single-family and multi-family residential customers for use are those specified in Section 6.01.025 Tiered Commodity Charge of the Billing Code; and
- (2) The Service Charge per Section 6.01.020 and the Watershed Management Fee per Section 6.01.021 are waived.

(b) In order to qualify for the rate, a person must fill out an application specified by the District, show proof of a disability requiring use of additional amounts of water from a doctor of medicine or osteopathy licensed to practice medicine in the State of California, and use per billing period an average in excess of the amount specified in Section 6.01.025 for Billing Code 1 at Tier 1.

(c) The District may perform a water audit on any property of a customer receiving the water rate for people with disabilities to assure that the customer is in compliance with this section and

other provisions in this code pertaining to water conservation.

**SECTION 13. Section 6.01.150 of the Marin Municipal Water District Code entitled “Low income discount” is amended to read as follows:**

**6.01.150 Low income discount.**

(a) A residential customer with a separately metered District water service account, not served through a master meter, in his or her name may qualify for a waiver of the Bi-Monthly Service charge specified in Section 6.01.020, the Watershed Management Fee in Section 6.01.021, and the Capital Maintenance Fee in Section 6.01.023 if he or she shows proof of having installed low flow shower heads, Water Sense labeled high efficiency toilets and low flow faucet aerators and having an annual household income at or below 80% of the federal Department of Housing and Urban Development low-income limit for Marin County.

(b) The District reserves the right to allot a total maximum dollar amount to be waived per fiscal year under the Low-Income Discount Program and to modify the eligibility requirements for this program.

**SECTION 14. New Section 6.01.170 of the Marin Municipal Water District Code entitled “Drought Surcharges” is hereby added to read as follows:**

**Section 6.01.170 Drought Surcharges.**

In accordance with the District’s Water Shortage Contingency Plan, when the following drought stages are declared via resolution of the Board of Directors or otherwise legally mandated, the tiered commodity charges sets forth in Section 6.01.025, the raw water commodity charges set forth in 6.01.060 and the volumetric watershed management fee in Section 6.01.021 shall be increased by the percentages set forth below for the declared drought stage per CCF of usage to cover the proportionate lost revenue and additional costs the District incurs during drought conditions.

*Maximum Percentage increase per CCF to the Tiered Commodity Charges, Raw Water Commodity Charges and Volumetric Watershed Management Fee for each Drought Stage*

<b>Drought Stage</b>	<b>July 1, 2023</b>	<b>July 1, 2024</b>	<b>July 1, 2025</b>	<b>July 1, 2026</b>
Stage 1	0%	0%	0%	0%
Stage 2	22%	23%	23%	23%
Stage 3	39%	39%	40%	40%
Stage 4	61%	61%	62%	62%
Stage 5	91%	92%	93%	93%

**SECTION 15. Section 6.01.200 of the Marin Municipal Water District Code entitled “Penalty water rates” is hereby deleted in its entirety.**

**SECTION 16. Section 6.01.310 of the Marin Municipal Water District Code entitled “Emergency Water Rates” is hereby deleted in its entirety.**

**SECTION 17. Findings:** The Board of Directors, after considering all of the information, documentation, protests and testimony presented at the District’s May 16, 2023 public hearing for rate adoption, including all of the comments and protests lodged in relation thereto, finds as follows:

**I. BACKGROUND AND COST OF SERVICE ANALYSIS**

1. The Marin Municipal Water District (District) is a public water utility that provides high-quality and safe drinking water to central and southern Marin County, California, excluding west Marin. The District’s 147-square-mile service area includes the cities and towns of San Rafael, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Corte Madera, Tiburon, Belvedere, and Sausalito. The District is the first municipal water district in California, formed on April 25, 1912. Today, the District serves over 191,000 residents through over 60,000 accounts. The District’s water system includes 7 reservoirs, 3 water treatment plants, 97 pump stations, 130 storage tanks, and 908 miles of pipelines.
2. The District operates as a self-supporting special district and revenues are derived almost solely from water rates, fees and charges (herein “rates”). As such, the District must establish rates adequate to fund the costs of providing water service, including costs for ongoing operations, wholesale water supply, debt service, and capital improvements needed to keep the District’s aging infrastructure in safe and reliable operating condition.
3. Proposition 218 was adopted by California voters in 1996 and added Articles 13C and 13D to the California Constitution. Article 13D, Section 6 governs property-related charges, which the California Supreme Court has ruled includes rates imposed for water delivered through pipes connected to property. Article 13D, Section 6 establishes both procedural requirements for imposing or increasing property-related charges, and substantive requirements for those charges. Substantively, Proposition 218 requires that the rates established may not exceed the cost of providing the service and also that the costs be allocated proportionally to the service provided.
4. In addition to the substantive requirements of Proposition 218, the District recognizes that water is a finite and precious resource and that the California Constitution Article X, Section 2 and California Water Code Section 100 provide that because of conditions prevailing in the State of California (the “State”), it is the declared policy of the State that “the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste or unreasonable use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare.”
5. Further, pursuant to California Water Code Section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation and California Water Code Section 375 *et seq.* authorizes water suppliers to adopt and enforce comprehensive water conservation programs and also to encourage water conservation through rate structure design.

6. The District is committed to complying with the requirements of Proposition 218 while also pursuing effective conservation efforts to sustain the District's water resources. The District is further committed to efficiently providing high quality, reliable water service at reasonable rates, while protecting the water resources and public health of the Marin County community and continually reinvesting in its water system and infrastructure while also keeping pace with inflation and other cost increases.
7. In order to achieve these goals and assess the financial needs of the District and determine how best to recover the District's projected costs over a four-year period beginning July 1, 2023, the District retained Bartle Wells and Associates, an experienced rate consultant. Bartle Wells and Associates assisted the District in the development of the District's March 29, 2023 Cost of Service Analysis, which serves as the basis for the District's 2023 rates, including any changes to the rate structure and any increases adopted as part of the 2023 rate setting process. The District has historically adopted rate increases in order to keep revenues in line with the escalating costs of providing service. Key goals and objectives of the Cost of Service Analysis included developing water rates that: (i) Recover the costs of providing service, including operating, capital, and debt funding needs; (ii) Are proportionate, fair and equitable to all customers; (iii) Are easy to understand and implement; (iv) Comply with the substantive requirements of the California Constitution, Article 13D, Section 6 and the general mandate of Article 10, Section 2 that prohibits the wasteful use of water; and (v) Support the long-term operational and financial stability of the District.
8. In the development of its 2023 Cost of Service Analysis, the District, with the assistance of Bartle Wells and Associates, has determined that rate increases effective beginning July 1, 2023 are necessary to (i) Replace and modernize aging infrastructure, (ii) Accelerate mitigation work to reduce wildfire risk and enhance forest health restoration efforts on the Mt. Tam Watershed, which is the District's primary water supply source, consistent with the District's Biodiversity, Fire, and Fuels Integrated Plan, (iii) Keep pace with inflation and the rising costs of operating and capital expenses, (iv) Strengthen water supply resiliency in the face of climate change, and (v) Replenish reserves to prepare for future emergencies, and work to develop changes to the District's rate structure to achieve these goals in compliance with California Constitution, Article 13D, Section 6 and the general mandate of Article 10, Section 2.

## **II. RATE SETTING PROCESS**

1. As part of the District's 2023 rates setting process, the District held multiple public meetings and a series of public workshops to explain the cost of service analysis, factors being considered in the assessment of the District's revenue needs, and the rate setting process, including legal requirements.
2. On December 12, 2022, at a special meeting of the District's Board of Directors, the District conducted an initial review of the cost of service analysis and rate setting process.
3. On December 22, 2022, at the District's Finance and Administration Committee/Special Board Meeting, the District introduced Bartle Wells and Associates, its rate consultant, and reviewed the cost of service analysis process, with focus on development of the District's revenue requirements.
4. On January 3, 2023, at the District's regular Board Meeting, the District provided an update on the rate setting process with a focus on discussion of the District reserve targets and needs



as well as a review of the District's capital investment needs, all of which helped to inform the analysis conducted in the rate setting process.

5. On January 26, 2023, at the District's Finance and Administration Committee/Special Board Meeting, the District reviewed in further detail the capital investment needs of the District and District reserve targets and needs.
6. On February 7, 2023, at the District's regular Board Meeting, the District conducted a thorough review of the rate setting process then underway, including an extensive presentation of District operations, water supply, infrastructure, the several cost drivers experienced by the District, as well as revenue shortfalls due to decreased water demand during the drought, a review of the District's rate history and current rate structure, all to help inform the cost of service analysis and rate setting process.
7. Additionally, the District held a series of public workshops in different locations within the District's service area and one virtually, on February 9, 13, 15 and 16, 2023 respectively, to help inform District customers of the significant factors being considered by the District as part of its cost of service study and rate setting and to provide an overview of the process and proposed rate changes, as well as receive public input and feedback.
8. On February 21, 2023, at the District's regular Board Meeting, the District provided an update on the rate setting process, including a summary of public comments received during the customer workshops.
9. On February 23, 2023, at the District's Finance and Administration Committee/Special Board Meeting, the District presented a detailed picture of the District's revenue needs for the District over the upcoming four-years in order to calibrate the District's revenue requirements for continued development of the cost of service analysis and the rate setting process.
10. On March 14, 2023, at the District's regular Board Meeting, Bartle Wells and Associates, the District's rate consultant, provided a review of the District's draft Cost of Service Analysis and preliminary rate proposals.
11. The District, in compliance with Proposition 218, mailed out its Notice of Proposed Water Rate, Fee and Charges Increases (herein "Notice"), which included notice of the District's public hearing on the adoption of the rate increase set for May 16, 2023 as well as detailed information on the proposed rate increases and information on how to submit a protest to the District to all property owners and customers within the District's service area at the end of March 2023, more than 45 days prior to the public hearing.
12. The District also created a specific web landing page on the District's website with extensive information on the District's rate setting process, including a copy of the mailed notice and the District's March 29, 2023 Cost of Service Analysis in support of the proposed rate increase, information on the public hearing set for May 16, 2023, links to all District Board and Committee meetings regarding the rate setting process, a list of frequently asked questions and answers, and a customer bill calculator for the proposed rates.
13. In addition, the District published a notice of the May 16, 2023 public hearing on the proposed rate increase in the Marin Independent Journal on May 9, 2023.

### **III. PUBLIC HEARING AND RATE ADOPTION**

1. The District Board of Directors held a public hearing on May 16, 2023, at or after 6:30 p.m. at 220 Nellen Avenue, Corte Madera, California, with the option for members of the public to

attend in person or virtually, to consider the 2023 proposed rate increases as set forth in the District's cost of service analysis, Notice and this ordinance.

2. At the Hearing, the District Board heard and considered all oral testimony, written materials, and written protests concerning the establishment and imposition of the proposed rate increases for the water service rates, fees and charges, entered such written protests into the record of such hearing and at the close of the hearing.
3. There are 56,178 identified parcels that receive water service from the District, of which a majority would be 28,090. At the submission of this ordinance        valid protest letters have been received by the District.
4. At the close of the hearing, the District having counted all of the valid protests received, the District did not receive written protests against the establishment and imposition of the proposed rate increases for the water service rates, fees and charges from a majority of the affected property owners or customers of the parcels directly liable for the payment of the water service fees and charges.
5. As explained in the Notice and the District's March 29, 2023 Cost of Service Analysis, the water service rates, fees and charges were developed in accordance with the requirements of Proposition 218 in that the rate increases are to pay for water service actually provided to the properties identified in the Notices and not being used for general governmental purposes, the revenues from water service rates, fees, and charges do not exceed the costs required to provide such water service, the revenues collected from water service rates, fees and charges have been and will be used only to pay for the water services for which they were collected, and are based on an allocation of such costs proportionate to the services provided, and, the water service rates, fees and charges are not standby charges, but are imposed for water immediately available to the property subject to the imposition of the fees and charges and are enacted under the Board's authority contained in Water Code Sections 375 and 71616.
6. This project has been reviewed for compliance with the California Environmental Quality Act (CEQA). The Board further finds and determines that the adoption of the water service rates, fees and charges established by this ordinance are exempt from the requirements of the California Environmental Quality Act pursuant to Section 21080(b) (8) of the Public Resources Code and Section 15273(a) of the State CEQA Guidelines because they are necessary and reasonable to fund the administration, operation, maintenance and improvements of the District water system.

**SECTION 18. Severability:** If any section, subsection, sentence, clause, phrase, portion or part of this ordinance is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such section shall not affect the validity of the remaining portions of this code. The Board of Directors hereby declares that it would have adopted this ordinance and each section, subsection, sentence, clause, phrase, part or portion thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, parts or portions be declared invalid or unconstitutional and, to that end, declares the provisions of this ordinance severable from one another.

**SECTION 19. Effective Date:** This ordinance shall become effective thirty (30) days after its adoption, but the rates adopted by it shall take effect as provided herein.

**SECTION 20. Reservation of Powers:** Nothing in this ordinance shall prevent the District from exercising any of its powers under the California Water Code or other applicable law including but not limited to its power to declare a water shortage emergency or a threat of water shortage and to adopt ordinance, resolutions, rules or regulations in response thereto.

**PASSED AND ADOPTED** this 16th day of May, 2023, by the following vote of the Board of Directors:

**AYES:**

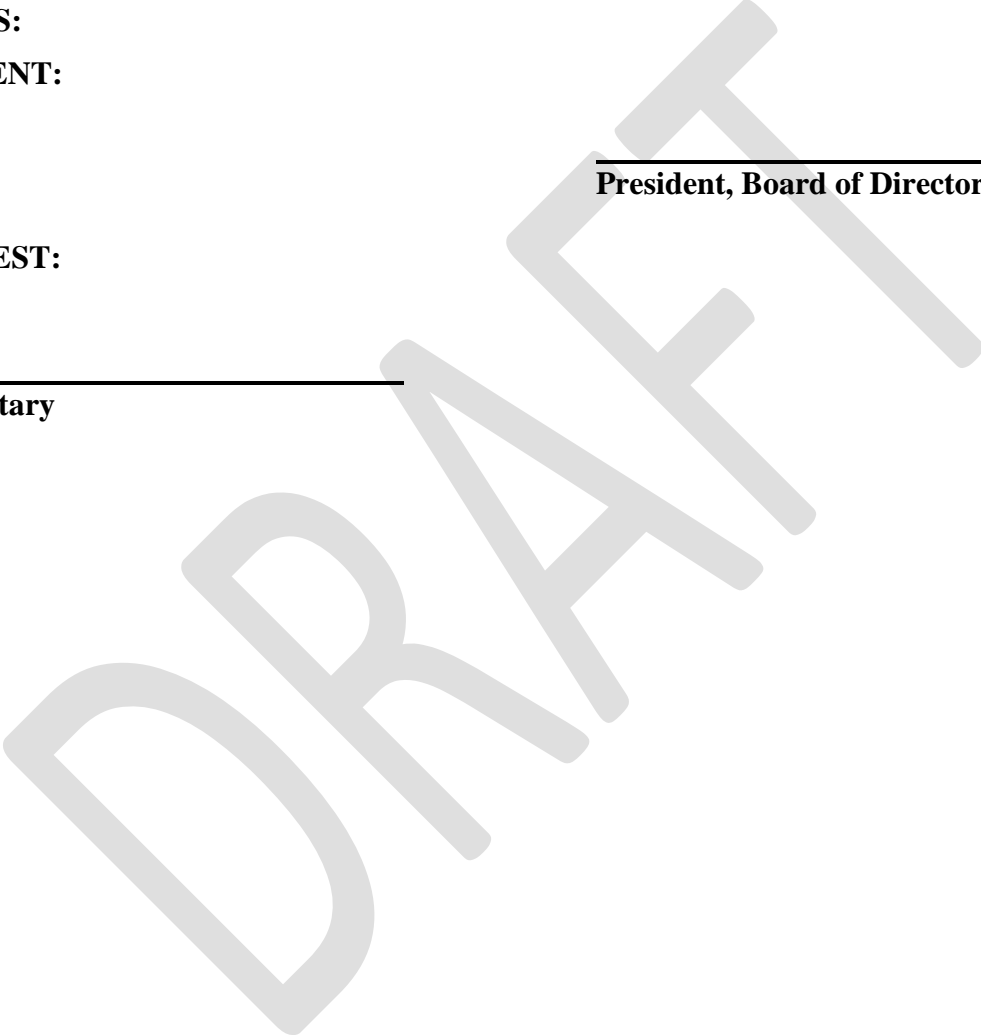
**NOES:**

**ABSENT:**

\_\_\_\_\_  
**President, Board of Directors**

**ATTEST:**

\_\_\_\_\_  
**Secretary**



# Marin Municipal Water District

## 2023 Water Rate Study



*March 29, 2023*



**BARTLE WELLS ASSOCIATES**  
INDEPENDENT PUBLIC FINANCE ADVISORS



**MARIN  
WATER**



**BARTLE WELLS ASSOCIATES**  
INDEPENDENT PUBLIC FINANCE ADVISORS

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Tel 510 653 3399  
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March 29, 2023

Ben Horenstein, General Manager  
Marin Municipal Water District  
220 Nellen Avenue  
Corte Madera, CA 94925-1169

Re: Cost of Service Rate Study

Bartle Wells Associates is pleased to submit the attached *Cost of Service Water Rate Study*. The study develops long-term financial projections for the District's cost of providing water service and calculates new rates designed to proportionally recover those costs. The recommended rates are designed to meet the District's funding needs, comply with legal requirements, and be equitable to all customers.

Over the four year planning period, the proposed rates incorporate modifications to the existing rate structure, which are designed to improve ratepayer equity, and align the rates with current demand levels and the projected cost of providing service.

We enjoyed working on this project and appreciated the assistance and input received from District staff throughout the rate study. Final recommendations were developed with input from the District's project team, the District's Board of Directors, the District's General Counsel's Office and independent legal counsel. Please contact us anytime if you have questions about the recommendations in this report or other issues regarding water rates and finances.

Sincerely,

BARTLE WELLS ASSOCIATES

Erik Helgeson, MBA  
Senior Project Manager

Douglas Dove, PE, CIPMA  
Principal/ President

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## Glossary of Terms

Terms	Descriptions
<b>Active Customer</b>	A service receiving regular water service
<b>AF</b>	Acre foot / Acre feet
<b>AWWA</b>	American Water Works Association
<b>BWA</b>	Bartle Wells Associates
<b>CCF</b>	Hundred Cubic Feet or 748 gallons
<b>CIP</b>	Capital Improvement Projects
<b>CMF</b>	Capital Maintenance Fee
<b>COS</b>	Cost of Service
<b>CPI</b>	Consumer Price Index/Indices
<b>CY</b>	Calendar Year
<b>District</b>	Marin Municipal Water District
<b>EFU</b>	Equivalent fire units
<b>FY</b>	Fiscal Year (July 1 – June 30)
<b>GPCD</b>	Gallons per capita per day
<b>M1 Manual</b>	"Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1", 6 <sup>th</sup> edition published by AWWA
<b>MEU</b>	Meter Equivalent Unit
<b>MFR</b>	Multi-Family Residential
<b>O&amp;M</b>	Operations and Maintenance
<b>PAYGO</b>	Pay-As-You-Go
<b>Proposition 218</b>	Article XIII D, Section 6 of the California Constitution
<b>Sonoma Water</b>	Sonoma County Water Agency
<b>Service</b>	A connection to the District's water system
<b>SFR</b>	Single Family Residential

# 1 EXECUTIVE SUMMARY

---

## 1.1 Introduction

The Marin Municipal Water District (District) is a financially self-supporting special district which relies almost solely on revenues from water rates, fees and charges (collectively referred to as “rate” or “rates” herein) to fund the costs of providing water service. As such, the District’s rates need to be set at adequate levels to: (a) fund the costs of operating and maintaining the District’s water and recycled water systems, (b) fund necessary capital improvements to keep the District’s infrastructure in good operating condition, (c) maintain the District’s watershed, its primary source of water supply, which includes seven (7) reservoirs and approximately 22,000 acres on Mount Tamalpais and in West Marin, (d) pay for the wholesale costs of imported water supply from Sonoma Water, and (e) meet its annual debt service requirements. Water rates are used to maintain the District’s seven (7) reservoirs and watershed lands because those resources provide the primary water supply for District customers.

The District has provided proactive financial stewardship by raising rates over the past decade to keep revenues in line with the costs of providing water service. Those rate increases have enabled the District to maintain its financial health. However, the District faces a number of financial challenges, discussed below, that necessitate the need for rate revenue increases.

In 2022, the District retained Bartle Wells Associates (BWA) to develop updated financial projections and a cost of service based water rate study for the District. Final recommendations incorporate input from District staff, the District’s Board of Directors, the District’s General Counsel’s Office, and independent legal review for compliance with the substantive provisions of Proposition 218. The proposed rates are designed to fund the operating and capital needs of the District’s water system, while proportionally and equitably recovering costs from all customers.

## 1.2 Financial Challenges

The District currently maintains reserves but has faced increased financial pressures in recent years, particularly due to drought. On April 20, 2021, the District declared a water shortage emergency within its service area. The severity of the drought conditions required implementation of numerous water conservation measures, which resulted in reduced water consumption and decreased revenues. These financial pressures were further exacerbated by the need for the District to import additional Sonoma Water to fill shortages in local water supplies from the District’s watershed. Therefore, the District is facing a number of financial challenges that will require immediate and long-term rate increases. These challenges include:

- **Increased Wholesale Water Costs** - Historically, the District has relied on imported water from Sonoma Water for approximately 25% its water supply. The recent drought caused the District to need to import additional water from Sonoma Water, which composed approximately 44%

of its supply during FY 2022. Additionally, Sonoma Water’s wholesale rates are projected to increase by an average of 8.5% per year starting July 1, 2023.

- **Repair and Maintenance of an Aging Water System** – The District takes a proactive approach to maintaining its water system which requires continuous repair and improvement projects. Accounting for construction cost inflation, the District anticipates funding approximately \$245 million of capital improvement projects over the next 4 years, averaging \$61 million per year. The proposed rates will allow the District to fund \$165 million of capital on a pay-as-you-go basis and seek financing for the remaining \$80 million.
- **Water Supply Projects** – The District is actively pursuing water supply enhancement and reliability projects to mitigate the impact of future droughts on District customers. The proposed rate increases will be necessary to pay for the cost of design and environmental work for these projects and to support adequate debt service coverage capacity for future financing.
- **Ongoing Inflation** – On top of rate increases needed for other purposes, annual rate increases are needed to keep revenues aligned with inflation and prevent rates from falling below the cost of providing service. In recent months, inflation has reached forty-year highs as reflected in the CPI, and the ENR CCI increasing over 7% in 2022.

Updated District financial projections indicate the need for water rate revenues to increase over the next four years, the period covered by this rate study. The proposed rates also incorporate modifications to the District’s water rate structure designed to align rates with the current cost of providing service. Due to these modifications, impacts to customer water bills will vary based on customer class, water meter size, and water use when the proposed rates are implemented.

### 1.3 Water Rate Recommendations

The proposed water rates maintain many similarities with the District’s existing rate structure but incorporate structural modifications designed to better align rates with current projected cost of service and customer demand. Rate structure and customer class recommendations are described as follows:

- Merge the Duplex Class into the Single-Family Residential Class: BWA reviewed the District’s customer usage data in these two classes, including peak and average usage, and identified similar usage trends and shared customer behavior. The similar customer and usage characteristics indicate it is more reasonable to combine these customer classes into the same rate structure.

- Merge the Single-Family Irrigation Class into the Commercial, Institutional, and Irrigation Class: Similarly, analysis of customer usage characteristics and patterns shows that Single-Family Irrigation customers have similar usage characteristics to Irrigation customers in the Commercial, Institutional, and Irrigation class. Customers grouped into this class place varied peak demands on the system and have rate structures tailored to their specific usage.
- Eliminate Seasonal Tiers for Residential Classes: Discontinue seasonal tier changes. The inclining block tier structure accounts for seasonality because customers placing above-average demands on the water system (which will likely occur more often in hotter months) will be paying rates in higher tiers reflecting the increased costs associated with serving their higher water use demands.
- Single Family Residential and Duplex Class: Realign tier break points to reflect current usage patterns, accounting for seasonal variability, the need to meet peak demand and the functional cost allocations to usage categories.
- Recycled: Move from three tiers to a single tier, uniform rate. This reflects the District’s contractual cost structure for purchasing recycled water from the Las Gallinas Valley Sanitary District, which reflects the District’s contributions to the recent upgrades to the Las Gallinas Valley Sanitary District recycled water facility. Under this agreement, the unit costs for the purchase and delivery of recycled water to the District remain relatively flat despite changes in the volume of use.
- Watershed Fee: Charge the watershed fee as a volumetric rate instead of as a fixed charge to proportionally recover the costs of watershed management based on a customer’s utilization of watershed resources.
- Fixed Charge Meter Equivalent Unit Ratios: Adjust meter equivalent ratios to more proportionally reflect current system capacity utilization.
- Drought Rates: Establish drought surcharges tied to water shortage levels as set forth in the District’s recently updated Water shortage Contingency Plan, which helps the District recoup revenue shortfalls during periods of drought and needed water conservation.

The following tables show the proposed water rates, including the changes to fixed fee charges based on the District’s financial projections and the cost of providing service.

**Table 1: Existing and Proposed Water Rate Tiers**

<b>Single-Family Residential</b>			
Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 26	0 - 21	0 - 15
Tier 2	27 - 59	22 - 48	16 - 25
Tier 3	60 - 99	49 - 80	26 - 80
Tier 4	100+	81+	81+
<b>Duplex Tier Allotments</b>			
Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 20	0 - 18	0 - 15
Tier 2	21 - 45	19 - 35	16 - 25
Tier 3	46 - 78	36 - 68	26 - 80
Tier 4	79+	69+	81+
<b>Multi-Family Residential Tier Allotments</b>			
Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 10	0 - 10	0 - 10
Tier 2	11 - 20	11 - 18	11 - 20
Tier 3	21 - 28	19 - 26	21 - 28
Tier 4	29+	27+	29+
<b>Commercial, Institutional and Irrigation Tier Allotments</b>			
Tiers	Existing	Proposed	
	<i>% of Allocation</i>	<i>% of Allocation</i>	
Tier 1	0 - 85%	0 - 85%	
Tier 2	86 - 150	86 - 150	
Tier 3	151+	151+	
<b>Single-Family Irrigation Tier Allotments</b>			
Tiers	Existing	Proposed	
	<i>% of Allocation</i>	<i>% of Allocation</i>	
Tier 1	0 - 50%	0 - 85%	
Tier 2	51 - 100	86 - 150	
Tier 3	100+	151+	
<b>Recycled Water Tier Allotments</b>			
Tiers	Existing	Proposed	
	<i>% of Allocation</i>	<i>Uniform Volumetric Rate</i>	
Tier 1	0 - 100%	<i>Per CCF</i>	
Tier 2	101 - 150	All use	
Tier 3	151+		

**Table 2: Existing and Proposed Volumetric Water Rates Per CCF of Use**

<b>Volumetric Charges</b> <i>(\$ per CCF)</i>	<b>FY 2023</b> <i>Existing</i>	<b>FY 2024</b> <i>Proposed</i>	<b>FY 2025</b> <i>Proposed</i>	<b>FY 2026</b> <i>Proposed</i>	<b>FY 2027</b> <i>Proposed</i>
<b>Watershed Maintenance Volumetric Rate</b>					
All Use	N/A	\$ 0.61	\$ 0.62	\$ 0.64	\$ 0.66
<b>Single-Family Residential Volumetric Rates</b>					
Tier 1	\$ 4.73	\$ 7.67	\$ 9.16	\$ 10.24	\$ 10.86
Tier 2	8.19	10.02	11.96	13.38	14.19
Tier 3	13.78	16.19	19.33	21.62	22.92
Tier 4	22.15	24.77	29.58	33.08	35.07
<b>Duplex Volumetric Rates</b>					
Tier 1	\$ 4.76	\$ 7.67	\$ 9.16	\$ 10.24	\$ 10.86
Tier 2	8.31	10.02	11.96	13.38	14.19
Tier 3	13.72	16.19	19.33	21.62	22.92
Tier 4	21.53	24.77	29.58	33.08	35.07
<b>Multi-Family Residential Volumetric Rates</b>					
Tier 1	\$ 4.82	\$ 8.19	\$ 9.78	\$ 10.94	\$ 11.60
Tier 2	8.11	10.30	12.30	13.76	14.59
Tier 3	12.85	14.94	17.84	19.95	21.15
Tier 4	21.56	19.69	23.51	26.29	27.87
<b>Commercial, Institutional, Irrigation Volumetric Rates</b>					
Tier 1	\$ 4.62	\$ 8.42	\$ 10.05	\$ 11.24	\$ 11.92
Tier 2	12.37	15.29	18.26	20.42	21.65
Tier 3	18.53	16.09	19.21	21.48	22.77
<b>Single-Family Irrigation Volumetric Rates</b>					
Tier 1	\$ 5.94	\$ 8.42	\$ 10.05	\$ 11.24	\$ 11.92
Tier 2	\$ 7.10	15.29	18.26	20.42	21.65
Tier 3	\$ 12.32	16.09	19.21	21.48	22.77
<b>Recycled Water Rates</b>					
Tier 1	\$ 3.70	\$ 5.43	\$ 5.63	\$ 5.84	\$ 6.06
Tier 2	11.49	5.43	5.63	5.84	6.06
Tier 3	21.35	5.43	5.63	5.84	6.06
<b>Raw Water Rates</b>					
All Use	\$ 4.31	\$ 5.32	\$ 6.35	\$ 7.10	\$ 7.53

**Table 3: Existing and Proposed Fixed Bi-Monthly Service Charge and Capital Maintenance Fee**

Bi-Monthly Fixed Charges	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Meter Size	Existing	Proposed	Proposed	Proposed	Proposed
<b>Service Charge</b>					
<i>SFR + Duplex</i>					
5/8"	\$ 44.62	\$ 48.04	\$ 50.44	\$ 52.96	\$ 55.61
3/4"	57.09	61.99	65.09	68.34	71.76
1"	82.01	72.46	76.08	79.88	83.87
1.5"	144.30	142.22	149.33	156.80	164.64
2"	219.05	222.45	233.57	245.25	257.51
<i>All Other Customer Classes (Except Private Fire Lines)</i>					
5/8"	\$ 44.62	\$ 48.04	\$ 50.44	\$ 52.96	\$ 55.61
3/4"	57.09	65.48	68.75	72.19	75.80
1"	82.01	100.36	105.38	110.65	116.18
1.5"	144.30	187.57	196.95	206.80	217.14
2"	219.05	292.22	306.83	322.17	338.28
3"	455.77	710.82	746.36	783.68	822.86
4"	804.63	1,408.48	1,478.90	1,552.85	1,630.49
6"	1,763.97	2,454.97	2,577.72	2,706.61	2,841.94
8"	3,009.87	4,722.38	4,958.50	5,206.43	5,466.75
10"	4,754.13	6,989.78	7,339.27	7,706.23	8,091.54
<b>Capital Maintenance Fee</b>					
<i>SFR + Duplex</i>					
5/8"	\$ 30.42	\$ 31.50	\$ 33.08	\$ 34.73	\$ 36.47
3/4"	45.61	44.11	46.32	48.64	51.07
1"	76.03	53.56	56.24	59.05	62.00
1.5"	152.07	116.57	122.40	128.52	134.95
2"	243.32	189.03	198.48	208.40	218.82
<i>All Other Customer Classes (Except Private Fire Lines)</i>					
5/8"	\$ 30.42	\$ 31.50	\$ 33.08	\$ 34.73	\$ 36.47
3/4"	45.61	47.26	49.62	52.10	54.71
1"	76.03	78.76	82.70	86.84	91.18
1.5"	152.07	157.52	165.40	173.67	182.35
2"	243.32	252.04	264.64	277.87	291.76
3"	532.26	630.10	661.61	694.69	729.42
4"	958.09	1,260.19	1,323.20	1,389.36	1,458.83
6"	2,129.09	2,205.34	2,315.61	2,431.39	2,552.96
8"	3,649.85	4,253.15	4,465.81	4,689.10	4,923.56
10"	5,778.95	6,300.97	6,616.02	6,946.82	7,294.16

**Table 4: Existing and Proposed Fixed Bi-Monthly Base Charge and CMF**

<b>Bi-Monthly Fixed Charges</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
<i>Meter Size</i>	<i>Existing</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>
<b>Watershed Management Fee</b>					
5/8"	\$ 11.59				
3/4"	13.86				
1"	18.35				
1.5"	29.61				
2"	43.12				
3"	85.91				
4"	148.96				
6"	322.37				
8"	547.56				
10"	862.84				
<b>Proposed volumetric rate per CCF shown above in Table 2</b>					
<b>Private Fire Line Service Charge</b>					
2"	\$ 40.59	\$ 21.41	\$ 22.48	\$ 23.60	\$ 24.78
4"	101.89	49.29	51.75	54.34	57.06
6"	202.33	95.66	100.44	105.46	110.73
8"	332.76	157.55	165.43	173.70	182.39
10"	515.38	240.06	252.06	264.66	277.89



## 2 BACKGROUND, OBJECTIVES, AND LEGAL REQUIREMENTS

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### 2.1 Background

The Marin Municipal Water District is a public utility that provides high-quality and safe drinking water to central and southern Marin County, California, excluding west Marin. The District's 147-square-mile service area includes the cities and towns of San Rafael, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Corte Madera, Tiburon, Belvedere, and Sausalito. Marin Municipal Water District is the first municipal water district in California, formed on April 25, 1912. Today, the District serves over 191,000 residents through over 60,000 accounts. The District's water system includes 7 reservoirs, 3 treatment plants, 97 pump stations, 130 storage tanks, and 908 miles of pipelines.

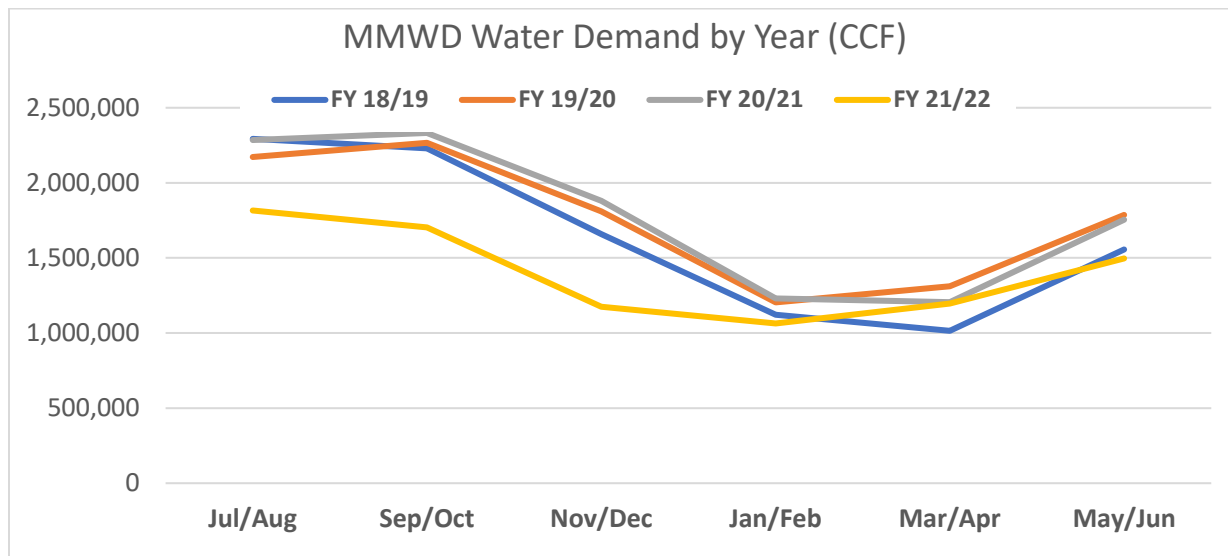
Historically, about seventy-five percent of the District's water comes from its 22,000 acres of protected watershed on Mt. Tamalpais and in the grassy hills of west Marin. Rainfall on the watershed flows into the District's seven reservoirs and is then treated at the District's potable water treatment plants before being delivered to its customers. The remainder of the District's water supply consists of wholesale water purchased from the Sonoma County Water Agency (Sonoma Water) and recycled water purchased from the Las Gallinas Valley Sanitary District (LGVSD). The water from Sonoma Water originates in Lake Sonoma and Lake Mendocino before flowing into the Russian River. Marin Water has a longstanding partnership with LGVSD and helped fund an expansion of their Recycled Water Facility to increase recycled water use. The District also continues to engage in multiple water conservation efforts to reduce customer water demands and preserve supply.

Severe conditions brought on by the drought over the last several years have intensified the District's focus on strengthening the reliability of its water supply. The District recently adopted a Strategic Water Supply Assessment Roadmap intended to augment the District's current baseline water supply in the face of climate-change-driven droughts and to evaluate the impact of potential future water management alternatives that could improve the District's long-term water supply resiliency. These efforts identify short-term water supply projects and will help the District ultimately determine which long-term options are viable, affordable, and make the most sense for the community and the region.

The following figure shows the District's water demands over the last four years. The District has a seasonal demand pattern, with substantially higher usage in the hotter, summer months largely due to landscape irrigation, which is two to three times the level of use during the lowest-use wet winter months. However, there is some annual variability in the timing and magnitude of minimum and maximum demands. These increased demands require the District to maintain additional infrastructure (i.e., larger storage tanks, bigger pumps, larger pipes, etc.), increased water supplies and require the District to incur other related costs that would otherwise not be required, except for this increased usage. These additional expenditures required to support increased water usage serve

as the basis for the District’s tier water rates, and the associated costs vary depending on the level of water usage by individual customers.

**Figure 1: MMWD Water Use by Month (CCF)**



The District operates as a self-supporting special district and revenues are derived almost solely from water rates. As such, the District must establish rates adequate to fund the costs of providing water service, including costs for ongoing operations, wholesale water supply, debt service, and capital improvements needed to keep the District’s aging infrastructure in safe and reliable operating condition.

## 2.2 Rate Study Objectives

In 2022, the District retained BWA to develop a cost of service based water rate study. The District has historically adopted rate increases in order to keep revenues in line with the escalating costs of providing service. Key goals and objectives of this study include developing water rates that:

- Recover the costs of providing service, including operating, capital, and debt funding needs;
- Are proportionate, fair and equitable to all customers;
- Are easy to understand and implement;
- Comply with the substantive requirements of the California Constitution, Article 13D, Section 6 (which was adopted by the voters as Proposition 218 in 1996) and the general mandate of Article 10, Section 2 that prohibits the wasteful use of water;
- Support the long-term operational and financial stability of the District.

## 2.3 Rate-Study Process

The general process used for this cost-of-service rate study is summarized on the following diagram.

**Figure 2: Cost-of-Service Rate Study Process**



Key elements of the study include:

- 1) **Project Initiation and Data Collection** – Review financial policies; collect financial, and other relevant data; and review rate structures; and
- 2) **Demand Analysis** – Analyze past water demands and customer characteristics and forecast future demands; and
- 3) **Long Range Financial Plans** - Develop financial projections to evaluate annual revenue requirements from rates and the overall level of rate increases needed to fund the costs of providing service and support long-term financial stability; and
- 4) **Cost Allocation** – Group the District’s costs in terms of the function they serve as a basis to proportionally allocate the revenue requirement from rates; and
- 5) **Cost of Service Rate Design** - Develop rate structures that proportionately recover costs between customer classes (i.e., residential and commercial), as well as from customers within their designated customer class; and
- 6) **Prop 218 Process** – Ensure compliance with the substantive and procedural requirements of Proposition 218.

## 2.4 Constitutional Requirements for Rates

The water rates proposed in this report are designed to comply with two key articles of the California Constitution: Article 13D and Article 10, as explained below.

### 2.4.1 Article 13D, Section 6

Proposition 218 was adopted by California voters in 1996 and added Articles 13C and 13D to the California Constitution. Article 13D, Section 6 governs property-related charges, which the California Supreme Court has ruled includes rates imposed for water delivered through pipes connected to property. Article 13D, Section 6 establishes both a) procedural requirements for imposing or increasing property-related charges, and b) substantive requirements for those charges. Article 13D requires voter approval for new or increased property-related charges but exempts rates for water, wastewater, and garbage service from this voting requirement if rates are adopted by the appropriate procedure and meet the substantive requirements. This report recommends water rates designed to comply with the substantive requirements of Proposition 218.

The substantive requirements of Article 13D, Section 6 require property-related charges, such as the District's water rates, to meet the following conditions:

- 1) Revenues derived from the fee or charge shall not exceed the costs required to provide the property related service.
- 2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- 4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to the property in question.
- 5) No fee or charge may be imposed for general governmental services, such as police or fire services, where the service is available to the public at large in substantially the same manner as it is to property owners.

### 2.4.2 Article 10, Section 2

Article 10, Section 2 of the California Constitution states that:

*It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.*

## 2.5 Statute of Limitations

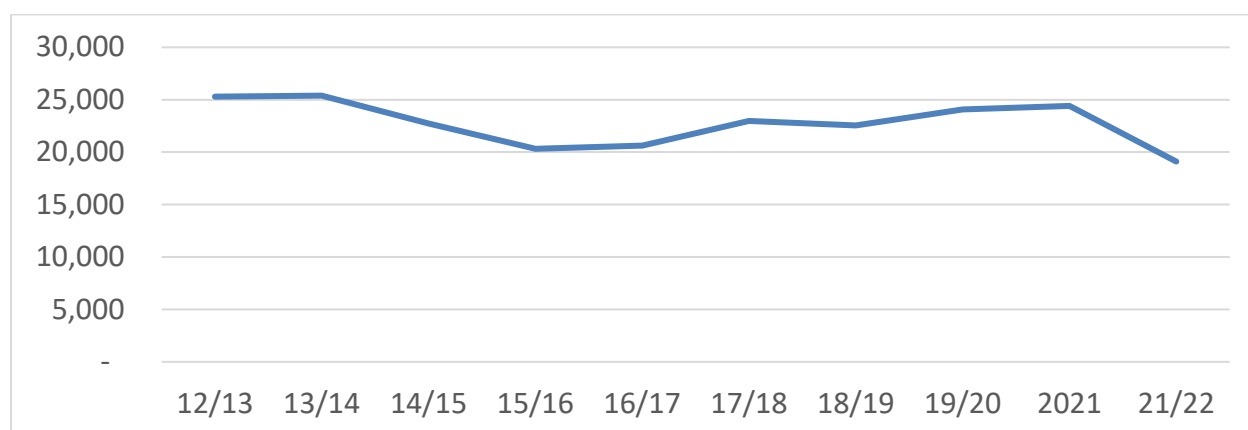
Pursuant to California Government Code 53759, there is a 120-day statute of limitations for challenging any new, increased, or extended fees. This statute of limitations applies to the water rates proposed in this rate study and included in the Proposition 218 Notice.

### 3 PROJECTED WATER DEMAND AND CUSTOMER CHARACTERISTICS

#### 3.1 Marin Water Supply and Metered Water Demand Projection

Water demand in the District has been trending down for quite some time. However, the District experienced a sharp reduction in demand due to drought and a declared water shortage emergency in FY 21/22. The District is projecting demand will partially rebound from the drought in the short term, similar to the years after the previous drought in FY 15/16, but will continue to follow the gradual downward trend in water use. The following chart shows the District’s metered potable water demand for the previous ten years. The data in the chart was derived by reviewing the District’s historic billing and consumption data.

**Figure 3: Metered Potable Water Demand**



Projected FY 23/24 water demand is based on partial year actual use in FY 22/23 and a gradual rebound from the drought. Water demand projections are conservative to reflect: (1) an uptick in customer investments, due in part to District rebates, in water efficiency upgrades during the drought that will result in long-term water use reductions, (2) elevated awareness of drought conditions and water efficiency messaging statewide, and (3) price signals provided to customers by the proposed rate structure. The projected water loss was based on the average of the last five years, as water loss is not related to water demand.

**Table 5: Historic and Projected Potable Supply and Metered Demand**

Water Supply and Metered Demand	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>
Potable Water Supply (AF)	26,828	26,196	20,418	21,463	21,892
Potable Water Supply (CCF)	11,686,466	11,410,836	8,893,960	9,349,333	9,536,320
Water Loss	10.3%	6.8%	7.7%	8.4%	8.4%
Total Potable Water Sold (CCF)	10,482,897	10,632,895	8,211,004	8,567,156	8,738,499

Source: Actual water supply, water loss, and metered water sales provided by the District.

### 3.2 Water Services and Equivalent Capacity

Each connection to the District's water system is considered one service. Some of the District's fixed costs are reasonably recovered on a per-customer basis, while others should be recovered based on the capacity required to serve each customer. The size of a customer's meter reflects the portion they require of the water system's capacity. A significant percentage of the costs of any water system is related to its requirement to deliver water to any customer instantaneously at any time, up to the maximum safe flow capacity of a customer's meter. Simply put, as the size of a customer's water meter increases, the instantaneous demand it can place on the District's water system increases.

Fixed charges for each meter size are based on the capacity of a meter relative to the capacity of smallest meter size (e.g., a 5/8 inch meter) in the District's system. In this study, the relative capacity of a meter size, referred to as a meter equivalent ratio (MEU), is calculated by dividing the capacity of a given meter size by the capacity of a 5/8" meter. The sum of all MEU's reflects the total capacity of the District.

For this rate study, MEUs for the Single-Family and Duplex classes are calculated based on a three-year average of the maximum bi-monthly billing period demand for each meter size relative to the maximum bi-monthly billing period demand of a 5/8" meter. The decision to base Single-Family and Duplex MEUs on actual demand is to more closely align their respective MEUs with their proportion of system capacity. Water use in these two customer classes is relatively homogenous and all meters are 2" or smaller.

The meter equivalent ratios used for all other customer classes are proportional to the maximum safe flow of a 5/8" meter, which is 20 gallons per minute (GPM). For example, a 1" meter with a maximum safe flow of 50 GPM will have a meter equivalent ratio of 2.5 MEUs. The maximum safe flow for each meter size will continue to be the basis for these customers' MEUs, since their use varies and they have a wider range of meter sizes (from 5/8" to 8"). The maximum safe flow in gallons per minute (GPM) for each meter size is set forth in Appendix A.

The following table contains the counts of water services and calculations of meter equivalent units. Total meter equivalent units for each meter size are derived by multiplying the meter equivalent ratio by the number of services at each meter size.

**Table 6: Water Services and Meter Equivalent Units**

Count of Services	Single Family & Duplex		Raw Water	Recycled Water	Fire	Total Services
	Other Potable					
Connection Size	#		#	#	#	#
5/8"	38,234	2,378	-	3	-	40,615
3/4"	3,678	291	-	3	-	3,972
1"	10,832	1,868	-	113	-	12,813
1.5"	633	1,554	-	102	-	2,289
2"	29	568	-	38	63	698
3"	-	88	-	-	-	88
4"	-	40	-	3	629	672
6"	-	16	1	-	518	535
8"	-	5	-	-	154	159
10"	-	-	-	-	4	4
<b>Total</b>	<b>53,406</b>	<b>6,808</b>	<b>1</b>	<b>262</b>	<b>1,368</b>	<b>61,845</b>

Base Water Charge & CMF	Meter Equivalent Ratios	Meter Equivalent Units (MEU)s	Total Annual MEUs
Meter Size	#	MEU	MEU
<b>Single Family and Duplex Customers</b>			
5/8"	38,234	38,234	229,404
3/4"	3,678	5,149	30,895
1"	10,832	18,414	110,486
1.5"	633	2,342	14,053
2"	29	174	1,044
<b>All Other Customer Classes (Except Private Fire Lines)</b>			
5/8"	2,381	2,381	14,286
3/4"	294	441	2,646
1"	1,981	4,953	29,715
1.5"	1,656	8,280	49,680
2"	606	4,848	29,088
3"	88	1,760	10,560
4"	43	1,720	10,320
6"	17	1,190	7,140
8"	5	675	4,050
10"	-	-	-
<b>Total</b>	<b>60,477</b>	<b>90,561</b>	<b>543,367</b>

Note: District provided service counts by meter size as of December 2022. Maximum safe flow GPM based on the standard meters used by the District for new connections and replacement meters.

### 3.3 Fire Line Service Capacity

The following table contains the counts of fire line services and calculations of equivalent fire units (EFU)s used for deriving the private fire line service charges. In this study, the relative capacity of a fire meter size, an EFU, is derived by calculating the Fire Capacity Factor equivalent to a 2" fire meter. EFUs reflect the total fire protection capacity of the District. The number of EFUs for each meter size are derived by multiplying the EFU by the number of services at each meter size. The District's fire service capacity includes the capacity of fire hydrants and private fire lines connected to the District's water system. Private fire line services account for 12.65% of the District's fire service capacity.

**Table 7: Fire Protection Services and Equivalent Units**

Fire Service Capacity Allocation							
Fire Service Size	Number of Services	Maximum Safe Fire Meter Flow	Equivalent Fire Unit Ratios (EFU)	Fire Capacity EFUs	Fire Capacity %	Annual Fire Services #	Annual EFUs #
<i>Service Size"</i>	<i>#</i>	<i>GPM</i>	<i>EFU</i>	<i>EFU</i>	<i>%</i>	<i>#</i>	<i>#</i>
<b>Public Hydrants</b>							
6	7,463	1,600	10.00	74,630	87.4%		895,560
<b>Private Fireline Services</b>							
2	63	160	1.00	63		756	756
3	0	350	2.19	0		0	0
4	629	700	4.38	2,755		7,548	33,060
6	518	1,600	10.00	5,180		6,216	62,160
8	154	2,800	17.50	2,695		1,848	32,340
10	4	4,400	27.50	<u>110</u>		<u>48</u>	<u>1,320</u>
Total Private Fireline	<u>1368</u>			<u>10,803</u>	<b>12.65%</b>	<u>16,416</u>	<u>129,636</u>
<b>Total Fire Protection</b>	<b>8,831</b>			<b>85,433</b>		<b>16,416</b>	<b>1,025,196</b>

Note: The District provided the number of fire services as of December 2022. The EFU are based on the maximum flow capacity of the standard fire service meters used for new connections and replacement meters.



## 4 DISTRICT FINANCES AND RATES

### 4.1 Water Financial Overview

Marin Municipal Water District is a special district that relies almost solely on revenues from water rates to fund the costs of providing service. Water rate revenues are projected to account for over 95% of total annual revenues, with the remaining revenues coming from interest earnings, rents, capacity charges from new or upsized connections, and other miscellaneous revenues. As such, water rates must be set at levels adequate to fund the costs of operating and maintaining the water system, pay for wholesale water purchases, and fund necessary capital improvements to keep the water system in good operating condition.

### 4.2 Current and Historical Water Rates

The following tables show a 10-year history of the District’s water rates. Those water rates include the following components:

- Volumetric tiered water rates that vary by customer class
- Fixed bi-monthly service charges based on a fixed per customer portion and meter size
- Fixed bi-monthly Capital Maintenance Fee (CMF) based on meter size that recovers a portion of the District’s capital improvement costs
- Fixed bi-monthly Watershed Management Fee (WMF) based on a fixed per customer portion and meter size portion that recovers part of the District’s watershed maintenance costs
- Fixed bi-monthly Private Fire Line charges levied on accounts with private fire service connections

**Table 8: Historical Non-Potable Volumetric Water Rates**

Non-Potable Volumetric Rates	Effective Date							
	6/1/2011	5/1/2012	1/1/2016	5/1/2016	7/1/2017	7/1/2019	4/1/2021	7/1/2022
<b>Recycled Water</b>								
Tier 1	\$2.42	\$2.57	\$2.65	\$2.76	\$3.17	\$3.27	\$3.41	\$3.55
Tier 2	4.84	5.13	7.27	7.56	10.05	10.20	10.61	11.04
Tier 3	9.68	10.26	15.17	15.78	18.73	18.94	19.70	20.49
<b>Raw Water</b>								
Tier 1	\$3.40	\$3.65	\$3.80	\$4.23	\$3.82	\$3.98	\$4.14	\$4.31
Tier 2	6.81	6.45	6.70	4.23	3.82	3.98	4.14	4.31
Tier 3	13.61	14.62	15.21	4.23	3.82	2.98	4.14	4.31

**Table 9: Historical Potable Volumetric Water Rates**

Potable Volumetric Rates	Effective Date							
	7/1/2012	3/1/2016	7/1/2016	7/1/2017	7/1/2019	4/1/2021	7/1/2021	7/1/2022
<b>Residential</b>								
Tier 1	\$3.74	\$3.81	\$3.96	\$4.07	\$4.19	\$4.36	\$4.54	\$4.73
Tier 2	7.48	6.40	6.66	7.13	7.26	7.56	7.87	8.19
Tier 3	14.97	10.96	11.40	12.07	12.25	12.74	13.25	13.78
Tier 4	22.45	18.85	19.60	19.45	19.68	20.47	21.29	22.15
<b>Duplex</b>								
Tier 1	\$3.74	\$3.81	\$3.95	\$4.10	\$4.22	\$4.39	\$4.57	\$4.76
Tier 2	7.48	6.52	6.77	7.24	7.38	7.68	7.99	8.31
Tier 3	14.97	10.69	11.11	12.02	12.19	12.68	13.19	13.72
Tier 4	22.45	18.17	18.89	18.90	19.13	19.90	20.70	21.53
<b>Multi-Family</b>								
Tier 1	\$3.74	\$3.83	\$3.93	\$4.16	\$4.27	\$4.45	\$4.63	\$4.82
Tier 2	7.48	6.33	6.50	7.07	7.20	7.49	7.79	8.11
Tier 3	14.97	10.43	10.71	11.25	11.41	11.87	12.35	12.85
Tier 4	22.45	17.88	18.36	18.94	19.16	19.93	20.73	21.56
<b>Commercial/Irrigation</b>								
Tier 1	\$3.74	\$3.65	\$3.80	\$3.98	\$4.09	\$4.26	\$4.44	\$4.62
Tier 2	7.48	9.37	9.75	10.82	10.99	11.43	11.89	12.37
Tier 3	14.97	14.41	14.98	16.26	16.46	17.12	17.81	18.53
<b>Single Family Irrigation</b>								
Tier 1	\$3.74	\$5.19	\$5.40	\$5.14	\$5.27	\$5.49	\$5.71	\$5.94
Tier 2	7.48	6.82	7.09	6.15	6.29	6.55	6.82	7.10
Tier 3	14.97	10.88	11.31	10.76	10.94	11.38	11.84	12.32

**Table 10: Historical Fixed Monthly Water Rates**

Fixed Charges	Effective Date							
	7/1/2012	3/1/2016	7/1/2016	7/1/2017	7/1/2019	4/1/2021	7/1/2021	7/1/2022
<i>Meter Size</i>								
<b>Service Charge</b>								
5/8"	\$21.53	\$32.55	\$33.85	\$36.79	\$39.66	\$41.25	\$42.90	\$44.62
3/4"	23.81	41.25	42.90	46.62	50.74	52.77	54.89	57.09
1"	32.88	58.60	60.95	66.28	72.89	75.81	78.85	82.01
1.5"	55.66	101.95	106.05	115.43	128.27	133.41	138.75	144.30
2"	82.85	154.00	160.20	174.41	194.72	202.51	210.62	219.05
3"	155.51	318.85	331.70	361.18	405.17	421.38	438.24	455.77
4"	214.69	561.75	584.40	636.42	715.30	743.92	773.68	804.63
6"	463.76	1,229.70	1,279.30	1,393.33	1,568.15	1,630.88	1,696.12	1,763.97
8"	917.90	2,097.20	2,181.80	2,376.33	2,675.75	2,782.78	2,894.10	3,009.87
10"	1,372.04	3,311.70	3,445.30	3,752.53	4,226.39	4,395.45	4,571.27	4,754.13
<b>Watershed Management Fee</b>								
5/8"		\$8.45	\$8.80	\$9.78	\$10.29	\$10.71	\$11.14	\$11.59
3/4"		10.15	10.55	11.69	12.30	12.80	13.32	13.86
1"		13.45	14.00	15.50	16.30	16.96	17.64	18.35
1.5"		21.80	22.65	25.02	26.31	27.37	28.47	29.61
2"		31.80	33.05	36.45	38.32	39.86	41.46	43.12
3"		63.50	66.00	72.65	76.36	79.42	82.60	85.91
4"		110.15	114.60	125.99	132.42	137.72	143.23	148.96
6"		238.55	248.10	272.67	286.57	298.04	309.97	322.37
8"		405.30	421.50	463.17	486.77	506.25	526.50	547.56
10"		638.75	664.30	729.87	767.05	797.74	829.65	862.84
<b>Capital Maintenance Fee</b>								
5/8"					\$27.25	\$28.34	\$29.25	\$30.42
3/4"					40.87	42.50	43.86	45.61
1"					68.12	70.84	73.11	76.03
1.5"					136.24	141.69	146.22	152.07
2"					217.99	226.71	233.96	243.32
3"					476.85	495.92	511.79	532.26
4"					858.34	892.67	921.24	958.09
6"					1,907.42	1,983.72	2,047.20	2,129.09
8"					3,296.86	3,400.65	3,509.47	3,649.85
10"					5,177.29	5,384.38	5,556.68	5,778.95

## 5 WATER FINANCIAL PLAN

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Working closely with District staff, BWA developed long-term cash-flow projections to determine the water utility's annual revenue requirements and project required water rate revenue increases. The financial projections incorporate the latest information available from the District's budget, annual reports, capital spending projections, and metered water demand data as well as a number of reasonable assumptions developed with input from the District.

### 5.1 Financial Plan Assumptions

Financial plan assumptions are based on input from District staff, historical escalations, and conservative projections for future escalations to reasonably ensure that the rates adopted by the District will provide sufficient revenues to meet the District revenue requirements.

#### REVENUE ASSUMPTIONS

- Rates proposed to be adopted in May 2023 would be effective on July 1, 2023 for the next four years with rate adjustments planned to become effective on July 1 of each of the next three years.
- Water sales revenues are based on the projected volume of water sales and projected water rates. In FY 21/22, water sales declined by 22% but are conservatively projected to gradually rebound from the low use due to the recent drought conditions and water shortage emergency in the District by 5% in FY 22/23 and 2% per year from FY 23/24 to FY 26/27.
- The customer base is projected to remain static (minimal to no growth) because the District is materially built-out and population growth in the District has remained very low as illustrated by the last Census.
- Interest earnings are projected based on the annual beginning fund balance multiplied by the projected interest rate. The interest rate projections are based on recent and anticipated interest rates.
- Discretionary "non-rate" revenues which support rate assistance programs, such as the low-income and medical disability waiver programs, were not included in projected revenues.

#### EXPENSE ASSUMPTIONS

- Water supply cost assumptions are shown in detail in the Appendix B of this report. Purchased water cost estimates are based on the latest rate information available from Sonoma Water and account for the District's utilization of its local water supply.
- Operating and maintenance expenses (other than wholesale water costs) are based on the District's FY 2022/23 Budget.
- Cost escalation is based on the recent and historical Consumer Price Index (CPI) and Engineering News-Record Construction Cost Index (ENR) changes. This report projects that

during the four year period covered by this rate study, the average annual inflation rate will be 5%.

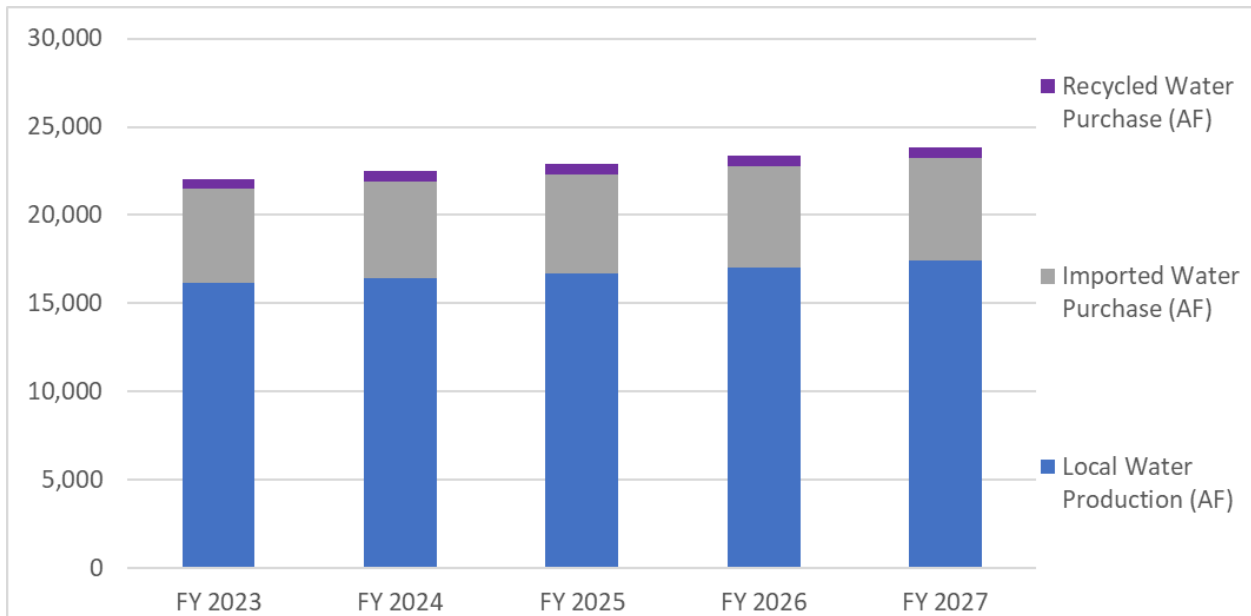
- Debt service projections are based on outstanding debt schedules and projected issuances of new debt.

The District is facing a number of manageable financial challenges that will drive the need for rate increases in upcoming years. Key drivers of future rate increases are summarized below.

### Volumetric Water Costs

The District has historically needed to import more costly water from Sonoma Water for roughly 25% of its water supply. At the peak of the recent drought and declared water shortage emergency, the District imported 44% of its water supply from Sonoma Water. Going forward the District projects imported water from Sonoma Water will continue to make up about 25% of its water supply. The District is currently exploring opportunities to increase supply from Sonoma Water to enhance its water supply resiliency. Recycled water accounts for roughly 1.5% of the District’s water supply.

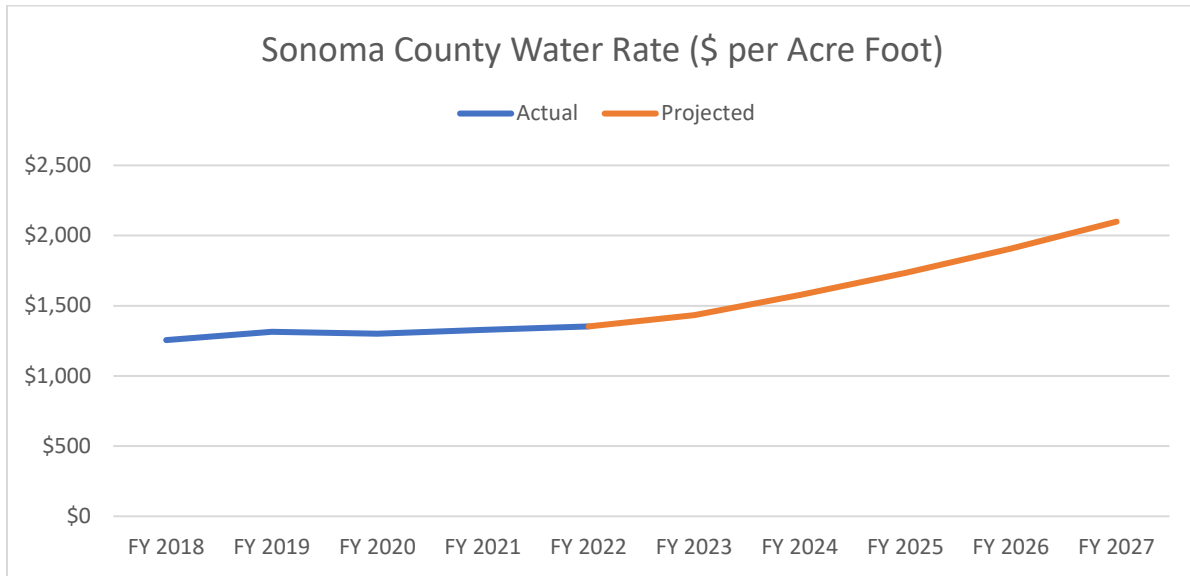
**Figure 4: Projected Water Supply Needs (AF)**



Over the last ten years, Sonoma Water’s rates for wholesale water have increased 4% per year. Over the next 4 years, Sonoma County Water’s rates are projected to increase by an average of an additional 8.5% per year. Projected wholesale water rates are based on estimates provided to District staff from Sonoma Water. The following figure shows the historical Sonoma Water rates from FY 17/18 and the projected rates through FY 26/27. In addition to the rate charged by

Sonoma Water, the District also incurs wheeling fees to transport the water from Sonoma County to Marin via a complex transmission system. Chemical and electricity costs to import and then treat the imported water to match the quality of the District’s local water supply are also incurred.

**Figure 5: Sonoma Water Cost**



Costs that vary based on the volume of the District’s local supply sold consist of the chemical and electricity costs associated with treatment and pumping of water. These costs are projected to increase with inflation.

Recycled water is provided to the District by Las Gallinas Valley Sanitary District. The purchase rate is based on a cost sharing agreement between the two districts.

The following table shows the projected water supply costs that vary by the volume of water produced and imported by the District. Fixed water supply costs are not included in the following table. Water supply projections are shown in detail in Appendix B.

**Table 11: Projected Volumetric Water Supply Cost Summary**

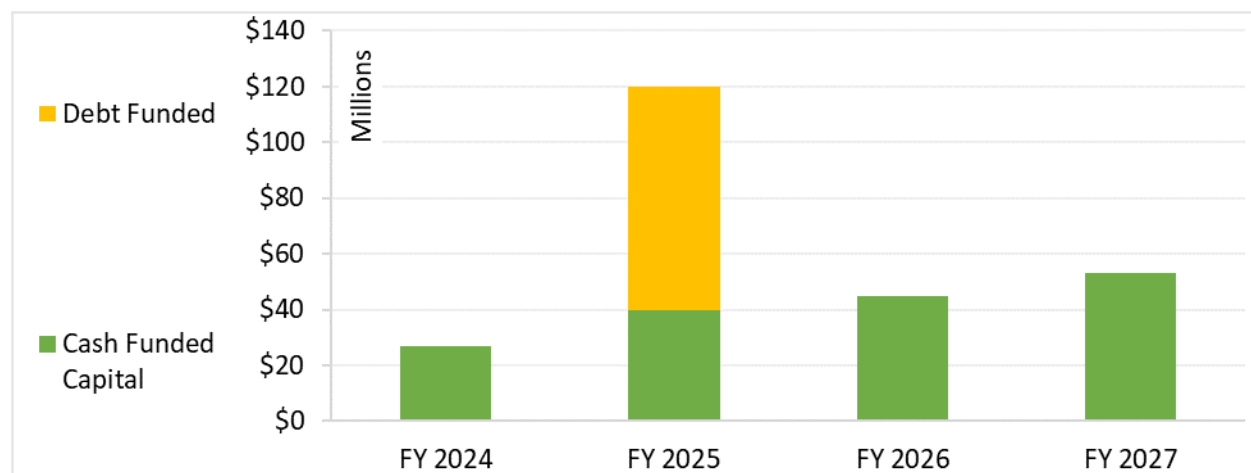
<b>Projected Volumetric Water Cost Summary</b>				
	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
District Water	\$5,152,502	\$5,518,330	\$5,910,131	\$6,329,751
Recycled Water	\$165,360	\$175,282	\$185,798	\$196,946
Imported Sonoma Water	\$9,278,146	\$10,242,320	\$11,307,539	\$12,484,455
<b>Total Volumetric Water Cost</b>	<b>\$14,596,008</b>	<b>\$15,935,932</b>	<b>\$17,403,469</b>	<b>\$19,011,152</b>

### Capital Improvement Funding Needs

The District takes a proactive approach to maintaining its water system which requires ongoing repair and improvement projects. Accounting for construction cost inflation, the District anticipates funding approximately \$245 million of capital improvement projects over the next four years, averaging \$61 million per year. District Staff estimates that an additional \$24 million in ongoing CIP funding for repair and replacement projects would be needed to stabilize the current annual backlog of deferred maintenance. By 2027, the proposed rates will allow the District to fund half of the \$24 million in unfunded annual deferred maintenance needs. With the proposed rate increases, the District will be able to fund \$165 million of capital improvements on a pay-as-you-go basis and seek financing for the remaining \$80 million. Projected capital spending is shown in detail in Appendix A.

For illustrative purposes, the chart below depicts a potential debt issuance in FY 2025 with the first payment in FY 2026. However, debt could be issued at other times during the four-year rate period as District needs arise.

**Figure 6: Capital Spending**



### Water Supply Enhancement

As a result of the recent drought, the District engaged in a comprehensive analysis of its future water supply needs and identified several projects to meet those needs on a short and long term basis as described in the recently approved Strategic Water Supply Assessment Integrated Roadmap. Additional revenue will be needed by the District to fund the implementation of the roadmap, including design and environmental work, as well as the development of short-term projects to augment available water supply. The District has also identified a new water supply reserve fund to ensure sufficient debt service coverage and to have available funds for future financing if necessary.

### *Ongoing Cost Inflation*

The District faces annual cost inflation due to annual increases in a range of expenses including staffing, utilities, insurance, supplies, etc. On top of rate increases needed for capital improvements and water supply enhancements, annual rate increases are needed to keep revenues aligned with cost inflation and prevent rates from falling behind the cost of providing service. Over the past 5 years, inflation has typically ranged between 3% to 4%. In recent months, inflation has reached forty-year highs with the CPI and ENR CCI exceeding 7% in 2022. The District's costs have historically increased in excess of inflation. It is not expected that inflation will remain at such high levels in the future and for the purposes of this rate study average annual inflation is projected to be 5%.

### *Reserve Replenishment*

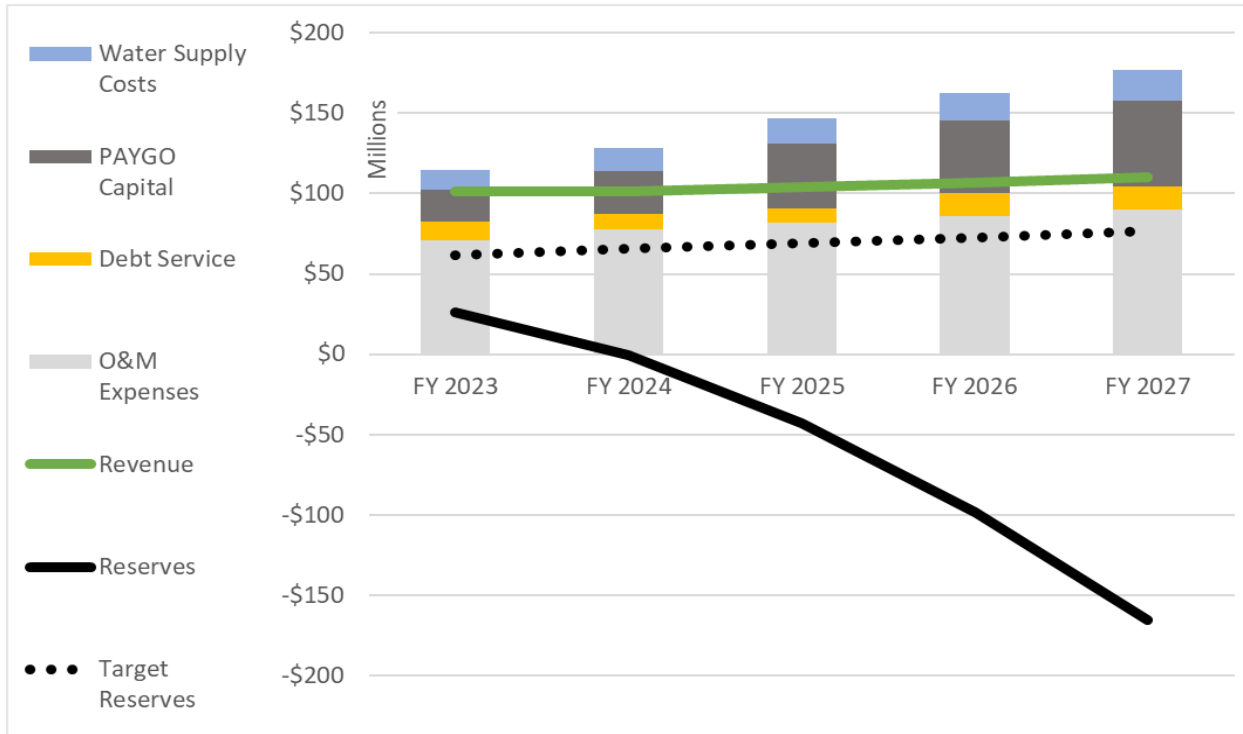
The recent drought resulted in reduced water sales revenue and the District used its reserves to meet revenue shortfalls and cover additional costs. There is now a need to replenish the District's reserve funds and the recommended rates put the District on a path to gradually rebuild reserves. The financial plan projects the District will meet its current reserve target in eight years. The existing reserve target is six months of operating expenses plus one year of baseline capital spending. The District is in the process of refining its reserve policies to include a reserve fund dedicated to future water supply resiliency and enhancement efforts.

## **5.2 Cash Flow Projections with Existing Rates**

The District is currently operating at a deficit and based on the financial projections, without any rate increases, the District would continue to operate at a deficit and deplete the District's reserves within the next year. The following figure shows a 5-year projection of expenses broken down by key categories, projected annual revenues with no rate increases, and ending reserves compared to the reserve target.



**Figure 7: 5-Year Cash Flow Projection without Rate Increases**



### 5.3 Cash Flow Projections and Recommended Rate Increases

Long-term cash-flow projections were developed based on assumptions and key drivers of future rate increases described in Section 5.1. The projections were used to determine the water utility’s annual revenue requirements and project required water rate revenue increases. The long-term cash-flow projections incorporate the latest information available from the District’s budget, annual reports, capital spending projections, and metered water demand data as well as a number of reasonable assumptions developed with input from the District. Detailed revenue, expense and customer demand projections are shown in Appendices A and B. The overall rate revenue increases shown in the following tables are designed to fund the District’s cost of providing service, maintain roughly balanced budgets, maintain healthy debt service coverage, and meet long-term fund reserve targets. The projections indicate the need for increases to water rate revenues each of the next four fiscal years. Actual impacts to customers’ water bills will vary based on customer class and water use due to proposed modifications to the rate structure and the updated cost-of-service analysis.

A summary of the long-term cash-flow projections is displayed in the following table.

**Table 12: Projected Revenue Needs**

<b>Key Financial Information</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
<b>Revenue from Full Year</b>					
<b>Rate Increase</b>	<b>\$0</b>	<b>\$33,431,777</b>	<b>\$17,590,552</b>	<b>\$13,369,954</b>	<b>\$8,244,496</b>
Total Revenue	\$101,060,426	\$134,948,600	\$155,971,742	\$173,144,773	\$185,460,298
Total Expenses	\$114,806,549	\$128,567,515	\$146,470,089	\$162,453,146	\$176,591,372
<b>Net Cash Change</b>	<b>-\$13,746,123</b>	<b>\$6,381,085</b>	<b>\$9,501,653</b>	<b>\$10,691,627</b>	<b>\$8,868,926</b>
<b>Total Reserves</b>	<b>\$26,353,877</b>	<b>\$32,734,962</b>	<b>\$42,236,615</b>	<b>\$52,928,242</b>	<b>\$61,797,168</b>
Reserve Targets	\$61,773,026	\$65,486,142	\$69,065,510	\$72,854,156	\$76,865,618

Detailed, long-term, cash-flow projections described are shown in the following table.

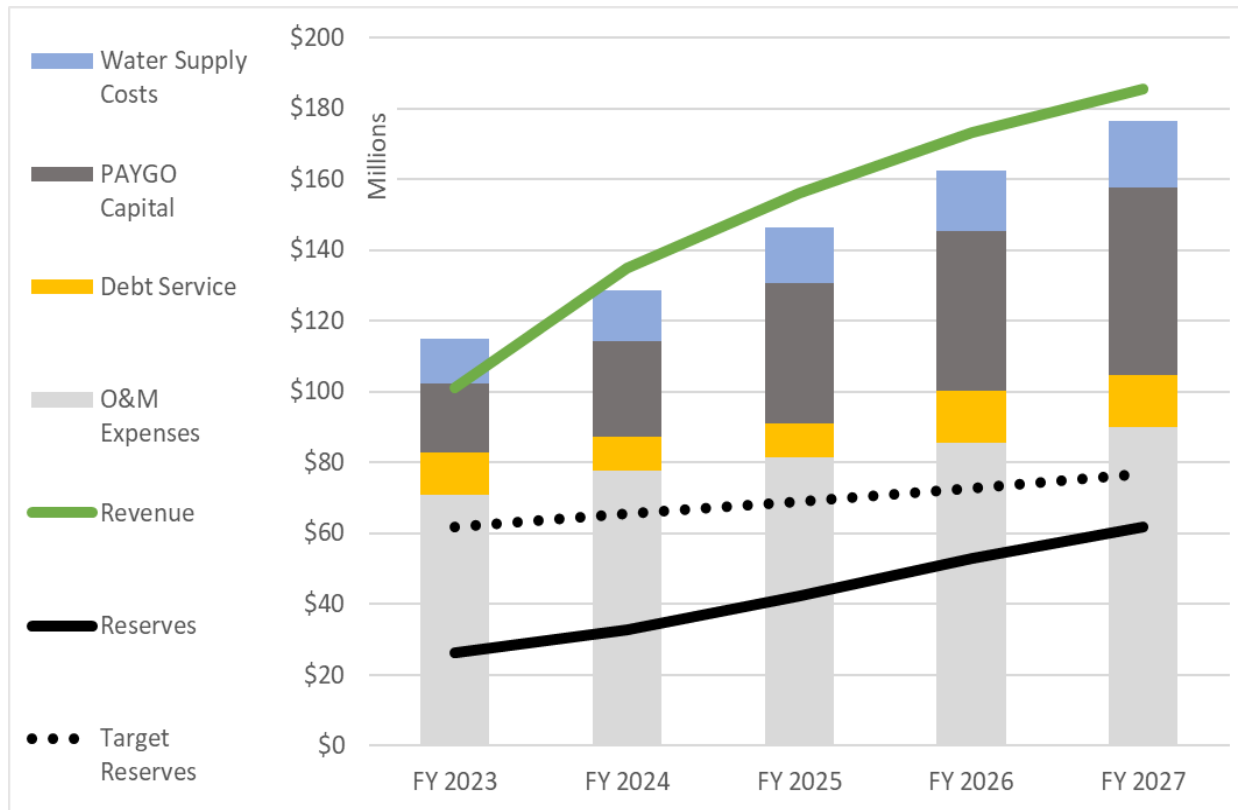
**Table 13: Detailed Water Financial Projections**

<b>REVENUES</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<b>Revenues from Rates and Charges</b>					
<b>Rate Revenue</b>	\$77,630,031	\$111,180,097	\$131,077,985	\$147,069,499	\$158,144,432
<b>Watershed Management Fee</b>	\$5,048,267	\$5,386,376	\$5,655,695	\$5,938,480	\$6,235,404
<b>Capital Maintenance Fee</b>	\$17,118,698	\$17,118,698	\$17,974,633	\$18,873,365	\$19,817,033
<b>Other Revenue</b>	\$1,263,430	\$1,263,430	\$1,263,430	\$1,263,430	\$1,263,430
<b>TOTAL REVENUES</b>	<b>\$101,060,426</b>	<b>\$134,948,600</b>	<b>\$155,971,742</b>	<b>\$173,144,773</b>	<b>\$185,460,298</b>
<b>EXPENSES</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<b>Operating Expenses</b>					
Water Supply Costs					
Local Treated Water	\$4,369,013	\$5,152,502	\$5,518,330	\$5,910,131	\$6,329,751
Purchased Water	\$8,261,729	\$9,278,146	\$10,242,320	\$11,307,539	\$12,484,455
Other Operating	\$70,915,309	\$77,697,635	\$81,584,170	\$85,665,131	\$89,950,245
<b>Subtotal Operating Expenses</b>	<b>\$83,546,051</b>	<b>\$92,128,283</b>	<b>\$97,344,820</b>	<b>\$102,882,802</b>	<b>\$108,764,451</b>
<b>Non-Operating Expenses</b>					
Water Existing Debt	\$11,838,498	\$9,517,232	\$9,392,169	\$9,384,142	\$9,394,706
Water New Debt	\$0	\$0	\$0	\$5,308,197	\$5,308,197
Cash Funded Capital	\$19,422,000	\$26,922,000	\$39,733,100	\$44,878,005	\$53,124,018
<b>Subtotal Non-Operating Expenses</b>	<b>\$31,260,498</b>	<b>\$36,439,232</b>	<b>\$49,125,269</b>	<b>\$59,570,344</b>	<b>\$67,826,921</b>
<b>TOTAL EXPENSES</b>	<b>\$114,806,549</b>	<b>\$128,567,515</b>	<b>\$146,470,089</b>	<b>\$162,453,146</b>	<b>\$176,591,372</b>
<b>Net Cash Change</b>	<b>(\$13,746,123)</b>	<b>\$6,381,085</b>	<b>\$9,501,653</b>	<b>\$10,691,627</b>	<b>\$8,868,926</b>
<b>RESERVE BALANCES</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<b>Total Reserve Balances</b>					
Beginning Balance	\$40,100,000	\$26,353,877	\$32,734,962	\$42,236,615	\$52,928,242
Ending Balance	\$26,353,877	\$32,734,962	\$42,236,615	\$52,928,242	\$61,797,168
<b>Target Reserve Balances</b>					
Operating (6 months)	\$41,773,026	\$46,064,142	\$48,672,410	\$51,441,401	\$54,382,226
Baseline Capital (1 year)	\$20,000,000	\$19,422,000	\$20,393,100	\$21,412,755	\$22,483,393
<b>Total Reserve Target</b>	<b>\$61,773,026</b>	<b>\$65,486,142</b>	<b>\$69,065,510</b>	<b>\$72,854,156</b>	<b>\$76,865,618</b>

Note: Discretionary non-rate revenues excluded from cashflow projection.

The following figure visually depicts the cash-flow projections with the proposed rate increases for the next four years. Projected expenses are summarized into key categories. The figure also compares fund reserves at the end of each fiscal year to annual fund reserve targets.

**Figure 8: Projected Revenues and Expenses**



Note: Revenues in excess of expenses are used to rebuild District reserves as detailed in Table 13 and depicted in Figure 8.

## 6 WATER COST OF SERVICE RATE ANALYSIS

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The American Water Works Association (AWWA) is the largest association of water professionals in the world. AWWA publishes the M1 Manual, titled "Principles of Water Rates, Fees, and Charges," which is widely recognized as the preeminent resource for setting water rates. The manual is consistently revised by leading professionals in the industry to incorporate the latest industry best practices and meet regulatory requirements.

The AWWA M1 Manual outlines two methods for deriving water rates, the base-extra capacity and commodity demand method. Both methods recognize that the cost of serving a customer depends not only on the total volume of water used, but also on peak-demand requirements. Similar to the previous cost of service study, the proposed rates presented within this rate study are developed using a base-extra capacity method. The base-extra capacity method was chosen because it ensures that customers with higher levels of water use, who place more demands on the water supply system, pay a proportionate share of the costs associated with providing that additional capacity. It also encourages conservation and ensures that those who use more water pay for the additional infrastructure, maintenance, and other costs required to meet their annual needs over the long term. By allocating the incremental costs of providing extra-capacity in the system to those customers whose use necessitates it, the base-extra capacity method ensures that rates for average and below-average users do not include costs for capital investments and imported water supplies that they do not require. This method also provides an incentive for customers to conserve water, as they can reduce their bills by reducing their usage, while ensuring that the water system can continue to provide reliable service to all customers.

In using the base-extra capacity method, costs are typically separated into four cost components: (1) Base (average), (2) Extra Capacity, (3) Customer, and (4) Fire. As noted in the AWWA M1 Manual, in detailed rate studies, such as the one performed for this rate study, some of these elements might be broken down further into two or more subcomponents.

Based on the District's expenditures and system characteristics, the Customer (or fixed monthly) component was separated into two subcomponents: (1) Customer (accounts) and (2) Capacity (meter equivalent units). This bifurcation of the Customer component is done to better identify and allocate costs that vary based on capacity needs (as defined by the size of the meter) from those that should be equally shared by each customer account. A meter equivalent unit (MEU) is a ratio of any given meter size relative to the baseline 5/8-inch meter. The ratio is developed by comparing the potential flow capacity of each meter with the baseline.

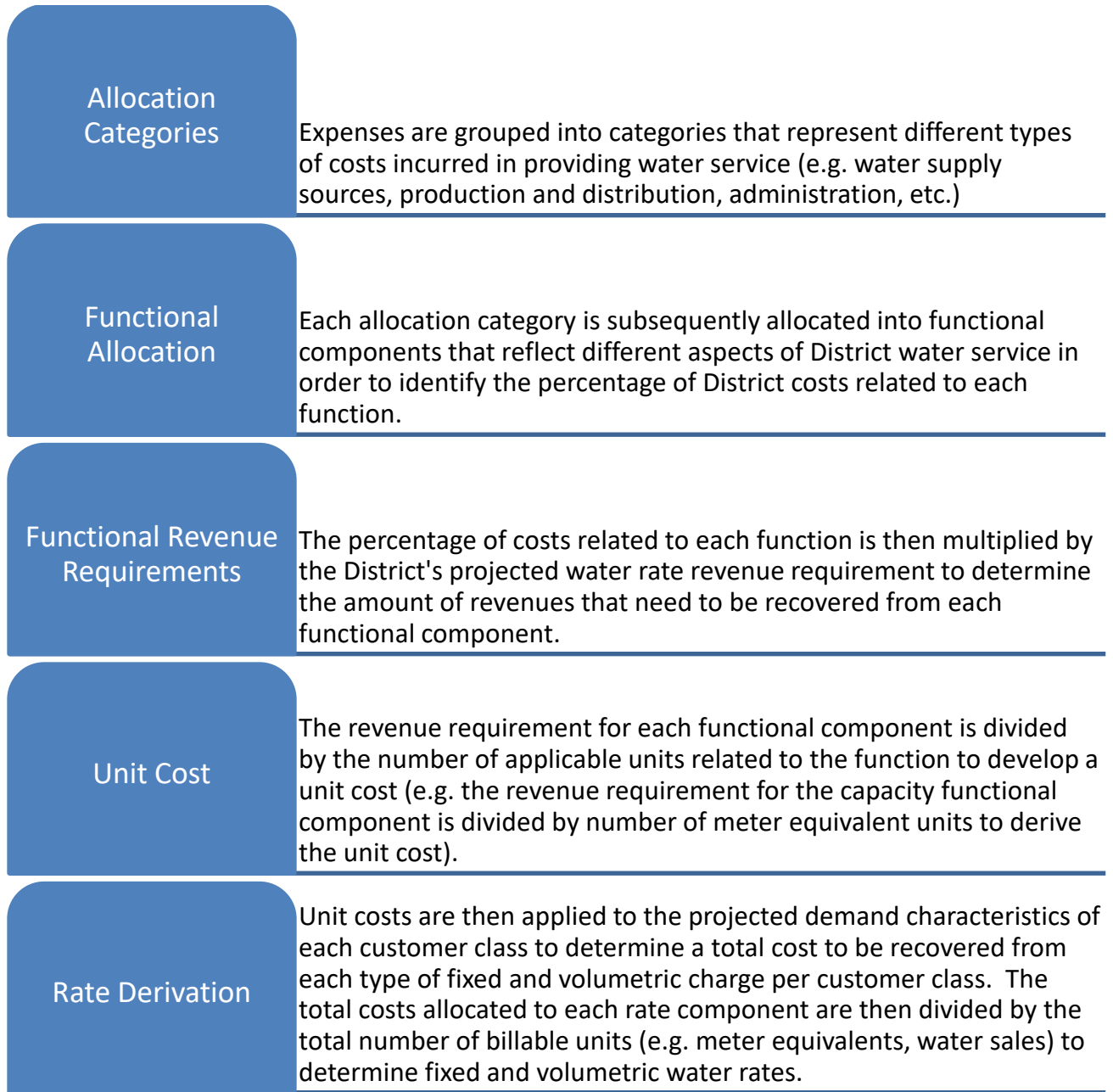
Base-Extra Capacity was split into four subcomponents: (1) Base Demands, (2) Average Demands, (3) Summer Demands, and (4) Peak Demands. These subcomponents are used to allocate the incremental costs of providing extra-capacity in the system equitably to those users who benefit

from the extra capacity and whose use necessitates the extra capacity. This cost allocation method ensures that those users with more expensive demands cover the additional infrastructure, water supply and other costs associated with their increased demands. This is described in more detail in Section 6.1.1.

The proposed rates are developed based on a detailed cost allocation that reflects the District's costs of providing service based on analysis of operations and input from District staff. As part of the process, BWA met with District staff from finance, administration, engineering, and operations to gain input on water system design and operations.

The following chart shows the general process for deriving water rates that reflect the District's costs of service to each customer class.

**Figure 9: Cost of Service Analysis Process**



### 6.1.1 Base-Extra Categories

There must be a nexus between the water used in each tier and the cost of providing that water. Base-Extra Categories are used to allocate the incremental costs of providing extra-capacity in the system needed to serve those customers whose use necessitates increased costs. This cost allocation method ensures that those users with more expensive demands cover the additional infrastructure, water supply and other costs associated with their increased demands. Said

differently, this method ensures that rates for users with average and below-average water usage do not include costs for capital investments and imported water supplies that are not required by their levels of use. FY 2021/22 consumption was used as a basis for determining the percentage of use in the Base-Extra Categories and projecting use in each tier. FY 2021/22 was used as a base because it reflects conservation demand patterns due to the drought. Demand patterns are projected to continue to reflect conservation as customers have become more aware of the need to conserve water and as water becomes more costly. To clearly demonstrate the nexus between the increased costs to the District and increased or peak customer demand, using District water usage data, BWA identified the volume of water used in each Base-Extra Category based on applying the following definitions to water usage in each bi-monthly billing period.

### **Base-Extra Category Definitions**

**Base Demand** in this study is the lowest level of demand that was supplied by the District's watershed in the last ten years, based on the District's customer usage and consumption data. Base demand includes water usage that is at or below 56% of the bi-monthly average demand. This reflects the minimum level of demand the District can expect to serve in a year.

**Average Demand** in this study equals the average demand calculated from the District's customer usage data in FY 21/22. Average demand exceeds base demand.

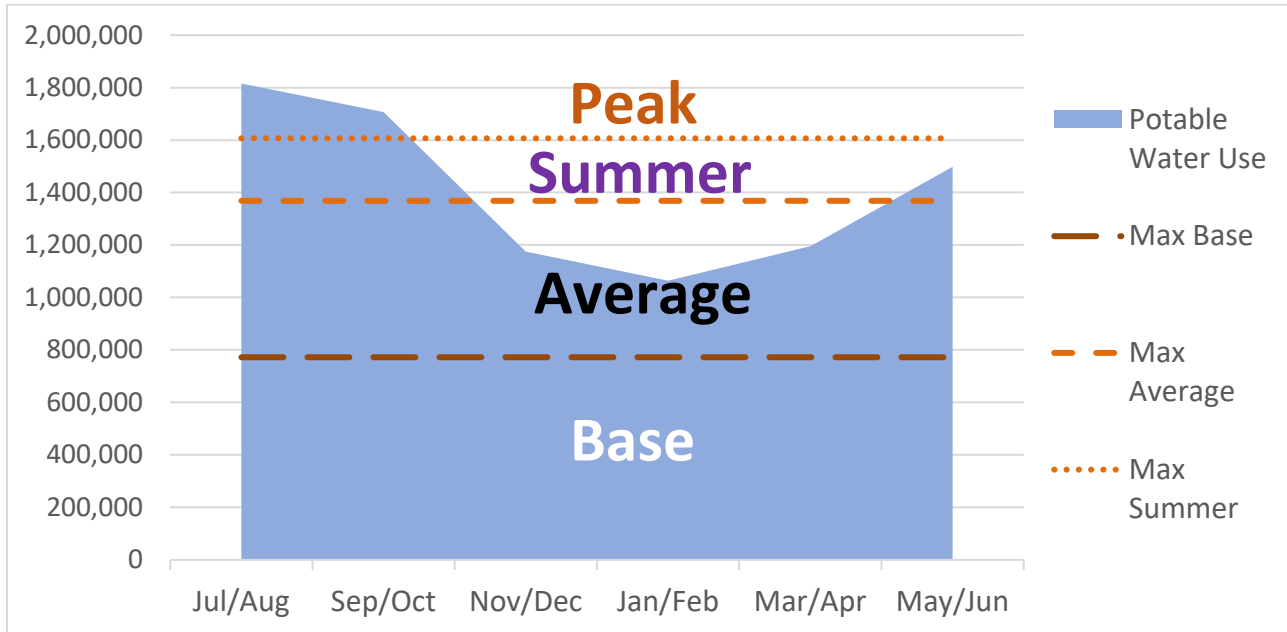
**Summer Demand** in this study equals the average summer demand in the months of May through October, calculated from the District's customer usage data in FY 21/22.

**Peak Demand** in this study is defined as use greater than the bi-monthly, average summer demand calculated from the District's customer usage data in FY 21/22. Use in this category includes maximum day and maximum hour demands.

The following figure shows the Base-Extra Category definitions applied to the projected FY 23/24 water demand. In the figure Base demand consists of all water usage below the dashed Max Base line; Average demand consists of all water usage above the dashed Max Base line but below the dashed Max Average line; Summer demand consists of all water usage above the dashed Max Average line but below the dotted Max Summer line; and Peak demand consists of all water usage above the dotted Max Summer line.



**Figure 10: Projected FY 23/24 Demand and Base-Extra Categories**



Water use in the District is higher in the summer and lower in the winter. Most of the potable portion of a water system is sized to accommodate maximum (peak) usage. To ensure that rates fairly reflect the costs of the water system sized to meet peak demands, these costs are allocated to Base-Extra Categories based on peak billing period usage but recovered in the rates based on the total annual use in each Base-Extra Category.

The following table shows the thresholds for each Base-Extra Category based on the descriptions above, the total use by Base-Extra Category in FY 21/22, and the maximum bi-monthly use in each Base-Extra Category. The percentages are used for cost allocation. The calculation of the bi-monthly use in each Base-Extra category by customer class is shown in Appendix A.

**Table 14: Base-Extra Category Percentages**

Demand Categories	Base-Extra Use Category Bi-Monthly Upper Threshold	FY 21/22	FY 21/22	FY 21/22	FY 21/22
		Annual Demand	Annual Demand	Peak Bi-Monthly Demand	Peak Bi-Monthly Demand
	CCF	CCF	%	CCF	%
Base	772,217	4,631,931	56.4%	772,217	44.3%
Average	1,368,501	2,861,645	34.9%	595,959	34.2%
Summer	1,606,762	530,931	6.5%	236,500	13.6%
Peak		186,497	2.3%	137,248	7.9%
Total		8,211,004	100.0%	1,741,924	100.0%

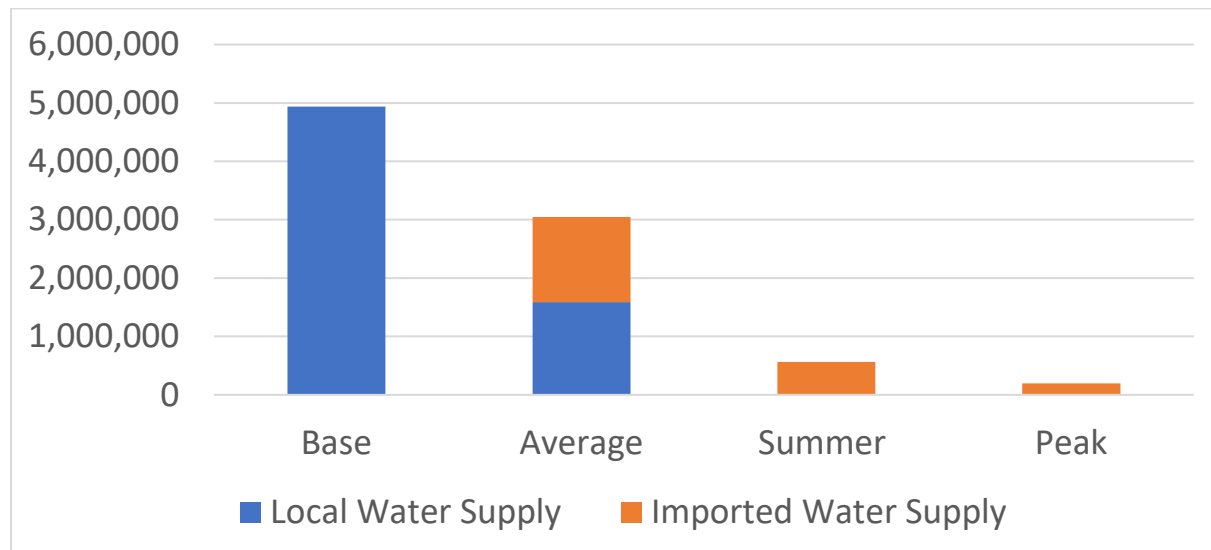
*Potable Water Supply Utilization by Use Category*

As described previously, the District’s potable water is supplied by its watershed and water imported from Sonoma Water. The least expensive water comes from the District's watershed, which is stored in its reservoirs. Once the lower cost, local supply water is exhausted, Sonoma Water purchases are necessary. The water supply utilization of each use category was determined by exhausting the lower cost, local supply used to meet base demands (watershed) through the Base-Extra Categories from base to peak. More costly purchased water then fulfills the remainder of the demand in each tier. The table below details how these source of supply costs are allocated.

**Table 15: Cost Allocation to Variable Cost Recovery Functional Components**

Supply by Base- Extra Category	Demand %	Total CCF	Local Water Supply CCF	Imported Water Supply CCF	Total Local Production CCF	Sonoma Water Imported (acre- feet) CCF
Total Supply	100.00%	8,738,499	6,543,140	2,195,359	100.0%	100.0%
<b>Base-Extra Category</b>						
Base	56.43%	4,930,955	4,930,955	0	75.4%	0.0%
Average	34.88%	3,047,773	1,612,184	1,435,589	24.6%	65.4%
Summer	6.46%	564,570	0	564,570	0.0%	25.7%
Peak	2.23%	195,200	0	195,200	0.0%	8.9%

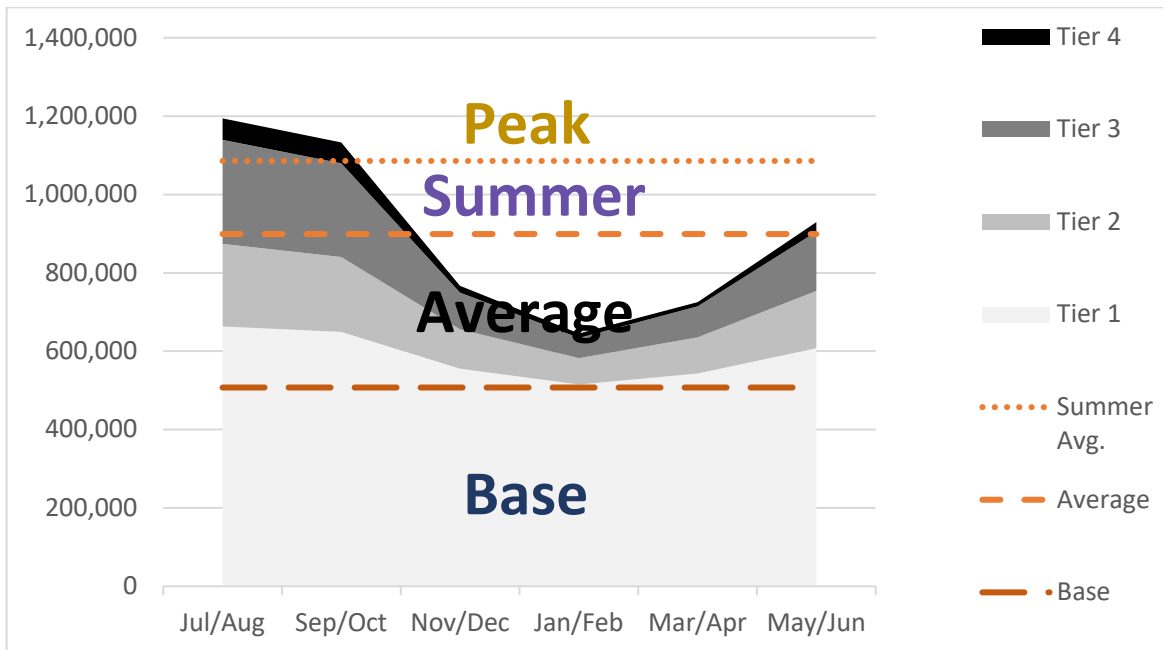
**Figure 11: Supply Utilization by Base-Extra Use Categories (CCF)**



### Base-Extra Use Category Utilization by Tier

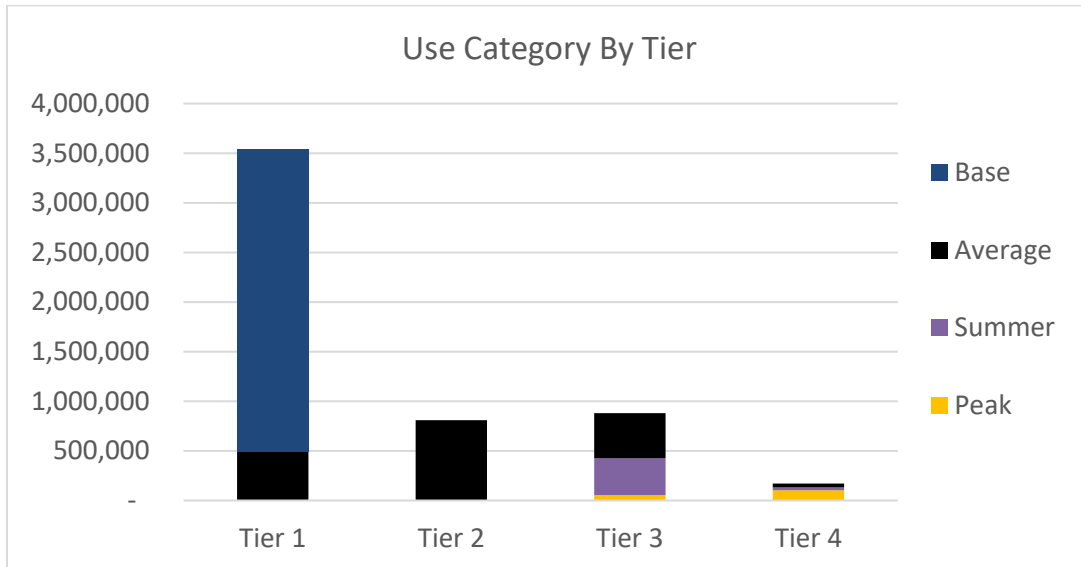
In order to develop tiered rates that reflect the underlying proportional costs of service, the volume of water by Base-Extra Category in each tier must be identified. This ensures that the costs allocated to each tier reflect the blended cost from the volume of each category used in each tier. The projected volume of use is based on bi-monthly tier usage in FY 21/22. The following figures show the water use categories that comprise each tier for the residential and duplex customer class. The calculation of the bi-monthly use in each Base-Extra category by customer class and tier is shown in Appendix A.

**Figure 12: Single Family Residential and Duplex Tier Demand by Base-Extra Category**



The following figure shows the total volume of each Base-Extra Category by Single Family Residential and Duplex tier.

**Figure 13: Base-Extra Category by Tier (CCF)**



## 6.2 Revenue and Expense Allocation Categories

The first step in the cost of service evaluation process is to develop allocation categories where revenues and expenses related to the same purpose are grouped together. BWA worked with District staff to analyze the District’s budget on a line-by-line basis and to assign each expenditure and revenue to the appropriate allocation category. The following contains descriptions of the allocation categories and an explanation of how they are allocated to functional components:

- **Customer** costs are fixed expenditures that relate to operational support activities, including billing, customer service, and meter reading support. These expenditures are common to all customers, regardless of the meter size serving a property or actual water use.
- **Marin Water** expenses are the District’s chemical and electricity costs to treat water from the District’s watershed. These costs are allocated to Base-Extra Categories based on the supply allocation described later in this section.
- **Sonoma Water** expenses are costs related to purchasing water from Sonoma Water and treating it to blend with the District’s local water supplies. These costs are allocated to Base-Extra Categories based on the supply allocation described later in this section.
- **Recycled Water** expenses are costs related to purchasing and distributing recycled water.
- **Administration Support** expenses are related to the District’s administrative overhead functions such as finance, information technology, and human resources. These costs are related to system capacity and recovered partially by MEUs and per unit of water demand.

- **Conservation** expenses are related to the District's efforts to encourage customers to conserve water and reduce peak summer demands. Conservation costs are allocated to the Summer and Peak Demands.
- **Watershed** expenses and offsetting revenues from the WMF are related to the operation and maintenance of the District's watershed. Watershed expenses are fixed and benefit all customers, as the watershed is the primary source of water supply. These costs are recovered per unit of potable and raw water sold.
- **Facility Support** expenses are related to the District's general and administrative functions such as warehousing, facilities and automotive service costs. Facility Support costs are related to the capacity of the District and recovered per MEU.
- **Water Quality Lab** expenses are related to testing and monitoring water quality. These costs are recovered per unit of potable water sold.
- **Electricity** expenses are related to the electricity expenses incurred by the District excluding electricity used for water treatment. These costs are recovered per unit of potable water sold and partially by MEUs.
- **Public Information** expenses are related to the public information activities and are recovered by a combination of MEU's, per unit of potable water sold and through the Base-Extra categories.
- **Potable Supply** expenses are related to improving the District's potable water supply. These costs are allocated to Base-Extra categories based on peak month demands.
- **Backflow** expenses are related to preventing backflow in the system including providing and testing backflow prevention devices a portion of these devices are specifically used to prevent recycled water backflow. These costs are recovered by MEUs and per unit of recycled water sold.
- **CIP** expenses are related to baseline capital projects including cash funded capital and debt service. These expenses are offset by capital related revenue including connection charges and fees as well as the CMF. These costs are recovered through Base-Extra Categories based on peak month use as well as raw water units and private fire capacity charges.
- **Distribution** expenses are related to maintaining and operating the District's potable water and recycled water distribution systems. These costs are recovered through, Base-Extra Categories based on peak month use as well as recycled water charges and private fire capacity charges.
- **Water System** expenses are the costs of maintaining and operating the water system, not including distribution. These costs are recovered through Base-Extra Categories based on peak month use as well as raw water units and private fire capacity charges.
- **Treatment** expenses consist of the costs to operate and maintain the District's water treatment plants, which are not related to the volume of water treated. These costs are recovered per unit of potable water sold.

The following table shows the projected expenses and offsetting revenues for FY 2024 in each allocation category. The final allocation amount for each allocation category is the net of expenses less offsetting revenues. Offsetting revenues consist of interest revenue, special read fees, connection fees, the CMF, and the WMF and offset specific allocation categories related to the revenue. Detailed line item revenues, functional allocations, and expenses are shown in Appendix A.

**Table 16: Allocation Categories for Functional Allocation**

Allocation Category	Allocation Expenses	Offsetting Revenues	Allocation Amount
Customer Only	\$4,482,707	\$0	\$4,482,707
Marin Water	\$5,152,502	\$0	\$5,152,502
Sonoma Water	\$9,483,466	\$0	\$9,483,466
Recycled Water	\$529,347	\$0	\$529,347
Admin Support	\$19,358,104	\$453,248	\$18,904,857
Conservation	\$2,709,766	\$0	\$2,709,766
Watershed	\$7,779,465	\$5,386,376	\$2,393,089
Facility Support	\$6,726,240	\$0	\$6,726,240
Water Quality Lab	\$2,574,021	\$0	\$2,574,021
Electricity	\$1,897,941	\$0	\$1,897,941
Public Information	\$1,195,871	\$0	\$1,195,871
Potable Supply	\$6,894,221		\$6,894,221
Backflow	\$919,290	\$0	\$919,290
As CIP	\$37,632,094	\$17,928,880	\$19,703,214
Distribution	\$6,603,277		\$6,603,277
Water System	\$15,987,819		\$15,987,819
Treatment	\$5,022,469		\$5,022,469
<b>Functional Allocation \$</b>	<b>\$134,948,600</b>	<b>\$23,768,504</b>	<b>\$111,180,096</b>
<b>Functional Allocation %</b>			<b>100%</b>
<b>Revenue Requirement</b>			<b>\$111,180,097</b>

### 6.3 Allocations Between Fixed Capacity and Variable Water Usage Functions

Water utilities have employed a wide range of approaches or perspectives for allocating and recovering their costs for providing service, often through a combination of fixed and variable charges. The percentage of revenues derived from the fixed and variable charges should be proportional to each system’s expenditures and must not exceed the cost of providing service.

Many of the District’s costs are fixed costs that do not vary by the level of service provided, such as operational and staff costs, as well as costs for building and maintaining infrastructure. Some of these costs are related to the number of customers but the majority of the fixed costs are related to the total capacity of the water system. Fixed costs related to system capacity can

reasonably be apportioned by meter size or variable, usage-based rate recovery in recognition that both units of measure reasonably reflect customer usage driving the District to incur capacity-related costs. For example, a share of the fixed cost of salaries related to water production can reasonably be recovered from usage-based charges as these costs are incurred to provide water supply to meet customer demand or from a fixed charge based on a customer's meter size which reflects the magnitude of water a customer can pull from the water system. Likewise, debt service payments may be fixed annual costs, but it is reasonable to recover some of these costs from usage-based rates as the costs are incurred to fund infrastructure that will improve the water delivery system.

While there is no single correct approach, BWA believes that costs should be allocated within a reasonable range that reflects both a) underlying cost causation, to the extent such causation can reasonably be determined or estimated, and b) the policy preferences of the agency in cases where a range of reasonable approaches can be justified.

## 6.4 Functional Cost Allocation

The next step in the cost of service analysis is to allocate the net expenses (expenses less offsetting revenues) in each allocation category to the District's functional components. A functional component is where portions of an allocation category's net expenses are most reasonably recovered by a specific allocation unit. An example of this is costs allocated to the customer functional component are most reasonably recovered on a per customer basis. Just as there is no single correct approach for fixed and variable cost allocation, there is no single correct approach for functional cost allocation. Functional cost allocations should be within a reasonable range that reflects the considerations described in the previous section. This process is intended to proportionately allocate costs to each functional component to determine the revenue requirement for each component. The allocations to each functional component were based on input from District staff and BWA analysis of customer, water supply, and metered water demand data. A description of the allocations for each allocation category is included in Section 6.2. Supporting calculations for the allocations are included in Appendix A.

## 6.5 Allocation to Fixed Cost Functional Components

The following section describes the functional components where the revenue requirement is recovered from fixed units (e.g., services, MEUs and EFUs).

### Fixed Cost Functional Components

- Costs allocated to the **Customer** functional component are related to the number of accounts and are reasonably recovered on a per account basis.
- Costs allocated to the **Capacity** functional component are related to the size of the District's water system and are reasonably recovered per meter equivalent unit (MEU).

- Costs allocated to the **Private Fire Capacity** functional component are related to private fire capacity. The revenue requirement for this functional category is recovered per equivalent fire capacity unit (EFU).

The following table shows a breakdown of the water utility’s allocation to fixed cost functional categories as described in Section 6.2.

**Table 17: Allocation to Fixed Cost Functional Components**

Allocation Category	Allocation Amount	Customer	Capacity	Private Fire Capacity
Customer Only	\$4,482,707	100.0%		
Marin Water	\$5,152,502			
Sonoma Water	\$9,483,466			
Recycled Water	\$529,347			
Admin Support	\$18,904,857		60.0%	
Conservation	\$2,709,766			
Watershed	\$2,393,089			
Facility Support	\$6,726,240		100.0%	
Water Quality Lab	\$2,574,021			
Electricity	\$1,897,941		20.0%	
Public Information	\$1,195,871	33.3%		
Potable Supply	\$6,894,221			
Backflow	\$919,290		55.0%	
As CIP	\$19,703,214			1.3%
Distribution	\$6,603,277			1.3%
Water System	\$15,987,819			1.3%
Treatment	\$5,022,469			
<b>Functional Allocation \$</b>	<b>\$111,180,096</b>	<b>\$4,881,330</b>	<b>\$18,954,351</b>	<b>\$534,812</b>
<b>Functional Allocation %</b>	<b>100%</b>	<b>4.39%</b>	<b>17.05%</b>	<b>0.48%</b>
<b>Revenue Requirement</b>	<b>\$111,180,097</b>	<b>\$4,881,330</b>	<b>\$18,954,352</b>	<b>\$534,812</b>

A description of the allocations for each allocation category is included in Section 6.2. Supporting calculations for the allocations are included in Appendix A. The Functional Allocation dollars are calculated by taking the sum of the products of the allocation percentages in each functional component multiplied by the allocation amounts. The Functional Allocation percentage is calculated by dividing the Functional Allocation dollars for each functional component by the total Functional Allocation dollars. The Functional Allocation percentage for each functional component is then multiplied by the total revenue requirement. The revenue requirement was identified in Section 5.3.



## 6.6 Fixed Cost Functional Component Unit Costs

The following table describes the allocation units used to derive the unit cost by functional component. Fixed allocation units are services and MEUs shown in Table 6.

**Table 18: Fixed Allocation Units**

Functional Component	Allocation Units	Allocation Units	Unit of Measure	Description
Customer	Number of Services Connections	61,845	#	Total number of active water and private fireline services
Water Capacity	Meter Equivalent Units	90,561	MEU	Total amount of active water customer meter equivalent units
Private Fire Capacity	Private Fireline Equivalent Fire Units	10,803	EFU	Total amount of private fireline equivalent fire units per month

The following table shows the allocation units and total revenue requirement by functional component. The allocation units used for each functional component are the units related to the service provided by the functional component. The revenue requirement divided by the allocation units for each functional component provide each functional component's unit rate.

**Table 19: Fixed Annual Unit Costs by Functional Component**

Allocation Units	Customer	Water Capacity	Private Fireline Capacity
<i>Allocation Unit of Measure</i>	<i>#</i>	<i>MEU</i>	<i>EFU</i>
Allocation Units	61,845	90,561	10,803
Revenue Requirement	<u>\$4,881,330</u>	<u>\$18,954,352</u>	<u>\$534,812</u>
<b>Annual Unit Cost</b>	<b>\$78.93</b>	<b>\$209.30</b>	<b>\$49.51</b>

## 6.7 Function Allocation to Variable Cost Components

The following section describes the functional components where the revenue requirement is recovered from variable CCF units (100 cubic feet or 748 gallons). The definition of the functional components are as follows:

- **Potable Water costs** are related to all potable water sold in the District.
- **Base Demand, Average Demand, Summer Demand and Peak Demand** costs are related to meeting different levels of water demand.
- **Recycled** costs are related to purchasing and distributing recycled water.
- **Raw Water** costs are related to providing raw water and exclude treatment and distribution costs.

The following table shows a breakdown of the water utility’s allocation to variable cost functional components as described in Section 6.2.

**Table 20: Cost Allocation to Variable Cost Recovery Functional Components**

Allocation Category	Allocation Amount	Potable Water	Base Demand	Average Demand	Summer Demand	Peak Demand	Recycled	Raw Water
Customer Only	\$4,482,707							
Marin Water	\$5,152,502		75.4%	24.6%	0.0%	0.0%		
Sonoma Water	\$9,483,466		0.0%	65.4%	25.7%	8.9%		
Recycled Water	\$529,347						100.0%	
Admin Support	\$18,904,857	38.5%					0.9%	0.6%
Conservation	\$2,709,766				63.3%	33.7%		3.0%
Watershed	\$2,393,089	98.5%						1.5%
Facility Support	\$6,726,240							
Water Quality Lab	\$2,574,021	100.0%						
Electricity	\$1,897,941	80.0%						
Public Information	\$1,195,871	32.0%			20.8%	12.1%	0.9%	1.0%
Potable Supply	\$6,894,221		44.3%	34.2%	13.6%	7.9%		
Backflow	\$919,290						45.0%	
As CIP	\$19,703,214		43.1%	33.3%	13.2%	7.7%		1.5%
Distribution	\$6,603,277		42.5%	32.8%	13.1%	7.6%	2.7%	
Water System	\$15,987,819		43.1%	33.3%	13.2%	7.7%		1.5%
Treatment	\$5,022,469	100.0%						
<b>Functional Allocation \$</b>	<b>\$111,180,096</b>	<b>\$19,135,762</b>	<b>\$25,127,179</b>	<b>\$23,868,866</b>	<b>\$10,921,086</b>	<b>\$5,690,846</b>	<b>\$1,300,896</b>	<b>\$764,967</b>
<b>Functional Allocation %</b>	<b>100%</b>	<b>17.21%</b>	<b>22.60%</b>	<b>21.47%</b>	<b>9.82%</b>	<b>5.12%</b>	<b>1.17%</b>	<b>0.69%</b>
<b>Revenue Requirement</b>	<b>\$111,180,097</b>	<b>\$19,135,762</b>	<b>\$25,127,179</b>	<b>\$23,868,867</b>	<b>\$10,921,086</b>	<b>\$5,690,846</b>	<b>\$1,300,896</b>	<b>\$764,967</b>

A description of the allocations for each allocation category is included in Section 6.2. Supporting calculations for the allocations are included in Appendix A. The functional allocation dollars are calculated by taking the sum of the products of the allocation percentages in each functional component multiplied by the allocation amounts. The functional allocation percentage is calculated by dividing the functional allocation dollars for each functional component by the total functional dollars. The functional allocation percentage for each functional component is then multiplied by the total revenue requirement. The revenue requirement was identified in Section 5.3.

## 6.8 Volumetric Unit Costs by Functional Components

The following table describes the volumetric allocation demand units used to derive the unit cost by function.

**Table 21: Volumetric Allocation Units (FY 2024)**

Functional Component	Allocation Units (CCF)	Description
Potable Water	8,738,499	Projected potable water units sold by the District
Base Demand	4,930,955	Projected base demand water units sold by the District
Average Demand	3,047,773	Projected average demand water units sold by the District
Summer Demand	564,570	Projected summer demand water units sold by the District
Peak Demand	195,200	Projected peak demand water units sold by the District
Recycled	239,494	Projected recycled water units sold by the District
Raw Water	143,748	Projected raw water units sold by the District
Watershed	8,882,246	Projected potable water and raw water units sold by the District

The following table shows the allocation units and total revenue requirement by functional component. The allocation units (Table 21) used for each functional component (Table 20) are the units related to the service provided by the functional component. The revenue requirement divided by the allocation units for each functional component provide each functional component's unit cost.

**Table 22: Volumetric Unit Costs by Function**

Allocation Units	Potable Water	Base	Average Demand	Summer Demand	Peak Demand	Recycled	Raw Water	Watershed
Allocation Unit of Measure	CCF	CCF	CCF	CCF	CCF	CCF	CCF	CCF
Allocation Units	8,738,499	4,930,955	3,047,773	564,570	195,200	239,494	143,748	8,882,246
Revenue Requirement	<u>\$19,135,762</u>	<u>\$25,127,179</u>	<u>\$23,868,867</u>	<u>\$10,921,086</u>	<u>\$5,690,846</u>	<u>\$1,300,896</u>	<u>\$764,967</u>	<u>\$111,180,097</u>
Unit Cost (\$/CCF)	<b>\$2.19</b>	<b>\$5.10</b>	<b>\$7.83</b>	<b>\$19.34</b>	<b>\$29.15</b>	<b>\$5.43</b>	<b>\$5.32</b>	<b>\$12.52</b>

## 6.9 Multi-Year Revenue Requirements

Some of the District's rates recover costs which increase independently of the overall rate revenue increases. Costs allocated to fixed charges are projected to increase related to inflation. Recycled water cost increases are also related to inflation and debt service payments. Volumetric rates recover the remaining rate revenue requirement.

**Table 23: Multi-Year Revenue Requirements**

<b>Multi-Year Revenue Requirements</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
<i>Inflation</i>		5.0%	5.0%	5.0%
<b>Rate Revenue (excluding demand changes)</b>	\$111,180,097	\$131,077,985	\$147,069,499	\$158,144,432
<b>Revenue Increasing Independently</b>				
Customer	\$4,881,330	\$5,125,397	\$5,381,667	\$5,650,750
Capacity	\$18,954,352	\$19,902,069	\$20,897,173	\$21,942,031
Fire Capacity	\$534,812	\$561,553	\$589,631	\$619,112
Recycled				
Recycled Purchase	\$165,360	\$175,282	\$185,798	\$196,946
Recycled Debt	\$363,987	\$364,049	\$364,447	\$364,111
Backflow and Admin	<u>\$771,549</u>	<u>\$810,127</u>	<u>\$850,633</u>	<u>\$893,165</u>
Total Recycled	\$1,300,896	\$1,349,457	\$1,400,879	\$1,454,223
<b>Total Recycled</b>		<b>3.73%</b>	<b>3.81%</b>	<b>3.81%</b>
Total Amount Increasing with Cost Inflation	<u>\$25,671,390</u>	<u>\$26,938,476</u>	<u>\$28,269,349</u>	<u>\$29,666,116</u>
<b>Revenue Requirement Linked to Revenue Increases</b>	<b>\$85,508,706</b>	<b>\$104,139,509</b>	<b>\$118,800,151</b>	<b>\$128,478,316</b>
Projected Demand (CCF)	8,738,499	8,913,269	9,091,534	9,273,365
<b>Revenue Requirement (\$ per CCF)</b>	<b>\$9.79</b>	<b>\$11.68</b>	<b>\$13.07</b>	<b>\$13.85</b>
<b>Revenue Requirement Linked to Revenue Increases</b>		<b>19.40%</b>	<b>11.84%</b>	<b>6.03%</b>

## 7 WATER RATE DERIVATION

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### 7.1 Rate Structure Recommendations

The proposed rates incorporate some modifications to the District's water rate structure designed to align rates with the current cost of providing service and reflect policy input provided by the District. Due to these modifications, impacts to water bills will vary based on customer class and water use when the first-year proposed rates are implemented.

The proposed water structure remains relatively consistent with the District's existing rate structure but incorporates some modifications designed to align rates with current projected costs of service and changes in customer use patterns. Rate structure recommendations are described as follows:

- Merge the Duplex Class into the Single-Family Residential Class: BWA reviewed the District's customer usage data in these two classes, including peak and average usage, and identified similar usage trends and shared customer behavior. The similar customer and usage characteristics indicate it is more reasonable to combine these customer classes into the same rate structure.
- Merge the Single-Family Irrigation Class into the Commercial, Institutional, and Irrigation Class: Similarly, analysis of customer usage characteristics and patterns shows that Single-Family Irrigation customers have similar usage characteristics to Irrigation customers in the Commercial, Institutional, and Irrigation class. Customers grouped into this class place varied peak demands on the system and have rate structures tailored to their specific usage.
- Eliminate Seasonal Tiers for Residential Classes: Discontinue seasonal tier changes. The inclining block tier structure accounts for seasonality because customers placing above-average demands on the water system (which will likely occur more often in hotter months) will be paying rates in higher tiers reflecting the increased costs associated with serving their higher water use demands.
- Single Family Residential and Duplex Class: Realign tier break points to reflect current usage patterns, accounting for seasonal variability, the need to meet peak demand and the functional cost allocations to usage categories.
- Recycled: Move from three tiers to a single tier, uniform rate. This reflects the District's contractual cost structure for purchasing recycled water from the Las Gallinas Valley Sanitary District, which reflects the District's contributions to the recent upgrades to the Las Gallinas Valley Sanitary District recycled water facility. Under this agreement, the unit costs for the purchase and delivery of recycled water to the District remain relatively flat despite changes in the volume of use.

- **Watershed Fee:** Charge the watershed fee as a volumetric rate instead of as a fixed charge to proportionally recover the costs of watershed management based on a customer’s utilization of watershed resources.
- **Fixed Charge Meter Equivalent Unit Ratios:** Adjust meter equivalent ratios to more proportionally reflect current system capacity utilization.
- **Drought Rates:** Establish drought surcharges tied to water shortage levels as set forth in the District’s recently updated Water shortage Contingency Plan, which helps the District recoup revenue shortfalls during periods of drought and needed water conservation.

## 7.2 Potable Unit Cost

The potable volumetric rates are determined by the amount of each classes’ projected use by Base-Extra Category. The total unit cost for each Base-Extra Category is the sum of the potable water unit rate, which applies to every unit of potable water, and the Base-Extra Category unit rate. The unit rates in the table below are used to calculate all the potable rates in the following sections.

**Table 24: Potable Water Unit Cost by Base-Extra Category**

Total Demand Category Unit Cost	Potable Water	Base Demand	Average Demand	Summer Demand	Peak Demand
<i>Allocation Unit of Measure</i>	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Allocation Units	8,738,499	4,930,955	3,047,773	564,570	195,200
Revenue Requirement	<u>\$19,135,762</u>	<u>\$24,730,250</u>	<u>\$23,562,434</u>	<u>\$10,799,230</u>	<u>\$5,620,062</u>
<b>Unit Cost (\$/CCF)</b>	<b>\$2.19</b>	<b>\$5.02</b>	<b>\$7.73</b>	<b>\$19.13</b>	<b>\$28.79</b>
Potable Water Unit Cost (\$/CCF)		<u>\$2.19</u>	<u>\$2.19</u>	<u>\$2.19</u>	<u>\$2.19</u>
<b>Total Demand Category Unit Cost (\$/CCF)</b>		<b>\$7.21</b>	<b>\$9.92</b>	<b>\$21.32</b>	<b>\$30.98</b>

## 7.3 Single-Family and Duplex Tier Rate Derivation

The recommended single-family and duplex rate structure consists of four tiers. Tier amounts are for the bi-monthly billing periods. The tier breaks reflect reasonable increments of water within each tier given a number of factors, including the seasonal variability of water use within the District (as shown on Table 12), the functional cost allocation within each Base-Extra Category, as well as the requirement that the system must be designed to meet peak use.

- **Tier 1: 0 to 15 CCF** – The Tier 1 breakpoint at 15 CCF captures all of the Base water use which is comprised of local supply, and some Average water use to capture seasonal variability. Roughly 66% of use is projected to occur in Tier 1.
- **Tier 2: >15 to 25 CCF** – The Tier 2 breakpoint at 25 CCF consists of only Average use, which reflects local supply as well imported water. Roughly 15% of use is projected to occur in Tier 2.

- **Tier 3: >25 to 80 CCF** – The Tier 3 breakpoint at 80 CCF includes a blend of Average, Summer and Peak use, and is mostly comprised of imported water supply. Roughly 16% of use is projected to occur in Tier 3.
- **Tier 4: > 80 CCF** – Usage in Tier 4 is comprised of Average, Summer and Peak use, but reflects mostly Peak use. Tier 4 is comprised of imported water supply. Roughly 3% of use is projected to occur in Tier 4.

These tier breaks facilitate the proportional allocation of cost within the Single-Family and Duplex class and reflect the District’s current consumption pattern.

### *Single-Family and Duplex Tier Revenue Requirement*

Building off the revenue requirement for each Base-Extra Category the revenue requirement for each tier must be determined. The tier revenue requirement for a Base-Extra Category is calculated by multiplying the Base-Extra Category total unit cost, found in Table 24, by the projected tier use in each Base-Extra Category, shown in Appendix A, (i.e., Base-Extra Category Unit Cost x Projected Units of Demand = Revenue Requirement). The total revenue requirement for each of these tiers is the sum of the revenue requirements for each Base-Extra Category.

**Table 25: Single-Family and Duplex Tier Revenue Requirements (FY 2024)**

<b>SFR+DUP Rate Derivation</b>	<b>Base</b>	<b>Average</b>	<b>Summer</b>	<b>Peak</b>	<b>Total</b>
Total Allocation Units	4,930,955	3,047,773	564,570	195,200	8,738,499
Class % of Total Units	61.8%	58.8%	71.6%	79.9%	
Residential Demand (CCF)	3,048,064	1,793,442	404,132	156,054	5,401,692
Unit Rates (\$/CCF)	\$7.29	\$10.02	\$21.53	\$31.34	
<b>Portion of Demand by Tier</b>					
Tier 1	86.1%	13.9%	0.0%	0.0%	65.5%
Tier 2	0.0%	100.0%	0.0%	0.0%	15.0%
Tier 3	0.0%	51.6%	42.4%	6.1%	16.3%
Tier 4	0.0%	22.5%	17.9%	59.6%	3.2%
<b>Projected Units of Demand by Tier (CCF)</b>					
Tier 1	3,048,064	490,706	-	-	3,538,770
Tier 2	-	809,435	-	-	809,435
Tier 3	-	454,316	373,392	53,466	881,174
Tier 4	-	38,985	30,740	102,588	172,313
<b>Revenue Requirement by Tier</b>					
Tier 1	\$22,220,387	\$4,916,879	\$0	\$0	\$27,137,265
Tier 2	\$0	\$8,110,536	\$0	\$0	\$8,110,536
Tier 3	\$0	\$4,552,245	\$8,039,139	\$1,675,627	\$14,267,010
Tier 4	\$0	\$390,627	\$661,830	\$3,215,115	\$4,267,572

### *Single-Family and Duplex Tier Unit Rates*

The unit rate for each residential tier is calculated by dividing the total revenue requirement from the prior table by the projected demand for each residential tier from the previous table.

**Table 26: Single-Family and Duplex Tier Unit Rates**

Residential Tier Rate Derivation	Total Revenue Requirement	Projected Demand (CCF)	Unit Rate (\$/CCF)
Tier 1	\$27,137,265	3,538,770	<b>\$7.67</b>
Tier 2	\$8,110,536	809,435	<b>\$10.02</b>
Tier 3	\$14,267,010	881,174	<b>\$16.19</b>
Tier 4	\$4,267,572	172,313	<b>\$24.77</b>

## 7.4 Multi-Family Tier Rate Derivation

The recommended residential rate structure consists of four tiers. Tiers are per living unit and tier amounts are for the bi-monthly billing period. Multi-Family customers are typically also served by an irrigation meter, and as such, place different types of demands on the water system when compared to single-family residences and duplexes. The tier breaks reflect reasonable increments of water within each tier given a number of factors, including the seasonal variability of water use within the District, the functional cost allocation within each Base-Extra Category, as well as the requirement that the system must be designed to meet peak use.

- **Tier 1: 0 to 10 CCF** – The Tier 1 breakpoint at 10 CCF captures all of the Base water use which is comprised of local supply, and some Average water use to capture seasonal variability. Roughly 84% of use is projected to occur in Tier 1.
- **Tier 2: >10 to 20 CCF** – The Tier 2 breakpoint at 20 CCF consists of Average use and some Summer use to capture seasonal variability. Roughly 13% of use is projected to occur in Tier 2.
- **Tier 3: >20 to 28 CCF** – The Tier 3 breakpoint at 28 CCF includes a blend of Average, Summer and Peak use, and is mostly comprised of imported water supply. Roughly 2% of use is projected to occur in Tier 3.
- **Tier 4: > 28 CCF** – Usage in Tier 4 is comprised of Average, Summer and Peak use, but reflects mostly Peak use. Tier 4 is comprised of imported water supply. Roughly 1% of use is projected to occur in Tier 4.

### *Multi-Family Tier Revenue Requirement*

Building off the revenue requirement for each Base-Extra Category the revenue requirement for each tier must be determined. The tier revenue requirement for a Base-Extra Category is calculated by multiplying the Base-Extra Category total unit cost, found in Table 24, by the projected tier use in each Base-Extra Category, shown in Appendix A, (i.e., Base-Extra Category Unit Cost x Projected Units of Demand = Revenue Requirement). The total revenue requirement for each of these tiers is the sum of the revenue requirements for each Base-Extra Category.





**Table 27: Multi-Family Residential Tier Revenue Requirements**

<b>Multi-Family Rate Derivation</b>	<b>Base</b>	<b>Average</b>	<b>Summer</b>	<b>Peak</b>	<b>Total</b>
Total Allocation Units	4,930,955	3,047,773	564,570	195,200	8,738,499
Class % of Total Units	13.6%	16.3%	3.2%	0.7%	
Residential Demand (CCF)	670,667	498,302	18,110	1,457	1,188,537
Unit Rates (\$/CCF)	\$7.29	\$10.02	\$21.53	\$31.34	
<b>Portion of Demand by Tier</b>					
Tier 1	67.0%	33.0%	0.0%	0.0%	84.3%
Tier 2	0.0%	97.5%	2.5%	0.0%	13.0%
Tier 3	0.0%	57.7%	41.6%	0.6%	2.0%
Tier 4	0.0%	29.8%	54.0%	16.2%	0.7%
<b>Projected Units of Demand by Tier (CCF)</b>					
Tier 1	670,667	330,968	-	-	1,001,635
Tier 2	-	151,196	3,833	-	155,029
Tier 3	-	13,723	9,896	145	23,764
Tier 4	-	2,415	4,381	1,312	8,108
<b>Revenue Requirement by Tier</b>					
Tier 1	\$4,889,161	\$3,316,302	\$0	\$0	\$8,205,464
Tier 2	\$0	\$1,514,981	\$82,533	\$0	\$1,597,514
Tier 3	\$0	\$137,507	\$213,059	\$4,553	\$355,120
Tier 4	\$0	\$24,197	\$94,327	\$41,115	\$159,639

*Multi-Family Tier Unit Rates*

The unit rate for each multi-family tier is calculated by dividing the total revenue requirement from the prior table by the projected demand for each multi-family tier from the previous table.

**Table 28: Multi-Family Tier Unit Rates**

<b>Multi-Family Tier Rate Derivation</b>	<b>Total Revenue Requirement</b>	<b>Projected Demand (CCF)</b>	<b>Unit Rate (\$/CCF)</b>
Tier 1	\$8,205,464	1,001,635	<b>\$8.19</b>
Tier 2	\$1,597,514	155,029	<b>\$10.30</b>
Tier 3	\$355,120	23,764	<b>\$14.94</b>
Tier 4	\$159,639	8,108	<b>\$19.69</b>

**7.5 Non-Residential Tier Rate Derivation**

Where residential and multi-family customers are provided tier allocations (detailed above), non-residential customers are provided a water allocation, or Tier 1 usage, based on the District's estimate of the basic water requirements for that particular property. Unlike the residential and multi-family customer classes whose customer's generally demonstrate homogenous water demand patterns, non-residential water demand patterns can vary significantly between

customers. Consequently, the District develops individual tiers for customers, which are intended to reflect non-peak and peak usage. It is, however, important that the District continually revisit these allocations and adjust them as necessary in order to continue to equitably recover costs from its non-residential customers. The recommended rate structure consists of three tiers.

- **Tier 1: 0% to 85% of Baseline** – The Tier 1 represents efficient use. Roughly 84% of use is projected to occur in Tier 1.
- **Tier 2: >85% to 150% of Baseline** – The Tier 2 represents expected use relative to a customer’s baseline. Roughly 8% of use is projected to occur in Tier 2.
- **Tier 3: > 150% of Baseline** – Usage in Tier 3 represents high use. Roughly 8% of use is projected to occur in Tier 3.

### *Non-Residential Tier Revenue Requirement*

Building off the revenue requirement for each Base-Extra Category the revenue requirement for each tier must be determined. The tier revenue requirement for a Base-Extra Category is calculated by multiplying the Base-Extra Category total unit cost, found in Table 24, by the projected tier use in each Base-Extra Category, shown in Appendix A, (i.e., Base-Extra Category Unit Cost x Projected Units of Demand = Revenue Requirement). The total revenue requirement for each of these tiers is the sum of the revenue requirements for each Base-Extra Category. Figure 12 illustrates the amount of demand of each Base-Extra demand in each tier falls into

**Table 29: Non-Residential Tier Revenue Requirements (FY 2024)**

<b>Non-Residential Rate Derivation</b>					
	<b>Base</b>	<b>Average</b>	<b>Summer</b>	<b>Peak</b>	<b>Total</b>
Total Allocation Units	4,930,955	3,047,773	564,570	195,200	8,738,499
Class % of Total Units	24.6%	24.8%	25.2%	19.3%	
Non-Residential Demand (CCF)	1,212,225	756,029	142,327	37,688	2,148,270
Unit Rates (\$/CCF)	\$7.29	\$10.02	\$21.53	\$31.34	
<b>Portion of Demand by Tier</b>					
Tier 1	67.5%	30.4%	2.1%	0.0%	83.6%
Tier 2	0.0%	60.9%	31.2%	7.9%	7.7%
Tier 3	0.0%	58.6%	28.1%	13.3%	8.6%
<b>Projected Units of Demand by Tier (CCF)</b>					
Tier 1	1,212,225	546,297	38,353	-	1,796,875
Tier 2	-	100,888	51,704	13,009	165,600
Tier 3	-	108,845	52,270	24,680	185,795
<b>Revenue Requirement by Tier</b>					
Tier 1	\$8,837,117	\$5,473,892	\$825,750	\$0	\$15,136,759
Tier 2	\$0	\$1,010,895	\$1,113,181	\$407,687	\$2,531,763
Tier 3	\$0	\$1,090,628	\$1,125,380	\$773,469	\$2,989,476

### Non-Residential Tier Unit Rates

The unit rate for each non-residential tier is calculated by dividing the total revenue requirement from the prior table by the projected demand for each non-residential tier from the previous table.

**Table 30: Non-Residential Tier Unit Rates**

Non-Residential Tier Rate Derivation	Total Revenue Requirement	Projected Demand (CCF)	Unit Rate (\$/CCF)
Tier 1	\$15,136,759	1,796,875	<b>\$8.42</b>
Tier 2	\$2,531,763	165,600	<b>\$15.29</b>
Tier 3	\$2,989,476	185,795	<b>\$16.09</b>

### 7.6 Recycled Water Rate Derivation

The recommended recycled rate is calculated by dividing the recycled water revenue requirement by the projected recycled water demand.

**Table 31: Recycled Water Rate Derivation**

Allocation Units	Recycled
<i>Allocation Unit of Measure</i>	<i>CCF</i>
Allocation Units	239,494
Revenue Requirement	<u>\$1,300,896</u>
<b>Unit Cost (\$/CCF)</b>	<b>\$5.43</b>

### 7.7 Raw Water Rate Derivation

The recommended raw water rate is calculated by dividing the raw water revenue requirement by the projected raw water demand.

**Table 32: Raw Water Rate Derivation**

Allocation Units	Raw Water
<i>Allocation Unit of Measure</i>	<i>CCF</i>
Allocation Units	143,748
Revenue Requirement	<u>\$764,967</u>
<b>Unit Cost (\$/CCF)</b>	<b>\$5.32</b>

### 7.8 Watershed Fee Derivation

The District incurs costs for managing the watershed, including administration, watershed protection, fisheries, vegetation and wildlife management, and watershed maintenance. Managing the watershed is necessary for the provision of water because it maintains and preserves the District's largest source of water supply, and as such, these activities maintain water supply, water quality and reliability. The recommended volumetric watershed fee is calculated by dividing the watershed fee revenue requirement by the projected total potable and raw water demand (allocation units). The fee is assessed on each CCF of water sold as each

customer benefits from the maintenance of the District’s watershed lands regardless of which tier the water is sold. The rate is derived annually in the following table to reflect the allocation units increasing based on water demand projections while the expenses increase with projected inflation. The determination of the watershed revenue requirement is shown in detail in Appendix A.

**Table 33: Volumetric Watershed Fee Derivation**

<b>Allocation Units</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
<i>Allocation Unit of Measure</i>	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Allocation Units	8,882,246	9,057,016	9,235,282	9,417,112
Revenue Requirement	<u>\$5,386,376</u>	<u>\$5,655,695</u>	<u>\$5,938,480</u>	<u>\$6,235,404</u>
<b>Unit Cost (\$/CCF)</b>	<b>\$0.61</b>	<b>\$0.62</b>	<b>\$0.64</b>	<b>\$0.66</b>

## 7.9 Bi-Monthly Fixed Charge Derivations

Proposed fixed charges are designed to recover the standing capacity and per customer (or per service) costs to serve each active service connection.

### *Bi-Monthly Fixed Service Charge*

This charge applies to all active services. It recovers the Customer functional component revenue requirement on a per service basis and the Capacity functional component revenue requirement on a per MEU basis. The Customer unit cost is the same for all meter sizes and the unit costs per MEU varies by meter size. Single-Family and Duplex MEU ratios are based on a three-year annual aggregated maximum bi-monthly billing period demand. The others are based on the AWWA meter equivalent ratio for each meter size as described in Section 3.2. Unit costs were calculated in Section 6.6. Analysis of actual District customer data within meter sizes found that the more similar use patterns among residential single family and duplex classes warranted use of the District’s aggregate data over the past three-years to determine the single family residential and duplex MEU ratios. This analysis also found that the variability of demand within other customer classes supported continued use of existing AWWA ratios, which continue to reasonably reflect the demand these customers place on the water system.

**Table 34: Monthly Fixed Water Service Charge Derivation**

**Base Water Charge Derivation**

Allocation Units	Customer	Water Capacity
<i>Allocation Unit of Measure</i>	#	MEU
Allocation Units	61,845	90,561
Revenue Requirement	<u>\$5,508,630</u>	<u>\$18,954,352</u>
<b>Annual Unit Cost</b>	<b>\$78.93</b>	<b>\$209.30</b>

Base Water Charge Derivation	Meter Equivalent Ratio	Annual Customer	Annual Water Capacity	Bi-Monthly Fixed Service Charges
<i>Meter Size</i>	MEU	\$	\$	\$
<i>SFR + Duplex</i>				
5/8"	1.00	\$78.93	\$209.30	<b>\$48.04</b>
3/4"	1.40	\$78.93	\$293.02	<b>\$61.99</b>
1"	1.70	\$78.93	\$355.81	<b>\$72.46</b>
1.5"	3.70	\$78.93	\$774.41	<b>\$142.22</b>
2"	6.00	\$78.93	\$1,255.79	<b>\$222.45</b>
<i>All Other Customer Classes</i>				
5/8"	1.00	\$78.93	\$209.30	<b>\$48.04</b>
3/4"	1.50	\$78.93	\$313.95	<b>\$65.48</b>
1"	2.50	\$78.93	\$523.25	<b>\$100.36</b>
1.5"	5.00	\$78.93	\$1,046.49	<b>\$187.57</b>
2"	8.00	\$78.93	\$1,674.39	<b>\$292.22</b>
3"	20.00	\$78.93	\$4,185.98	<b>\$710.82</b>
4"	40.00	\$78.93	\$8,371.95	<b>\$1,408.48</b>
6"	70.00	\$78.93	\$14,650.92	<b>\$2,454.97</b>
8"	135.00	\$78.93	\$28,255.34	<b>\$4,722.38</b>
10"	200.00	\$78.93	\$41,859.76	<b>\$6,989.78</b>

### Bi-Monthly Fixed Capital Maintenance Fee Derivation

The Capital Maintenance Fee (CMF) was implemented to provide a partial funding source for capital projects. This charge applies to active services. It recovers baseline capital costs on a per MEU basis. The unit costs per MEU vary by meter size. Single-Family and Duplex MEU are based on maximum month use while the others are based on the AWWA meter equivalent ratio for each meter size, as explained in the preceding section.

**Table 35: Bi-Monthly Fixed Capital Maintenance Fee Derivation**

Capital Maintenance Fee (CMF) Derivation			
Allocation Units		Baseline Capital	
<i>Allocation Unit of Measure</i>		<i>MEU</i>	
Allocation Units		90,561	
Revenue Requirement		<u>\$17,118,698</u>	
<b>Unit Cost (per year)</b>		<b>\$189.03</b>	
Monthly Fixed CMF Derivation	Meter Equivalent Ratio	Annual Water Capacity	Bi-Monthly CMF
<i>Meter Size</i>	<i>MEU</i>	<b>\$</b>	<b>\$</b>
<i>SFR + Duplex</i>			
5/8"	1.00	\$189.03	<b>\$31.50</b>
3/4"	1.40	\$264.64	<b>\$44.11</b>
1"	1.70	\$321.35	<b>\$53.56</b>
1.5"	3.70	\$699.41	<b>\$116.57</b>
2"	6.00	\$1,134.17	<b>\$189.03</b>
<i>All Other</i>			
5/8"	1.00	\$189.03	<b>\$31.50</b>
3/4"	1.50	\$283.54	<b>\$47.26</b>
1"	2.50	\$472.57	<b>\$78.76</b>
1.5"	5.00	\$945.15	<b>\$157.52</b>
2"	8.00	\$1,512.23	<b>\$252.04</b>
3"	20.00	\$3,780.58	<b>\$630.10</b>
4"	40.00	\$7,561.16	<b>\$1,260.19</b>
6"	70.00	\$13,232.03	<b>\$2,205.34</b>
8"	135.00	\$25,518.92	<b>\$4,253.15</b>
10"	200.00	\$37,805.81	<b>\$6,300.97</b>

### Bi-Monthly Fixed Private Fire Line Service Charge

This charge applies to active private fireline services. It recovers the Customer functional component revenue requirement on a per service basis and the Private Fireline Capacity functional component revenue requirement on a per EFU basis. The Customer unit cost is the same for all meter sizes and the unit costs per EFU are based on the AWWA Equivalent Fire Ratios for each service size. Unit costs were calculated in Section 6.6.

**Table 36: Bi-Monthly Fixed Private Fire Service Charge Derivation**

Allocation Units	Customer	Private Fireline Capacity
<i>Allocation Unit of Measure</i>	#	EFU
Allocation Units	61,845	10,803
Revenue Requirement	<u>\$4,881,330</u>	<u>\$534,812</u>
<b>Unit Cost (per year)</b>	<b>\$78.93</b>	<b>\$49.51</b>

Bi-Monthly Private Fire Service Charge Derivation	Equivalent Fire Meter Ratio	Customer	Annual Private Fireline Capacity	Bi-Monthly Private Fire Service Charge Derivation
<i>Meter Size</i>	EFU	\$	\$	\$
2"	1.00	\$78.93	\$49.51	<b>\$21.41</b>
4"	4.38	\$78.93	\$216.84	<b>\$49.29</b>
6"	10.00	\$78.93	\$495.06	<b>\$95.66</b>
8"	17.50	\$78.93	\$866.35	<b>\$157.55</b>
10"	27.50	\$78.93	\$1,361.41	<b>\$240.06</b>



## 7.10 Proposed Water Rates

The following tables show the proposed water rates.

**Table 37: Existing and Proposed Water Rate Tiers**

### Single-Family Residential

Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 26	0 - 21	0 - 15
Tier 2	27 - 59	22 - 48	16 - 25
Tier 3	60 - 99	49 - 80	26 - 80
Tier 4	100+	81+	81+

### Duplex Tier Allotments

Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 20	0 - 18	0 - 15
Tier 2	21 - 45	19 - 35	16 - 25
Tier 3	46 - 78	36 - 68	26 - 80
Tier 4	79+	69+	81+

### Multi-Family Residential Tier Allotments

Tiers	Existing Summer	Existing Winter	Proposed Summer/ Winter
	<i>CCF</i>	<i>CCF</i>	<i>CCF</i>
Tier 1	0 - 10	0 - 10	0 - 10
Tier 2	11 - 20	11 - 18	11 - 20
Tier 3	21 - 28	19 - 26	21 - 28
Tier 4	29+	27+	29+

### Commercial, Institutional and Irrigation Tier Allotments

Tiers	Existing	Proposed
	<i>% of Allocation</i>	<i>% of Allocation</i>
Tier 1	0 - 85%	0 - 85%
Tier 2	86 - 150	86 - 150
Tier 3	151+	151+

### Single-Family Irrigation Tier Allotments

Tiers	Existing	Proposed
	<i>% of Allocation</i>	<i>% of Allocation</i>
Tier 1	0 - 50%	0 - 85%
Tier 2	51 - 100	86 - 150
Tier 3	100+	151+

### Recycled Water Tier Allotments

Tiers	Existing	Proposed
	<i>% of Allocation</i>	<i>Uniform Volumetric Rate Per CCF</i>
Tier 1	0 - 100%	All use
Tier 2	101 - 150	
Tier 3	151+	

**Table 38: Proposed Water Rates**

<b>Volumetric Charges</b> <i>(\$ per CCF)</i>	<b>FY 2023</b> <i>Existing</i>	<b>FY 2024</b> <i>Proposed</i>	<b>FY 2025</b> <i>Proposed</i>	<b>FY 2026</b> <i>Proposed</i>	<b>FY 2027</b> <i>Proposed</i>
<b>Watershed Maintenance Volumetric Rate</b>					
All Use	N/A	\$ 0.61	\$ 0.62	\$ 0.64	\$ 0.66
<b>Single-Family Residential Volumetric Rates</b>					
Tier 1	\$ 4.73	\$ 7.67	\$ 9.16	\$ 10.24	\$ 10.86
Tier 2	8.19	10.02	11.96	13.38	14.19
Tier 3	13.78	16.19	19.33	21.62	22.92
Tier 4	22.15	24.77	29.58	33.08	35.07
<b>Duplex Volumetric Rates</b>					
Tier 1	\$ 4.76	\$ 7.67	\$ 9.16	\$ 10.24	\$ 10.86
Tier 2	8.31	10.02	11.96	13.38	14.19
Tier 3	13.72	16.19	19.33	21.62	22.92
Tier 4	21.53	24.77	29.58	33.08	35.07
<b>Multi-Family Residential Volumetric Rates</b>					
Tier 1	\$ 4.82	\$ 8.19	\$ 9.78	\$ 10.94	\$ 11.60
Tier 2	8.11	10.30	12.30	13.76	14.59
Tier 3	12.85	14.94	17.84	19.95	21.15
Tier 4	21.56	19.69	23.51	26.29	27.87
<b>Commercial, Institutional, Irrigation Volumetric Rates</b>					
Tier 1	\$ 4.62	\$ 8.42	\$ 10.05	\$ 11.24	\$ 11.92
Tier 2	12.37	15.29	18.26	20.42	21.65
Tier 3	18.53	16.09	19.21	21.48	22.77
<b>Single-Family Irrigation Volumetric Rates</b>					
Tier 1	\$ 5.94	\$ 8.42	\$ 10.05	\$ 11.24	\$ 11.92
Tier 2	\$ 7.10	15.29	18.26	20.42	21.65
Tier 3	\$ 12.32	16.09	19.21	21.48	22.77
<b>Recycled Water Rates</b>					
Tier 1	\$ 3.70	\$ 5.43	\$ 5.63	\$ 5.84	\$ 6.06
Tier 2	11.49	5.43	5.63	5.84	6.06
Tier 3	21.35	5.43	5.63	5.84	6.06
<b>Raw Water Rates</b>					
All Use	\$ 4.31	\$ 5.32	\$ 6.35	\$ 7.10	\$ 7.53

**Table 39: Proposed Fixed Bi-Monthly Base Charge and CMF**

<b>Service Charge</b>					
<i>SFR + Duplex</i>					
5/8"	\$ 44.62	\$ 48.04	\$ 50.44	\$ 52.96	\$ 55.61
3/4"	57.09	61.99	65.09	68.34	71.76
1"	82.01	72.46	76.08	79.88	83.87
1.5"	144.30	142.22	149.33	156.80	164.64
2"	219.05	222.45	233.57	245.25	257.51
<i>All Other Customer Classes (Except Private Fire Lines)</i>					
5/8"	\$ 44.62	\$ 48.04	\$ 50.44	\$ 52.96	\$ 55.61
3/4"	57.09	65.48	68.75	72.19	75.80
1"	82.01	100.36	105.38	110.65	116.18
1.5"	144.30	187.57	196.95	206.80	217.14
2"	219.05	292.22	306.83	322.17	338.28
3"	455.77	710.82	746.36	783.68	822.86
4"	804.63	1,408.48	1,478.90	1,552.85	1,630.49
6"	1,763.97	2,454.97	2,577.72	2,706.61	2,841.94
8"	3,009.87	4,722.38	4,958.50	5,206.43	5,466.75
10"	4,754.13	6,989.78	7,339.27	7,706.23	8,091.54
<b>Capital Maintenance Fee</b>					
<i>SFR + Duplex</i>					
5/8"	\$ 30.42	\$ 31.50	\$ 33.08	\$ 34.73	\$ 36.47
3/4"	45.61	44.11	46.32	48.64	51.07
1"	76.03	53.56	56.24	59.05	62.00
1.5"	152.07	116.57	122.40	128.52	134.95
2"	243.32	189.03	198.48	208.40	218.82
<i>All Other Customer Classes (Except Private Fire Lines)</i>					
5/8"	\$ 30.42	\$ 31.50	\$ 33.08	\$ 34.73	\$ 36.47
3/4"	45.61	47.26	49.62	52.10	54.71
1"	76.03	78.76	82.70	86.84	91.18
1.5"	152.07	157.52	165.40	173.67	182.35
2"	243.32	252.04	264.64	277.87	291.76
3"	532.26	630.10	661.61	694.69	729.42
4"	958.09	1,260.19	1,323.20	1,389.36	1,458.83
6"	2,129.09	2,205.34	2,315.61	2,431.39	2,552.96
8"	3,649.85	4,253.15	4,465.81	4,689.10	4,923.56
10"	5,778.95	6,300.97	6,616.02	6,946.82	7,294.16

**Table 40: Proposed Fixed Bi-Monthly Watershed and Private Fire Line Service Charges**

<b>Bi-Monthly Fixed Charges</b>					
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
<i>Meter Size</i>	<i>Existing</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>
<b>Watershed Maintenance Fee</b>					
5/8"	\$ 11.59				
3/4"	13.86				
1"	18.35				
1.5"	29.61				
2"	43.12				
3"	85.91	<b>Volumetric rate (See above)</b>			
4"	148.96				
6"	322.37				
8"	547.56				
10"	862.84				
<b>Private Fire Line Service Charge</b>					
2"	\$ 40.59	\$ 21.41	\$ 22.48	\$ 23.60	\$ 24.78
4"	101.89	49.29	51.75	54.34	57.06
6"	202.33	95.66	100.44	105.46	110.73
8"	332.76	157.55	165.43	173.70	182.39
10"	515.38	240.06	252.06	264.66	277.89

## 8 TEMPORARY DROUGHT RATES

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From time to time, the District's water supply may be reduced due to mandatory conservation measures imposed on the District by its wholesaler, the State, or reduction in local supply due to drought or other water shortage emergencies. During these times, customers may be asked or required to meet certain conservation targets in accordance with the District's Water Shortage Contingency Plan.

At the same time, the District collects a portion of its fixed costs through its variable rates, which are imposed per unit of water sold. During these times, while the District's water purchase costs may decrease, the District will still continue to incur fixed costs associated with operating and maintaining the water system, and a portion of these costs will no longer be recovered due to reduced water use. In sum, financial impacts during water shortages and periods of reduced water sales can include:

- A loss of volumetric water rate revenues due to a reduction in the volume of water sales.
- Reduced variable expenses due to reduced volumes of water production and supply, such as reduced costs for water treatment and pumping.
- Additional costs for achieving water demand cutback targets, such as costs for an enhanced conservation program and water demand mitigation efforts.
- Additional costs for supplemental sources of water supply when normal-year supply is depleted or curtailed during a drought.
- Potential costs of compliance for drought-related regulations and potential cost of fines or penalties for non-compliance with State water reduction mandates during periods of severe drought.

In order to ensure continued financial stability during times of reduced water usage and sales and mitigate impacts of water shortages, the District is proposing to authorize a series of drought rates that could be implemented to support financial stability and help ensure adequate funding for water utility operations during periods of water shortages and reduced water sales due to conservation targets. As proposed, these rates would be temporary surcharges, billed based on metered water use that would be levied in addition to the District's regular water rates during drought periods. The proposed rates correspond with the Water Shortage Response Levels identified in the District's Water Shortage Contingency Plan. No surcharges are proposed for Level 1 water shortages. The drought rates will be imposed upon the Board's declaration of a water shortage emergency or drought in accordance with its Water Shortage Contingency Plan.

These surcharges can be phased in corresponding with escalating water shortages in order to support financial stability under associated escalating water reduction requirements. The surcharges can also be phased out as water use gradually rebounds as water supplies are

replenished, or upon declaration of the Board that the District is no longer in a specific Level of drought in accordance with the Water Shortage Contingency Plan.

The surcharges account for a) lost revenues due to reduced water sales, less b) estimated reduced variable expenses due to reduced water supply, plus c) an estimate of the additional conservation program, costs of supplement sources of water supply, compliance related costs, and/or other efforts to reduce water demand, divided by d) the volume of projected water sales with reduced demand. The derivation of the temporary drought rate surcharges is shown in Appendix A.

The proposed drought surcharge percentages set forth in Table 41 represent the maximum percentage surcharge that the District may impose at each drought stage level. These surcharge percentages by drought stage level represent the amount of increase that would be applied to all volumetric rates, including those for raw water and the Watershed Management Fee, but excluding recycled water. Table 42 illustrates the maximum amount surcharge that may be imposed during each year of this rate study.

**Table 41: Proposed Drought Surcharge Percentage**

**Drought Surcharges Applied to All Volumetric Rates including Raw Water and the Watershed Management Fee, excluding Recycled Water**

<b>Drought Stage</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
Stage 1 - Voluntary 10% Reduction				
Stage 2 - Voluntary 20% Reduction	22.0%	23.0%	23.0%	23.0%
Stage 3 - Mandatory 30% Reduction	39.0%	39.0%	40.0%	40.0%
Stage 4 - Mandatory 40% Reduction	61.0%	61.0%	62.0%	62.0%
Stage 5 - Mandatory 50% Reduction	91.0%	92.0%	93.0%	93.0%

**Table 42: Proposed Maximum Drought Surcharges (% Applied to Highest Rate)**

<b>Temporary Drought Stage Five Surcharges (\$ per CCF)</b>					
<b>Tier</b>	<b>Current</b>	<b>Proposed July 1, 2023</b>	<b>Proposed July 1, 2024</b>	<b>Proposed July 1, 2025</b>	<b>Proposed July 1, 2026</b>
<b>Single-Family and Duplex Residential Volumetric Surcharges</b>					
Tier 1	N/A	\$6.98	\$8.43	\$9.52	\$10.10
Tier 2	N/A	\$9.12	\$11.00	\$12.44	\$13.20
Tier 3	N/A	\$14.73	\$17.78	\$20.11	\$21.32
Tier 4	N/A	\$22.54	\$27.21	\$30.76	\$32.62
<b>Multi-Family Residential Volumetric Surcharges</b>					
Tier 1	N/A	\$7.45	\$9.00	\$10.17	\$10.79
Tier 2	N/A	\$9.37	\$11.32	\$12.80	\$13.57
Tier 3	N/A	\$13.60	\$16.41	\$18.55	\$19.67
Tier 4	N/A	\$17.92	\$21.63	\$24.45	\$25.92
<b>Commercial, Institutional, Irrigation &amp; Single Family Irrigation Volumetric Surcharges</b>					
Tier 1	N/A	\$7.66	\$9.25	\$10.45	\$11.09
Tier 2	N/A	\$13.91	\$16.80	\$18.99	\$20.13
Tier 3	N/A	\$14.64	\$17.67	\$19.98	\$21.18
<b>Raw Water Rates</b>					
All Use	N/A	\$4.84	\$5.84	\$6.60	\$7.00
<b>Watershed Management Rate</b>					
All Use	N/A	\$0.56	\$0.57	\$0.60	\$0.61

## 9 WATER RATE BILL IMPACTS

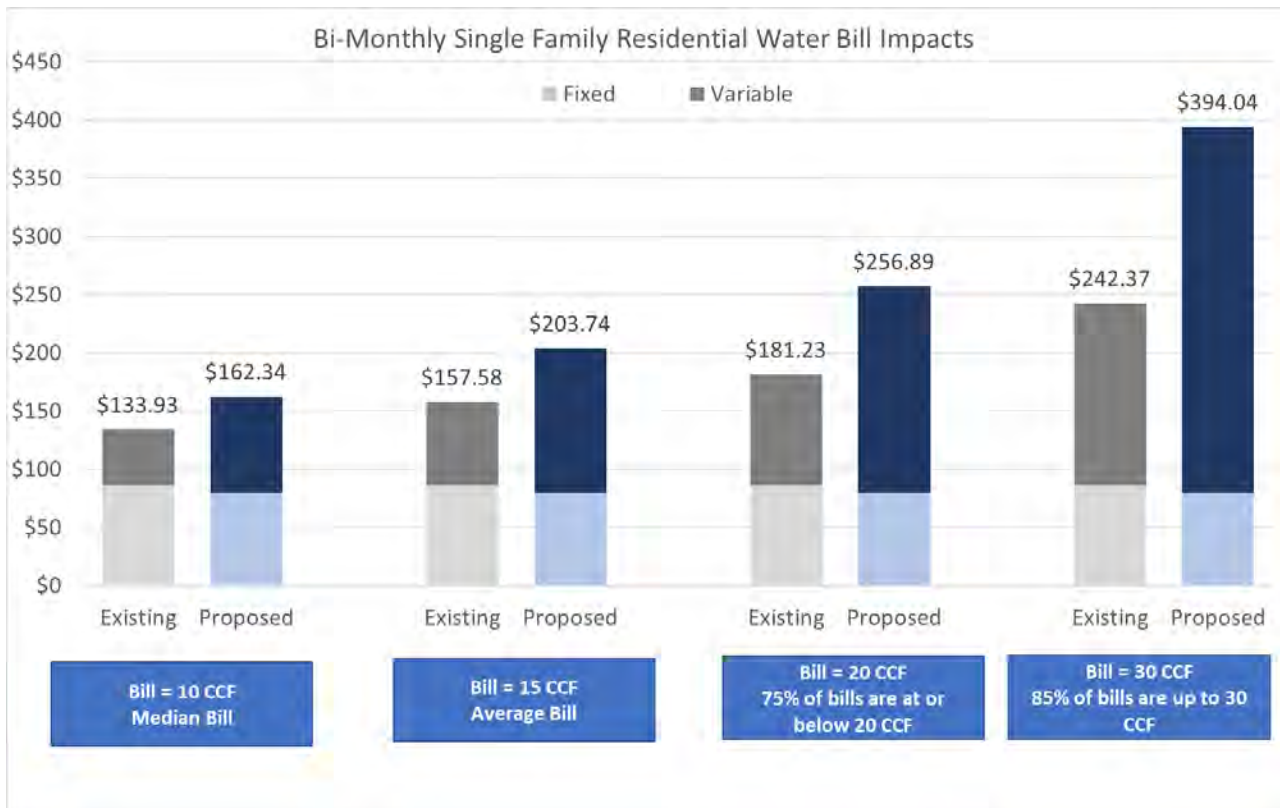
The following table shows the impacts of the proposed water rates on a range of single-family customers with different levels of consumption.

**Table 43: Existing and Proposed Bi-Monthly Bills for a Single-Family, 5/8" Meter Customer**

Single-Family Bi-Monthly Bill					
Impacts (5/8" Meter, Summer Tiers)	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<i>CCF</i>	<i>Existing</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>	<i>Proposed</i>
<i>Single-Family Bill</i>					
10	\$133.93	\$162.34	\$181.32	\$196.49	\$207.28
15	\$157.58	\$203.74	\$230.22	\$250.89	\$264.88
20	\$181.23	\$256.89	\$293.12	\$320.99	\$339.13
30	\$242.37	\$394.04	\$455.77	\$502.39	\$531.28
40	\$324.27	\$562.04	\$655.27	\$724.99	\$767.08
50	\$406.17	\$730.04	\$854.77	\$947.59	\$1,002.88
<i>Single-Family Bill \$ Change</i>					
10		\$28.41	\$18.98	\$15.17	\$10.79
15		\$46.16	\$26.48	\$20.67	\$13.99
20		\$75.66	\$36.23	\$27.87	\$18.14
30		\$151.67	\$61.73	\$46.62	\$28.89
40		\$237.77	\$93.23	\$69.72	\$42.09
50		\$323.87	\$124.73	\$92.82	\$55.29
<i>Single-Family Bill % Change</i>					
10		21.21%	11.69%	8.37%	5.49%
15		29.29%	13.00%	8.98%	5.58%
20		41.75%	14.10%	9.51%	5.65%
30		62.58%	15.67%	10.23%	5.75%
40		73.32%	16.59%	10.64%	5.81%
50		79.74%	17.09%	10.86%	5.83%



**Figure 14: Single-Family Bi-Monthly Bill Impacts (Existing Summer Tiers)**



## APPENDIX A – Supporting Tables

Escalation Factors	Escalation Factor	FY 2024	FY 2025	FY 2026	FY 2027
Inflation	Inflation	5.0%	5.0%	5.0%	5.0%
Interest	Interest	2.50%	2.25%	2.00%	1.75%

Revenue	Category	Escalation	FY 2024	FY 2025	FY 2026	FY 2027
			<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Water Rate Revenue			\$111,180,097	\$131,077,985	\$147,069,499	\$158,144,432
Watershed Management Fee	Watershed	Inflation	\$5,386,376	\$5,655,695	\$5,938,480	\$6,235,404
Capital Maintenance Fee	As CIP	Inflation	\$17,118,698	\$17,974,633	\$18,873,365	\$19,817,033
Other Revenue						
Special Read Charge	Admin Support	Non-inflated	\$120,133	\$120,133	\$120,133	\$120,133
Connection Charge	As CIP	Non-inflated	\$710,182	\$710,182	\$710,182	\$710,182
Connection Fees	As CIP	Non-inflated	\$100,000	\$100,000	\$100,000	\$100,000
Interest Revenue	Admin Support	Non-inflated	\$333,115	\$333,115	\$333,115	\$333,115
<b>Total Revenue</b>			<b>\$134,948,600</b>	<b>\$155,971,742</b>	<b>\$173,144,773</b>	<b>\$185,460,298</b>

Existing Debt	Category	Escalation	FY 2024	FY 2025	FY 2026	FY 2027
			<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
2022 Bonds	As CIP	Non-inflated	\$5,065,950	\$5,064,950	\$5,060,150	\$5,071,550
2017 Bonds	As CIP	Non-inflated	\$2,277,750	\$2,275,875	\$2,272,250	\$2,271,750
2016 Bonds	As CIP	Non-inflated	\$1,481,975	\$1,481,975	\$1,481,975	\$1,481,975
CREBS-OFFICE	Facility Support	Non-inflated	\$62,063	\$0	\$0	\$0
CREBS- YARD	Facility Support	Non-inflated	\$60,188	\$0	\$0	\$0
AEEP	Sonoma Water	Non-inflated	\$205,320	\$205,320	\$205,320	\$205,320
LGVSD: RWTF Buy-in Debt Service	Recycled Water	Non-inflated	\$107,559	\$107,559	\$107,559	\$107,559
LGVD 2017 Rev Bond Debt Service	Recycled Water	Non-inflated	\$256,428	\$256,490	\$256,888	\$256,553
<b>Total Existing Debt</b>			<b>\$9,517,232</b>	<b>\$9,392,169</b>	<b>\$9,384,142</b>	<b>\$9,394,706</b>

Capital	Category	Escalation	FY 2024	FY 2025	FY 2026	FY 2027
<b>Inflated Capital</b>						
Baseline	As CIP	Inflation	\$19,422,000	\$20,393,100	\$21,412,755	\$22,483,393
All Water Supply Projects	As CIP	Input	\$4,000,000	\$9,365,000	\$9,684,000	\$10,034,900
Deferred Maintenance	As CIP		\$3,000,000	\$6,300,000	\$9,922,500	\$13,891,500
Large Projects	As CIP		\$0	\$80,000,000	\$0	\$0
Critical Systems	As CIP		\$500,000	\$3,675,000	\$3,858,750	\$6,714,225
<b>Total Inflated Capital</b>			<b>\$26,922,000</b>	<b>\$119,733,100</b>	<b>\$44,878,005</b>	<b>\$53,124,018</b>







**MF Res**

<b>FY 2022</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Tier 1	159443	161205	153563	157907	147646	160104	939868	84.3%
Tier 2	27484	27213	22954	22737	19433	25648	145469	13.0%
Tier 3	2838	3159	4446	5170	3139	3547	22299	2.0%
Tier 4	1090	1231	1252	1721	954	1360	7608	0.7%
	190,855	192,808	182,215	187,535	171,172	190,659	1,115,244	

<b>Mo. Amount</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
<b>104,885</b>	104,885	104,885	104,885	104,885	104,885	104,885		
<b>185,874</b>	80,989	80,989	77,330	80,989	66,287	80,989		
<b>191,441</b>	4,981	5,567	0	1,661	0	4,785		
	0	1,367	0	0	0	0		

<b>Tier 1</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	104,885	104,885	104,885	104,885	104,885	104,885	629,309	<b>67.0%</b>
Average	54,558	56,320	48,678	53,022	42,761	55,219	310,559	<b>33.0%</b>
Summer Avg.	0	0	0	0	0	0	0	<b>0.0%</b>
Peak	0	0	0	0	0	0	0	<b>0.0%</b>
Total	159,443	161,205	153,563	157,907	147,646	160,104	939,868	

<b>Tier 2</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	0	0	0	0	0	0	0	<b>0.0%</b>
Average	26,431	24,669	22,954	22,737	19,433	25,648	141,872	<b>97.5%</b>
Summer Avg.	1,053	2,544	0	0	0	0	3,597	<b>2.5%</b>
Peak	0	0	0	0	0	0	0	<b>0.0%</b>
Total	27,484	27,213	22,954	22,737	19,433	25,648	145,469	

<b>Tier 3</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	0	0	0	0	0	0	0	<b>0.0%</b>
Average	0	0	4,446	5,170	3,139	122	12,877	<b>57.7%</b>
Summer Avg.	2,838	3,023	0	0	0	3,425	9,286	<b>41.6%</b>
Peak	0	136	0	0	0	0	136	<b>0.6%</b>
Total	2,838	3,159	4,446	5,170	3,139	3,547	22,299	

<b>Tier 4</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	0	0	0	0	0	0	0	<b>0.0%</b>
Average	0	0	1,252	60	954	0	2,266	<b>29.8%</b>
Summer Avg.	1,090	0	0	1,661	0	1,360	4,111	<b>54.0%</b>
Peak	0	1,231	0	0	0	0	1,231	<b>16.2%</b>
Total	1,090	1,231	1,252	1,721	954	1,360	7,608	

**Inst, Com, Irr, SF Irr**

<b>FY 2022</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Tier 1	371,954	331,036	229,207	207,866	229,712	316,293	1,686,068	83.6%
Tier 2	32,523	26,486	17,537	20,842	31,685	26,315	155,388	7.7%
Tier 3	23,158	25,244	16,492	31,871	53,770	23,803	174,338	8.6%
Tier 4	0	0	0	0	0	0	0	0.0%
<b>Total</b>	<b>427,635</b>	<b>382,766</b>	<b>263,236</b>	<b>260,579</b>	<b>315,167</b>	<b>366,411</b>	<b>2,015,794</b>	

<b>Mo. Amount</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
<b>189,579</b>	189,579	189,579	189,579	189,579	189,579	189,579	1,137,471	56.4%
<b>335,966</b>	146,387	146,387	73,657	71,000	125,588	146,387	709,408	35.2%
<b>392,271</b>	56,305	46,800	0	0	0	30,445	133,551	6.6%
	35,364	0	0	0	0	0	35,364	1.8%
							2,015,794	

<b>Tier 1</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	189,579	189,579	189,579	189,579	189,579	189,579	1,137,471	<b>67.5%</b>
Average	146,387	141,457	39,628	18,287	40,133	126,714	512,609	<b>30.4%</b>
Summer Avg.	35,988	0	0	0	0	0	35,988	<b>2.1%</b>
Peak	0	0	0	0	0	0	0	<b>0.0%</b>
<b>Total</b>	<b>371,954</b>	<b>331,036</b>	<b>229,207</b>	<b>207,866</b>	<b>229,712</b>	<b>316,293</b>	<b>1,686,068</b>	

<b>Tier 2</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	0	0	0	0	0	0	0	<b>0.0%</b>
Average	0	4,930	17,537	20,842	31,685	19,673	94,666	<b>60.9%</b>
Summer Avg.	20,317	21,556	0	0	0	6,642	48,515	<b>31.2%</b>
Peak	12,206	0	0	0	0	0	12,206	<b>7.9%</b>
	32,523	26,486	17,537	20,842	31,685	26,315	155,388	

<b>Tier 3</b>	<b>Jul/Aug</b>	<b>Sep/Oct</b>	<b>Nov/Dec</b>	<b>Jan/Feb</b>	<b>Mar/Apr</b>	<b>May/Jun</b>	<b>Total</b>	<b>% Total</b>
Base	0	0	0	0	0	0	0	<b>0.0%</b>
Average	0	0	16,492	31,871	53,770	0	102,133	<b>58.6%</b>
Summer Avg.	0	25,244	0	0	0	23,803	49,047	<b>28.1%</b>
Peak	23,158	0	0	0	0	0	23,158	<b>13.3%</b>
<b>Total</b>	<b>23,158</b>	<b>25,244</b>	<b>16,492</b>	<b>31,871</b>	<b>53,770</b>	<b>23,803</b>	<b>174,338</b>	

## Allocation Factors

### FY 2023/24 Potable and Raw Water Allocation

Potable + Raw Water	Potable Water	Raw Water	Total
Amount (AF)	21,463	330	21,793
Percent of Total	98.49%	1.51%	100.00%

All Water	Potable Water	Raw Water	Recycled Water	Total
Amount (AF)	21,463	330	600	22,393
Percent of Total	95.85%	1.47%	2.68%	100.00%

### Direct Operating Cost Percentage

Engineering	Operations	Total	Watershed	Watershed %	Other %
\$13,223,507	\$31,244,488	\$44,467,995	\$7,409,015	16.7%	83.3%

### Watershed Cost Allocation

Watershed Budget	Total	Watershed Fee	Volumetric Rates	Watershed Fee	Volumetric Rates
WATERSHED ADMINISTRATION	\$977,441	100%		\$977,441	\$0
WATERSHED PROTECTION	\$1,946,544	100%		\$1,946,544	\$0
FISHERIES	\$699,234		100%	\$0	\$699,234
VEG & WILDLIFE MANAGEMENT	\$1,323,405		100%	\$0	\$1,323,405
WATERSHED MAINTENANCE	\$2,462,391	100%		\$2,462,391	\$0
<b>Total Amount</b>	<b>\$7,409,015</b>			<b>\$5,386,376</b>	<b>\$2,022,639</b>

### Single Family & Duplex Meter Equivalent Ratios

Maximum Bi-Monthly Period Demand Ratio	Three Year Average			
	FY 19/20	FY 20/21	FY 21/22	Average
<i>Meter Size</i>	#	#	#	#
5/8"	1	1	1	1
3/4"	1.3	1.4	1.4	1.4
1"	1.7	1.7	1.7	1.7
1.5"	3.6	3.7	3.7	3.7
2"	7.1	6	6	6.4



**All Other Customers Meter Equivalent Ratios**

Meter Size	Maximum Safe Flow	Meter Equivalent Ratios
<i>Meter Size</i>	<i>GPM</i>	<i>MEU</i>
5/8"	20	1
3/4"	30	1.5
1"	50	2.5
1.5"	100	5
2"	160	8
3"	400	20
4"	800	40
6"	1,400	70
8"	2,700	135
10"	4,000	200

Fire Service Size	Number of Services	Maximum Safe Fire Meter Flow	Equivalent Fire Unit Ratios (EFU)	Fire Capacity EFUs	Fire Capacity %	Annual Fire Services	Annual EFUs
<i>Service Size"</i>	<i>#</i>	<i>GPM</i>	<i>EFU</i>	<i>EFU</i>	<i>%</i>	<i>#</i>	<i>#</i>

**Public Hydrants**

6	7,463	1,600	10.00	74,630	87.4%		895,560
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**Private Fireline Services**

2	63	160	1.00	63		756	756
3	0	350	2.19	0		0	0
4	629	700	4.38	2,755		7,548	33,060
6	518	1,600	10.00	5,180		6,216	62,160
8	154	2,800	17.50	2,695		1,848	32,340
10	<u>4</u>	4,400	27.50	<u>110</u>		<u>48</u>	<u>1,320</u>
Total Private Firelines	<u>1368</u>			<u>10,803</u>	<b>12.65%</b>	<u>16,416</u>	<u>129,636</u>
<b>Total Fire Protection</b>	<b>8,831</b>			<b>85,433</b>		<b>16,416</b>	<b>1,025,196</b>

Fire Service Percentage of Expense Categories\* 10.00%

Private Fire Service Expenses Allocation Percentage **1.265%**

\*BWA worked with District staff and identified that fire service contributed to 10% of costs in several allocation categories.

## Drought Surcharge Derivation

Drought Stage		FY 2024	FY 2025	FY 2026	FY 2027
<b>Total Projected Potable Water Supply</b>					
Volume (AF)		21,892	22,330	22,777	23,232
	<b>Stage</b>				
<b>Drought Stage</b>	<b>Reduction</b>	<b>Reduced Water Use</b>			
1 - Voluntary	10%	2,189	2,233	2,278	2,323
2 - Voluntary	20%	4,378	4,466	4,555	4,646
3 - Mandatory	30%	6,568	6,699	6,833	6,970
4 - Mandatory	40%	8,757	8,932	9,111	9,293
5 - Mandatory	50%	10,946	11,165	11,388	11,616
<b>Projected Imported Water Cost (\$/AF)</b>		<b>\$1,686.94</b>	<b>\$1,825.73</b>	<b>\$1,976.08</b>	<b>\$2,138.98</b>
<b>Volumetric Cost Reduction</b>					
1 - Voluntary		\$688,127	\$736,984	\$789,310	\$845,351
2 - Voluntary		1,376,255	1,473,969	1,578,621	1,690,703
3 - Mandatory		2,064,382	2,210,953	2,367,931	2,536,054
4 - Mandatory		2,752,509	2,947,938	3,157,241	3,381,405
5 - Mandatory		3,440,637	3,684,922	3,946,551	4,226,757
<b>Volumetric Revenue Requirements</b>					
No Reduction		\$85,508,706	\$104,139,509	\$118,800,151	\$128,478,316
1 - Voluntary		84,820,579	103,402,525	118,010,840	127,632,964
2 - Voluntary		84,132,452	102,665,540	117,221,530	126,787,613
3 - Mandatory		83,444,324	101,928,556	116,432,220	125,942,262
4 - Mandatory		82,756,197	101,191,571	115,642,909	125,096,910
5 - Mandatory		82,068,070	100,454,587	114,853,599	124,251,559
<b>Total Volumetric Demand (AF)</b>					
No Reduction		22,222	22,660	23,107	23,562
1 - Voluntary		20,000	20,394	20,796	21,206
2 - Voluntary		17,778	18,128	18,486	18,850
3 - Mandatory		15,556	15,862	16,175	16,494
4 - Mandatory		13,333	13,596	13,864	14,137
5 - Mandatory		11,111	11,330	11,553	11,781
<b>Average Volumetric Rate (\$/AF)</b>					
No Reduction		\$3,847.86	\$4,595.69	\$5,141.33	\$5,452.68
1 - Voluntary		4,240.99	5,070.18	5,674.64	6,018.67
2 - Voluntary		4,732.41	5,663.30	6,341.27	6,726.16
3 - Mandatory		5,364.23	6,425.88	7,198.36	7,635.78
4 - Mandatory		6,206.66	7,442.65	8,341.16	8,848.62
5 - Mandatory		7,386.06	8,866.14	9,941.07	10,546.59
<b>Drought Surcharges Applied to All</b>					
<b>Volumetric Rates</b>		<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>
1 - Voluntary					
2 - Voluntary		22.0%	23.0%	23.0%	23.0%
3 - Mandatory		39.0%	39.0%	40.0%	40.0%
4 - Mandatory		61.0%	61.0%	62.0%	62.0%
5 - Mandatory		91.0%	92.0%	93.0%	93.0%

## APPENDIX B – Water Supply Costs

### Water Supplies and Variable Cost

			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	
<b>Escalation Factors</b>								
Sonoma Water			6.0%	8.5%	8.5%	8.5%	8.5%	
Chem & Electricity			5.0%	5.0%	5.0%	5.0%	5.0%	
Recycled Water			6.0%	6.0%	6.0%	6.0%	6.0%	
Water Supply Growth			5.00%	2.00%	2.00%	2.00%	2.00%	
<b>Potable Water Supply Projections (Acre Feet)</b>								
			Escalation	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
				<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<b>Potable Water Supply Projections</b>								
Potable Water Supply (acre-feet)	WS Compound Growth			<b>21,463</b>	<b>21,892</b>	<b>22,330</b>	<b>22,777</b>	<b>23,232</b>
Potable Water Supply (CCF)				9,349,333	9,536,320	9,727,046	9,921,587	10,120,019
Total Potable Water Sold (CCF)				8,567,156	8,738,499	8,913,269	9,091,534	9,273,365
Water Loss				0.916	0.92	0.92	0.92	0.92
<b>MMWD Potable Water Production</b>								
		<b>% MMWD Supply</b>						
San Geronimo Treatment Plant Prod (acre-feet)		76.0%		12,284	12,458	12,707	12,962	13,221
Bon Tempe Treatment Plant Prod (acre-feet)		24.0%		<u>3,879</u>	<u>3,934</u>	<u>4,013</u>	<u>4,093</u>	<u>4,175</u>
<b>Total Local Production</b>				<b>16,163</b>	<b>16,392</b>	<b>16,720</b>	<b>17,055</b>	<b>17,396</b>
<b>Purchased Potable Water</b>								
Sonoma Water Imported (acre-feet)				5,300	5,500	5,610	5,722	5,837
				24.7%	25.123%	25%	25%	25%
<b>Non-Potable Water Supply Projections (Acre Feet)</b>								
<b>Recycled Water Supply</b>								
Las Gallinas Imported (acre-feet)				600	600	600	600	600
Recycled Water Sales (CCF)				239,494	239,494	239,494	239,494	239,494
Recycled Water Loss				0.92	0.92	0.92	0.92	0.92
<b>Raw Water Sales</b>								
Raw Water Sales (AF)				330	330	330	330	330
Raw Water Sales (CCF)				143,748	143,748	143,748	143,748	143,748
<b>Water Supply Cost Projections</b>								
			Escalation	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
				<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<b>MMWD Water</b>								
San Geronimo	\$/AF	Chem & Electricity		<u>\$304</u>	<u>\$350</u>	<u>\$368</u>	<u>\$386</u>	<u>\$405</u>
	\$ / year			\$3,739,686	\$4,362,344	\$4,672,070	\$5,003,787	\$5,359,056
Bon Tempe	\$/AF	Chem & Electricity		<u>\$162</u>	<u>\$201</u>	<u>\$211</u>	<u>\$221</u>	<u>\$233</u>
				\$629,327	\$790,158	\$846,260	\$906,344	\$970,694
<b>Imported Potable Water</b>								
Sonoma Water Purchase	\$/AF	Sonoma Water		<u>\$1,434</u>	<u>\$1,556</u>	<u>\$1,688</u>	<u>\$1,831</u>	<u>\$1,987</u>
Total Sonoma Water Purchase	\$ / year			\$7,598,374	\$8,555,339	\$9,468,194	\$10,478,450	\$11,596,501
Ingacio	\$/AF	Chem & Electricity		<u>\$125</u>	<u>\$131</u>	<u>\$138</u>	<u>\$145</u>	<u>\$152</u>
Total Ingacio	\$ / year			\$663,355	\$722,807	\$774,126	\$829,089	\$887,954
<b>Recycled Water</b>								
Recycled Water Purchase	\$/AF	Recycled Water		<u>\$260</u>	<u>\$276</u>	<u>\$292</u>	<u>\$310</u>	<u>\$328</u>
Total Recycled Water Purchase	\$ / year			\$156,000	\$165,360	\$175,282	\$185,798	\$196,946
<b>Projected Water Supply Cost Summary</b>								
			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	
MMWD Water			\$4,369,013	\$5,152,502	\$5,518,330	\$5,910,131	\$6,329,751	
Recycled Water			\$156,000	\$165,360	\$175,282	\$185,798	\$196,946	
Imported Water			\$8,261,729	\$9,278,146	\$10,242,320	\$11,307,539	\$12,484,455	
<b>Water Purchase Costs</b>			<b>\$12,786,742</b>	<b>\$14,596,008</b>	<b>\$15,935,932</b>	<b>\$17,403,469</b>	<b>\$19,011,152</b>	