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

Tuesday, June 16, 2026 at 5:00 PM

AGENDA

LOCATIONS:

Open Session to start at or after 5:00 p.m.

Marin Water Board Room – 220 Nellen Avenue, Corte Madera, CA 94925

Outside location for Director Larry Russell – Marriott Courtyard, Business Center, 3841 Lakewood Blvd., Long Beach, CA 90808

Closed Session to immediately follow Open Session

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

Public Participation:

The public may attend this meeting in-person or remotely using one of the following methods:

On a computer or smart device, go to: **https://marinwater.zoom.us/j/88134852296**

By phone, dial: **1-669-444-9171** and use Webinar ID: **881 3485 2296.**

HOW TO PROVIDE PUBLIC COMMENT:

During the Meeting: Typically, you will have 3 minutes to make your public comment, however, the board president may shorten the amount of time for public comment due to a large number of attendees. Furthermore, pursuant to Government Code, section 54954.2 (the Brown Act), the Board may not take action or discuss any item that does not appear on the agenda.

-- In-Person Attendee: Fill out a speaker card and provide to the board secretary. List the number/letter (ex: 6a) 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.

-- Remote Attendee: Use the "raise hand" button on the bottom of the Zoom screen. If you are joining by phone and would like to comment, press *9. The board secretary will use the last four digits of your phone number to call on you (dial *6 to mute/unmute).

In Advance of the Meeting: Submit your comments by email in advance of the meeting to boardcomment@marinwater.org. To ensure that your comment is provided to the Board of Directors prior to the meeting, please email your comment 24 hours in advance of the meeting start time. Comments received after this cut off time will be sent to the Board after the meeting. Please do not

include personal information in your comment such as phone numbers and home addresses.

AGENDA ITEMS:

1. **Call to Order and Roll Call**
2. **Adoption of Agenda**
3. **Public Comment on Non-Agenda Matters**

   This is the time when any person may address the Board of Directors on matters not listed on this agenda, but which are within the subject matter jurisdiction of the Board.

4. **Directors' and General Manager's Announcements** (5:05 p.m. – Time Approximate)
5. **Board Committee Reports**

   Each Committee Chair or Vice Chair will provide a report on recent committee meetings. Directors may ask questions or provide brief comments or requests for additional information on an item.

6. **Consent Items** (5:10 p.m. – Time Approximate)

   All Consent Items will be enacted by a single action of the Board, unless specific items are pulled from Consent by the Board during adoption of the agenda for separate discussion and action.

   a. June 2, 2026 Board Meeting Minutes

      RECOMMENDATION: Accept the minutes of the Board of Directors' Regular Bi-Monthly Meeting on June 2, 2026

   b. General Manager's Report May 2026

      RECOMMENDATION: Approve Report

   c. Fiscal Year 2026/27 Insurance Renewal

      RECOMMENDATION: Approve Renewal of Annual Insurance Policies for All Risk Property, Excess Liability, Automobile Physical Damage, Excess Workers Compensation, Pollution, Cyber, Drone and Crime and Fidelity for Fiscal Year (FY) 2026/27

   d. Approve the Quitclaim of a District Right-of-Way: 175 Marinwood Avenue, San Rafael

      RECOMMENDATION: Approve the quitclaim of District easement rights to the underlying property owner of 175 Marinwood Avenue, San Rafael and authorize the General Manager to execute the deed in favor of the property owner

   e. Approve Pipeline Extension Agreement – Woodland Avenue, San Rafael – Auburn Grove

      RECOMMENDATION: Staff recommends the Board of Directors approve a resolution approving the fee study setting the fees for work to be constructed in connection with a pipeline extension, approving a pipeline extension agreement for Auburn Grove, San Rafael and authorizing the General Manager to accept and execute all suitable real property easements and rights-of-way required by the Pipeline Extension Agreement

7. **Public Hearing Item** (5:15 p.m. – Time Approximate)

   a. 2025 Urban Water Management Plan and Water Shortage Contingency Plan

      RECOMMENDATION: (1) Conduct a Public Hearing on the draft 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP), and (2) approve a

resolution to adopt the 2025 Urban Water Management Plan and a resolution to adopt the Water Shortage Contingency Plan

8. **Regular Items** (5:25 p.m. – Time Approximate)

   a. Capital Program Update

   RECOMMENDATION: Receive a staff update on Fiscal Year 2026 (FY26) third quarter Capital Improvement Program

   b. Biodiversity, Fire, & Fuels Integrated Plan (BFFIP) Updates to Increase Annual Broadcast Prescribed Burning and Addendum to the Biodiversity, Fire, and Fuels Integrated Plan Program Environmental Impact Report

   RECOMMENDATION: Adopt an Addendum to the Biodiversity, Fire, and Fuels Integrated Plan Program Environmental Impact Report (PEIR), which incorporates updates to the BIFFIP to allow for up to a total of 1,000 acres of broadcast prescribed burning annually

9. **Future Board and Committee Meetings and Upcoming Agenda Items**

   This schedule lists upcoming board and committee meetings as well as upcoming agenda items for the next month, which may include Board interest in adding future meeting items. The schedule is tentative and subject to change pending final publication and posting of the meeting agendas.

   a. Upcoming Meetings

10. **Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s)**

    Following announcement of Closed Session items and prior to recess into Closed Session, the public may speak up to three minutes on items to be addressed in Closed Session. The Board will convene to Closed Session in the Mt. Tam Conference Room after public comment.

    a. **Conference with Real Property Negotiations**

       (*California Government Code §54956.8*)

       Property: 100 Larkspur Landing, Ground Lease

       Agency Negotiation: Ben Horenstein, General Manager

       Negotiating Parties: Robert Bilbao, TDA Investment Group

       Under Negotiation: Price and Terms

    b. **Conference with Legal Counsel - Anticipated Litigation**

       (Significant Exposure to Litigation Pursuant to California Government Code Section 54956.9 (d) (2))

       Number of Cases: Unknown

    c. **Conference with Legal Counsel - Anticipated Litigation**

       (Initiation of Litigation Pursuant to California Government Code Section 54956.9 (d) (4))

       Number of Cases: One

11. **Reconvene to Open Session; Closed Session Report Out**

12. **Adjournment** (7:00 p.m. – Time Approximate)

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 the Board Secretary/ADA Coordinator at 415.945.1448, at least two business 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 Administration Building, and marinwater.org.

Posted: 06-12-2026

STAFF REPORT

Meeting Type:	Board of Directors
Title:	June 2, 2026 Board Meeting Minutes
From:	Terrie Gillen, Board Secretary
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Accept the minutes of the Board of Directors' Regular Bi-Monthly Meeting on June 2, 2026

SUMMARY: The Board of Directors held their regular bi-monthly meeting on June 2, 2026. The minutes of that meeting are attached for your approval.

DISCUSSION: None.

ENVIRONMENTAL REVIEW: Not applicable.

FISCAL IMPACT: None.

ATTACHMENT(S):

1. Draft June 2, 2026 Regular Meeting Minutes

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

Attachment 1

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

Tuesday, June 02, 2026 at 5:00 PM

MINUTES

LOCATIONS:
Open Session to start at or after 5:00 p.m.
Marin Water Board Room – 220 Nellen Avenue, Corte Madera, CA 94925

Public Participation:
The public attended this meeting in-person or remotely using one of the following methods: on a computer or smart device, https://marinwater.zoom.us/j/88134852296, or by phone, 1-669-444-9171, using Webinar ID No.: 881 3485 2296.

DRAFT

AGENDA ITEMS:

1. Call to Order and Roll Call

Board President Jed Smith called the meeting to order at 5:00 PM.

DIRECTORS PRESENT
Ranjiv Khush
Diana Maier
Matt Samson
Larry Russell
Jed Smith

2. Adoption of Agenda

Director Khush motioned to adopt the agenda. Director Samson seconded the motion.

There were no public comments.

Voting Yea: Directors Russell, Samson, Khush, Maier, and Smith

Motion passed.

3. Public Comment on Non-Agenda Matters

There was one (1) public comment.

4. Directors' and General Manager's Announcements

- President Smith reminded all that today was election day.
- General Manager provided an update on the Bolinas Road Pipeline Replacement Project in Fairfax.

There were no other announcements.

5. Board Committee Reports

- Chair Maier and Vice Chair Smith reported on agenda items discussed at the Finance & Administration Committee Meeting held on May 28, 2026.

There were no other committee reports provided.

6. Consent Items

a. May 26, 2026 Board Meeting Minutes

RECOMMENDATION: Accept the minutes of the Board of Directors' Regular Bi-Monthly Meeting on May 26, 2026

b. Request for Marin County Elections to Perform Election Services for November 2026 District Elections

RECOMMENDATION: Adopt a resolution calling for and consolidating the election of District Directors in Divisions I, III and IV with the November 3, 2026 Statewide General Election, and requesting that the Marin County Elections Department perform all necessary election services and canvassing of said election (*Resolution No. 8835*)

c. Amendment No. 1 to Contract No. 2050 with Forester and Kroeger Inc.

RECOMMENDATION: Approve Amendment No. 1 to Contract No. 2050 (CN-2050) with Forester and Kroeger, Inc. to add $323,400 for vegetation maintenance and landscaping services supporting the Pump Station Fire Hardening Project for a total not to exceed amount of $5,424,840, and Authorize the General Manager to execute the amendment

d. Award of Contract No. 2061 – Capital Improvement Program – Miracle Mile – East Pipeline Replacement Project (D26016)

RECOMMENDATION: Approve a resolution authorizing award of Contract No. 2061, Capital Improvement Program – Miracle Mile – East Pipeline Replacement Project, to Piazza Construction in the amount of $1,070,000 and authorizing the General Manager to execute any necessary amendments to Contract No. 2061, which do not exceed $110,000 (*Resolution No. 8836*)

e. Amendment No. 1 to Contract No. 2004 with The Professional Tree Care Co. for Tree Maintenance

RECOMMENDATION: Authorize the General Manager to execute Amendment No. 1 to Contract No. 2004 with The Professional Tree Care Co. to extend the contract term for one additional year and not to exceed $256,255

Before the Board voted on the Consent Calendar, Director Samson and President Smith commented on agenda item 6c and its importance to the community and correlation to insurance cost savings.

There were no public comments.

The Board unanimously approved the Consent Calendar.

Motion passed.

7. Regular Items

a. Amendment No. 3 to Professional Services Agreement MA 6188 with Woodard and Curran

RECOMMENDATION: Approve Amendment No. 3 to Professional Services Agreement MA 6188 with Woodard and Curran to provide Water Supply Roadmap Program Management assistance, water supply modeling, review of ARC engineering plans, ARC draft EIR review and assistance responding to comments, finalize In-system Improvement projects evaluation and other services such as grant support not to exceed $477,900 and authorize the general manager to execute the amendment

Water Resources Director Paul Sellier presented this item.

Discussion followed.

There were two (2) public comments.

Director Khush motioned to approve Amendment No. 3. Director Samson seconded the motion.

Voting Yea: Directors Russell, Samson, Khush, Maier, and Smith

Motion passed.

b. Budget Update

RECOMMENDATION: Receive an update on the District's budget planning process

Finance Director Bret Uppendahl presented this item.

Discussion ensued.

There were no public comments.

This was an information item. No formal Board action was taken.

c. Board Policy No. 46 (Reserve Policy)

RECOMMENDATION: Approve changes to Board Policy No. 46 to establish a Facility Reserve Fund

Finance Director Uppendahl also presented this item.

Discussion followed.

There was one (1) public comment.

Director Samson motioned to approve the changes to the policy. Director Khush seconded the motion.

Voting Yea: Directors Russell, Samson, Khush, Maier, and Smith

Motion passed.

8. Future Board and Committee Meetings and Upcoming Agenda Items

a. Upcoming Meetings

The board secretary announced the upcoming Board and Watershed Committee meetings, as well as the cancellation of the North Bay Watershed Association Meeting in June.

9. Announcement of Closed Session Item(s); Public Comments on Closed Session Item(s) - None.

10. Reconvene to Open Session; Closed Session Report Out - Not applicable.

11. Adjournment

There being no further business, the Board of Directors' meeting adjourned on June 2, 2026, at 6:12PM.

_____

Board Secretary

STAFF REPORT

Meeting Type:	Board of Directors
Title:	General Manager's Report May 2026
From:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Approve Report

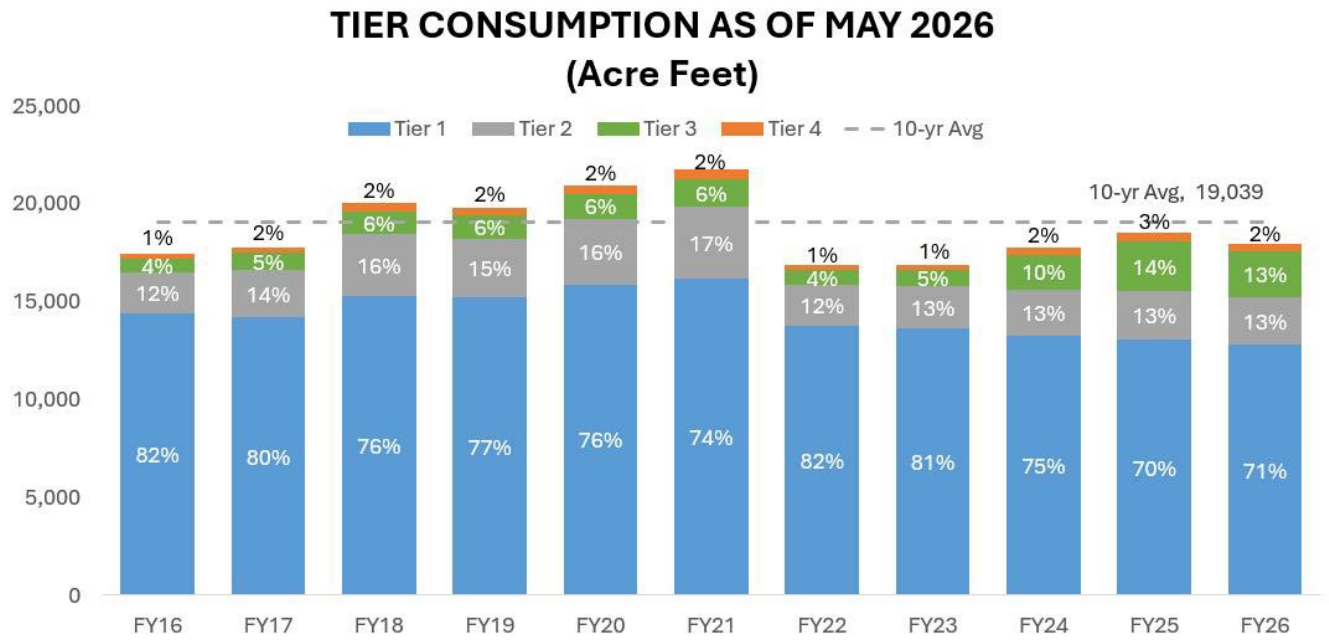
SUMMARY:

A. HIGHLIGHTS:

- The daily average net production for the month of May 2026 was 20.6 MGD compared to 23.3 MGD for the month of May 2025. Typical usage for May is 26.0 MGD.
- Staff had a preliminary meeting on the Greenbrae Boardwalk Pipeline Replacement Project at the Marin Project Coordination Meeting. The Greenbrae Boardwalk PRP will replace approximately 2,200 feet of 4-inch pipe that has had multiple leaks and is located over the bay, serving 55 residents that live on the bay. Engaging the regulators early on in the design process will ensure that staff obtain all the appropriate environmental permits necessary to construct this project.
- Staff responded to 1,435 underground service alert tickets and marked out approximately 46,311 feet (~8.77 miles) of pipe in the month of May, helping ensure that District underground infrastructure is not damaged by contractors or homeowners during excavation work.
- Assistant Utility Maintenance Worker recruitment skills testing was conducted at Pelican Way Yard. Candidates participated in a series of hands-on exercises designed to evaluate core competencies essential to the role. The assessment included basic wood framing applications, vehicle operations, pipe flange assembly, excavation tasks, material lifting and carrying, setting a concrete meter box to grade, and tool identification. These exercises are designed to provide a comprehensive evaluation of each candidate's practical skills, safety awareness, and readiness to perform common duties associated with the Assistant Utility Maintenance Worker position.
- The District continued implementation of BFFIP Year 7 through May 2026 and wrapped up the Broom Maintenance. From February through May roughly 50 individuals in total were assigned to various Broom projects and the District anticipates reporting over 890 acres of broom managed this season.
- The Watershed partnered with Engineering on a facilities wildfire hardening project to initiate

vegetation clearance and hardscaping install around 49 Pump Stations throughout the District's footprint.

- Marin County Fire Dept's Tam Crew arrived at the Watershed in May and prepped approximately 120 acres of Oak Woodland habitat in the Pine Point and Knob I units for Prescribed Burns later this summer.
- Fisheries staff captured and tagged the third highest number of Coho Salmon in the District's twenty-year history of smolt trap monitoring on Lagunitas Creek.
- The District awarded a $985K construction contract to Hanford Applied Restoration and Conservation to complete Phase 1C of the Lagunitas Creek Enhancement Project in summer 2026.
- District hosted Roads and Trails Management Plan Community Workshop on May 30th.
- A bilingual outing at Lake Lagunitas engaged community leaders from the Multicultural Center of Marin in a walk and talk about water supply and watershed health


TIER CONSUMPTION AS OF MAY 2026
(Acre Feet)
25,000
20,000
15,000
10,000
5,000
0
Tier 1
Tier 2
Tier 3
Tier 4
10-yr Avg
10-yr Avg, 19,039
FY16
FY17
FY18
FY19
FY20
FY21
FY22
FY23
FY24
FY25
FY26
1%
4%
12%
82%
2%
5%
14%
80%
2%
6%
16%
76%
2%
6%
15%
77%
2%
6%
16%
76%
2%
6%
17%
74%
1%
4%
12%
82%
1%
5%
13%
81%
2%
10%
13%
75%
3%
14%
13%
70%
2%
13%
13%
71%

AWARDED GRANTS					
PROJECT	FUNDER	FUNDING OPPORTUNITY	DESCRIPTION	STATUS	AWARD AMOUNT
Marin City and Canal Pipeline Replacement Project	DWR	Prop.1. Round 2 IRWM Disadvantaged Community	Replacing aging transmission lines and laterals in Marin City and San Rafael's Canal District	Awarded; in progress and on track.	$6,408,000
Forestry Corps	CCNB		Workforce development; state funding directly to CCNB to fund crews working on the watershed	Awarded; in progress and on-track.	$500,000
Lagunitas Creek Salmonid Spawning Gravel Improvement Project - Phase 2 Design	CDFW	Fisheries Restoration Grant Program (FRGP)	Lagunitas Creek Coho Habitat Enhancement Plan - 100% Designs for Phase 2 Sites (7, 8, 9, 10, 11); CEQA	Awarded; in progress and on-track.	$599,689
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	DWR	Riverine Stewardship Program (RSP)	This project will inject 1,700 tons of clean river-run gravel just below Peters Dam and Kent Lake at two sites within Lagunitas Creek and is part of our larger effort to restore 4 miles of Lagunitas Creek to its historical geomorphic condition.	Awarded; in progress and on-track.	$590,000
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	USBR		Gravel augmentation for Lagunitas Creek Sites 1-3	Awarded; in progress and on-track. No-cost extension was executed to extend through 2026 construction.	$1,400,000
Rain Water Harvesting Project	MCSTOPP		Barells for customers	Awarded; in progress and on-track.	$15,032
Water Conservation: turf rebates	USBR	Water and Energy Efficiency Grant (WEEG)	Turf rebates	Awarded; in progress and on track	$722,925
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	CDFW	Prop 1	Lagunitas Creek Restoration Sites 1-6	Awarded; in progress and on track	$4,659,898
Azalea Hill Trail Restoration	California State Parks	Recreational Trails Program (RTP)	Azalea Hill Restoration	Awarded; closeout package and final invoice have been submitted and are under review.	$952,657
One Tam Regional Forest Health Project	CA WCB		BFFIP implementation	Awarded; in progress and on-track.	$4,260,000
Water Resources - Modeling	USBR	WaterSMART Aplied Science	Funding for weather modeling to inform water resources management	Awarded; in progress.	$150,628.00
One Tam Regional Forest Health Project Phase II	CAL FIRE	California Climate Investments Department of Forestry and Fire Protection Forest Health Program 2023-2024	BFFIP Implemenation for 2-3 years	Awarded; in progress and on-track.	$6,966,078
Lagunitas Creek Salmonid Spawning Gravel Improvement Project	Wildlife Conservation Board	Restoration	Funding for construction of Phase 2A in 2027	Secured	$1,109,000
Water Supply	U.S. Army Corps of Engineers	Water Resources Development Act 2022	$2M for Marin Water is written into the current FY26 Army Corps funding bill.	Secured; Marin Water was written into the FY26 Army Corps workplan. Staff have begun coordinating with USACE SF.	$2,000,000
			TOTAL FUNDED:		$30,333,907

PENDING GRANTS					
PROJECT	FUNDER	FUNDING OPPORTUNITY	DESCRIPTION	STATUS	AMOUNT REQUESTED
Water Supply	USACE	FY27 Congressionally Directed Spending Requests	Staff is purusuing funding through the congressional directed spending request process for the offices of Rep. Huffman, Sen. Padilla, and Sen. Schiff.	Rep. Huffman: Declined Sen. Padilla: Pending Sen. Schiff: Pending	$3M
One Tam Block Grant	California Natural Resources Agency	Block/Regional Grant	One Tam block grant request to CNRA to increase the pace and scale of forestry work between FY26 and FY32. Total request across One Tam agencies is $28,378,435. MMWD's request of $10,371,070 would enable us to complete an estimated 2,700 additional treatment acres during the project period. Submitted 7/2/25.	Pending	$10,371,070
Cash for Grass Turf Replacement	USBR	WaterSMART Small-Scale Water Efficiency	Funds requested to support the FY28-FY29 Cash for Grass rebates.	Staff submitted a full proposal on 6/1/26.	$83,250
Beneficial Gravel ReUse	CDFW	Fisheries Restoration Grant Program (FRGP)	Approximately 50% of historic anadromous salmonid habitat in the Lagunitas Creek watershed lies above Seeger Dam (Nicasio Reservoir) and Peters Dam (Kent Lake). These dams and past land management practices have reduced spawning gravel needed for endangered CCC coho salmon and threatened CCC steelhead. Marin Water has monitored these species for over 25 years and implemented restoration efforts, including gravel augmentation. This project will create a long-term plan for beneficial gravel reuse in the watershed.	Staff submitted a concept proposal on 3/2 and consulted with CDFW. CDFW indicated the project is a good fit and well-designed. **Update**: the full proposal opened on May 5; staff will submit a proposal for $242,000 by the 6/2 deadline.	$400,000

OPEN FUNDING OPPORTUNITIES					
PROJECT	FUNDER	FUNDING OPPORTUNITY	DESCRIPTION	STATUS	TIMELINE
BFFIP	CAL FIRE	Forest Health Program	Funds for active restoration and reforestation activities aimed at providing for more resilient and sustained forests. As in past Forest Health phases, the District will apply as part of the One Tam collaborative. Total One Tam Request: $7,893,175 Marin Water Request: $3,822,934	Submitted pre-proposal 3/28/26. **Update**: One Tam has been invited to submit a full proposal.	Closes June 29, 2026
BFFIP	CAL FIRE	Regional Wildfire & Landscape Resilience	The CAL FIRE Regional Wildfire and Landscape Resilience Grants fund collaborative, multi-benefit projects—such as hazardous fuels reduction, prescribed burns, and reforestation—to reduce wildfire risk and improve ecosystem health. The District will apply as part of the One Tam collaborative.	In progress	Pre-Application closes June 29th, 2026
Infrastructure Hardening	CAL FIRE	Wildfire Prevention Grants	Funds for projects in and near fire threatened communities to improve public health and safety while reducing greenhouse gas emissions.	In progress; staff consulted with Marin County Fire 6/1/26. Marin Water will prepare an independent proposal focusing on fuel reduction around critical infrastructure.	Closes July 8, 2026
ARC	USBR	WaterSMART Drought Response	Up to $1.5M for projects designed to improve drought resilience by developing effective water management strategies and drought contingency plans. $13.5M total available with 20 awards expected.	In progress	Closes July 28, 2026
TBD	USACE	Report to Congress on Future Water Resources Development	The Annual Report to Congress on Future Water Resources Development provides an opportunity for communities to inform Congress about their interest in a new congressional authorization – or modifying an existing authorization – for specifically authorized Civil Works water resources studies, projects, and environmental infrastructure programs. This Annual Report provides Congress with a list of potential studies and projects to newly authorize and a list of existing study, project, and programmatic authorities to modify. This is the first step in the Watre Resources Development Act (WRDA) process.	Staff is reviewing process for next steps	Closes September 1, 2026
TBD	USBR	WaterSMART Enhancing Water Resources	The WaterSMART Enhancing Water Resources Projects funding opportunity supports collaboratively developed projects that benefit multiple water users, improve water supply reliability, and enhance watershed health. Note: this funding opportunity was previously known as Environmental Water Resources Projects.	In progress; evaluating project best fit	Closes September 9, 2026

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 2025/26		FY 2024/25	
	(million gallons)	(acre-feet)	(million gallons)	(acre-feet)
Potable				
Total production this FY	5,810	17,829	6,536	20,059
Monthly production, May	635	1,948	718	2,203
Daily average, May	20.48	62.84	23.16	71.07
Recycled				
Total production this FY	176.18	540.68	236.38	725.43
Monthly production, May	22.64	69.48	35.22	108.09
Daily average, May	0.73	2.24	1.14	3.49
Raw Water				
Total production this FY	41.39	127.01	57.28	175.79
Monthly production, May	3.23	9.9	-4.28	-13.13
Daily average, May	0.1	0.32	-0.14	-0.42
Imported Water				
Total imported this FY	1,637	5,022	1,593	4,888
Monthly imported, May	78	240	134	410
Reservoir Storage				
Total storage, May	24,691	75,774	24,671	75,712
Storage change during May	-784	-2,405	-897	-2,754
Stream Releases				
Total releases this FY	2,915	8,945	2,698	8,280
Monthly releases, May	173	530	283	870

2. Precipitation:

	FY 2025/26 (in.)	FY 2024/25 (in.)
ALPINE	44.76	49.71
BON TEMPE	36.08	46.78
KENT	38.51	54.03
LAGUNITAS	41.72	50.24
NICASIO	26.87	37.09
PHOENIX	38.17	51.98
SOULAJULE	28.01	40.58

Average to date = 51.89 inches

3. Water Quality:

Laboratory	FY 2025/26	FY 2024/25
Water Quality Complaints:		
Month of Record	14	10
Fiscal Year to Date	145	190
Water Quality Informational Inquiries:		
Month of Record	7	10
Fiscal Year to Date	100	121

The WQ Lab ensured that the water supplied met or surpassed water quality regulations by collecting and analyzing 1,374 analyses on treatment plants and distribution system samples.

Mild steel corrosion rates averaged 3.10 (2.72 – 3.51) MPY. The AWWA has recommended an operating level of <5 MPY with a goal of <1 MPY.

Complaint Flushing: No flushing events were performed to improve water quality for the month on record.

Disinfection Program: 2,639’ of new pipeline was disinfected during the month of May. Performed chlorination on 19 water storage tanks to ensure compliance with bacteriological water quality regulations.

Tank Water Quality Monitoring Program: Performed 85 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 analyzed 1,374 treatment plants and distribution water samples, and the water quality department treated 19 tanks for low chlorine and checked an additional 85 tanks for low chlorine residual in May 2026.

4. Water Treatment:

	San Geronimo		Bon Tempe		Ignacio	
Treatment Results	Average	Monthly Goal	Average	Monthly Goal	Average	Monthly Goal
Turbidity (NTU)	0.06	≤ 0.10	0.02	≤ 0.10	0.05	≤ 0.10
Chlorine residual (mg/L)	2.80	2.75 *	2.81	2.75 *	2.76	2.75 *
Color (units)	0.4	≤ 15	0.2	≤ 15	0.1	≤ 15
pH (units)	7.9	7.8*	7.8	7.8*	7.9	8.1**

* Set monthly by Water Quality Lab

** pH to Ignacio is controlled by SCWA

5. Capital Improvement:

a. Pine Mountain Tank Phase 2 – New Water Tanks Project (D21043): The Pine Mountain Tunnel Tanks Replacement Project is a multi-year two-phased project that will replace the existing Pine Mountain Tunnel. The current project (Phase 2) will construct two 90-foot inside diameter pre-stressed concrete potable water storage tanks, install yard piping and control systems, and complete final site grading.
   - Project Budget: $19,142,500
   - Monthly Activities: With the project currently under its annual suspension during the Northern Spotted Owl nesting season, the District and its contractor are preparing for construction of the tanks next season. Construction will resume after the prohibition period ends on August 1, 2026, or after biological surveys provide early clearance to begin field work. Project completion is estimated in 2029.

b. San Geronimo Treatment Plant Roof Replacement Project (D21034): The San Geronimo Treatment Plant Roof Replacement Project is a component of the District's Capital Improvement Program. This project will remove and replace the existing leaky roof membrane

with a new Class A fire-rated thermoplastic polyolefin (TPO) roof membrane and will install fall protection guardrails at the San Geronimo Treatment Plant and North Marin Line Pump Station.

- Project Budget: $1,495,747
- Monthly Activities: The Contractor is continuing to fabricate 1,000 linear feet of permanent guardrail to be installed atop the treatment plant roofs, which is anticipated to be performed in June. The remaining scope of work to be completed includes guardrail installations and subsequent roofing system improvements. Project completion is estimated Summer 2026.

c. Bon Tempe Treatment Plant Backwash Vale Replacement Project (D23008): This project is part of the District's Capital Improvement Program and will address the deteriorating condition of the existing backwash system by replacing existing backwash valves, select pipe, and associated appurtenances.
   - Project Budget: $1,200,960
   - Monthly Activities: The contractor completed all exterior work and the installation of four new 24-inch backwash valves inside the plant. Remaining work includes the installation of 8-inch house water piping and other miscellaneous improvements, anticipated to begin in July and August. Project completion is estimated Summer 2026.

d. Kastania Pump Station Rehabilitation Project Phase II (D21027): This project will install a single, new high efficiency pump and motor and will incorporate various new drainage features at Kastania Pump Station. The project will also install a new 16" pressure relief valve and 8,000-gallon pressure relief discharge tank at Ignacio Treatment Plant.
   - Project Budget: $3,733,577
   - Monthly Activities: The contractor continues to perform the initial phase of the project, which includes procuring equipment and materials for installation. Field installation work will begin once all materials are procured. Project completion is estimated Summer 2027.

e. Marin City Phase II Pipeline Replacement Project (GC25005): Marin City Phase II Pipeline Replacement Project is a component of the District's Capital Improvement Program. The Project will install approximately 10,440 feet of 16, 8, 6 and 4-inch welded steel pipe to replace the old, leak prone, seismic deficient cast iron and asbestos cement piping installed as early as 1961.
   - Project Budget: $5,387,010
   - Monthly Activities: The contractor has completed the installation of all underground facilities, including more than 10,440 linear feet of mainline piping and 137 water services. Remaining work includes final asphalt paving and concrete restorations, which are currently underway. The project is estimated to be completed ahead of schedule by July 2026.

f. Sleepy Hollow Pipeline Replacement Project (F24002): Sleepy Hollow Pipeline Replacement Project is a component of the District's Fire Flow Improvement Program. This Project will install approximately 4,250 feet of new 12-, 8-, and 6-inch welded steel pipe to replace old, leak-prone, fire flow deficient piping installed as early as 1932.
   - Project Budget: $2,328,132

- Monthly Activities: The contractor has completed the installation of all underground facilities, including more than 4,250 linear feet of mainline piping and 60 water services. The contractor is currently performing roadway pavement restoration. Project completion is estimated Summer 2026.

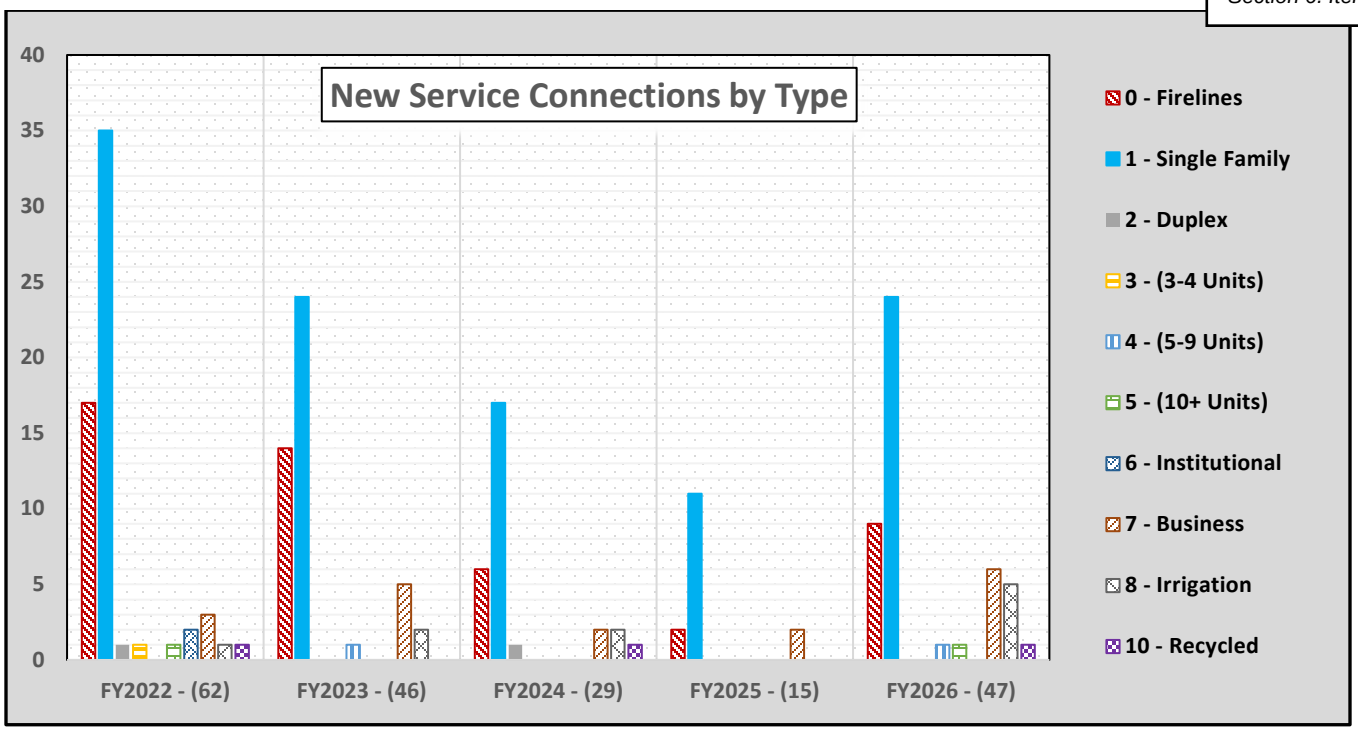
g. Bolinas Road Pipeline Replace Project (D18026): This project will install approximately 4,350 feet of new 10", 8", 6" and 4" welded steel pipe to replace leak prone cast iron pipe that's over 100 years old.
   - Project Budget: $3,300,855
   - Monthly Activities: The contractor has mobilized to the project site and completed preliminary potholing work to verify locations of existing underground utilities. The contractor begins installing the new water main on June 1. Work is anticipated be completed Fall 2026.

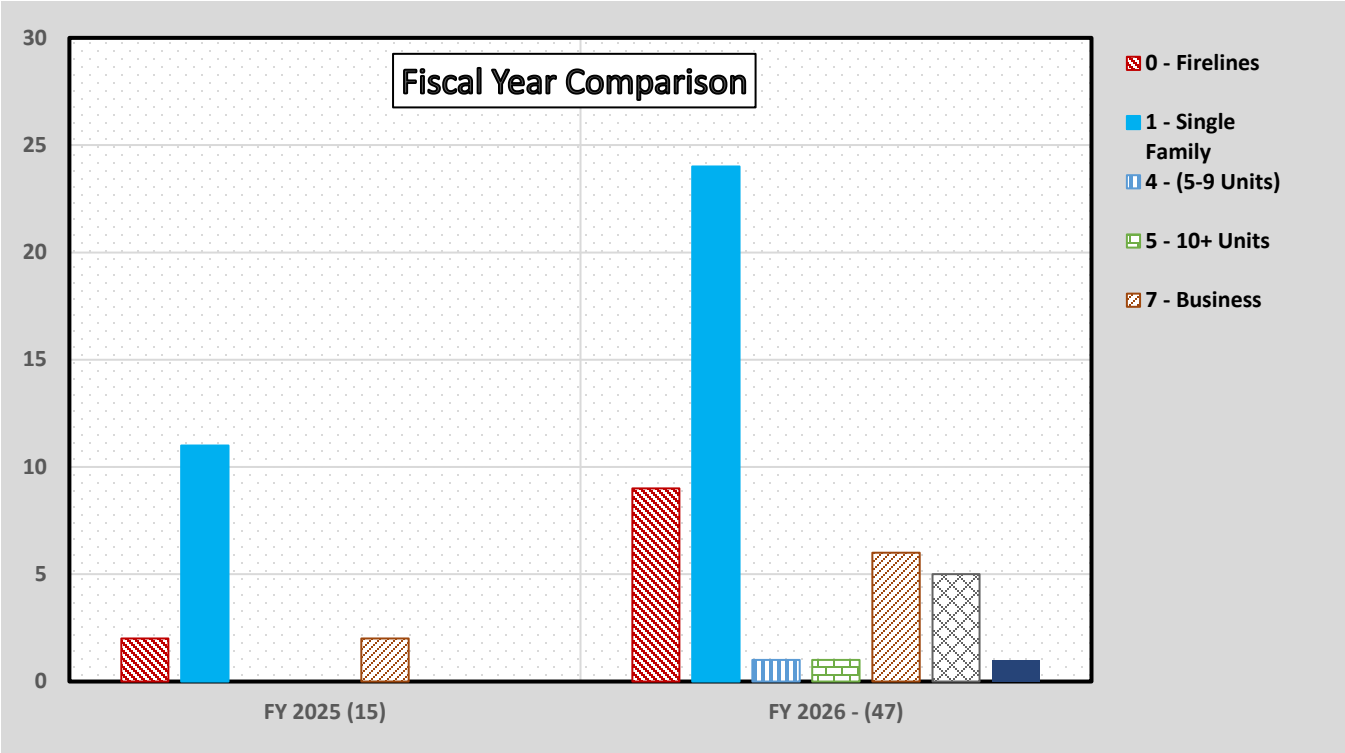
h. Tocaloma Pump Station Rehabilitation Project (D20008): This project is a component of the District's Capital Improvement Program and rehabilitates the Tocaloma Pump Station. The project consists of various facility improvements including constructing a new seismically resilient and fire-hardened electrical control building, installing new electrical switchgear, replacing five (5) pumps and motors, installing variable frequency drives for each pump, and replacing critical valves and appurtenances.
   - Project Budget: $12,085,685
   - Monthly Activities: The construction contract has been executed and a pre-construction meeting is planned for June. The contractor is preparing initial project submittals, and material and equipment procurement. The estimated completion date is December 2028.

i. Scenic Avenue Tank Replacement Project (D25025): This project is a component of the District's Capital Improvement Program and replaces an existing 20,000-gallon redwood tank in San Anselmo with a new seismically resilient bolted steel tank.
   - Project Budget: $715,024
   - Monthly Activities: The construction contract has been executed and a pre-construction meeting is planned for June. The contractor is preparing initial project submittals, and material and water tank procurement. The project is anticipated to be complete Fall 2026.

6. Other:

Pipeline Installation	**FY 2025/26**	**FY 2024/25**
Pipe installed during May (feet)	770	54
Total pipe installed this fiscal year (feet)	27,567	29,327
Total miles of pipeline within the District	908*	909*
** Reflects adjustment for abandoned pipelines*		
Pipe Locates (1,435 Responses)	**FY 2025/26**	**FY 2024/25**
Month of May (feet)	46,311	56,846
Total this fiscal year (feet)	345,687	415,111
Main Line Leaks Repaired	**FY 2025/26**	**FY 2024/25**
Month of May	7	8
Total this fiscal year (7/1/25-5/31/26)	114	131
Services	**FY 2025/26**	**FY 2024/25**
Service upgrades during May	19	15
Total service upgrades this FY	150	176
Service connections installed during May	2	4
Total active services as of June 1st, 2025	60,653	60,599
(Total Including firelines)	62,054	61,987


New Service Connections by Type
40
35
30
25
20
15
10
5
0
FY2022 - (62)
FY2023 - (46)
FY2024 - (29)
FY2025 - (15)
FY2026 - (47)
0 - Firelines
1 - Single Family
2 - Duplex
3 - (3-4 Units)
4 - (5-9 Units)
5 - (10+ Units)
6 - Institutional
7 - Business
8 - Irrigation
10 - Recycled


Fiscal Year Comparison
30
25
20
15
10
5
0
FY 2025 (15)
FY 2026 - (47)
0 - Firelines
1 - Single Family
4 - (5-9 Units)
5 - 10+ Units
7 - Business

7. Recruitments and Hires:

The District recruited for the following positions:

1. Assistant Utility-Maintenance Worker
2. Distribution System Operator
3. Engineering Technician
4. Field Supervisor
5. General Manager
6. Junior, Assistant or Associate Engineer
7. Natural Resources Technician I/II (Limited Term) – Fisheries
8. Senior Meter Reader and Repair Worker
9. Summer Helpers – Meter Box Maintenance
10. Utility Crew Leader
11. Water System Technician
12. Watershed Aide (Maintenance)

The District hired new employees for the following positions:

1. Watershed Aide (Veg Management)

Employees promoted through competitive process:

1. Supervisor of Facilities Maintenance and Special Projects

8. Demand Management:

	May-26	FY 25/26 TOTAL	FY 24/25 TOTAL	FY 23/24 TOTAL
WATER-EFFICIENCY PROGRAMS				
Water-Use Site Surveys				
Conservation Assistance Program (CAP) Consultations				
Residential properties resi 1-2 (single-family)	75	786	692	404
Residential properties resi 3-5 (multi-family units)	0	9	10	6
Non-residential properties resi 6-7 (commercial)	0	0	1	0
Dedicated irrigation accounts resi 8-10 (large landscape)	1	4	7	0
Marin Master Gardeners' Marin-Friendly Garden Walks				
Residential garden walks	17	136	147	173
Public Outreach, Education, Customer Service				
Public outreach events (number of people attending)	850	3372	3870	7022
Public education events (number of participants)	0	563	265	425
Department customer calls/emails	411	5369	6124	4485
Outreach to new Marin Water customers (letters sent)	178	1791	1483	1908
School Education				
School assemblies				
Number of activities	0	14	19	19
Number of students reached	0	4456	7212	21850
Field trips				
Number of activities	4	14	22	16
Number of students reached	92	312	471	343
Classroom presentations				
Number of activities	1	17	13	14
Number of students reached	50	565	390	457
Other (e.g. Earth Day booth events, school gardens)				
Number of activities	0	4	2	3
Number of students reached	0	160	225	400
Incentives				
Rain Barrel/Cisterns approved	0	3	14	9
Rain Barrel/Cisterns gallons	0	1860	13650	0
Rain Barrel Give-a-way (Gallons)	350	14700	33550	4840
"Cash for Grass" Lawn Replacements total properties approved	3	72	81	61
"Cash for Grass" (Best Practices) square ft. lawn replaced	0	4057	17699	0
"Cash for Grass" (Standard) square ft. lawn replaced	2129	82463	51049	0
"Cash for Grass" (MCSTOPP) square ft. lawn replaced	0	7961	3555	0
Number of Laundry-to-Landscape Systems (kits) approved	1	2	0	1
Hot water recirculating system rebates	0	5	6	11
Pool Cover rebates	0	5	25	35
Number of Smart Home Water Monitor "Flume Direct Distribution" redeemed		338	456	544
Number of Smart Controllers MW rebates approved	0	22	37	49
Number of Smart Controllers "Rachio Direct Distribution" approved	5	97	184	219
Custom Rebate - Commercial and Multi-Family	0	1	1	0
Advanced Metering Infrastructure (AMI)				
AMI leak letters sent to customers (>200 GPD)	72	1051	1319	1330
ORDINANCES				
Water Waste Prevention				
Water Waste Reports Received	14	103	177	224
Water Waste Notifications Sent	5	22	34	49
Landscape Plan Review				
Plans submitted	7	108	90	117
Plans exempt	0	23	15	23
Plans completed	5	33	23	30
Plans in workflow (pass & fail)	13	176	139	172
Tier 4 Exemption				
Inspections that resulted in a pass	0	0	1	2

9. Watershed Protection:

Firearms Violation

On Saturday, May 30th, Watershed Deputy Walton saw a long gun case in a vehicle at the Lake Lagunitas Parking Lot while checking for parking passes. Possession of a firearm at this location was a violation of MMWD Land Use Regulations and the California Fish and Game Code. Walton contacted the driver, who had been fishing, and determined the gun was locked in its case and unloaded. The driver was warned for this weapons violation.

Person at East Peak Placed on Mental Health Hold

On Friday, May 29th, a 58-year-old male who is an arson registrant was reported to be having a medical emergency while illegally camping on MMWD lands in the East Peak area. It was determined by responders that the subject was schizophrenic, off his medications, and having a mental health emergency. He was placed on a 5150 WI hold by State Parks as a danger to self and then transported by ambulance to the hospital.

Medical Aid Calls Keep Rangers Busy in May

n May, Rangers responded to nine medical aid calls on the watershed. The most serious occurred on Cataract Trail, where a hiker fell over 25 feet and fractured their skull. Another hiker broke their leg on Nora Trail, and several hikers had allergic reactions.

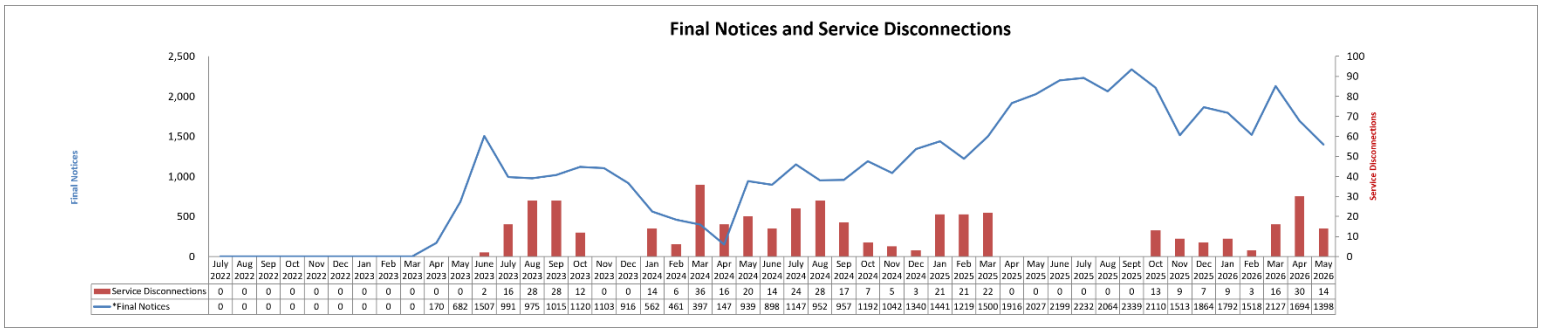
Rangers Complete Wildland Fire Safety Training Annual Refresher

On May 6th, the Rangers and Watershed Maintenance Staff completed mandatory Wildland Fire Safety Training Annual Refresher (RT-130) class. This training prepares the watershed staff for the fire season. Throughout the rest of the fire season, the rangers and maintenance staff will complete additional in-service fire training and will hold drills with the local fire departments.

RANGER ACTIVITIES	
Law Enforcement	**#**
MMWD Ordinance Violations	
Citations	35
Dog Off Leash	1
Bike on Trail	1
Fishing with Live Bait	1
Parking	33
Warnings	102
Penal Code Violations	**#**
Vandalism	18
Resisting a Peace Officer	1
Theft	1
Vehicle Code Violations	**#**
• Parking Violations Cites	9
• Warnings	13
Fish and Wildlife	**#**
• License Checks	44
• Warning for Fishing Violations	7
Other	
Misc. Law Enforcement Calls	41
Mental Health Hold (5150)	1
Suspicious Circumstances	2
Weapons Violation	1
Medical/Fire	**#**
• Medical Calls	8
General	**#**
Visitor Assists	156
Dam Checks	27
Assist MMWD groups	52
Outreach and Interpretation Events	3
Watershed Observation Reports	**#**
Received	7
Additional Patrols	
Foot	86 miles
Bike	70 miles
ATV/UTV	86 miles
Boat patrols	2
LIDAR patrols	2

10. Shutoff Notices and Disconnections:

*Final Notices
Service Disconnections
* Includes 10 day and final notices



	July 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	June 2023	July 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	June 2024	July 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	June 2025	July 2025	Aug 2025	Sept 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026
Service Disconnections	0	0	0	0	0	0	0	0	0	0	0	2	16	28	28	12	0	0	14	6	36	16	20	14	24	28	17	7	5	3	21	21	22	0	0	0	0	0	0	13	9	7	9	3	16	30	14
*Final Notices	0	0	0	0	0	0	0	0	0	170	682	1507	991	975	1015	1120	1103	916	562	461	397	147	939	898	1147	952	957	1192	1042	1340	1441	1219	1500	1916	2027	2199	2232	2064	2339	2110	1513	1864	1792	1518	2127	1694	1398

FISCAL IMPACT: Not Applicable.

ATTACHMENT(S): None.

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Office of the General Manager	_____	
	Ben Horenstein General Manager	**Ben Horenstein General Manager**

STAFF REPORT

Meeting Type:	Board of Directors
Title:	Fiscal Year 2026/27 Insurance Renewal
From:	Bret Uppendahl, Finance Director
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Approve Renewal of Annual Insurance Policies for All Risk Property, Excess Liability, Automobile Physical Damage, Excess Workers Compensation, Pollution, Cyber, Drone and Crime and Fidelity for Fiscal Year (FY) 2026/27

SUMMARY: The FY 2026/27 Insurance Renewal estimates were reviewed by the Finance Committee on May 28, 2026. The annual overall cost of all insurance policies is $1,891,882, with a total increase of 0.2% compared to FY 2025/26. All policies experienced a decrease in premium from last year with the exception of liability insurance. The largest premium amounts are for property and liability insurance; which together account for approximately 90 percent of the District's annual premium. Property insurance decreased by 16% and liability increased by 12%.

DISCUSSION: The District's existing insurance policies are due for renewal on July 1, 2026. The recommended coverage was developed with staff utilizing the expertise of the District's insurance broker, Arthur J Gallagher Risk Management Services, Inc. (Gallagher). Gallagher obtained quotes from underwriters and negotiated the premium and coverage on behalf of the District. For the brokerage services provided by Gallagher, the District will pay an annual fee of $55,000. The District's contract with Gallagher includes an opt-out of contingent and supplemental compensation.

Excess Liability

The proposed FY 2026/27 liability coverage retains a $25 million coverage limit with an SIR of $500,000 but is structured with four layers, compared to three in FY 2025/26. The premium for a $5 million policy limit with SIR amount of $500,000 from Great American E&S Insurance Company is $531,068. The 2nd layer of $5 million in Excess Liability limit is from Accredited Specialty Insurance Company, with a premium of $265,534. The 3rd layer of $5 million in Excess Liability limit is from Starstone Specialty Insurance Company, with a proposed premium of $186,137. The 4th layer of $10 million in Excess Liability limit is from Gemini Insurance Company, with a proposed premium of $195,526. In total, Liability insurance premiums are $1,178,265, an increase of 122,300 or 12%.

Excess Workers' Compensation

This policy provides Workers' Compensation insurance up to $1 million for the employer's liability and coverage per State of California statutory limits. The proposed coverage is from the current incumbent, Arch Insurance Company and the quoted premium is $101,970, a decrease of $12,836 or 11% from the previous year.

All Risk Property

The types of losses covered under this policy are for physical loss or damage to real and personal property from fire, theft, vandalism, and equipment breakdowns. The policy provides coverage for the replacement cost for insured events.

The premium for FY 2026/27 is $526,218, which is a decrease of $96,830 or 16% from the prior year. The deductible was reduced from $1 million to $500,000 per occurrence ($1 million for flood losses). The policy provides All Risk limit of $200 million, equipment breakdown limit of $50 million and a flood limit of $10 million. The policy does not provide earthquake coverage and has limits on flood losses based on flood zones. The proposed coverage is from SwissRe Corporate Solutions.

Automobile Physical Damage

This coverage is for physical damage to automobiles and equipment owned and or used for District operations. The policy will provide replacement cost of a like kind and quality automobile or equipment with a total coverage limit of $10 million with a deductible amount of $25,000. The FY 2026/27 premium is $29,264 from Hanover Insurance, a decrease of $6,845 or 19% from the policy cost last year.

Aviation Insurance Policy

The policy is to cover the District's drone operations. The coverage is up to $1 million with a 10% deductible. The FY 2026/27 premium is $3,108, a decrease of $79 or 2% from the prior year. The carrier is Global Aerospace, Inc.

Cyber and Privacy Liability

The coverage for the FY 2026/27 is from Great American Fidelity Insurance Company with a premium of $22,699, a decrease of $6,317 or 22% from last year. The policy covers losses due to privacy or security breaches, privacy regulatory claims related to customer and employee confidential information, cyber threats and or extortion, digital asset restoration, and business income loss. The policy would pay claims and recovery costs up to $1 million after the self-retention amount of $50,000 per claim.

Pollution Policy

The 2026/27 premium is $14,777, a decrease of $6,599 or 31% from last year. The policy is with Illinois Union Insurance Company and will have a $1 million coverage limit with a deductible amount of $25,000.

Crime Policy

The 2026/27 premium is $3,200, a decrease of $1,102 or 26% from last year. The policy's $1 million coverage includes employee theft, forgery or alterations, theft of money and securities, computer fraud, funds transfer fraud and money order and counterfeit money and has a deductible amount of $15,000.

Terrorism Policy

The District is adding a new policy that includes property coverage of $100 million and liability coverage of $5 million for terrorism and sabotage with a $0 deductible. The 2026/27 premium is $12,382 for coverage with Talbot.

ENVIRONMENTAL REVIEW: Not applicable.

FISCAL IMPACT: The FY 2026/27 cost for the annual insurance premium is $1,891,882 and is included in the adopted budget.

ATTACHMENT(S):

1. Premium Summary FY 2026/27
2. Insurance Proposal for FY 2026/27

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Finance	**Bret Uppendahl** **Finance Director**	**Ben Horenstein** **General Manager**

Line of Coverage	Limits	SIR/Deductible	Insurance Company	25/26 Expiring Premium	26/27 Renewal Quotes
Liability - 1st Layer	$5,000,000	$500,000 SIR	Great American E&S Insurance Company	$ 737,838.00	$ 531,068.00
Excess Liability - 2nd Layer	$5,000,000	$5M Underlying	Accredited Specialty Insurance Company	(included in 1st Layer)	$ 265,534.00
Excess Liability - 3rd Layer	$5,000,000	$10M Underlying	Starstone Specialty Insurance Company	$ 174,271.00	$ 186,136.72
Excess Liability - 4th Layer	$10,000,000	$15M Underlying	Gemini Insurance Company	$ 143,856.00	$ 195,526.00
Excess Workers' Compensation	Statutory Workers Compensation Limits $1,000,000	$750,000 Each Accident $750,000 Disease, Each Employee	Arch Insurance Company	$ 114,806.00	$ 101,970.00
Property	$200,000,000 Per Occurrence Full Total Insured Value (TIV) = $546,253,835 $50,000,000 Equipment Breakdown $10,000,000 Flood $7,500,000 Business Income	$500,000 Per Occurrence $500,000 Per Occurrence $1M Per Occurrence	SwissRe Corporate Solutions Capacity Insurance Corporation	$ 623,048.00	$ 526,218.00
Inland Marine - Equipment and Auto Physical Damage	$10,000,000 APD Per Occurrence $1,883,375 Contractor's Equipment $77,782 Boats, Motors & Trailers	$25,000 Per Occurrence $25,000 Per Occurrence $25,000 Per Occurrence	Hanover	$ 36,109.00	$ 29,264.00
Aviation Unmanned Aircraft Systems (UAS) Drone Liability and Physical Damage	$1,000,000 Per Schedule - $16,020 TIV for PD	In Motion: 10% Not in Motion: 10%	American Alternative Ins; National Indemnity Co; Tokio Marine America Ins	$ 3,187.00	$ 3,108.00
Cyber	$1,000,000 Policy Aggregate $1,000,000 Loss Expense Aggregate $100,000 Extortion Costs $250,000 Cyber Crime Sublimit $1,000,000 Liability Expense Aggregate	$50,000 Retention	Great American Fidelity Insurance Company	$ 29,016.00	$ 22,698.57
Premises Pollution Liability	$1,000,000 Per Pollution Condition	$25,000 Per Pollution Condition	Illinois Union Insurance Company	$ 21,376.00	$ 14,777.44
Crime	$1,000,000	$15,000 Deductible	Great American Insurance Company	$ 4,302.00	$ 3,200.00
Standalone Terrorism	$100,000,000 Terrorism & Sabotage Per Occurrence $5,000,000 Terrorism Liability Per Occurrence	$0	Talbot		$ 12,381.60
			Total:	**$ 1,887,809.00**	**$ 1,891,882.33**

MARIN WATER

Proposal of Insurance

Marin Municipal Water District

220 Nellen Avenue
Corte Madera, CA 94925-1169

Presentation Date: June 5, 2026

Arthur J Gallagher Risk Management Services, LLC
AJG License Nos.IL 100292093 / CA 0D69293

Gallagher

Insurance | Risk Management | Consu

Table of Contents

Your Gallagher Team **3**
Program Structure **4**
Named Insured **5**
Market Review **6**
Year-Over-Year Summary **9**
Full Program Details **10**
Excess Liability - Great American E&S Insurance Company 10
Excess Liability - Accredited Specialty Insurance Company 12
Excess Liability - StarStone Specialty Insurance Company 14
Excess Liability - Gemini Insurance Company 16
Workers' Compensation - Arch Insurance Company 19
Property - Swiss Re Corporate Solutions Capacity Insurance Corporation. 21
Pollution Liability - Illinois Union Insurance Company 25
Automobile Physical Damage - Hanover Insurance Company 28
Aviation - Unmanned Aircraft Systems - American Alternative Insurance Corp, (More) 32
Cyber Liability - Great American Fidelity Insurance Co 35
Crime - Great American Insurance Company 38
Terrorism Standalone - Underwriters at Lloyd's London 40
Premium Summary **42**
Payment Plans 45
Proposal Disclosures 46
Client Signature Requirements **49**
Surplus Lines Notice - California 50
Coverages for Consideration 52
Appendix **56**
Compensation Disclosure Schedule 57
Binding Requirements 59
Claims Reporting By Policy 61
Gallagher STEP Flyer 64
Cyber Liability eRiskHub Features 66
Gallagher Bassett Services Flyer 67
Gallagher Benefit Services Flyer 68
Business Continuity Flyer 69
Gallagher Insight Flyer 71
Gallagher Verify Flyer 72

Your Gallagher Team

Your Gallagher team is a true partner. We have the expertise to understand your business and we're here to service and stay alongside you, every step of the way.

Service Team	*Role*	*Email*	*Phone*
Susan Blankenburg	Area Executive Vice President	Susan_Blankenburg@ajg.com	(415) 536-8417 (p)
Kayla Smith	Client Service Manager II	Kayla_Smith@ajg.com	(415) 536-4006 (p)
Tay Gonzalez	Client Service Associate	Tay_Gonzalez@ajg.com	(415) 536-4004 (p)
Ron Green	Certificates Specialist	Ron_Green@ajg.com	(415) 536-8432 (p)
Julia K. Holt, Esq.	Complex Claims Advocate	Julia_Holt@ajg.com	(818) 539-1505 (p)

Program Structure

Insurance | Risk Management | Consulting

Named Insured

Named Insured	*Primary & Excess Liability*	*Workers' Compensation*	*Property*	*Difference in Conditions*	*Environmental Liability*	*Automobile Physical Damage*	*Aviation - Unmanned Aircraft Systems*	*Cyber Liability*	*Crime*	*Terrorism Standalone*
Marin Municipal Water District	X	X	X	X	X	X	X	X	X	X

Note: Any entity not named in this proposal may not be an insured entity. This may include affiliates, subsidiaries, LLCs, partnerships, and joint ventures.

Market Review

We approached the following carriers in an effort to provide the most comprehensive and cost effective insurance program.

Line Of Coverage	*Insurance Company ** (AM Best Rate/Financial Strength)*	*Market Response ****	*Premium*	*Admitted ******
Primary Liability - $5M xs SIR	Great American E&S Insurance Company (A+ XV) - **Incumbent**	**Recommended Quote** Great American provided the renewal quote with same program as last year, however, they are only offering $5M limits as opposed to the previous $10M. They are requiring a one-time $500K Annual Aggregate deductible – the first loss to the District would be $1M, then all others are $500K.	$531,067.46	Non-Admitted
	Accredited Specialty Insurance Company (A- IX)	Non-Binding Indication	$696,120.00	Non-Admitted
	Safety National Casualty Corp (A++ XV)	Declined to Quote – Policy would exclude Inverse Condemnation	$0	Non-Admitted
XS Liability - $5M xs $5M	Accredited Specialty Insurance Company (A- IX)	**Recommended Quote** Since the lead carrier only offered $5M limits, it required us to secure a $5M xs $5M quote. Accredited is one of the few carriers who can offer the full array of coverage extensions needed by water districts.	$265,534.00	Non-Admitted
XS Liability - $5M xs $10M	StarStone Specialty Insurance Company (A XIII) - **Incumbent**	**Recommended Quote**	$186,137.00	Non-Admitted
XS Liability - $10M xs $15M	Gemini Insurance Company (A+ XV)	**Recommended Quote**	$195,526.00	Non-Admitted
Workers' Compensation	Midwest Employers Casualty Company (A+ XV)	Quoted $33M Payroll; $1M Limit; $750k SIR	$102,861.00	Admitted
	Arch Insurance Company (A+ XV) **- Incumbent**	**Recommended Quote** $33M Payroll; $1M Limit; $750k SIR	$101,970.00	Admitted
	Safety National Casualty Corporation (A++ XV)	Quoted $33M Payroll; $1M Limit; $750k SIR	$102,300.00	Admitted
Property	Swiss Re Corporate Solutions Capacity Insurance Corporation. (A+ XV)	**Recommended Quote** $200M Blanket Limit; $50M Equipment Breakdown Limit; $10M Flood Limit; $7.5M Business Income Limit; $500k Deductible; $1M Flood Deductible	$526,218.00	Non-Admitted
	American International Group, Inc	Declined to Quote - Need Loss Runs from Alliant to quote, not enough time to underwrite	$0	Non-Admitted
Pollution Liability	Indian Harbor Insurance Company (A+ XV) **- Incumbent**	Quoted $1M/$1M Limit; $25k SIR	$21,548.11	Non-Admitted

Line Of Coverage	Insurance Company ** (AM Best Rate/Financial Strength)	Market Response *	Premium	Admitted ***
	Illinois Union Insurance Company (A++ XV)	**Recommended Quote** $1M/$1M Limit; $25k SIR	$14,777.44	Non-Admitted
	Beazley Insurance Company, Inc.	Declined - Pricing not Competitive	$25,000 MP	Non-Admitted
Automobile Physical Damage / Equipment / Scheduled Property	Hanover Insurance Company (A XV) - **Incumbent**	**Recommended Quote** $10M APD Catastrophe Limit with $25k Deductible; Scheduled Property Limit $77,782, ACV, 80% coinsurance; Contractor's Equipment Limit $1,883,375, RCV, $25k Deductible	$30,069.00	Admitted
Unmanned Aircraft Systems	Chubb Group of Insurance Companies	Declined - Pricing not Competitive	$0	Admitted
	Global Aerospace, Inc. (A+ XV) - **Incumbent**	**Recommended Quote** $1M Liability Limit; $1M Personal Injury Limit; $5k Medical Expense Limit	$3,108.00	Admitted
Cyber Liability	Houston Casualty Company (A++ XV) - **Incumbent**	Quoted $1M Limit; $50k Deductible; Terms include $250k sublimits for breach event costs, system failure, dependent system failure, cyber extortion, a $250k sublimit/$25% coinsurance ransomware endorsement; breach event costs outside the limit is n/a; dependent system failure non-IT sublimit is n/a. Once MFA is implemented and remediation of the MS EOL server is confirmed, endorsement will increase the first party/ransomware sublimits to $1M.	$27,028.00	Non-Admitted
	Great American Fidelity Insurance Co (A+ XV)	**Recommended Quote** $1M Limit; $250k Cyber Crime Sublimit; $50k Retention; 8 Hour Waiting Period; Extortion Costs (Including Ransomware Event) Sublimited to $100k until MFA is implemented. Once implemented, endorsement will increase limit to $1M	$22,699.00	Non-Admitted
Crime	Great American Insurance Company (A+ XV)	**Recommended Quote** $1M Limits; $15k Deductible; $250k Fraudulently Induced Transfer Limit; $50k Deductible	$3,200.00	Admitted
Standalone Terrorism	Underwriters at Lloyd's London (A XV)	**Recommended Quote** $100M Limit for Terrorism & Sabotage Property, $5M Terrorism Liability Limit	$12,381.60	Non-Admitted

*If shown as an indication, the actual premium and acceptance of the coverage requested will be determined by the market after a thorough review of the completed application.

**Gallagher companies use AM Best rated insurers and the rating listed above was verified on the date the proposal document was created.

Best's Credit Ratings™ reproduced herein appear under license from AM Best and do not constitute, either expressly or impliedly, an endorsement of Gallagher's service or its recommendations. AM Best is not responsible for transcription errors made in presenting Best's Credit Ratings™. Best's Credit Ratings™ are proprietary and may not be reproduced or distributed without the express written permission of AM Best.

A Best's Financial Strength Rating is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. It is not a warranty of a company's financial strength and ability to meet its obligations to policyholders. Best's Credit Ratings™ are under continuous review and subject to change and/or affirmation. For the latest Best's Credit Ratings™ and Guide to Best's Credit Ratings, visit the AM Best website at http://www.ambest.com/ratings.

***If coverage placed with a non-admitted carrier, it is doing business in the state as a surplus lines or non-admitted carrier, and is neither subject to the same regulations as an admitted carrier nor do they participate in any state insurance guarantee fund.

Gallagher companies make no representations and warranties concerning the solvency of any carrier, nor does it make any representation or warranty concerning the rating of the carrier which may change.

Year-Over-Year Summary

COVERAGE	ALLIANT 2025-2026	AJG RENEWAL 2026-2027	% CHANGE
Exposures			
Excess Liability - Field Payroll	-	$ 19,536,179	
Property - TIV	$ 546,253,834	$ 546,253,835	0%
Auto Physical Damage - TIV	$ 9,132,748	$ 9,538,398	4%
Pollution Legal Liability - TIV	$ 546,253,834	$ 546,253,835	
Cyber Liability - Revenue	-	$ 188,047,000	
Drone Liability - TIV	$ 16,020	$ 16,020	0%
Excess Workers Comp - Total Payroll	$ 29,497,998	$ 33,000,000	12%
Crime Liability - # of Employees	-	276	
Rate			
1st & 2nd Excess Liability - $10M xs SIR - Field Payroll per $1000		40.7757	
3rd Excess Liability - $5M xs $10M - Field Payroll per $1000		9.5278	
4th Excess Liability - $10M xs $15M - Field Payroll per $1000		10.0084	
Property - TIV per $100	0.1141	0.0963	-16%
Auto Physical Damage - TIV per $100	0.3954	0.3068	-22%
Pollution Legal Liability ($1M/$1M) - TIV per $100	0.0039	0.0027	-31%
Cyber Liability - Revenue per $1000		0.1207	
Drone Liability - TIV per $100	19.8939	19.4007	-2%
Excess Workers Comp - Total Payroll per 100	0.3892	0.3090	-21%
Crime Liability - # of Employees		11.5942	
Premium			
1st & 2nd Excess Liability - $10M xs $500K SIR	$ 737,838	$ 796,602	8%
3rd Excess Liability - $5M xs $10M	$ 174,271	$ 186,137	7%
4th Excess Liability - $10M xs $20M	$ 143,856	$ 195,526	36%
Total Liability	**$ 1,055,965**	**$ 1,178,265**	**12%**
Property ($200M Limit)	$ 623,048	$ 526,218	-16%
Auto Physical Damage ($10M Limit)	$ 36,109	$ 29,264	-19%
Pollution Legal Liability ($1M/$1M)	$ 21,376	$ 14,777	-31%
Cyber Liability ($1M/$1M)	$ 29,016	$ 22,699	-22%
Drone Liability	$ 3,187	$ 3,108	-2%
Excess Workers Comp	$ 114,806	$ 101,970	-11%
Crime Liability	$ 4,302	$ 3,200	-26%
Standalone Terrorism	-	$ 12,382	-
TOTAL PREMIUM	**$ 1,887,808.36**	**$ 1,891,882.33**	**0.22%**

Full Program Details

Excess Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Great American E&S Insurance Company
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Annual premium is due within 30 days of effective date.

Premium & Exposures	**Proposed**
Premium	$514,700.00
SL Tax	$15,441.00
Stamping Fee	$926.46
TRIA – Additional Premium	$11,367.69
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	25%
Estimated Cost – without TRIA	**$531,067.46**

Standard Coverages	**Proposed**
Limits	$5,000,000 - Any one Occurrence, Wrongful act or offense for Bodily Injury, Property Damage, Public Officials Errors and Omissions, Employment Practices Liability, or Personal Injury or any combination thereof excess of your “Retained Limit”.
Policy Aggregate Limit	$15,000,000

Deductibles/SIR	**Proposed**
Retention (SIR) - Excess Liability	$500,000
Deductible - Annual Aggregate	$500,000

Form Type	**Proposed**
Form Type	Excess Liability - Occurrence

Endorsements (including but not limited to)
Blanket Additional Insured
Blanket Waiver of Subrogation
Covered Dams – Scheduled
Eminent Domain and Inverse Condemnation Coverage

Exclusions (including but not limited to)
Employment Related Practices Exclusion
Professional Liability Exclusion
Workers' Compensation, Auto No Fault, Uninsured/ Underinsured Motorists, Disability, and Unemployment Compensation Laws
Pollution (Hostile Fire Exception)

Exclusions (including but not limited to)
Asbestos
Physical Damage to Property in Insured's Care, Custody, or Control
Auto First-party Coverage
Pollution (Auto)
Products Recall
Total Pollution Exclusion
Retained Limit
Lead & Silica
Cyber
Biometrics
Organic Pathogens
Terrorism (unless elected)
War
Subsidence Exclusion Removed

Binding Requirements:

Description
Subject To:
- California Surplus Lines Notification/Copy of signed E&S due diligence affidavit from retail agent must accompany any request to bind coverage.
- Confirmation of Binding Coverage must be signed at Binding

Other Significant Terms and Conditions/Restrictions:

Description
Allocated Loss Adjustment Expenses (ALAE) - Erodes SIR and Part of loss
GA Share Authorization - 100%
TRIA Premium Includes Taxes of $350.35
Any change of TPA/Self-Administered status must be approved by GAIG prior to change

Excess Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Accredited Specialty Insurance Company
A.M. Best Rating	A- IX
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Premium is due at inception and must be fully paid within 30 days

Premium & Exposures	**Proposed**
Premium	$257,350.00
Surplus Lines Tax	$7,720.50
Stamping Fee	$463.23
TRIA – Additional Premium	$4,318.00
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	25%
Estimated Cost – without TRIA	**$265,533.73**

Standard Coverages	**Proposed**
Each Occurrence Limit	$5,000,000
Aggregate Limit (Where Applicable)	$5,000,000

Form Type	**Proposed**
Form Type	Excess Liability - Occurrence

Endorsements (including but not limited to)
Claims Reporting Instructions - SD-XS 004 00 (01-25)
Following Form Excess Liability Policy Declarations - SD-XS 001 00 08-24
Following Form Excess Liability Policy - SD-XS 002 00 08-24
Security Schedule - SD-XS 004 00 08-24
Special District Following Form Excess Liability Policy - SD-XS 002 00 (01-25)
Special District Following Form Excess Liability Policy Declarations - SD-XS 001 00 (01-25)
Forms and Endorsements Schedule - SD-XS 003 00 01-25
Underlying Insurance Schedule - SD-XS 008 00 01-25
Service of Suit - SD-XS 005 00 01-25
Fraud Warning Notice - SD-XS 006 00 01-25
Privacy Notice - SD-XS 007 00 01-25
Cap on Losses From Certified Acts of Terrorism (if accepted) - CX 21 30 01 15 01-15
Disclosure Pursuant to Terrorism Risk Insurance Act - IL 09 85 12 20 12-20
U.S. “OFAC” Advisory Notice to Policyholders - IL P 001 01 04 01-04

Exclusions (including but not limited to)
Exclusion of Certified Acts of Terrorism (if rejected) - CX 21 33 01 15 01-15
Exclusion—Electromagnetic Radiation - EX-XS 018 00 01-25
Exclusion—Eminent Domain or Similar Property Law - EX-XS 019 00 01-25
Exclusion—Employee Compensation - EX-XS 020 00 01-25

Exclusions (including but not limited to)
Exclusion—Legal Services - EX-XS 038 00 01-25
Exclusion—Professional Services - EX-XS 045 00 01-25
Exclusion—Service Contractors - EX-XS 053 00 01-25
Exclusion—Violation of Wage and Hour Laws - EX-XS 059 00 01-25

Underlying Policies:

Coverage	Description	Limit	Carrier Name	Effective Date	Expiration Date
General Liability	Each Occurrence	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
General Liability	Personal & Advertising Injury	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
General Liability	Products/Completed Ops. Aggregate	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
Employee Benefits Liability	Each Employee	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
Public Officials Liability	Each Wrongful Act	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
Employment Practices Liability	Each Wrongful Act	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
Automobile Liability	Each Accident	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
Policy Aggregate	Policy Aggregate Limit—All Lines	$15,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027

Binding Requirements:

Description
Subject To:
- Updated ground-up and excess carrier loss runs valued within 90 days for Trident and Safety National
- Signed and dated Acceptance or Rejection of Terrorism Insurance Coverage form
- All applicable underlying binders
- Signed and completed APR applications / supplementals as follow: Required Within 30 Days of Effective Date
- Signed and dated Fraud Warning Notice (if not included with application). - Required Within 30 Days of Effective Date
- All applicable underlying policies - Required Within 30 Days of Effective Date
- Supplemental Application for Sexual Abuse and Molestation

Other Significant Terms and Conditions/Restrictions:

Description
Defense Costs Treatment: Follows Underlying

Excess Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	StarStone Specialty Insurance Company
A.M. Best Rating	A XIII
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Payable within 30 days of binding coverage

Premium & Exposures	Proposed
Premium	$184,000.00
SL Tax	$5,520.00
Stamping Fee	$331.20
TRIA	Included
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	25%
Estimated Cost	**$189,851.20**

Standard Coverages	Proposed
Per Occurrence	$5,000,000
Aggregate Limit, where applicable	$5,000,000

Form Type	Proposed
Form Type	Excess Liability - Occurrence

Endorsements (including but not limited to)
Public Entity - Jacket - SSS EXS PE JKT CW 05 23
SSIC Privacy Notice - SSICPRI 11 25
Company Contact Notice - SSC ML PHN CONTACT 09 23
CA Surplus Lines Notice (D-2) - SSS SLN CA 04 21
Claim Reporting - SSS EXS PE CLM 2000 CW 05 23
Excess Public Entity Liability Declaration - SSS EXS PE DEC 0002 CW 11 24
Schedule of Forms and Endorsements - SSS EXS PE SCHED 0004 CW 05 23
Schedule Of Underlying Insurance - SSS EXS PE SCHED UL 0003 CW 05 23
Excess Public Entity Liability Policy - SSS EXS PE POL 0001 CW 05 23
SSIC Signature Page - SSS SIG CW 08 23
Trade or Economic Sanctions - SSC SANCTIONS END CW 08 23
Service of Suit Clause - SSC SERVSUIT CW 08 23
OFAC Advisory Notice to Policyholders - SSC OFAC CW 08 23
Cap On Losses From Certified Acts Of Terrorism - SSS EXS PE TRIA 4002 CW 05 23
Policyholder Disclosure Notice of Terrorism Insurance Coverage ($3,600) - SSC TRIA ML 0001 CW 08 23
Disclosure Pursuant to Terrorism Risk Insurance Act - SSC TRIA ML 0002 CW 08 23

Exclusions (including but not limited to)
Access Or Disclosure Of Confidential Or Personal Information And Data-Related Liability Exclusion - SSS EXS PE END 1000 CW 05 23

Exclusions (including but not limited to)
Asbestos Exclusion - SSS EXS PE END 1001 CW 05 23
Biometrics Information Exclusion - SSS EXS PE END 1022 CW 10 24
Communicable Disease Exclusion - SSS EXS PE END 1002 CW 05 23
Fungi Or Bacteria Exclusion - SSS EXS PE END 1005 CW 05 23
Lead Exclusion - SSS EXS PE END 1006 CW 05 23
Nuclear Energy Liability Exclusion Endorsement - SSS EXS PE END 1008 CW 05 23
Perfluoroalkyl And Polyfluoroalkyl Substances (PFAS) Exclusion - SSS EXS PE END 1009 CW 05 23
Exclusion Of Punitive Damages Related To A Certified Act Of Terrorism - SSS EXS PE TRIA 4001 CW 05 23

Underlying Policies:

Coverage	*Description*	*Limit*	*Carrier Name*	*Effective Date*	*Expiration Date*
Excess Liability	Each Occurrence Limit	$5,000,000	Accredited Specialty Insurance Company	7/1/2026	7/1/2027
Excess Liability	Aggregate Limit (Where Applicable)	$5,000,000	Accredited Specialty Insurance Company	7/1/2026	7/1/2027
General Liability, Public Officials (Including EPL), & Auto Liability	Any one Occurrence, Wrongful act or offense for Bodily Injury, Property Damage, Public Officials Errors and Omissions Employment Practices Liability, or Personal Injury or any combination thereof excess of your “Retained Limit”.	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027
General Liability, Public Officials (Including EPL), & Auto Liability	Policy Aggregate Limit	$15,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027

Binding Requirements:

Description
Subject To:
- Fully completed StarStone surplus line tax form
- Completed and signed TRIA Acceptance or Rejection form
- We reserve the right to amend our terms and conditions subject to receipt and review of the underlying terms
- All underlying policies must be received within 60 days of binding
- Confirmation of Binding Coverage must be signed at Binding

Other Significant Terms and Conditions/Restrictions:

Description
Note: you are granted authority to issue ACORD certificates of insurance. Certificates of insurance do not amend, extend, or modify any coverage afforded under the policy.
Premium Includes TRIA OF $3,714.48 (TRIA - $3,600; SL tax: $114.48)

Excess Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Gemini Insurance Company
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Premium is due 45 days

Premium & Exposures	Proposed
Premium	$193,290.00
SL Tax	$5,798.70
Stamping Fee	$347.92
TRIA	Included
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	25%
Estimated Cost	**$199,436.62**

Standard Coverages	Proposed
Each Occurrence	$10,000,000
Policy Aggregate Cap	$10,000,000

Form Type	Proposed
Form Type	Excess Liability - Occurrence

Endorsements (including but not limited to)
California Surplus Lines Notice - SN-CA 1112
Excess Liability Policy Declarations - CEX0001 0825
Forms and Endorsement Schedule - BCIM0000 0513
Claim Notice - BCIM0001 0821
Service of Suit - California - BCIM0003CA 0821
Schedule of Underlying Policies - BCIM0002 0513
Restrictive as Underlying Endorsement - BCIM0044 0513
Issuance Prior to Receipt of Underlying Endorsement - BCIM0015 0513
Policy Aggregate Amendment of Limits of Liability - BCIM0058 0513
Unimpaired Aggregate Limit Endorsement - BCIM0082 0513
Common Policy Conditions - IL 00 17 11 98
Commercial Excess Liability Coverage Form - CX 00 01 04 13
U.S. Treasury Department's Office of Foreign Assets Control ("OFAC") Advisory Notice to Policyholders - IL P 001 01 04
Signature Page - BCIM0008 0820

Exclusions (including but not limited to)
Asbestos Exclusion - BCIM0007 0513
War Exclusion - BCIM0063 0513
Nuclear Energy Liability Exclusion Endorsement - CX 21 01 09 08
Aggregate Drop-Down Exclusion - BCIM0005 0513

Exclusions (including but not limited to)
Exclusion - Cyber Incident - CX 83 54 02 22
Cyber Incident Exclusion Endorsement Advisory Notice to Policyholders - CX PN 83 00 02 22
Perfluoroalkyl and Polyfluoroalkyl Substance (PFAS) Exclusion - CX 83 90 10 25
Exclusion - Fungi or Bacteria - CX 21 13 04 13
Exclusion - Silica or Silica Related Dust - CX 21 16 04 13
Exclusion - Violation of Information Statutes - BCIM0064 0513
Financial Services Exclusion - BCIM0085 0513
Lead Exclusion - BCIM0060 0513
Sub-Limited Coverage Exclusion - BCIM0062 0513
Nuclear, Biological, Chemical, or Radiological Terrorism Exclusion - BCIM0400 0315
Exclusion - Communicable Disease - CX 21 17 04 13
If Certified Acts of Terrorism Coverage is accepted - Exclusion of Other Acts of Terrorism Committed Outside the United States; Cap on Losses from Certified Acts of Terrorism - will be added to the policy - CX 21 31 01 15
If Certified Acts of Terrorism Coverage is accepted - Exclusion of Punitive Damages Related to a Certified Act of Terrorism - will be added to the policy - CX 21 36 01 15
If TRIA Coverage is declined - Exclusion of Certified Acts of Terrorism and Exclusion of Other Acts of Terrorism Committed Outside the United States, will also be attached to the policy - CX 21 35 01 15

Underlying Policies:

Coverage	*Description*	*Limit*	*Carrier Name*	*Effective Date*	*Expiration Date*
Excess Liability	Each Occurrence	$5,000,000	Starstone Specialty Insurance Company	7/1/2026	7/1/2027
Excess Liability	Aggregate Limit (Where Applicable)	$10,000,000	Starstone Specialty Insurance Company	7/1/2026	7/1/2027
Excess Liability	Each Occurrence	$5,000,000	Accredited Specialty Insurance Company	7/1/2026	7/1/2027
Excess Liability	Aggregate Limit (Where Applicable)	$5,000,000	Accredited Specialty Insurance Company	7/1/2026	7/1/2027
Other Coverage	Any one Occurrence, Wrongful act or offense for Bodily Injury, Property Damage, Public Officials Errors and Omissions, Employment Practices Liability, or Personal Injury or any combination thereof excess of your	$5,000,000	Great American E&S Insurance Company	7/1/2026	7/1/2027

Binding Requirements:

Description
Subject To:

Binding Requirements:

Description
- Please provide us with a copy of the Underlying Carrier Binders -Required within 30 days of binding/Confirmation of Binding Coverage must be signed at Binding
- Please provide us with a copy of the Underlying Policies, including the Carrier, Effective Date, Expiration Date, Policy Number, Limits and Premium-Required within 60 days of binding
- Signed and Dated TRIA Letter-Required prior to binding
- Please provide us with a copy of the Commercial General Liability Binder-Required within 30 days of binding
- Please provide us with a copy of the Commercial General Liability Policy, including the Carrier, Effective Date, Expiration Date, Policy Number, Limits, and Premium-Required within 60 days of binding

Other Significant Terms and Conditions/Restrictions:

Description
Premium Includes TRIA of $3840.52 (TRIA: $3,790; Taxes: $120.52)
In compliance with the Terrorism Risk Insurance Program Reauthorization Act of 2015, terrorism coverage under the Act can be included for an additional premium. The completed and signed Policyholder Disclosure Notice of Terrorism Insurance Coverage must be returned at the time of binding.
Cancellation term is 30 days. Term is 10 days for non-payment of premium
Deposit Premium: $193,290.00
Minimum Annual Premium: $193,290.00

Workers' Compensation

Carrier Information	Proposed
Policy Term	7/1/2026 - 7/1/2027
Carrier	Arch Insurance Company
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Admitted
Payment Plan	Minimum and Deposit - $101,970

Premium & Exposures	Proposed
Premium	$101,970.00
Exposure / TIV	$33,000,000
Rate	0.3602
TRIA	Included
Minimum Type	Minimum And Deposit Premium
Minimum Amount / Description	$101,970
Estimated Cost	**$101,970.00**

States
States Covered: CA
States Excluded: OH, ND, WA, WY
Extraterritorial Jurisdictions:

Standard Coverages	Proposed
A. Part One - Excess Workers Compensation Insurance	
Our Limit of Liability - Each Accident	Statutory
Our Limit of Liability - Disease, Each Employee	Statutory
B. Part Two – Excess Employers Liability Insurance	
Our Limit of Liability - Each Accident	$1,000,000
Our Limit of Liability - Disease, Each Employee	$1,000,000
Our Limit of Liability – Aggregate	$1,000,000

Deductibles/SIR	Proposed
Your Retained Limit - Each Accident	$750,000 – All Other Employees
Your Retained Limit – Disease, Each Employee	$750,000 – All Other Employees

Endorsements (including but not limited to)
Split Retained Limit Endorsement
Losses Redefined to Include Allocated Loss Adjustment Expenses Endorsement
California Volunteer Coverage – Excess Voluntary Compensation and Employers Liability Coverage Endorsement
Waiver of Our Right to Recover From Others Endorsement
California Terrorism Risk Insurance Program Reauthorization Act Disclosure Endorsement
California Amendatory Endorsement

Exclusions (including but not limited to)
Owners or Officers
Bodily Injury to an Employee While Employed in Violation of Law
Bodily Injury Intentionally Caused by Insured
Longshore & Harbor Workers' Act
Federal Employers' Liability Act
Assumptions under Contract

Auditable Exposures:

State	Class Code	Description	Rate per $100	Renewal Exposure
CA		Payroll - Workers' Compensation	$0.3090	$33,000,000

Other Significant Terms and Conditions/Restrictions:

Description
California Fraud Statement

Property

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Swiss Re Corporate Solutions Capacity Insurance Corporation.
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Premium is payable within 30 days of invoice date

Premium & Exposures	Proposed
Premium	$510,000.00
Surplus Lines Taxes	$15,300.00
Surplus Lines Stamping Fee	$918.00
Exposure / TIV	Total Insurable Values - $546,253,835
TRIA – Additional Premium	$75,000.00
Minimum Type	None
Estimated Cost – without TRIA	**$526,218.00**

Standard Coverages	Proposed
Program Limit of Liability	$200,000,000
Company's Policy Limit of Liability - The Company is not Liable for More than Its Proportionate Share, As Specified Below, Of the Program Limit or of the Program Layer Limits that Make up the Program Limit for all Loss or Damage Insured by This Policy Arising out of One Occurrence Regardless of the Number of Locations or Coverages Involved in the Occurrence.	Layer # 1, Company's Policy Limit of Liability - $200,000,000 (Being 100.00 %) Part of Program Limit $200,000,000 Excess of Policy Deductible

Additional Coverages	Proposed
Program Sublimits	
All Risks	$200,000,000
Boiler & Machinery	$50,000,000
Flexa - Fire, Lightning, Explosion, Aircraft	$200,000,000
Flood (Annual Aggregate), Further Sublimited as Follows:	$10,000,000
Flood (Annual Aggregate) as Respects Locations in "12.1. Special Flood Zone 1"	$10,000,000
Accounts Receivable	$10,000,000
Commissions, Licensing Fees and Royalties	$10,000,000
Contingent Time Element Direct Unnamed Suppliers and Customers	$2,500,000
Course of Construction Insured Property Damage and Time Element Combined	$10,000,000
Crisis Management	$1,000,000

Additional Coverages	Proposed
Data Restoration Insured Property Damage and Time Element Combined	$10,000,000
Debris Removal - or 25% of the Combined Amount of Physical Damage and Time Element Loss Payable at the Location Where the Damage Occurs or Limit Shown, Whichever is the Lesser.	$10,000,000
Defense Costs	$250,000
Demolition and Increased Cost of Construction Insured Property Damage and Time Element Combined	$10,000,000
Errors and Omissions	$10,000,000
Exhibitions, Expositions, Fairs or Trade Shows	$10,000,000
Expediting Expenses	$5,000,000
Extra Expense	$25,000,000
Fine Arts, subject to a maximum of $5,000,000 per item	$5,000,000
Fire and Police Department Service Charges	$1,000,000
Green Coverage, Not Exceeding 0% of the Amount of Insured Property Damage Loss at the Insured Location	$5,000,000
Business Income - Gross Earnings	$7,500,000
Ingress/Egress	$10,000,000
Installment or Deferred Payments	$5,000,000
Land and Water Contaminants Cleanup, Removal and Disposal (Annual Aggregate)	$250,000
Land Improvements	$5,000,000 Per Occurrence
Leasehold Interest	$25,000,000
Logistics Extra Cost	$2,500,000
Miscellaneous Unnamed Locations	$5,000,000
Mold Ensuing from an Insured Cause of Loss (Annual Aggregate)	$500,000
Newly Acquired Property	$10,000,000
Order of Civil or Military Authority	$10,000,000
Professional Fees: $0 Plus 0% of the Amount Recoverable Under This Professional Fees Coverage in Excess of $0	$250,000
Radioactive Contamination	$500,000
Rental Insurance	$10,000,000
Research and Development	$25,000,000
Service Interruption Property Damage and Service Interruption Time Element Combined	$10,000,000
Soft Costs	$5,000,000
Temporary Removal of Property	$10,000,000
Transportation - Insured Property Damage and Time Element Combined	$10,000,000

Additional Coverages	Proposed
Valuable Papers and Records	$10,000,000
Time Limits	
from the date of the order of civil or military prohibition for Crisis Management	30 consecutive calendar days
For Extended Period of Liability – Gross Earnings and Rental Insurance	365 consecutive calendar days
After Such Length of Time as Would be Required with the Exercise of Due Diligence and Dispatch to Repair or Replace the Damaged Dam, Reservoir or Equipment for Impounded Water	30 consecutive calendar days
From the Date of Occurrence for Ingress/Egress	30 consecutive calendar days
From the Date of Occurrence for Logistics Extra Cost	30 consecutive calendar days
From the Date of Acquisition for Newly Acquired Property	30 consecutive calendar days
From the Date of Occurrence for Order of Civil or Military Authority	30 consecutive calendar days
After the Insured Has First Taken Initial Action for Protection and Preservation of Property – Time Element	48 consecutive hour
Distance Limits	
From the Insured Location for Ingress/Egress	1 Statute Mile(S)
From the Insured Location for Order of Civil or Military Authority	1 Statute Mile(S)

Deductibles/SIR	Proposed
Deductible: Policy Deductibles*	
Deductible: Basic Deductible:	$500,000 Per Occurrence
Deductible: Except as Respects the Following:	
Deductible: Boiler & Machinery	$500,000 Per Occurrence
Deductible: Convective Storm - all Locations	$500,000 Per Occurrence
Deductible: Flood as Respects Locations in "12.1. Special Flood Zone 1"	$1,000,000 Per Occurrence plus;
Deductible: Flood at all Other Locations:	$1,000,000 Per Occurrence
Deductible: Named Windstorm - All Locations	$500,000 Per Occurrence
Deductible: Transportation	$500,000 Per Occurrence
Deductible: Waiting Periods	
Deductible: from the inception of order of prohibition for Crisis Management.	24 consecutive hours
Deductible: from the Inception of Disruption for Logistics Extra Cost, except 168 Consecutive Hours for Logistics Extra Cost Occasioned by Earth Movement and/or Flood and/or Named Windstorm [and/or Convective Storm].	24 consecutive hours

Deductibles/SIR	Proposed
Deductible: from the inception of interruption of services for Service Interruption - Property Damage and Service Interruption - Time Element	24 consecutive hours

Endorsements (including but not limited to)
ONE Form - Edition ONE0002 0120
Cap on Losses From Certified Acts of Terrorism - SP 10 705 0815

Exclusions (including but not limited to)
Communicable Disease Exclusion Endorsement - ONE0029 1220
Property Cyber And Data Exclusion - ONE0034 1220

Perils Covered:

Type	*Description*
Special Form Perils	Applies

Other Significant Terms and Conditions/Restrictions:

Description
TIV: Property Damage - $538,753,835 Time Element - $7,500,000 Total Insurable Values - $546,253,835
Currency All Limits, Deductibles, and Premiums are expressed in U.S. Dollars
Cancellation 90 days except 10 days for non-payment of premium
Policy Territory United States of America and its Territories Sanctions Clause This POLICY will not be deemed to have provided coverage and will not be liable to pay any claim or provide any benefit to the extent that payment of such claim or provision of such benefit would expose the Company to any sanction, prohibition or restriction under United Nations resolutions or the trade or economic sanctions, laws or regulations of any jurisdiction applicable to the Company
Application of Program Sublimit(S) 1.Program Sublimit(S) are Part of and not in Addition to the Program Limit. Program Sublimit(S) do not Increase the Program Limit or any Other Program Sublimit(S). 2.Program Sublimit(S) Apply in the Aggregate Per Occurrence to all Insured Location(S) and for all Coverages Involved, Including Time Element. 3.When a Program Sublimit(S) is Noted as an Annual Aggregate, Such Program Sublimit(S) Applies in the Aggregate Annually to all Losses Insured by This Policy Occurring During the Policy Period.
Deductibles - * in Each Case of Loss or Damage Insured by This Policy, The Company is Liable Only if the Insured Sustains Such Loss or Damage in a Single Occurrence, The Value of Which is in Excess of the Applicable Deductible Specified, And Then the Amount Insured by This Policy Shall be the Amount in Excess of the Deductible, Subject to all Terms, Conditions, Provisions, Limitations and Exclusions of This Policy

Pollution Liability - Recommended

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Illinois Union Insurance Company
A.M. Best Rating	A++ XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	In the Event Coverage is Bound, The Premium Indicated Above Must be Remitted to US Within Thirty (30) Days from the Date of the Invoice as Outlined on Your Agency's Monthly Statement Bill
Payment Method	Agency Bill

Premium & Exposures	Proposed
Premium	$14,322.00
Surplus Lines Taxes	$429.66
Surplus Lines Stamping Fee	$25.78
TRIA – Additional Premium	$716.00
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	25%
Estimated Cost – without TRIA	**$14,777.44**

Standard Coverages	Proposed
Per Pollution Condition or Indoor Environmental Condition	$1,000,000
Aggregate All Pollution Conditions or Indoor Environmental Condition	$1,000,000

Additional Coverages	Proposed
Asbestos Sublimits of Liability	
Per Asbestos Condition Sublimit of Liability	$500,000
Aggregate Asbestos Conditions Sublimit of Liability	$500,000
Lead-Based Paint Sublimits of Liability	
Per Lead Condition Sublimit of Liability	$500,000
Aggregate Lead Conditions Sublimit of Liability	$500,000
Dedicated Defense Aggregate Limit	$1,000,000
Legionella Coverage Limitations	
Per Legionella Condition Sublimit of Liability	$1,000,000
Legionella Condition Aggregate Sublimit of Liability	$1,000,000
Public Entity Coverage	
Per Operations Condition Sublimit of Liability	$1,000,000
Aggregate Operations Conditions Sublimit of Liability	$1,000,000
Defense Outside Limits	$1,000,000
In Aggregate Limit for Litigation Expense and Subpoena Expense Coverage	$25,000

Additional Coverages	Proposed
Expansion of the Aggregate Limit	$1,000,000 / $2,000,000 At Substantial Cost Savings

Optional Coverages	Proposed
Optional 2 Premium: $18,620, TRIA: $931	Limit: $2,000,000

Deductibles/SIR	Proposed
Deductible: Business Interruption Loss	10 Days Per Pollution Condition or Indoor Environmental Condition for Business Interruption Loss
Self-Insured Retention: Per Pollution Condition or Indoor Environmental Condition	$25,000
Self-Insured Retention: Public Entity - Per Operations Condition	$25,000
Self-Insured Retention: Legionella Coverage	$50,000

Defense Limitations	Proposed
	Legal Defense Expenses are Subject to and Shall Erode the Limits of Liability

Form Type	Proposed
Form Type	Coverage A: Premises Pollution Condition Liability, Premises Indoor Environmental Condition Liability, Premises Pollution Condition First-Party Claims, Premises Indoor Environmental Condition First-Party Claims - Claims Made And Reported
Retroactive Date	Coverage A: Premises Pollution Condition Liability, Premises Indoor Environmental Condition Liability, Premises Pollution Condition First-Party Claims, Premises Indoor Environmental Condition First-Party Claims - 07/01/2018
Form Type	Coverage B: Transportation Liability, Transportation First-Party Claims - Claims Made And Reported
Retroactive Date	Coverage B: Transportation Liability, Transportation First-Party Claims - 07/01/2026
Form Type	Locations Specified on the Sov Titled "26-27 Property Sov" Except for Ranger Residences - Claims Made and Reported
Retroactive Date	Locations Specified on the Sov Titled "26-27 Property Sov" Except for Ranger Residences - 07/01/2018

Definition Of Claim:
“Claim” Means the Written Assertion of a Legal Right Received by the “Insured” from a Third-Party, Or from Another “Insured” that is Party to an “Environmental Indemnity Obligation”, Including, But not Limited to, A “Government Action”, Suits or Other Actions Alleging Responsibility or Liability on the Part of the “Insured” for “Bodily Injury”, “Property Damage” or “Remediation Costs” Arising out of “Pollution Conditions” or “Indoor Environmental Conditions” to Which This Insurance Applies

Claims Made Disclaimer:
Should you elect to change carriers (if a new retroactive date is provided) or non-renew this policy, a supplemental extended reporting endorsement may be available subject to policy terms and conditions. You must request the extended reporting period in writing to the carrier within ([Days To Extend]) days of the expiration date. The cost of this extended reporting period is [Percent Cost]% of the annual premium and is fully earned. The extended reporting period extends only to those claims made during the extended reporting period for wrongful acts that occurred prior to the expiration date and would have been covered by the policy. Claims must be reported to the carrier within ([Days To Report]) days of the end of the policy period. The extended reporting period does not increase the limits of liability and is subject to all policy terms, conditions and exclusions.

Endorsements (including but not limited to)
Premises Pollution Liability Insurance Policy - PF-44887b (08/18) / 264547.1 (08/18)
Premium is 25 % Minimum-Earned as of inception of the Policy
Asbestos and/or Lead-Based Paint Limitation Endorsement - PF-45388 (02/15)
Catastrophe Management Coverage Limitations Endorsement - PF-51284 (10/18)
Dedicated Defense Aggregate Limit Endorsement - PF-44917a (03/20)
Legionella Coverage Limitations Endorsement - PF-53197 (03/20) / (285074.8)
Non-Owned Disposal Sites Coverage Limitation Endorsement - PF-48647 (01/17)
Premium Earn-Out (Staggered - One Year - Acceleration) Endorsement - PF-44967 (09/14)
Public Entity Coverage Amendatory Endorsement - PF-54576 (01/21) / 309345.1
Schedule of Covered Locations Endorsement - PF-51286 (10/18)
Service Of Suit Endorsement - SL-34255b (04/23)
Trade Or Economic Sanctions Endorsement - ALL-21101 (11/06)
Signatures - LD-5S23l (10/24)
Chubb Producer Compensation Practices & Policies - ALL-20887a (03/16)
U. S. Treasury Department's Office of Foreign Assets Control ("OFAC") Advisory Notice to Policyholders - ILP 001 01 04
Terrorism Risk Insurance Act Endorsement - PF-23728b (02/20) / (296458.2)
Disclosure Pursuant To Terrorism Risk Insurance Act - TRIA11e (08/20)
Policyholder Disclosure Notice of Terrorism Insurance Coverage - TRIA24a (08/20)

Exclusions (including but not limited to)
Maintenance, Upgrades, Improvements, Or Installations Exclusionary Endorsement - PF-53198a (02/24) / MS-292156.3 (11/19)
Prior Claims Exclusionary (Broad) Endorsement - PF-44968 (09/14)
Specific Pollution Conditions Or Indoor Environmental Conditions Exclusionary Endorsement - PF-48662 (01/17)

Binding Requirements:

Description
Subject to:
- Signed and Dated Attached Tria Disclosure Form, But Only if Rejecting TRIA Coverage / Policyholder Disclosure Notice of Terrorism Insurance Coverage
- Completion of a Satisfactory Chubb Engineering Review

Other Significant Terms and Conditions/Restrictions:

Description
Major 30% Rate Cut on the $1M/$1M Limit Option

Automobile Physical Damage

Carrier Information	Proposed
Policy Term	7/1/2026 - 7/1/2027
Carrier	Hanover Insurance Company
A.M. Best Rating	A XV
Admitted/Non-Admitted	Admitted
Payment Plan	Prepaid – No Installments
Payment Method	Agency Bill

Premium & Exposures	Proposed
Premium	$29,264.00
Exposure / TIV	$7,577,241 (Auto Physical Damage)
TRIA – Additional Premium	$805.00
Minimum Type	Minimum Earned Premium
Minimum Amount / Description	$2,500
Estimated Cost – without TRIA	**$29,264.00**

Standard Coverages	Proposed
Contractor's Equipment Coverage: Property Covered	
Contractor's Equipment per Schedule Submitted	$1,883,375
Unscheduled Contractor's Equipment	
- Unscheduled Contractor's Equipment Limit of Insurance	$25,000
- Unscheduled Maximum Limit Per Any One Item	$2,500
Newly Acquired Contractor's Equipment: Maximum Limit Per Any One Item	$1,000,000
Auto Physical Damage	
Catastrophe Limit – the Most we Pay for Loss in any One Occurrence for all Vehicles is:	$10,000,000
Scheduled Property Coverage: Miscellaneous Covered Property	
Boats, Motors & Trailers	$77,782
Flood	$77,782 Limit (Per Occurrence and Annual Aggregate)
Earthquake	$77,782 Limit (Per Occurrence and Annual Aggregate)

Additional Coverages	Proposed
Contractor's Equipment Coverage	
Additional Coverages:	
Business Personal Property	$25,000
Continuing Rental or Lease Expense	$25,000
Contract Penalty	$25,000
Debris Removal - Additional Limits	$100,000
Employee Tools and Work Clothing	

Additional Coverages	Proposed
- any One Occurrence	$10,000
- any One Item	$1,000
Engine Emissions Green Coverage	
- any One Occurrence	$5,000
- any One Policy Period	$10,000
Equipment Borrowed from Others	$50,000
Equipment Leased and Rented from Others	$50,000
Equipment Leased or Rented to Others	$500,000
Equipment Loaned to Others	$50,000
Expediting Expense	$25,000
Extended Warranties	$5,000
False Pretense	$500,000
Fire and Police Department Service Charges	$25,000
Fire Suppression Equipment	$50,000
Hauling Property of Others as a Carrier for Hire	$200,000
Installation or Rigging Property	$25,000
Loss Adjustment Expenses	$5,000
Pollutant Clean up and Removal	$100,000
Preservation of Property	$5,000
Rental Reimbursement	$100,000
Reward Payments	$10,000
Spare Parts and Fuel	$10,000
Theft Prevention Devices Deductible Waiver	$25,000
Waterborne Property	$500,000
Auto Physical Damage	
Coverage Extensions: * Additional Debris Removal Expenses	$25,000
Supplemental Coverages:	
- Newly Acquired and Substitute Vehicles	$1,000,000
- Number of Days	365
- Pollutant Cleanup and Removal	$25,000
- Towing and Labor Costs	$25,000
- Rental Reimbursement	$500 Per Day / $10,000 Max
Scheduled Property Coverage: Miscellaneous Covered Property	
Coverage Extensions: Additional Debris Removal Expenses	$5,000
Supplemental Coverages	
- Newly Acquired Property	$15,000
- Pollutant Cleanup and Removal	$10,000

Deductibles/SIR	Proposed
Deductible - Contractor's Equipment Coverage:	
Deductible -- Per Occurrence Deductible	$25,000

Deductibles/SIR	Proposed
Deductible -- Rental Reimbursement Waiting Period	24 Hours
Deductible - Auto Physical Damage	$25,000
Deductible - Scheduled Property Coverage: Miscellaneous Covered Property	$25,000
Deductible -- Flood	$25,000
Deductible -- Earthquake	$25,000

Valuations	Proposed
Replacement Cost	Contractor's Equipment Coverage - 5
Actual Cash Value	Scheduled Property Coverage: Miscellaneous Covered Property

Coinsurance	Proposed
Coinsurance	Contractor's Equipment Coverage - Waived
Coinsurance	Scheduled Property Coverage: Miscellaneous Covered Property - 80%

Endorsements (including but not limited to)
Contractor's Equipment Coverage - IM441-1471
Scheduled Vehicle Physical Damage Floater - IM441-1075 01 09
Scheduled Property Coverage Form - AAIS 7500
IM7857

Exclusions (including but not limited to)
Inland Marine - Named Driver Exclusion - IM MAN-00060 03 20

Perils Covered:

Type	*Description*
Special Form Perils	All Risk

Subject to Audit: Annually

Binding Requirements:

Description
Subject To
Signed TRIA Form

Other Significant Terms and Conditions/Restrictions:

Description
Premium Breakdown: Contractor's Equipment Coverage - $5,840 Auto Physical Damage - $23,186 Scheduled Property - $238
Auto Physical Damage: - Perils Excluded: Civil Authority; Nuclear Hazard; War and Military Action; Contamination or Deterioration; Criminal, Fraudulent, Dishonest or Illegal Acts; Loss of use; Mechanical Breakdown; Missing Property; Pollutants; Temperature/Humidity; Voluntary Parting; Wear and Tear; Weight of Load.

Other Significant Terms and Conditions/Restrictions:

Description
- All Manuscript Endorsements from the 2025/2026 Term Will be Carried Forward to the 2026/2027 Term. - Scheduled Vehicles on File – Schedule Dated: 05-01-26
Contractor's Equipment: Total Annual Premium (including Deposit) - $5,840 Minimum Premium - $5,840
Rates: Contractor's Equipment - $0.306 Auto Physical Damage - $.306
Mandatory Fire Following Premium - Waived
Scheduled Property Coverage: Miscellaneous Covered Property: Civil Authority; Earth Movement or Volcanic Eruption; Flood, Nuclear Hazard; Sewer Backup and Water Below the Surface; War and Military Action; Contamination or Deterioration; Criminal, Fraudulent, Dishonest, Or Illegal Acts; Electrical Currents; Explosion Rupture, Or Bursting; Loss of use; Mechanical Breakdown; Missing Property; Pollutants; Temperature/Humidity; Theft from an Unattended Vehicle; Voluntary Parting; Wear and Tear.

Drone Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier / A.M. Best Rating	Global Aerospace
Admitted/Non-Admitted	Admitted
Payment Plan	100% of the Annual Premium Due on Inception

Premium & Exposures	Proposed
Premium	$3,108.00
TRIA	Included
Minimum Type	None
Estimated Cost	**$3,108.00**

Standard Coverages	Proposed
Liability Coverage	$1,000,000
Personal Injury	$1,000,000
Medical Expense	$5,000
Coverage A - Bodily Injury and Property Damage Liability - Each Occurrence Limit	$1,000,000

Additional Coverages	Proposed
Additional Benefits (Subject to conditions):	
- Bail Bonds	$5,000
- Fire Legal	$100,000
- Contractual Liability	Policy Limit
- Product liability arising out of sale of scheduled aircraft	Policy Limit
Expenses for Medical Services	$5,000 each occurrence
Aviation Personal And Advertising Injury Liability	$1,000,000 each occurrence/aggregate
Fire Legal Liability	$100,000 each occurrence

Deductibles/SIR	Proposed
Deductible - Unmanned Aircraft Systems (UAS)	Refer SOV

Form Type	Proposed
Form Type	Aviation - Unmanned Aircraft Systems

Endorsements (including but not limited to)
Unmanned Aircraft Systems (UAS Policy Form)
Additional Insured - A121
Amendment of Defined Terms - A125
Expenses for Medical Services - C036
Liability for Sale of Aircraft, Aircraft Parts or Services - C039
Terrorism (TRIA) Coverage - Hull & Liability - C054
Aviation Personal And Advertising Injury Liability - C061

Endorsements (including but not limited to)
Premises Coverage - C064
Fire Legal Liability - C066
Expanded Contractual Liability Endorsement - C095
Non-Owned Aircraft Liability - UnManned Aircraft System - N004
TRIA Disclosure - D004
California Changes - S001
State Amendatory Endorsement and Disclosure notice

Exclusions (including but not limited to)
Electronic Data Event Liability Exclusion - E041
Limited Liability War Exclusion Limited Coverage - C022
Limited Physical Damage War Exclusion Limited Coverage - C023
Electronic Date Recognition Exclusion Limited Coverage - C025

Multi-Carrier Schedule:

Carrier	*Participating Limit*
American Alternative Insurance Corp	69.24%
National Indemnity Company	18.39%
Tokio Marine America Insurance Company	12.37%

Other Significant Terms and Conditions/Restrictions:

Description
Unmanned Aircraft Systems (UAS) - Refer SOV
Premium Breakdown - Refer SOV; Premium includes Liability Premium of $1,950.00
the operation of UAS you rent/lease/borrow for periods of less than 30 days
Premium for Terrorism Insurance Coverage (Which is in Addition to the "Total Premium", And is Subject to any Applicable State Taxes and Surcharges) is $Zero.

Unmanned Aircraft Systems (UAS)

Year	Make	Model	Serial Number	Flight Hours	Deductible	Insured Value	Premium
2021	DJI INNOVATIONS	PHANTOM 4 PRO V2.0	1581F11VKJ8B00203GB0	1	In Motion: 10%; Not In Motion: 10%	$2,745	$198
2021	DJI INNOVATIONS	PHANTOM 4 PRO V2.0	1581F11VKJ5E00201BG0	30	In Motion: 10%; Not In Motion: 10%	$2,745	$198
2017	DJI INNOVATIONS	PHANTOM 4 PRO	1787F04BM23100005643	1	In Motion: 10%; Not In Motion: 10%	$1,800	$130
2017	DJI INNOVATIONS	INSPIRE 2	1787F04BM23100005643	5	In Motion: 10%; Not In Motion: 10%	$1,980	$143

2023	DJI INNOVATIONS	MAVIC 3E	1581F5FHD232G00D17JH	30	In Motion: 10%; Not In Motion: 10%	$5,500	$398
2021	SKYDIO	2	1668BS20FB006A3T	1	In Motion: 10%; Not In Motion: 10%	$1,250	$91

Cyber Liability

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Great American Fidelity Insurance Co
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Prepaid
Payment Method	Agency Bill

Premium & Exposures	Proposed
Premium	$21,999.00
Surplus Lines Taxes	$659.97
Surplus Lines Stamp Fees	$39.60
TRIA	Included
Estimated Cost	**$22,699.00**

Standard Coverages	Proposed
Policy Aggregate Limit	$1,000,000
Insuring Agreement A - Loss Expense Aggregate Limit	-
Insuring Agreement a Includes the Following Coverages and Respective Limits Within Specified Loss Expense Aggregate Limit Unless Specified Otherwise by Endorsement	$1,000,000
Business Interruption Loss	$1,000,000
Contingent Business Interruption Loss	$1,000,000
System Failure / Contingent System Failure	$1,000,000
Extortion Costs (Including Ransomware Event)	$100,000
Forensics	$1,000,000
Identity Monitoring Services	$1,000,000
Notification (including call center services)	$1,000,000
Reputational Harm	$1,000,000
Restoration	$1,000,000
Bricking Costs	$1,000,000
Business Impersonation Costs	$1,000,000
Crisis Management	$1,000,000
Incident Response	$1,000,000
Cyber Crime Sublimit (Included Within Insuring Agreement A – Loss Expense)	-
Cyber Crime Includes the Following Coverages and Respective Limits Within Specified Cyber Crime Sublimit	$250,000
Botnet Attack	$250,000
Cryptojacking Attack	$250,000
Invoice Manipulation	$250,000

Standard Coverages	Proposed
Social Engineering	$250,000
Telecommunications Hacking	$250,000
Transfer of Funds	$250,000
Insuring Agreement B - Liability Expense Aggregate Limit	-
Insuring Agreement B. Liability Expense Coverage Provides Claims-Made Coverage and is Provided on a Full Prior Acts Basis Unless Endorsed Otherwise. - Insuring Agreement B Includes the Following Coverages and Respective Limits Within Specified Liability Expense Aggregate Limit Unless Specified Otherwise by Endorsement	$1,000,000
Defense Expenses (Including Monetary and Punitive Damages)	$1,000,000
Pci Costs	$1,000,000
Regulatory Costs	$1,000,000
Media Liability	$1,000,000
Supplemental Coverage	-
A. Betterment Expense	$100,000
B. Reward Expense	$100,000
C. Attendance Expense – Hearings and Trials	$100,000

Deductibles/SIR	Proposed
Retention: Policy	$50,000
Deductible: Waiting Period	8 Hours

Form Type	Proposed
Form Type	Insuring Agreement B - Liability Expense - Claims Made
Retroactive Date	Insuring Agreement B - Liability Expense - Full Prior Acts

Claims Made Disclaimer:
Should you elect to change carriers (if a new retroactive date is provided) or non-renew this policy, a supplemental extended reporting endorsement may be available subject to policy terms and conditions. You must request the extended reporting period in writing to the carrier within ([Days To Extend]) days of the expiration date. The cost of this extended reporting period is [Percent Cost]% of the annual premium and is fully earned. The extended reporting period extends only to those claims made during the extended reporting period for wrongful acts that occurred prior to the expiration date and would have been covered by the policy. Claims must be reported to the carrier within ([Days To Report]) days of the end of the policy period. The extended reporting period does not increase the limits of liability and is subject to all policy terms, conditions and exclusions.

Endorsements (including but not limited to)
Cyber Risk Division - Claims - 0009-CBR 01/19
Erisk Hub Information for Policyholders - 0002-CBR 11/25
Cyber Loss Control - 0036-CBR 01/23
Surplus Lines Disclosures - CWSN 04/23

Endorsements (including but not limited to)
Important Information to Policyholders California to Obtain Information or to Make a Complaint - SDM705 11/08
in Witness Clause - IL7268 09/09
Global Sanction Endorsement - IL7324 07/21
Disclosure Pursuant to Terrorism Risk Insurance Act General Endorsement - IL7368 01/20
Declarations for Risk E-Business Cyber Loss & Liability Insurance Policy - IL8802 11/85
Risk E-Business Cyber Loss & Liability Insurance Policy - CY6003 03/23
General Service of Suit Endorsement - CY4004 10/23
Brokerage Information - AES4102 12/24
Amendment to Definition of Computer System (Employee Owned Devices) - CY0024 11/23
Amendment to Definition of Insured (Independent Contractors) - CY0029 09/24
Deletion of Funds Transfer Verification of Authenticity Endorsement - CY0030 09/24
Amendment to Definition of Third Party Network to Include - CY1101 03/24
Non-it Service Provider Endorsement - CY1102 10/24
Voluntary Shutdown Endorsement - CY1103 02/25
Amendment to Definition of Period of Recovery - CY1104 04/25
Amend Exclusion F. Bipa Exclusion - CY1105 04/25
Amendment to Section II. Supplemental Coverage - CY1108 06/25
Additional Extended Business Interruption Loss Period Endorsement - CY1109 06/25
Additional Supplemental Coverage Claim Preparation Expense - CY1110 08/25
Blanket Additional Insured Endorsement - CY3026 05/25
Artificial Intelligence Endorsement with Transfer of Funds Extension - CY3028 02/25
Ransomware Event Sublimit Endorsement - CY8007 04/23
Terrorism Coverage Endorsement Cap on Loss from Certified Acts - CY7001 01/19
Risk e-Business Cyber Loss and Liability Insurance PolicySM - 0021-CBR (08/24)

Binding Requirements:

Description
Subject to:
- Re-Signed and Dated Great American Cyber Application
- For Review of an Increased Extortion Cost Sublimit, The Insured Will Need to Confirm Implementation of MFA for Email and Remote Access Along with EDR.
- A Completed, Signed and Dated Copy of the Attached Surplus Line Filing Confirmation is Required to Issue This Policy / Surplus Lines Filing Confirmation
- Policyholder Disclosure Terrorism Coverage Under the Terrorism Risk Insurance Act

Crime

Carrier Information	Proposed
Policy Term	7/1/2026 - 7/1/2027
Carrier	Great American Insurance Company
A.M. Best Rating	A+ XV
Admitted/Non-Admitted	Admitted
Payment Method	Agency Bill

Premium & Exposures	Proposed
Premium	$3,200.00
Minimum Type	None
Estimated Cost	**$3,200.00**

Standard Coverages	Proposed
1. Employee Dishonesty	$1,000,000
2. Forgery or Alteration	$1,000,000
3. Inside the Premises	$1,000,000
4. Outside the Premises	$1,000,000
5. Computer Hacking	$1,000,000
6. Money Orders and Counterfeit Paper Cash	$1,000,000
7. Loss of Clients' Property	$1,000,000
8. Funds Transfer Fraud	$1,000,000
9. Fraudulently Induced Transfer	$250,000

Deductibles/SIR	Proposed
Deductible: 1. Employee Dishonesty	$15,000
Deductible: 2. Forgery or Alteration	$15,000
Deductible: 3. Inside the Premises	$15,000
Deductible: 4. Outside the Premises	$15,000
Deductible: 5. Computer Hacking	$15,000
Deductible: 6. Money Orders and Counterfeit Paper Cash	$15,000
Deductible: 7. Loss of Clients' Property	$15,000
Deductible: 8. Funds Transfer Fraud	$15,000
Deductible: 9. Fraudulently Induced Transfer	$50,000

Form Type	Proposed
Form Type	Discovery

Endorsements (including but not limited to)
Great American Insurance Fidelity & Crime Policy Cover - 0790FIC
Important Notice Fidelity Crime Division Claims - SDM683
Important Information to Policyholders - California - to Obtain Information or to Make a Complaint - SDM705
Crime Protection Policy for Public Entities / SFAA Crime Protection Policy for Public Entities - SP0002 Ed. 03/19
Businesspro Forms and Endorsements Schedule - IL8801

Endorsements (including but not limited to)
California Escrow Agent - SE0117
California Changes-Cancellation and Nonrenewal - SE0133
Amend Confidential Information and Data Breach Costs Exclusions - SE0161
Include Callback for Fraudulently Induced Transfers - SA7205
Global Sanction Endorsement - IL7324
in Witness Clause - IL7268

Exclusions (including but not limited to)
Government Action Exclusion
Third Party Employee Dishonesty
Accounting or Arithmetic Errors
Voluntary Parting of Property
Loss in which the existence of such loss is only proved by a profit and loss comparison or inventory records
Any theft or criminal act committed by a partner of the insured
Employee Dishonesty (does not apply to Employee Theft Coverage)
Governmental Action Exclusion - SE0212
Virtual or on-Line Peer to Peer Mediums of Exchange Exclusion - SA7152

Terrorism Standalone

Carrier Information	*Proposed*
Policy Term	7/1/2026 - 7/1/2027
Carrier	Talbot
A.M. Best Rating	A XV
Admitted/Non-Admitted	Non-Admitted
Payment Plan	Full Pay

Premium & Exposures	Proposed
Premium	$12,000.00
Surplus Lines Taxes	$360.00
Surplus Lines Stamping Fee	$21.60
Exposure / TIV	TIV: $557,881,790
Estimated Cost	**$12,381.60**

Standard Coverages	Proposed
Terrorism and Sabotage Coverage Part: ($10,000 Premium)	
Terrorism and Sabotage Limit of Liability	$100,000,000 Per Occurrence
Terrorism and Sabotage Limit of Liability	$100,000,000 Aggregate
Terrorism and Sabotage Liability Coverage Part: ($2,000 Premium)	
Terrorism and Sabotage Liability Limit of Liability	$5,000,000 Per Occurrence
Terrorism and Sabotage Liability Limit of Liability	$5,000,000 Aggregate

Optional Coverages	Proposed
Option 2: Terrorism and Sabotage Liability	$10,000,000 Per Occurrence / $10,000,000 Aggregate - $4,000 Premium
Option 3: Nuclear/Biological/Chemical	$1,000,000 Per Occurrence / $1,000,000 Aggregate - $2,500 Premium
Option 4: Nuclear/Biological/Chemical	$5,000,000 Per Occurrence / $5,000,000 Aggregate - $10,000 Premium

Deductibles/SIR	Proposed
Deductible	None

Endorsements (including but not limited to)
Sanctions Clause – LMA 3100
Subject Sanctions Clearance and Service of Suit Clause – LMA 5020 USA
Five Powers Middle Eastern Extension
Claims Control Clause (in respect of reinsurances) – NMA2738

Exclusions (including but not limited to)
Chemical/Biological/Nuclear/Cyber – LMA5409A
Threat / Hoax
Unnamed CBI
Territories – Belarus, Russia, Ukraine, Israel
Corona-Virus Exclusion

Perils Covered:

Type	*Description*
Terrorism & Sabotage	Terrorism & Sabotage

Binding Requirements:

Description
No material changes, no previous incidents

Other Significant Terms and Conditions/Restrictions:

Description
Coverage Type: Per Occurrence
Deductible: Nil
Defense Costs: Included within the limits for liability only
The policy is not subject to audit

Premium Summary

The estimated program cost for the options are outlined in the following table:

Line of Coverage		Proposed
		Great American E&S Insurance Company
Primary Liability - $5M xs $500K SIR	Premium	$514,700.00
	Estimated Cost*	**$531,067.46**
		Accredited Specialty Insurance Company
Excess Liability - $5M xs $5M	Premium	$257,350.00
	Estimated Cost*	**$265,534.00**
		StarStone Specialty Insurance Company
Excess Liability - $5M xs $10M	Premium	$184,000.00
	Estimated Cost*	**$186,137.00**
		Gemini Insurance Company
Excess Liability - $10M xs $15M	Premium	$193,290.00
	Estimated Cost*	**$195,526.00**
		Arch Insurance Company
Workers' Compensation	Premium	$101,970.00
	Estimated Cost*	**$101,970.00**
		Swiss Re Corporate Solutions Capacity Insurance Corporation.
Property	Premium	$510,000.00
	Estimated Cost*	**$526,218.00**
		Illinois Union Insurance Company
Pollution Liability	Premium	$14,322.00
	Estimated Cost*	**$14,777.44**
		Hanover Insurance Company
Automobile Physical Damage	Premium	$29,264.00
	Estimated Cost*	**$29,264.00**
		American Alternative Insurance Corp, National Indemnity Company, Tokio Marine America Insurance Company
Drone Liability	Premium	$3,108.00
	Estimated Cost*	**$3,108.00**
		Houston Casualty Company
Cyber Liability	Premium	$21,999.00

Line of Coverage		Proposed
	Estimated Cost*	**$22,699.00**
		Great American Insurance Company
Crime	Premium	$3,200.00
	Estimated Cost*	**$3,200.00**
		Underwriters at Lloyd's London
Standalone Terrorism	Premium	$12,000.00
	Estimated Cost*	**$12,381.60**
Total Program Cost		**$1,891,882.33**

*Estimated Cost includes all taxes, fees, surcharges and TRIA premium (if applicable)

Quote from **Indian Harbor Insurance Company (XL Group plc)** is valid until **7/1/2026**

Quote from **Great American Insurance Company (Great American Financial Group, Inc)** is valid until **7/1/2026**

Quote from **Midwest Employers Casualty Company (W. R. Berkley Group)** is valid until **7/3/2026**

Quote from **Houston Casualty Company (Tokio Marine Holdings, Inc.)** is valid until **7/1/2026**

Quote from **Hanover Insurance Company (Hanover Insurance Companies)** is valid until **6/5/2026**

Quote from **Swiss Re Corporate Solutions Capacity Insurance Corporation. (Swiss Re LTD)** is valid until **7/1/2026**

Quote from **Underwriters at Lloyd's London** is valid until **5/15/2026**

Quote from **Underwriters at Lloyd's London** is valid until **6/14/2026**

Quote from **Illinois Union Insurance Company (ACE Group)** is valid until **7/1/2026**

Quote from **Arch Insurance Company (Arch Insurance Group)** is valid until **6/7/2026**

Quote from **American Alternative Insurance Corp (Munich Re America Corporation Group), etc...** is valid until **7/1/2026**

Quote from **Safety National Casualty Corporation (Tokio Marine Holdings, Inc.)** is valid until **7/2/2026**

Quote from **Great American Fidelity Insurance Co (Great American Financial Group, Inc)** is valid until **6/3/2026**

Gallagher is responsible for the placement of the following lines of coverage:

Workers' Compensation

Property

Difference in Conditions

Environmental Liability

Automobile Physical Damage

Aviation - Unmanned Aircraft Systems

Cyber Liability

Crime

Terrorism Standalone

It is understood that any other type of exposure/coverage is either self-insured or placed by another brokerage firm other than Gallagher. If you need help in placing other lines of coverage or covering other types of exposures, please contact your Gallagher representative.

Premiums are due and payable as billed and may be financed, subject to acceptance by an approved finance company. Following acceptance, completion (and signature) of a premium finance agreement with the specified down payment is required. Note: Unless prohibited by law, Gallagher may earn compensation for this optional value-added service.

Where permitted by law, Gallagher may assess a $100 Agency Bill Administration Fee on all new and renewal policy placements where Gallagher is responsible for collecting client premium and remitting payment to insurance carriers and other third parties. In connection with such billing obligations, Gallagher assumes additional administrative, financial and compliance obligations that introduce significant risks to Gallagher's business. Should you change to direct bill, where available, or premium finance the transaction, you will not incur the Agency Bill Administration Fee.

This proposal of insurance features insurance policies which contain cancellation provisions to refund premium other than on a pro-rata basis for such occurrences including but not limited to non-payment of premium (short rate penalty provisions). At your request, we can detail the terms of such cancellation provisions.

Payment Plans

Carrier / Payable Carrier	Line Of Coverage	Payment Schedule	Payment Method
Great American E&S Insurance Company	Primary Liability - $5M xs $500K SIR	Annual premium is due within 30 days of effective date.	Agency Bill
Accredited Specialty Insurance Company	Excess Liability - $5M xs $5M	Annual premium is due within 30 days of effective date.	Agency Bill
StarStone Specialty Insurance Company	Excess Liability - $5M xs $10M	Annual premium is due within 30 days of effective date.	Agency Bill
Gemini Insurance Company	Excess Liability - $10M xs $15M	Annual premium is due within 30 days of effective date.	Agency Bill
Arch Insurance Company	Workers Compensation	Minimum and Deposit - $101,970	Agency Bill
Swiss Re Corporate Solutions Capacity Insurance Corporation.	Property	Premium is payable within 30 days of invoice date	Agency Bill
Illinois Union Insurance Company	Pollution Liability	Premium Must be Remitted to us Within Thirty (30) Days from the Date of the Invoice	Agency Bill
Hanover Insurance Company	Automobile Physical Damage	Full Pay	Agency Bill
Global Aerospace	Drone Liability	100% of the Annual Premium Due on Inception	Agency Bill
Great American Fidelity Insurance Co	Cyber Liability	Full Pay	Agency Bill
Great American Insurance Company	Crime	Premium is payable within 30 days of effective date	Agency Bill
Talbot	Terrorism Standalone	Full Pay	Agency Bill

Proposal Disclosures

The following disclosures are hereby made a part of this proposal. Please review these disclosures prior to signing the Client Authorization to Bind or e-mail confirmation.

Proposal Disclaimer

IMPORTANT: The proposal and/or any executive summaries outline certain terms and conditions of the insurance proposed by the insurers, based on the information provided by your company. The insurance policies themselves must be read to fully understand the terms, coverages, exclusions, limitations and/or conditions of the actual policy contract of insurance. Policy forms will be made available upon request. We make no warranties with respect to policy limits or coverage considerations of the carrier.

Compensation Disclosure

1. Gallagher Companies are primarily compensated from the usual and customary commissions, fees or, where permitted, a combination of both, for brokerage and servicing of insurance policies, annuity contracts, guarantee contracts and surety bonds (collectively “insurance coverages”) handled for a client’s account, which may vary based on market conditions and the insurance product placed for the client.

2. In placing, renewing, consulting on or servicing your insurance coverages, Gallagher companies may participate in contingent and supplemental commission arrangements with intermediaries and insurance companies that provide for additional compensation if certain underwriting, profitability, volume or retention goals are achieved. Such goals are typically based on the total amount of certain insurance coverages placed by Gallagher with the insurance company, not on an individual policy basis. As a result, Gallagher may be considered to have an incentive to place your insurance coverages with a particular insurance company. If you do not wish to have your commercial insurance placement included in consideration for additional compensation, contact your producer or service team for an Opt-out form.

3. Gallagher Companies may receive investment income on fiduciary funds temporarily held by them, or from obtaining or generating premium finance quotes, unless prohibited by law.

4. Gallagher Companies may also access or have an ownership interest in other facilities, including wholesalers, reinsurance intermediaries, captive managers, underwriting managers and others that act as intermediaries for both Gallagher and other brokers in the insurance marketplace some of which may earn and retain customary brokerage commission and fees for their work.

If you have specific questions about any compensation received by Gallagher and its affiliates in relation to your insurance placements, please contact your Gallagher representative for more details.

TRIA/TRIPRA Disclaimer

If this proposal contains options to purchase TRIA/TRIPRA coverage, the proposed TRIA/TRIPRA program may not cover all terrorism losses. While the amendments to TRIA eliminated the distinction between foreign and domestic acts of terrorism, a number of lines of coverage excluded under the amendments passed in 2005 remain excluded including commercial automobile, burglary and theft insurance; surety insurance, farm owners multiple perils and professional liability (although directors and officers liability is specifically included). If such excluded coverages are required, we recommend that you consider purchasing a separate terrorism policy. Please note that a separate terrorism policy for these excluded coverages may be necessary to satisfy loan covenants or other contractual obligations. TRIPRA includes a $100 billion cap on insurers' aggregate liability.

TRIPRA is set to expire on December 31, 2027. There is no certainty of extension, thus the coverage provided by your insurers may or may not extend beyond December 31, 2027. In the event you have loan covenants or other contractual obligations requiring that TRIA/TRIPRA be maintained throughout the duration of your policy period, we recommend that a separate ""Stand Alone"" terrorism policy be purchased to satisfy those obligations.

Property Estimator Disclaimer

These property values were obtained using a desktop Property Estimator software operated by non-appraisal professionals. These property values represent general estimates which are not to be considered a certified appraisal. These property values include generalities and assumptions that may produce inaccurate values for specific structures.

Terms and Conditions

It is important that we clearly outline the nature of our mutual relationship. The following terms and conditions (these "Terms") govern your relationship with Gallagher unless you have separately entered into a written services agreement with Gallagher relative to the policies and services outlined in this Proposal, in which case that services agreement will govern and control with respect to any conflicts with these Terms. These Terms will become effective upon your execution of the Client Authorization to Bind Coverage (the "CAB") included in this Proposal and shall survive for the duration of your relationship with Gallagher relative to the policies placed pursuant to the CAB or otherwise at your request.

Services

Gallagher will represent and assist you in all discussions and transactions with insurance companies relating to the lines of insurance coverage set forth in the CAB and any other lines of insurance coverage with which you request Gallagher's assistance. Gallagher will consult with you regarding any matters involving these or other coverages for which you have engaged Gallagher. You have the sole discretion for approving any insurance policies placed, as well as all other material decisions involving your risk management, risk transfer and/or loss prevention needs.

Although you are responsible for notifying applicable insurance companies directly in connection with any claims, demands, suits, notices of potential claims or any other matters as required by the terms and conditions of your policies, Gallagher will assist you in determining applicable claim reporting requirements.

Gallagher is not required to provide Services to you if Gallagher reasonably considers that to do so would put Gallagher in breach of, or would expose Gallagher or its affiliates to fines, penalties or sanctions under any laws, regulations, professional rules or, in Gallagher's sole opinion, you have breached a term/the terms of the Policies. In such circumstances, Gallagher will be entitled to terminate its Services with immediate effect. In the event that Gallagher exercises its right to terminate its Services with immediate effect, Gallagher will not be responsible or liable to you for any direct or indirect loss which you or any other party may suffer as a result.

Please be aware that Gallagher is generally restricted from providing broking, claims handling or other services that relate to Cuba and Iran, including due to significant difficulties in processing payments and other commercial and reputational considerations.

Treatment of Information

Gallagher understands the need to protect the confidentiality and security of your confidential and sensitive information and strives to comply with applicable data privacy and security laws. Your confidential and sensitive information will be protected by Gallagher and only used to perform services for you; provided that Gallagher may disclose and transfer your information (including transfers outside the United States in compliance with applicable laws) to our affiliates, agents or vendors that have a need to know such information in connection with the provision of such services (including insurance markets, as necessary, for marketing, quoting, placing and/or servicing insurance coverages). We may also disclose such information as required by applicable data protection laws or the order of any court or tribunal, subject to our providing you with prior notice as permitted by law. The parties agree that confidential information does not include aggregate, anonymized or de-identified data. In addition, we may also utilize your aggregated, anonymized, or de-identified information in connection with benchmarking, risk modeling and other data analytics, service or product improvements, and offerings, and similar business purposes. You further agree we may use your information with artificial intelligence or other automated applications for the purposes of improving or delivering our services to you.

We will (i) implement appropriate administrative, physical and technical safeguards to protect personal information; (ii) timely report security incidents involving personal information to affected parties and/or regulatory bodies; (iii) create and maintain required policies and procedures; and (iv) comply with data subjects' rights, as applicable. To the extent applicable under associated data protection laws, you are a "business" or "controller" and Gallagher is a "service provider" or "data processor." You will ensure that any information provided to Gallagher has been provided with any required notices and that you have obtained all required consents, if any and where required, or are otherwise authorized to transfer all information to Gallagher and enable Gallagher to process the information for the purposes described in this Proposal and as set forth in Gallagher's Privacy Policy located at https://www.ajg.com/privacy-policy/. Gallagher may update its Privacy Policy from time to time and any updates will be posted to such site.

Dispute Resolution

Gallagher does not expect that it will ever have a formal dispute with any of its clients. However, in the event that one should arise, we should each strive to achieve a fair, expedient and efficient resolution and we'd like to clearly outline the resolution process.

A. If the parties have a dispute regarding Gallagher's services or the relationship governed by this Proposal ("Dispute"), each party agrees to resolve that Dispute by mediation. If mediation fails to resolve the Dispute, you and Gallagher agree to binding arbitration. Each party waives all rights to commence litigation in court to resolve a Dispute, and specifically waives all rights to pursue relief by class action or mass action in

court or through arbitration. However, the parties do not waive the ability to seek a court order of injunction in aid of the mediation and arbitration required by these Terms.

B. The party asserting a Dispute must provide a written notice ("Notice") of the claim to the other party and to the American Arbitration Association ("AAA") in accordance with its Commercial Arbitration Rules and Mediation Procedures. All Dispute resolutions will take place in Chicago, IL, unless you and Gallagher agree to another location. The parties will equally divide all costs of the mediation and arbitration proceedings and will each pay their own attorneys' fees. All matters will be before a neutral, impartial and disinterested mediator or arbitrator(s) that have at least 20 years' experience in commercial and insurance coverage disputes.

C. Mediation will occur within sixty (60) days of filing the Notice with the AAA. Mediation results will be reduced to a memorandum of understanding signed by you, Gallagher and the mediator. A Dispute that is not resolved in mediation will commence to binding arbitration. For Disputes in excess of $500,000, either party may elect to have the Dispute heard by a panel of three (3) arbitrators. The award of the arbitrator(s) must be accompanied by a reasoned opinion prepared and signed by the arbitrator(s). Except as may be required by law, neither you, Gallagher, nor a mediator or arbitrator may disclose the existence, content or results of any Dispute or its dispute resolution proceeding without the prior written consent of both you and Gallagher.

Electronic Delivery

In lieu of receiving documents in paper format, you agree, to the fullest extent permitted by law, to accept electronic delivery of any documents that Gallagher may be required to deliver to you (including, but not limited to, insurance policies and endorsements, account statements and all other agreements, forms and communications) in connection with services provided by Gallagher. Electronic delivery of a document to you may be made via electronic mail or by other electronic means, including posting documents to a secure website.

Miscellaneous Terms

Gallagher is engaged to perform services as an independent contractor and not as your employee or agent, and Gallagher will not be operating in a fiduciary capacity.

Where applicable, insurance coverage placements and other services may require the payment of federal excise taxes, surplus lines taxes, stamping or other fees to the Internal Revenue Service, various State(s) departments of revenue, state regulators, boards or associations. In such cases, you will be responsible for the payment of the taxes and/or fees, which Gallagher will separately identify on related invoices.

The Proposal and these Terms are governed by the laws of the State of Illinois, without regard to its conflict of law rules.

If an arbitrator/court of competent jurisdiction determines that any provision of these Terms is void or unenforceable, that provision will be severed, and the arbitrator/court will replace it with a valid and enforceable provision that most closely approximates the original intent, and the remainder of these Terms will remain in effect.

Except to the extent in conflict with a services agreement that you may enter into with Gallagher, these Terms and the remainder of the Proposal constitute the entire agreement between you and Gallagher with respect to the subject matter of the Proposal, and supersede all prior negotiations, agreements and understandings as to such matters.

Client Signature Requirements

IMPORTANT NOTICE:

1. The insurance policy that you are applying to purchase is being issued by an insurer that is not licensed by the State of California. These companies are called "nonadmitted" or "surplus line" insurers.

2. The insurer is not subject to the financial solvency regulation and enforcement that apply to California licensed insurers.

3. The insurer does not participate in any of the insurance guarantee funds created by California law. Therefore, these funds will not pay your claims or protect your assets if the insurer becomes insolvent and is unable to make payments as promised.

4. The insurer should be licensed either as a foreign insurer in another state in the United States or as a non-United States (alien) insurer. You should ask questions of your insurance agent, broker, or "surplus line" broker or contact the California Department of Insurance at the toll-free number 1-800-927-4357 or internet website www.insurance.ca.gov. Ask whether or not the insurer is licensed as a foreign or non-United States (alien) insurer and for additional information about the insurer. You may also visit the NAIC's internet website at www.naic.org. The NAIC—the National Association of Insurance Commissioners—is the regulatory support organization created and governed by the chief insurance regulators in the United States.

5. Foreign insurers should be licensed by a state in the United States and you may contact that state's department of insurance to obtain more information about that insurer. You can find a link to each state from this NAIC internet website: https://naic.org/state_web_map.htm.

6. For non-United States (alien) insurers, the insurer should be licensed by a country outside of the United States and should be on the NAIC's International Insurers Department (IID) listing of approved nonadmitted non-United States insurers. Ask your agent, broker, or "surplus line" broker to obtain more information about that insurer.

7. California maintains a "List of Approved Surplus Line Insurers (LASLI)." Ask your agent or broker if the insurer is on that list, or view that list at the internet website of the California Department of Insurance: www.insurance.ca.gov/01-consumers/120-company/07lasli/lasli.cfm.

8. If you, as the applicant, required that the insurance policy you have purchased be effective immediately, either because existing coverage was going to lapse within two business days or because you were required to have coverage within two business days, and you did not receive this disclosure form and a request for your signature until after coverage became effective, you have the right to cancel this policy within five days of receiving this disclosure. If you cancel coverage, the premium will be prorated and any broker's fee charged for this insurance will be returned to you.

Date: _____

Insured: _____

D-1 (Effective January 1, 2020)

Coverages for Consideration

Overview

Gallagher recommends that you consider purchasing the following additional coverages for which you have exposure. A Proposal for any of the coverages below can be provided.

- Flood
- Earthquake

Please note the recommendations and considerations summarized in this section are not intended to identify all potential exposures. Gallagher is not an expert in all aspects of your business and assumes no responsibility to independently investigate the risks your business faces. Gallagher has relied upon the information you provided in making our insurance Proposals. If you are interested in pursuing additional coverages other than those listed above, please list the additional coverages in the Client Authorization to Bind.

Client Authorization to Bind Coverage

After careful consideration of Gallagher's proposal dated 6/5/2026, we accept the following coverage(s). Please check the desired coverage(s) and note any coverage amendments below:

	Coverage/Carrier
☐ Accept ☐ Reject	**Primary Liability - $5M xs $500K SIR** Great American E&S Insurance Company
☐ Accept ☐ Reject	**TRIA - Primary Liability - $5M xs $500K SIR**
☐ Accept ☐ Reject	**Excess Liability - $5M xs $5M** Accredited Specialty Insurance Company
☐ Accept ☐ Reject	**TRIA - Excess Liability - $5M xs $5M**
☐ Accept ☐ Reject	**Excess Liability - $5M xs $10M** StarStone Specialty Insurance Company
Included*	**TRIA - Excess Liability - $5M xs $10M**
☐ Accept ☐ Reject	**Excess Liability - $10M xs $15M** Gemini Insurance Company
Included*	**TRIA - Excess Liability - $10M xs $15M**
☐ Accept ☐ Reject	**Workers' Compensation** Arch Insurance Company
Included*	**TRIA - Workers' Compensation**
☐ Accept ☐ Reject	**Property** Swiss Re Corporate Solutions Capacity Insurance Corporation.
☐ Accept ☐ Reject	**TRIA - Property**
☐ Accept ☐ Reject	**Pollution Liability** Illinois Union Insurance Company
☐ Accept ☐ Reject	**TRIA - Environmental Liability**
☐ Accept ☐ Reject	**Automobile Physical Damage** Hanover Insurance Company
☐ Accept ☐ Reject	**TRIA - Automobile Physical Damage**
☐ Accept ☐ Reject	**Drone Liability** Global Aerospace
Included*	**TRIA - Drone Liability**
☐ Accept ☐ Reject	**Cyber Liability**

	Coverage/Carrier
	Great American Fidelity Insurance Co
Included*	**TRIA - Cyber Liability**
☐ **Accept** ☐ **Reject**	**Crime** Great American Insurance Company
☐ **Accept** ☐ **Reject**	**Terrorism Standalone** Talbot

*For this coverage, TRIA cannot be rejected

Additional Recommended Coverages

Gallagher recommends that you purchase the following additional coverages for which you have exposure. By checking the box(es) below, you are requesting that Gallagher provide you with a Proposal for this coverage. By not requesting a Proposal for this coverage, you assume the risk of any uncovered loss.

Other Coverages to Consider

☐ Flood

The above coverage(s) does not necessarily represent the entirety of available insurance products. If you are interested in pursuing additional coverages other than those listed in the Additional Recommended Coverages, please list below:

Coverage Amendments and Notes:

Exposures and Values

You confirm the payroll, values, schedules, and any other information pertaining to your operations, and submitted to the underwriters, were compiled from information provided by you. If no updates were provided to Gallagher, the values, exposures and operations used were based on the expiring policies. You acknowledge it is your responsibility to notify Gallagher of any material change in your operations or exposures.

Additional Terms and Disclosures

Gallagher is not an expert in all aspects of your business. Gallagher's Proposals for insurance are based upon the information concerning your business that was provided to Gallagher by you. Gallagher expects the information you provide is true, correct and complete in all material respects. Gallagher assumes no responsibility to independently investigate the risks that may be facing your business but rather have relied upon the information you provide to Gallagher in making our insurance Proposals.

Gallagher's liability to you arising from any of Gallagher's acts or omissions will not exceed $20 million in the aggregate. The parties each will only be liable for actual damages incurred by the other party, and will not be liable for any indirect, special, exemplary, consequential, reliance or punitive damages. No claim or cause of action, regardless of form (tort, contract, statutory, or otherwise), arising out of, relating to or in any way connected with the Proposal, any of Gallagher's services or your relationship with Gallagher may be brought by either party any later than two (2) years after the accrual of the claim or cause of action.

Gallagher has established security controls to protect Client confidential information from unauthorized use or disclosure. For additional information, please review Gallagher's Privacy Policy located at https://www.ajg.com/privacy-policy/.

You have read, understand and agree that the information contained in the Proposal and all documents attached to and incorporated into the Proposal, is correct and has been disclosed to you prior to authorizing Gallagher to bind coverage and/or provide services to you. By signing below, or authorizing Gallagher to bind your insurance coverage through email when allowed, you acknowledge you have reviewed and agree with terms, conditions and disclosures contained in the Proposal.

By: _____

Print Name (Specify Title)

_____

Company

_____

Signature

Date: _____

Appendix

Compensation Disclosure Schedule

Client Name: Marin Municipal Water District

Coverage	*Carrier Name(s)*	*Wholesaler, MGA, or Intermediary Name[1]*	*Est. Annual Premium[2]*	*Gallagher U.S. Owned Wholesaler, MGA, or Intermediary % and/or Fee %*
Primary Liability	Great American E&S Insurance Company	Allied Public Risk, Inc.	$514,700.00	
Excess Liability	Accredited Specialty Insurance Company	APEX Insurance Agency, LLC	$257,350.00	
Excess Liability	StarStone Specialty Insurance Company	APEX Insurance Agency, LLC	$184,000.00	
Excess Liability	Gemini Insurance Company	APEX Insurance Agency, LLC	$193,290.00	
Workers Compensation	Arch Insurance Company	N/A	$101,970.00	
Property	Swiss Re Corporate Solutions Capacity Insurance Corporation	N/A	$510,000.00	
Pollution Liability	Illinois Union Insurance Company	N/A	$14,322.00	
Automobile Physical Damage	Hanover Insurance Company	N/A	$29,264.00	
Aviation - Unmanned Aircraft Systems	American Alternative Insurance Corp; National Indemnity Company; Tokio Marine America Insurance Company	Global Aerospace, Inc	$3,108.00	
Cyber Liability	Great American Fidelity Insurance Co	N/A	$21,999.00	
Crime	Great American Insurance Company	Risk Placement Services	$3,200.00	20 %
Terrorism Standalone	Talbot	N/A	$12,000	

1 We were able to obtain more advantageous terms and conditions for you through an intermediary/ wholesaler.

2 If the premium is shown as an indication: The premium indicated is an estimate provided by the market. The actual premium and acceptance of the coverage requested will be determined by the market after a thorough review of the completed application.

* A verbal quotation was received from this carrier. We are awaiting a quotation in writing.

Note: When placing business with insurance companies, Gallagher Companies receive commission based on negotiated contractual terms with those carriers. The commission rate is a percentage of the premium excluding taxes and fees. Major lines of coverage, and their typical range of commissions are listed below. If you wish to receive more details on actual compensation paid to Gallagher Companies, please contact your Gallagher representative.

- **Accident & Health**: 15-25%
- **Aviation**: 14-15%
- **Contract Bonds**: 20-30%
- **All Other Bonds/Surety**: 30-35%
- **Builders Risk**: 15-18%
- **Property**: 15-22%
- **Inland Marine**: 20-22.5%
- **Ocean Marine**: 15-17.5%
- **Casualty**: 14-15%
- **Commercial Auto**: 12.5-15%
- **Package / Business Owners Package**: 15-16.8%
- **Workers Compensation**: 8-11%
- **All Other Commercial**: 10-20%
- **Executive/Professional Lines**: 15-17.5%
- **Medical Malpractice**: 10-12%

Compensation to Gallagher may also be disclosed in a Client Services Agreement or Consulting Services Agreement.

Binding Requirements

Coverage (Issuing Carrier)	Binding Requirements
Workers' Compensation Arch Insurance Company	N/A
Property Swiss Re Corporate Solutions Capacity Insurance Corporation.	Subject To: Important Notice - Surplus Line - SLN0001CA 0120
Pollution Liability Illinois Union Insurance Company	Subject To: - Signed and Dated Attached Tria Disclosure Form, But Only if Rejecting TRIA Coverage / Policyholder Disclosure Notice of Terrorism Insurance Coverage - Completion of a Satisfactory Chubb Engineering Review
Automobile Physical Damage Hanover Insurance Company	Subject To: Signed TRIA Form
Drone Liability Global Aerospace, Inc.	N/A
Cyber Liability Great American Fidelity Insurance Co	Subject to: - Re-Signed and Dated Great American Cyber Application - For Review of an Increased Extortion Cost Sublimit, The Insured Will Need to Confirm Implementation of MFA for Email and Remote Access Along with EDR. - Policyholder Disclosure Terrorism Coverage Under the Terrorism Risk Insurance Act
Crime Great American Insurance Company	N/A
Terrorism Standalone Talbot	N/A
Excess Liability StarStone Specialty Insurance Company	Subject To: - Completed and signed TRIA Acceptance or Rejection form - We reserve the right to amend our terms and conditions subject to receipt and review of the underlying terms - All underlying policies must be received within 60 days of binding - Confirmation of Binding Coverage must be signed at Binding
Excess Liability Great American E&S Insurance Company	Subject To: - Confirmation of Binding Coverage must be signed at Binding
Excess Liability Gemini Insurance Company	Subject To: - Please provide us with a copy of the Underlying Carrier Binders -Required within 30 days of binding/Confirmation of Binding Coverage must be signed at Binding - Please provide us with a copy of the Underlying Policies, including the Carrier, Effective Date, Expiration Date, Policy Number, Limits and Premium-Required within 60 days of binding - Signed and Dated TRIA Letter-Required prior to binding

Coverage (Issuing Carrier)	Binding Requirements
	- Please provide us with a copy of the Commercial General Liability Binder-Required within 30 days of binding
	- Please provide us with a copy of the Commercial General Liability Policy, including the Carrier, Effective Date, Expiration Date, Policy Number, Limits, and Premium-Required within 60 days of binding
Excess Liability Accredited Specialty Insurance Company	Subject To:
	- Updated ground-up and excess carrier loss runs valued within 90 days for Trident and Safety National
	- Signed and dated Acceptance or Rejection of Terrorism Insurance Coverage form
	- All applicable underlying binders
	- Signed and completed APR applications / supplementals as follow: Required Within 30 Days of Effective Date
	- Signed and dated Fraud Warning Notice (if not included with application). - Required Within 30 Days of Effective Date
	- All applicable underlying policies - Required Within 30 Days of Effective Date
	- Supplemental Application for Sexual Abuse and Molestation

Claims Reporting By Policy

Immediately report all claims. Each insurer requires notice of certain types of claims depending on the potential exposure or particular injury types. It is important to thoroughly review your policy to ensure you are reporting particular incidents and claims, based upon the insurer's policy requirements.

If you are using a third party administrator ("TPA"), your TPA may or may not report claims to an insurer on your behalf. Although we will assist you where requested, it is important that you understand whether your TPA will be completing this notification.

Reporting Direct to Carrier [Only When Applicable]

Coverage(s): Terrorism Standalone	*Report To:*
Insurer: Talbot Policy Period: 5/15/2026 to 5/15/2027	Insurer/TPA Name: Gallagher Phone: 1-855-497-0578 Email: SEClaims@ajg.com

Coverage(s): Pollution Liability	*Report To:*
Insurer: Indian Harbor Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Indian Harbor Insurance Company Phone:

Coverage(s): Property	*Report To:*
Insurer: Swiss Re Corporate Solutions Capacity Insurance Corporation Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Swiss Re Corporate Solutions Capacity Insurance Corporation Email: ClaimsNAProperty_CorporateSolutions@swissre.com

Coverage(s): Crime	*Report To:*
Insurer: Great American Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Great American Insurance Company Phone: 800-545-4269 Fax: 513-864-3750 Email: Eldclaims@gaig.com Web: https://www.greatamericaninsurancegroup.com/for-claims/report-a-claim

Coverage(s): Pollution Liability	*Report To:*
Insurer: Illinois Union Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Illinois Union Insurance Company Phone: 1-800-433-0385 Fax: 1-877-395-0131 Email: acecrs-claims@chubb.com Web: https://www.chubb.com/us-en/claims/commercial-claims.aspx

Coverage(s): Workers' Compensation	Report To:
Insurer: Arch Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Arch Insurance Company Phone:

Coverage(s): Cyber Liability	Report To:
Insurer: Great American Fidelity Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Great American Fidelity Insurance Company Phone: (877) 209-2009 Email: cyberclaim@gajg.com

Coverage(s): Aviation - Unmanned Aircraft Systems	Report To:
Insurer: American Alternative Insurance Corp Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: American Alternative Insurance Corp Phone: 888-729-2242 Email: Clmsins@munichreamerica.com Web: http://www.americanalternativeinsurancecorporation.com/en.html

Coverage(s): Aviation - Unmanned Aircraft Systems	Report To:
Insurer: National Indemnity Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: American Alternative Insurance Corp Phone: 800-356-5750 Fax: 402-916-3031 Email: claims@nationalindemnity.com Web: https://www.nationalindemnity.com/#

Coverage(s): Aviation - Unmanned Aircraft Systems	Report To:
Insurer: Tokio Marine America Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Tokio Marine America Insurance Company Phone: 877-567-7486 Email: claims@actec.net Web: https://tmamerica.com/claims/Default.aspx

Coverage(s): Automobile Physical Damage	Report To:
Insurer: Hanover Insurance Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Hanover Insurance Insurance Company Phone: 800-628-0250; Platinum Holders: 800-799-6977 Fax: 800-399-4734 Email: firstreport@hanover.com Web: https://www.hanover.com/claims.html

Coverage(s): Excess Liability	Report To:
Insurer: StarStone Specialty Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: StarStone Specialty Insurance Company Phone: 844-722-7827 Fax: Email: claims@corespecialty.com Web:
Coverage(s): Excess Liability	**Report To:**
Insurer: Great American E&S Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Great American E&S Insurance Company Phone: 800-545-4269 Fax: 513-864-3750 Email: Eldclaims@gaig.com Web: https://www.greatamericaninsurancegroup.com/for-claims/report-a-claim
Coverage(s): Excess Liability	**Report To:**
Insurer: Gemini Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Gemini Insurance Company Phone: 855-597-7616 Fax: (855) 999-0776 Email: Claims@Berkleycustom.com Web:
Coverage(s): Excess Liability	**Report To:**
Insurer: Accredited Specialty Insurance Company Policy Period: 7/1/2026 to 7/1/2027	Insurer/TPA Name: Accredited Specialty Insurance Company Phone: (844) 631-7819, Option 1\Urgent Contact: (760) 522-0905 Fax: Email: commercialclaims@k2insclaims.com/Urgent Contact: dcarlson@k2insclaims.com Web:

Reporting to Gallagher or Assistance in Reporting

Coverage(s):	Report To:
Gallagher Claims and Risk Consulting	Phone: 855-497-0578 Fax: 225-663-3224 Email: ggb.gcrcclaimscenter@ajg.com

Gallagher STEP

Reduce Your Risk and Simplify Training

Safety training programs and educational materials for employees are critical for reducing accidents, increasing retention, and minimizing your total cost of risk now and in the future.

Gallagher Safety Training Education Platform (STEP) is our proprietary learning management system (LMS) that supports your safety program, provides real-time access to your loss control plans and keeps employees up to date with the latest safety standards.

Key Benefits of Gallagher STEP

- **Register** for up to 10 complimentary modules every year from a library of over 100 training and safety shorts. In addition, monthly bulletins are available, covering topics such as general and environmental safety, human resources, and health and wellness.
- **Save** valuable time by assigning employee training and monitoring their latest progress and completion.
- **Simplify** the process of training to stay in compliance and avoid costly penalties.
- **Onboard and train** an unlimited number of users while enhancing your overall risk control program.
- **Customize** your platform with your company's logo, training content and modules tailored to your business, and personalized procedures and forms for an added fee.

Please visit **ajg.com/us/gallagher-step/** to learn more.

Most Popular Training Modules

- Sexual Harassment and Discrimination
- Slip, Trip and Fall Training
- Electrical Safety Training
- Back Safety Training
- Bloodborne Pathogens
- Safe Lifting Practices
- Defensive Driving Basics
- Fire Prevention Basics
- Personal Protective Equipment
- GHS Hazard Communication

Gallagher CORE360®

Gallagher **CORE360**® is our unique, comprehensive approach of evaluating your risk management program that leverages our analytical tools and diverse resources for custom, maximum impact on six cost drivers of your total cost of risk.

Gallagher

Insurance | Risk Management | Consulting

Sample of Available Training Modules and Safety Shorts

Human Resources Training

- Americans with Disabilities Act (ADA)
- California Ethics
- California Sexual Harassment & Discrimination—Employees (English and Spanish)
- California Sexual Harassment and Discrimination—Supervisors (English and Spanish)
- Connecticut Sexual Harassment Prevention and Response
- Diversity
- Drug-Free Workplace—Supervisor
- Ethics in Action
- Fair and Accurate Credit Transaction Act (FACTA)
- Family Medical Leave Act (FMLA)
- Interviewing Strategies
- Job Applications
- Maine Sexual Harassment Prevention and Response
- Personnel Files
- Sensitivity Basics: Creating Positive Working Relationships
- Sexual Harassment and Discrimination—Employees
- Sexual Harassment and Discrimination—Supervisors
- New York City Sexual Harassment and Discrimination—Employees (English and Spanish)
- New York City Sexual Harassment and Discrimination—Supervisors (English and Spanish)
- New York State Sexual Harassment and Discrimination—Employees (English and Spanish)
- New York State Sexual Harassment and Discrimination—Supervisors (English and Spanish)
- Smart Hiring
- Smart Risk Management—Core Principles
- Theft
- Unsafe Acts
- Violence Prevention
- Workers Compensation Essentials
- Workplace Investigations Basics
- Wrongful Termination

Safety Training

- Accident Investigation Techniques
- Asbestos Awareness (General Industry)
- Basic Conveyor Safety
- Bloodborne Pathogens (English and Spanish)
- Creating a Safe Holiday Celebration
- Common Fire and Life Safety Hazards
- Continuity of Operations Planning
- Defensive Driving—Accident Scene Management
- Defensive Driving—Backing Safely, R is for Reverse
- Defensive Driving Basics—Part I (English and Spanish)
- Defensive Driving—Changing Lanes Safely
- Defensive Driving—Driving Safely in School Zones
- Defensive Driving—General Auto Risk Management
- Defensive Driving—Intersections
- Defensive Driving—Reducing Deer-Related Incidents
- Defensive Driving—Safe Following Distance
- Defensive Driving—Spring Weather Conditions
- Defensive Driving—Winter Weather Conditions
- Determining the Root Cause of Accidents
- Disaster Planning 101
- Electrical Safety (English and Spanish)
- Ladder Safety
- Employee and Family Disaster Planning
- Evacuation Planning and Procedures
- Fire Prevention Practices (English and Spanish)
- Forklift Safety Basics for General Industry
- Hazard Communication (English and Spanish)
- Hearing Protection
- Housekeeping—Custodial, Safe Housekeeping Practices
- Identifying Strain and Exertion Exposures (English and Spanish)
- Lead-Based Paint
- Lockdown Procedures
- Lockout/Tagout (English and Spanish)
- Machine Guarding (English and Spanish)
- Means of Egress (English and Spanish)
- Mold
- Office Ergonomics Defined
- Office Ergonomics—Working in Comfort
- Office Workstation Safety
- Office Workstation Safety for Supervisors
- Personal Protective Equipment (English and Spanish)
- Portable Fire Extinguishers I
- Portable Fire Extinguishers II
- Power Tool Safety
- Preparation for Physical Activity
- Preventing Back Injuries (English and Spanish)
- Preventing Slips, Trips and Falls (English and Spanish)
- Preventing Injuries When Lifting, Moving and Transferring Residents
- Safety Pays for Life
- Temp Staffing Services. Employee Safety Orientation (English and Spanish)

Safety Shorts

Two safety shorts are considered one module selection.

- Bloodborne Pathogens
- Electrical Safety
- Emergency Procedures
- Fire Prevention and Protection
- Hand and Power Tools
- Hazard Communication
- Housekeeping/Custodial—Before You Start
- Housekeeping/Custodial—Cleaning by Hand
- Housekeeping/Custodial—Emptying Trash
- Housekeeping/Custodial—Mopping and Emptying Buckets
- Housekeeping/Custodial—Preventing Slips, Trips and Falls
- Housekeeping—General
- Ladder Safety
- Lockout/Tagout
- Personal Protective Equipment
- Safe Lifting Practices
- Slip, Trip and Fall

The Gallagher Way.
Since 1927.

Please visit ajg.com/us/gallagher-step/ to learn more.

Insurance brokerage and related services provided by Arthur J. Gallagher Risk Management Services, LLC. (License Nos. 100292093 and/or 0D69293).

© 2023 Arthur J. Gallagher & Co. All rights res
GGB43790

Gallagher | eRiskHub®

Overview and Login Information

The Gallagher eRiskHub® portal provides you with exclusive risk management tools and best practices to improve your organization's cyber risk posture. This important resource serves your cyber risk management strategies by enhancing your capabilities in cyberattack prevention, loss mitigation and cyber risk transfer techniques.

To access the Gallagher eRiskHub® now:

1. Navigate to https://eriskhub.com/gallagher
2. Complete the new user registration at the bottom of the page. Choose your own user ID and password. The access code is **447597**.
3. After registering, you can access the hub immediately using your newly created credentials in the member login box located at the top right of the page.

If you have any questions about the Gallagher eRiskHub®, please reach out the eRiskHub® support staff at support@eriskhub.com

Key Features of the Gallagher eRiskHub®

- **Risk Manager Tools**—A collection of tools for risk managers including research of known breach events, information to calculate the potential cost of a breach event, sample policies, breach response planning and more.
- **Learning Center**—An extensive collection of thought leadership articles, webinars, videos and blog posts covering everything from emerging cyber threats to data protection and more.
- **Security and Privacy Training**—Resources for creating an effective security training program for your employees.
- **Strategic Third-Party Relationships and Partner Resources**—Information on third-party vendors that can assist your organization improve your overall cyber risk, as well as access to exclusive Gallagher discounts on tools.

Gallagher's Cyber Capabilities

Gallagher's Cyber practice has the expertise to deliver a full complement of cyber risk management and insurance services to help your team stay protected. We take a consultative, action-based approach to address the sophisticated and evolving nature of cyber liability to design custom solutions that meet your unique needs. For more information, please contact us.

Gallagher

Insurance | Risk Management | Consulting

ajg.com **The Gallagher Way.** Since 1927.

The information contained herein is offered as insurance Industry guidance and provided as an overview of current market risks and available coverages and is intended for discussion purposes only. This publication is not intended to offer legal advice or client-specific risk management advice. Any description of insurance coverages is not meant to interpret specific coverages that your company may already have in place or that may be generally available. General insurance descriptions contained herein do not include complete Insurance policy definitions, terms, and/or conditions, and should not be relied on for coverage interpretation. Actual insurance policies must always be consulted for full coverage details and analysis.
Insurance brokerage and related services provided by Arthur J. Gallagher Risk Management Services, LLC. (License Nos. 100292093 and/or 0D69293).
© 2023 Arthur J. Gallagher & Co. GP41579

Gallagher

Insurance | Risk Management | Consulting

Benefits and HR Consulting to Support Diverse Workforces and Organizational Wellbeing

Your organization's success is powered by your people. When you partner with Gallagher's Benefits & HR Consulting team, we deliver a comprehensive approach to benefits, compensation, retirement, and employee communication that aligns your people strategy with your overall business goals. Let our consultants help you build a workplace that works better, so you can face the future with confidence.

Gain strategic insights through:

Gallagher Better Works℠ Insights
Expand your perspective on trending HR and benefits topics.

Workforce Trends Report Series
Access benchmarking data and insights from thousands of employers.

Best-In-Class Benchmarking Analysis
Find out how best-of-the-best employers build a better workplace.

Access innovative resources at your fingertips.

We provide the tools and experience to deliver actionable insights to your organization.

- Compliance resources
- HR and benefits technology trends
- Workforce evaluation
- Organizational wellbeing polls
- Data warehousing and insights
- Industry-specific resources

Health & Benefits

- Compliance Consulting
- Employee Benefits Consulting
- Pharmacy Benefit Management Consulting
- Small Business Consulting
- Voluntary Benefits Consulting

Financial & Retirement Services

- Executive Life & Benefits
- Investment Consulting
- Retirement Plan Consulting

Human Resources & Compensation

- Communication Consulting
- Compensation and Rewards Consulting
- Data & Research
- Human Resources Consulting
- HR Technology Consulting
- Multinational Benefits & HR Consulting
- Executive Search & Leadership Advisors

FACTS AND FIGURES*

7,500+
Benefits & HR Consulting employees worldwide

300+
Benefits & HR Consulting offices worldwide

90+
Countries with client Benefits & HR Consulting capabilities

Specialized experience in:

- Energy
- Equity M&A
- Healthcare
- Hospitality and Restaurant
- Nonprofit
- Public Sector and K-12 Education
- Religious

*Gallagher Benefit Services, Inc.

Gallagher Better Works℠

Gallagher Better Works℠ Builds a Better Workplace

Gallagher Better Works℠ is a holistic approach to attracting, engaging, and retaining the talent you need to help your organization grow. We work with you to develop benefits and HR programs at the right cost to optimize your annual talent investment, mitigate organizational risk, and build a wellbeing-centric culture that allows your people to thrive. Best of all, you'll be able to face the future with confidence, having gained a competitive advantage from a workplace that simply works better.

Physical & Emotional Wellbeing Solutions

- Legislative compliance guidance
- Employee health plan design and total rewards
- Pharmacy benefit plan design, RFP, and cost optimization
- Voluntary benefit plan design, employee education, and enrollment solutions
- Small business and emerging markets benefits and compensation

Career Wellbeing Solutions

- Internal employee experience communications
- Total rewards consulting
- Internal employee surveys and external stakeholder research
- Human resources policy, management, and strategy
- HR technology strategy, sourcing, implementation, and optimization
- Global benefits and HR strategy, and duty of care
- Talent search, organizational strategy, and leadership development

Financial Wellbeing Solutions

- Executive planning strategies for attracting, retaining, and rewarding key talent
- Fiduciary and institutional investment consulting to optimize plan assets for improved retirement outcomes
- Retirement plan design, fiduciary compliance, employee financial wellbeing education, coaching, and planning

Organizational Wellbeing Outcomes

- Unique workplace culture
- Improved employee retention
- Robust recruiting efforts
- Reduced organizational risk
- Enhanced employee experience

Gallagher Fiduciary Advisors, LLC ("GFA") is an SEC Registered Investment Advisor that provides retirement, investment advisory, discretionary/named and independent fiduciary services. **GFA** is a limited liability company with Gallagher Benefit Services, Inc. as its single member. **GFA** may pay referral fees or other remuneration to employees of AJG or its affiliates or to independent contractors; such payments do not change our fee. Neither Arthur J. Gallagher & Co., **GFA**, their affiliates nor representatives provide accounting, legal or tax advice.

Securities may be offered through **Triad Advisors, LLC ("Triad"),** member FINRA/SIPC. **Triad** is separately owned and other entities and/or marketing names, products or services referenced here are independent of **Triad**. Neither **Triad** nor their affiliates provide accounting, legal or tax advice. **GFA/Triad** CD (6469110)(exp032026).

Gallagher money coaching services are provided in partnership with Your Money Line® and, as such, users will be required to contract directly with Your Money Line for certain services. Your Money Line is not affiliated with Gallagher companies but Gallagher companies may receive referral fees from Your Money Line under this partnership.

AJG.com

For institutional use only. Not for public distribution.

© 2024 Arthur J. Gallagher & Co. All rights reserved. CRPUS46389

Gallagher

Insurance | Risk Management | Consulting

Business Continuity and Resilience

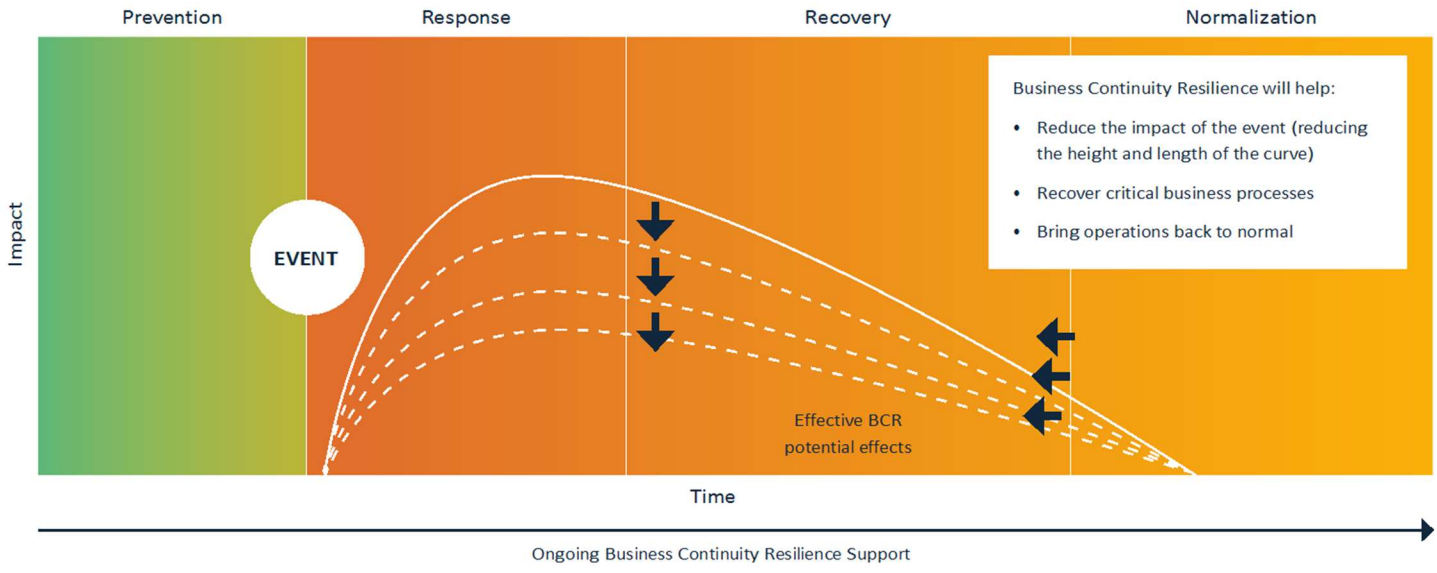
Organizations today must navigate an ever-changing business landscape and be prepared to respond to an increasing range of threats, such as:

- Supply Chain Disruptions
- Cyber Attacks
- Employee Misconduct
- Changing Regulatory Requirements
- Climate Change
- Geo-Political Unrest
- Digitization

Any of these risks could quickly escalate into a crisis and threaten your business. Without adequate planning and preparation, even a seemingly minor incident has the potential to escalate, and impact operations, brand reputation and financial results.

In light of the current market volatility and range of challenges, insurance companies are increasingly requiring organizations to have a Business Continuity Plan in place to demonstrate their resilience and readiness to respond and recover critical business operations. Resiliency planning will ensure you can identify, assess and manage risks and vulnerabilities of any kind, being more prepared to reduce the impact of an event. Having a plan in place builds confidence among key stakeholders such as employees, regulators, customers, investors, insurers and the public.

As a trusted partner and advisor, Gallagher's Business Continuity and Resilience Practice works with organizations in virtually every industry vertical. We offer tailor made solutions to assess your level of business resilience, develop custom plans for improvement, and then embed them into the organization through training programs. Additionally, we offer a free Resilience Ready assessment that enables you to assess your business's resilience score and pinpoint potential areas for future improvement.



Gallagher Offers A Variety Of Business Continuity And Resilience Service Offerings

Business Continuity

"All Hazard" business continuity plans reduce the operational impact of an incident by directly targeting the recovery of an organization's value drivers — business processes that directly drive revenue and reputation. This enables an organization to recover more efficiently and effectively following a major business disruption or crisis. No matter the extent of your resources and infrastructure for business continuity, we are here to support your organization by offering planning guidance and training tailored to your specific needs.

Crisis Management

Crisis management plans prevent or mitigate risks to people, brands, reputations, and financial results and provide the overarching framework for all response and recovery activities within the organization.

Crisis Communications

Crisis communication plans communicate promptly, accurately, and confidently to all stakeholders during an incident or actual crisis and enable businesses to better coordinate internal and external global communications with media, employees, regulators, customers, investors, and the public at large.

Supply Chain

Supply chain risk management plans help assess and manage third-party risks and vulnerabilities to ensure that products and services continue to be delivered both during and following major disruptions.

Leaders Where It Counts

Gallagher was founded on a culture of service and a common interest doing what's in our clients' best interest. We understand the importance of leading with value-based decisions and exemplifying an overall commitment to integrity.

Gallagher provides risk services consultation that is tailored to our clients' particular loss history, industry risk factors, and insurance program structure. Our services, summaries and recommendations can include claim advocacy, evaluation of loss frequency and severity, loss prevention strategy, sufficiency of self-insured retentions, risk transfer options, identification of risk exposures, and insurance coverage for particular claims. Our work can also include collaboration with carriers, our client's legal counsel, loss prevention or actuarial consultants. We emphasize that any of the above risk services, risk management opinions, and advice provided directly to clients or to clients' third-party vendors, is both confidential and intended for our clients' use and not for distribution. We also only offer the advice from an insurance/risk management perspective and it is NOT legal advice or intended to supplant the advice or services provided to clients from legal counsel and advisors. We recommend that our clients seek advice from legal counsel and third-party professionals to become fully apprised of all legal and financial implications to their businesses.
Insurance brokerage and related services provided by Arthur J. Gallagher Risk Management Services, LLC. (License Nos. 100292093 and/or 0D69293).
© 2024 Arthur J. Gallagher & Co. | GGBUS100628

Empower Your Business with Gallagher Go

Gallagher
Insurance | Risk Management | Consulting

Gallagher Go was designed with our clients in mind.

Experience the convenience of the Gallagher Go Client Portal, where you can effortlessly access your insurance coverages, initiate service requests, manage certificates and explore a wealth of resources to manage your risk. Whether you're at the office or on the go, Gallagher Go is available 24/7, ensuring you have everything you need at your fingertips with just a click.

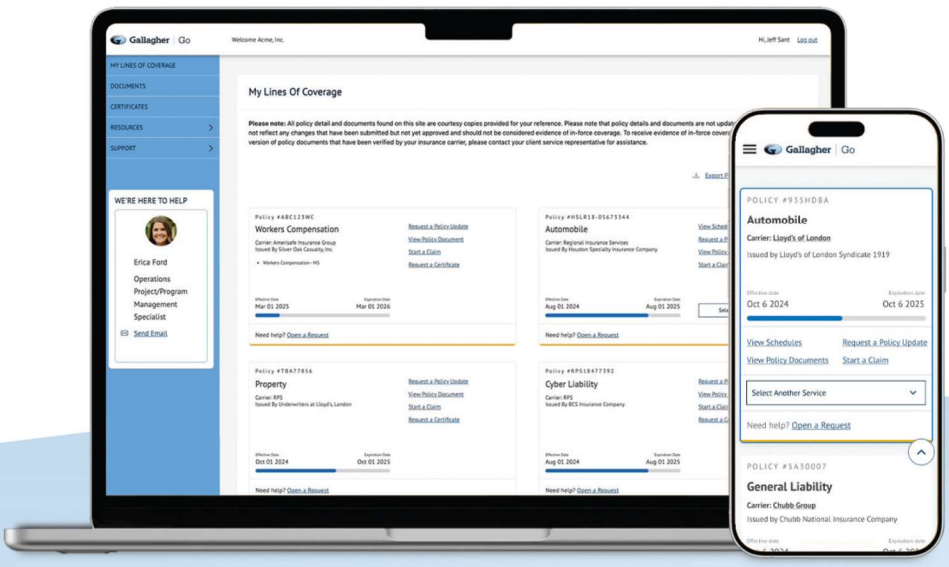
With Gallagher Go, gain access to:

- **Simplified access:** One home for your Gallagher digital tools and resources
- **24/7 availability:** Anytime, anywhere — from a computer, phone or tablet
- **Streamlined support:** Submit requests securely and instantly to your Gallagher team

A centralized home for your risk management needs, from services to insight:

- View your policies and coverage details
- Retrieve and share documents
- Manage certificates
- Submit service requests
- Access Gallagher Drive® reports

Get in touch with a Gallagher representative to learn more.



AJG.com **The Gallagher Way.** Since 1927.

The information contained herein is offered as insurance Industry guidance and provided as an overview of current market risks and available coverages and is intended for discussion purposes only. This publication is not intended to offer financial, tax, legal or client-specific insurance or risk management advice. General insurance descriptions contained herein do not include complete Insurance policy definitions, terms, and/or conditions, and should not be relied on for coverage interpretation. Actual insurance policies must always be consulted for full coverage details and analysis.
Insurance brokerage and related services provided by Arthur J. Gallagher Risk Management Services, LLC License Nos. IL 100292093 / CA 0D69293
© 2025 Arthur J. Gallagher & Co., and affiliates & subsidiaries | GGBUS104562

Contractual Risk Compliance

Gallagher
Insurance | Risk Management | Consulting

Gallagher | Verify℠

Verified Testimonial

Gallagher Verify monitors expiration dates, insurance limits and other details across thousands of COIs. In addition, their team delivers a very consultative, custom approach, which has allowed us to significantly improve our overall risk exposure.

Mitigate contractual risk with confidence

There is more to managing compliance than just collecting your third-party vendors' certificates. **Gallagher Verify**℠ ensures you are tracking all the information you need to keep your company organized, compliant and properly protected. Take advantage of our intelligent technology and experienced compliance experts to gain insight into your level of risk, giving you the freedom to focus on your day-to-day operations.

Protect your business from unknown risk

A majority of organizations face unknown risk. In fact, research shows that most organizations average only 20% compliance for vendor insurance. Gallagher Verify limits your unknown risk and significantly improves compliance. Most companies that use Gallagher Verify average over 80% compliance.*

Track more than just certificates of insurance (COIs)

Our cloud software has the capability to track and verify compliance for any type of document your business is required to keep on file. These documents can include but are not limited to:

W-9 forms	OSHA mod rates	Background checks
MVRs	Contracts	Certifications and licenses

Gallagher Verify brings big benefits to your business

- Increased profitability due to reduced internal administrative costs
- Insurance consulting with a risk advisor
- Reports and dashboards to manage compliance trends
- Ongoing monitoring of A.M. Best insurance carrier ratings and vendor compliance with A.M. Best ratings
- Easy-to-use cloud software used to track and record incoming COIs
- Proactive compliance calls to vendors
- Industry-specific software configurations

*Tier 2 model.

Gallagher CORE360®

Learn More About CORE360®

Gallagher Verify is part of Gallagher **CORE**360, our unique, comprehensive approach to evaluating your risk management program that leverages our analytical tools and diverse resources for custom, maximum impact on six cost drivers of your total cost of risk.

We consult with you to understand your **contractual liability**, and how to mitigate risks and associated costs.

This will empower you to know, control and minimize your total cost of risk, and improve your profitability.

Tiers of service tailored to the needs of your organization

	Tier 1	Tier 2
Gallagher Verify cloud software	✓	✓
Dedicated implementation project managers (includes data entry and software configuration)	✓	✓
Automated COI endorsement and document compliance verification	✓	✓
Automated noncompliance and renewal notifications to vendors	✓	✓
Client access to software support	✓	✓
Customizable daily, weekly and monthly reports, and historical compliance dashboard widgets	✓	✓
Risk management consulting for clients (insurance requirement exception guidance)		✓
Outgoing vendor compliance enforcement and educational phone calls (up to four phone calls per certificate of insurance)		✓
Weekly or monthly client stewardship calls with a risk advisor		✓
Unlimited phone support for vendors with insurance and contract-related questions		✓

Verified Testimonial

When we initially implemented Gallagher Verify, our third-party insurance compliance was less than 20%. Today, compliance is more than 90%. The aggressive tracking of insurance requirements and vendor compliance mitigates financial exposure, should there be a claim.

The Gallagher Way.
Since 1927.

ajg.com

The information contained herein is offered as insurance Industry guidance and provided as an overview of current market risks and available coverages and is intended for discussion purposes only. This publication is not intended to offer legal advice or client-specific risk management advice. Any description of insurance coverages is not meant to interpret specific coverages that your company may already have in place or that may be generally available. General insurance descriptions contained herein do not include complete Insurance policy definitions, terms, and/or conditions, and should not be relied on for coverage interpretation. Actual insurance policies must always be consulted for full coverage details and analysis.

Insurance brokerage and related services provided by Arthur J. Gallagher Risk Management Services, LLC. (License Nos. 100292093 and/or 0D69293).

© 2023 Arthur J. Gallagher & Co.
1023931865

STAFF REPORT

Meeting Type:	Board of Directors
Title:	Approve the Quitclaim of a District Right-of-Way: 175 Marinwood Avenue, San Rafael
From:	Alex Anaya, Director of Engineering
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Approve the quitclaim of District easement rights to the underlying property owner of 175 Marinwood Avenue, San Rafael and authorize the General Manager to execute the deed in favor of the property owner

SUMMARY: The property owner has requested the District release its interest in an easement due to a redevelopment project. Any necessary utilities will be relocated to serve the redeveloped site.

DISCUSSION: The Marinwood Plaza property has commenced construction on a substantial redevelopment project. At one time, the Plaza included a large market attached to a long row of commercial units within a single structure commonly referred to as a "strip mall". While the market remains, the other commercial units have been demolished to be replaced by 125 affordable living units and a 1,000-square-foot retail space within 4 detached buildings.

The footprint of one of the new buildings will encroach directly upon existing District facilities within an easement held by the District. The property owner has requested that the District release its interest in the easement and abandon the existing facilities on the property so that the developer may make the proposed improvements. The District's 6-inch water main and five water services within the easement will be abandoned and replaced with new facilities appropriate for the project.
District Staff have reviewed the request and have no objections.

An administrative fee of $1,000 has been paid to the District for the staff time required to process this request.

Easement Characteristics

- Easement Area – 2,000-square-feet more or less

ENVIRONMENTAL REVIEW: The Board of Directors' consideration of approval of a quitclaim of existing easement is a discretionary project, as defined by CEQA, and is subject to additional CEQA review. District staff has determined that the proposed quitclaim qualifies for a categorical exemption pursuant to Section 15303 of the CEQA Guidelines, as the proposed project includes a quitclaim of existing easement to allow installation of a new water main of reasonable length and other utility extensions to serve the development project.

FISCAL IMPACT: None.

ATTACHMENT(S):

1. Proposed Quitclaim Deed
2. Location Maps

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	**Alex Anaya** **Engineering Director**	**Ben Horenstein** **General Manager**

WHEN RECORDED RETURN TO:

Marinwood Plaza LLC

100 Galli Dr. Suite. 2
Novato, CA 94949

Space above this line for the purpose of recording

QUITCLAIM DEED AND TERMINATION OF EASEMENT RIGHTS

Marin Municipal Water District hereby forever quitclaims all rights, claims, interest or title in and to that real property situated in the County of Marin, State of California, as shown in that in Grant of Easement as recorded February 21, 1963 in Book 1660 of Original Records, Page 68, Official Records of Marin County and attached hereto as Exhibit "A", and specifically terminates and relinquishes all rights arising out of or under said Deed.

By: _____

Dated _____ 20 _____ By: _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
) ss
County of _____)

On _____, 20__, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Exhibit A

BOOK 1660 PAGE 68

10527PB 164-260-25

6509 THIS INDENTURE made and entered into this 2nd day of January 1963, by and between MARIN PLAZA, a partnership, hereinafter called "Grantor" and MARIN MUNICIPAL WATER DISTRICT, a public corporation, hereinafter called "District".

W I T N E S S E T H :

That for a good and valuable consideration, receipt whereof is hereby acknowledged, grantor does by these presents, grant, bargain, sell and convey unto the District, its successors and assigns, the following right-of-way in the County of Marin, State of California, described as follows:

A right-of-way for pipeline or pipelines and access purposes fifteen (15) feet in width lying seven and one half ($7\frac{1}{2}$) feet on each side of the following described line.

> Beginning at a point on the exterior boundary of the lands described in the Deed from Marin Plaza, a partnership, to County of Marin recorded May 12, 1960 in Book 1366 of Official Records at page 620, Marin County Records, distant thereon North 52° 16' 03" East 70.28 feet from the intersection of the calls set forth as "South 37° 43' 57" East 223.00 feet" and "North 52° 16' 03" East 86.00 feet" therein; thence leaving said exterior boundary South 40° 11' 06" East 11.84 feet; thence North 54° 24' 16" East 10.36 feet; thence North 81° 07' 43" East 94.25 feet; thence South 38° 37' 05" East 20.00 feet.

Said right-of-way is granted and shall be held for and subject to the following terms and conditions.

The District shall have, and is hereby granted the right to lay, maintain, repair, remove, replace and operate a pipeline or pipelines of such dimension or dimensions as the District may elect to install therein together with enlargements and renewals thereof and together also with the right to construct and maintain such meters, valves, and other facilities as may be necessary or convenient in connection with the storage, transmission and delivery of water, together with and including reasonable ingress and egress over adjoining lands for the construction, repair and maintenance of such pipeline and facilities.

Grantor reserves and shall have the right to revise the grade of the surface or location of such right-of-way provided and only if and when it shall first pay to the District the full expense of changing the grade or location of the pipeline and other installations

of the District therein. In the event of any such change in grade the District will determine if such grade change necessitates the raising or lowering of the pipeline or other installation and its finding thereon and on expense shall be final. In the event a change in location is desired, grantor will first deed to the District a new right-of-way suitable to the District and covering such change.

The right-of-way granted herein shall be and is non-exclusive, and the right is hereby reserved by the grantor to use said right-of-way for any and all purposes which will not interfere with or jeopardize the use of the right-of-way for the said purposes of the District; provided however, that no structures or other improvements shall be placed on or over such right-of-way which will interfere with or impede the free access of District for use, repair, replacement or maintenance of the installations therein.

Bearings shown are based on the deed from Marin Plaza to County of Marin above described.

IN WITNESS WHEREOF, Grantor has executed these presents the day and year first above written.

MARIN PLAZA

By: Marcia Estates, Inc., a general partner

By Vera Bailey President

By Vera Bailey Secretary

BRADLEY ESTATES, INC., a General Partner

By: [signature] Vice President

By: R. J. Muller Asst. Secretary

Refer to Drawing:
G9-7-6

PBN:nb
12/18/62

6509

RECORDED AT REQUEST OF
CAL-MARIN TITLE CO.
AT 49 MIN. PAST 10A M.
FEB 2 1963
Official Records of Marin County
N. J. Giacomini
FEE $ RECORDER
FEE C. 6509

THIS IS TO CERTIFY THAT ... APPROVED BY REAL PROPERTY COM... DEED OR GRANT DATED 1/2/63 ... MARIN PLAZA ... TO MARIN MUNICIPAL ... GOVERNMENTAL ... HIGHWAY ... DIRECTORS ON FEB 13, 1963 ... RECORDATION ... BY DULY AUTHORIZED OFFICER.
DATED FEB 13, 1963

BOOK 1660 PAGE 69

BOOK 1660 PAGE 70

STATE OF CALIFORNIA,
County of CONTRA COSTA } ss.

On this 3rd day of January in the year one thousand nine hundred and sixty-three
before me, R. L. Jones a Notary Public in and for the
County of Contra Costa, State of California, residing therein,
duly commissioned and sworn, personally appeared Gerald G. Hoytt and
Vera Bailey, president and secretary, respectively
of Marcia Estates, Inc.
known to me to be one of the partners of the partnership that executed the within instrument,
and acknowledged to me that such partnership executed the same.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal,
in the County of Contra Costa the day and year in this
certificate first above written.

(R.L.Jones) my commission expires 1/22/66
Notary Public in and for the County of ContraCosta
State of California.

Cowdery's Form No. 29—(Acknowledgment—Partnership)
(C. C. Sec. 1190a)

(Corporation as a Partner of a Partnership)

STATE OF CALIFORNIA
COUNTY OF Los Angeles } SS.

On January 2, 1963, *before me, the undersigned,* a Notary Public in and for said County and State, personally appeared Ira Englander, known to me to be the Vice President, and R. J. Muller, known to me to be the Assistant Secretary of Bradley Estates, Inc., the corporation that executed the within instrument and known to me to be the persons who executed the within instrument on behalf of said corporation, said corporation being known to me to be one of the partners of Marin Plaza, the partnership that executed the within instrument, and acknowledged to me that such corporation executed the same as such partner and that such partnership executed the same.

WITNESS my hand and official seal.

(Seal) B. J. Allen

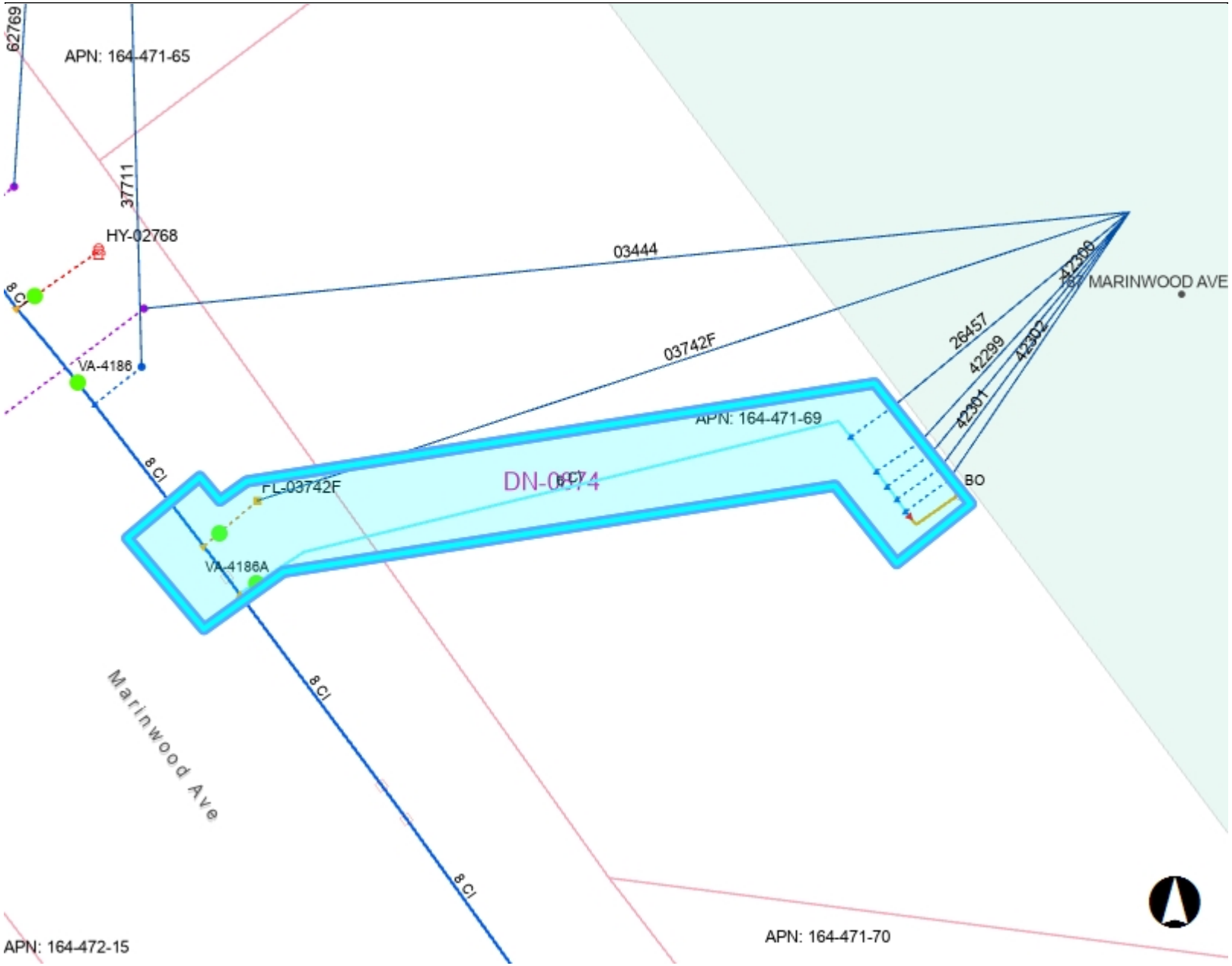
B. J. ALLEN
My Commission Expires July 16, 1966
Name (Typed or Printed)
Notary Public in and for said County and State

STAPLE HERE

322 9:59

Marinwood Plaza

Deed No. 0874 - Marinwood Avenue



Legend

- Potable Installations
  - Fireline
  - Service
- Potable Taps
- Potable CTS
- Potable Hydrants
- Potable Pump Stations
- Potable Tanks
  - Storage Tanks
  - Pressure Tanks
  - Error/Null Values
- Potable Treatment Plants
- Potable Valves
  - AR, Off
  - AR, Static
  - BO, Static
  - CV, Static
  - DR, Static
  - LV, Off
  - LV, On
  - LV, Static
  - RA, Static
  - RC, Static
  - RF, Static
  - RG, Static
  - VA, Off

Notes

46.2 0 23.09 46.2 Feet

STAFF REPORT

Meeting Type:	Board of Directors
Title:	Approve Pipeline Extension Agreement – Woodland Avenue, San Rafael – Auburn Grove
From:	Alex Anaya, Director of Engineering
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Staff recommends the Board of Directors approve a resolution approving the fee study setting the fees for work to be constructed in connection with a pipeline extension, approving a pipeline extension agreement for Auburn Grove, San Rafael and authorizing the General Manager to accept and execute all suitable real property easements and rights-of-way required by the Pipeline Extension Agreement

SUMMARY: The Planning committee reviewed this item on April 28, 2026. An extension of the District's existing facilities is required to serve a new residential subdivision in San Rafael as the properties do not meet the standard conditions for water service as described in District code. A new water main, hydrants, firelines and services are proposed to be installed for the new units within Woodland Avenue in San Rafael.

DISCUSSION: On June 5, 2025, the County of Marin approved a Vesting Tentative Map which authorized the subdivision of a 4.95-acre unit of real property to develop 79 living units on two lots. The County's decision is final and the Tentative Map is now vested.

Seventy-nine (79) living units will be constructed within 16 buildings containing a mix of single-family, duplex and multi-family residences. All structures will be accessed from Woodland Avenue which connects to Auburn Street at both its eastern and western end.

The Marin County Fire Department has set the fire flow requirement for the project at 1,500 gallons per minute (gpm) with 20 psi residual pressure. Water service and fire protection for the project will require the installation of approximately 1,150' of 6" water main, 4-6" hydrants, 15-4" firelines, 11-1.5" services and 6-1" services.

ENVIRONMENTAL REVIEW: The County of Marin determined that the proposed development project is statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section 21159.25 ("County Infill Exemption"), and the County filed a Notice of Exemption for the project on June 12, 2025.

The Board of Directors consideration of approval of a Pipeline Extension Agreement is a discretionary project, as defined by CEQA and the District is therefore a responsible agency pursuant to section 15051 of the CEQA Guidelines. While the installation of utilities was not expressly addressed in the County Infill Exemption, District staff has determined that the proposed Pipeline Extension Agreement qualifies for statutory exemption pursuant to Public Resources Code section 21080.21, as the proposed project consists of installation of less than one mile of new pipeline within a public right-of-way. Additionally, District staff have determined that the proposed project also qualifies for categorical exemption pursuant to Section 15303 of the CEQA Guidelines, as the proposed project includes installation of a water main of reasonable length and other utility extensions necessary to serve the development project.

FISCAL IMPACT: None.

ATTACHMENT(S):

1. Subdivision Overview
2. Pipeline Extension Agreement
3. Proposed Resolution Making Determinations with respect to Fees and Charges Contained in Pipeline Extension Agreement and Approving a Pipeline Extension Agreement to serve Auburn Grove
4. Pipeline Extension Study - Woodland Avenue, San Rafael – Auburn Grove
5. Vicinity Map
6. Site Map

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Engineering	**Alex Anaya** **Engineering Director**	**Ben Horenstein** **General Manager**

SUBDIVISION OVERVIEW:

APPLICANT: Darian Dennler of City Ventures

TYPE OF DEVELOPMENT: Residential Subdivision

FIRE DEPARTMENT: Marin County Fire

FIRE MARSHALL: Scott Alber

FIRE FLOW REQUIRED: 1,500 gpm

PIPING: 1,150' of 6" PVC

HYDRANTS: 4-6" **Calculated Flow:** 3,000+ **Residual:** 20 psi

SERVICES: 11-1.5", 6-1" & 15-4" firelines

SYSTEM: Forbes Reservoir **Elevation:** 290'

ELEVATION OF PROPERTY: Min: 0' Max: 10'

PRESSURE: Max: 120psi Min: 116psi

ESTIMATED ANNUAL CONSUMPTION: 11.41 acre-feet (1.37af for irrigation)

EXISTING HISTORICAL ENTITLEMENT: 0.38 acre-feet

LEAD AGENCY: County of Marin

TENTATIVE MAP APPROVED: June 5, 2025

CEQA: Categorical Exemption – Section 211.59.25

MARIN MUNICIPAL WATER DISTRICT
PIPELINE EXTENSION AGREEMENT

(MMWD – PIERCE CO PROPERTIES)
WOODLAND AVENUE, SAN RAFAEL – AUBURN GROVE

THIS AGREEMENT is made and entered into this 16th day June, 2026, by and between **MARIN MUNICIPAL WATER DISTRICT,** hereinafter called "District"; and **PIERCE CO PROPERTIES**, hereinafter called "Applicants" as follows:

For valuable consideration, receipt of which is hereby acknowledged, the parties agree as follows:

Section A. Recitals

1. Applicants have requested a pipeline extension to provide water service to Assessor's Parcel Nos. 018-074-16, 018-075-28, 018-085-23, 018-086-17 and 018-086-18 as shown on a maps entitled, "Assessor's Map Book 18, Page 07, Scale 1"=100' dated September 16, 2016" and "Assessor's Map Book 18, Page 08, Scale 1"-100' dated November 5, 2024".

2. District has determined that service to said project will require the installation of 1,150' of 6" pipe, 4-6" hydrants, 15-4" firelines, 11-1.5" services and 6-1" services and other facilities as set forth in plans prepared therefor.

3. Prior to final approval by the City or County of a Subdivision Map, Precise Development Plan, Parcel Map or other land use application and recordation of a final map for the project, the Applicants shall enter into an agreement with the District and complete financial arrangements for water to each lot, unit or parcel of the project;

4. District has determined that the above mentioned replacement lies within the boundaries of the Marin County Fire Department.

Section B. General Provisions

1. **Installation According to District Plans and Specifications**: The pipeline extension applied for and all work done in connection therewith shall be done under the supervision of and to the satisfaction of District, and shall be installed in accordance with detailed plans and specifications or supplemental plans as they may be prepared from time to time therefor by District. District shall have absolute discretion in determining the kind and quality of the work and materials. As the work progresses, District reserves

and shall have the right to amend and adapt plans and specifications to meet conditions as they develop. Any extra costs arising from any such revision of plans will be charged to and paid for by Applicants.

ATTENTION IS CALLED TO THE STANDARD SPECIFICATIONS OF DISTRICT AVAILABLE AT WWW.MARINWATER.ORG WHICH ARE REFERRED TO AND ARE INCORPORATED HEREIN BY REFERENCE AS THOUGH SET FORTH AT LENGTH. APPLICANTS AGREES THAT ALL WORK SHALL BE DONE ACCORDING TO THE PROVISIONS OF THE STANDARD SPECIFICATIONS AND THAT APPLICANTS AND HIS CONTRACTOR, AND SUBCONTRACTORS, ARE FULLY BOUND BY ALL PROVISIONS OF THE STANDARD SPECIFICATIONS.

2. **Financial Arrangements**: Prior to issuing written certification to the City, County or State that financial arrangements have been made for construction of the required water facilities, the Applicants shall complete such arrangements with the District in accordance with Paragraph 6.

3. **Construction Scheduling:** Prior to release or delivery of any materials by the District or scheduling of construction inspection by the District, the Applicants shall:

a. Deliver to the District prints of the utility plans approved by the City or County to enable the District to prepare final water facilities contract drawings.

b. Grant or cause to be granted to the District without cost and in form satisfactory to the District, title to all real property and rights-of-way required by Paragraph 10.

c. Deliver to the District a written construction schedule to ensure timely withdrawal of guaranteed funds for ordering of materials to be furnished by the District and scheduling of inspection or construction.

4. **Method of Performance of Work**: Work done under this agreement shall be performed as hereinafter indicated:

Items of Work:

Water main to be installed by .....A
Fire hydrants to be installed by .....A
Service connections to be installed by .....A
Firelines to be installed by .....A

Methods of Doing Work:

(A) Private contract to be let by Applicants or performed by Applicants's own forces.

5. **Estimated Cost of Work**: The estimated cost of the pipeline replacement applied for as determined by District is as follows:

	Column 1: Materials,Fees, and Charges	**Column 2: Installation Costs**	**Column 3: Total**
Pipeline Installation	$33,806	$207,500	$241,306
Hydrant Installation	$24,184	$88,000	$112,184
Service Installation	$29,075	$91,395	$120,470
Fireline Installation	$53,685	$270,000	$323,685
District Labor & Equipment	$84,300	$0	$84,300
Capacity Charges*	$987,660	$0	$987,660
TOTAL	$1,212,710	$656,895	$1,869,605

** The Capacity Charge is based upon $83,700 for each 1.5" meter and $16,740 for each 1" meter. A Capacity Charge credit has been applied in the amount of $33,480 for two existing ¾-inch residential services at the site.*

Said cost estimates are made solely for the convenience of District in determining required deposits, bonds, and guarantees. District makes no representations whatever, and assumes no responsibility whatever, regarding the accuracy of said estimates.

6. **Financial Arrangements to Be Made by the Applicants** shall consist of the following:

Materials, Fees and Charges

The Applicants shall pay to the District the total estimated cost of Materials, Fees and Charges set forth in Paragraph 5, Column 1, $1,212,710.

Installation Costs

Under Method A: Applicants agrees to hire a private contractor to install the facilities, and therefore, shall provide financial guarantees satisfactory to the District in the form of a performance bond in the amount of $656,895 guaranteeing installation of the facilities and furnishing of bulk material. Applicant's contractor shall furnish a maintenance bond in the amount of $164,224 guaranteeing the cost of maintaining, repairing, or replacing the facilities during the first two (2) years following completion of all facilities and acceptance by the District.

The Applicants or Contractor may substitute a check in lieu of a performance bond or maintenance bond.

In addition, the Contractor shall furnish the following insurance requirements:

a. Workers' Compensation Insurance including a waiver of subrogation in favor of the District.

b. Public Liability - combined single limit of not less than $1,000,000 and $2,000,000 annual aggregate including a waiver of subrogation in favor of the District.

c. Auto coverage of not less than state minimum requirements for all owned and non-owned auto and equipment.

d. The policies shall specifically name Marin Municipal Water District, its officers, officials, agents, employees and volunteers as an additional insured and shall provide that said coverage is primary to any insurance carried by the District.

e. The policies shall include a statement indicating that there shall be not less than 30 days written notice prior to cancellation.

7. **Review of Estimates**: All estimated costs set forth in this agreement shall be subject to periodic review and revision at the District's discretion. In the event the Applicants has not completed financial arrangements with the District in accordance with Paragraph 6 within 6 months from the date of this agreement, all estimated fees, costs and charges set forth in Paragraph 5 shall be reviewed and revised if necessary. In the event Applicants has not secured final land use approval for the project from the City or County, recorded a final map and diligently commenced construction of improvements required by those agencies and the District prior to expiration of one year from the date of this agreement, the District may, at its option, either retract financial certifications issued to City, County and State agencies and terminate this agreement or require amendment of this agreement and revision of all costs contained herein. The Applicants

shall pay any balance due upon demand or furnish a guarantee of such payment satisfactory to the District.

8. **Extensions of Time**: All extensions of time granted by the City or County for the Applicants to comply with conditions of land use approval or to construct improvements pursuant to a subdivision improvement agreement shall require concurrent extensions of this agreement and shall be cause for review and revision of all water facilities costs set forth in Paragraph 5 hereof. The Applicants shall apply to the District for extension of this agreement prior to approval of the Applicants's request for such extensions by either the City or the County.

9. **Delay or Failure to Complete**: If the District determines that there has been undue delay in completion of any work to be performed by Method A, or a failure to complete the same within a reasonable time, it may demand that Applicants forthwith either complete all such work or pay to District the District's estimate of the entire amount required to complete all such work. District's determination upon the question of undue delay or failure to complete shall be final and binding upon Applicants. If Applicants fails to comply with said demand within a reasonable time, District may take possession of all parts of the project and may complete it at the expense and for the account of Applicants.

10. **Property and Rights-of-Way**: Applicants must furnish District all necessary and suitable real property and rights-of-way required by Chapter 11.40 of the Marin Municipal Water District Code at least 30 days prior to start of construction, as follows:

> **"A deed from the fee owner(s) to District granting a pipeline and access right-of-way over the route of all facilities not falling within publicly dedicated and accepted streets. If, for any reason, such deed cannot be obtained, District will accept a final court decree (to be obtained at Applicants's sole cost and expense) establishing such pipeline and access right-of-way".**

11. **Changes in Estimated Costs - Additional Deposits**: At any time or times prior to completion of installation of the facilities, whether or not the plans and specifications have been changed, District may revise its estimate of any item of estimated cost payable by Applicants to District. If a revised estimate is greater than the amount previously paid, Applicants must pay the excess to District within 30 days after District requests an additional deposit. If the revised estimate is less than the amount previously paid, District will credit the difference to any account then owed by Applicants, or if no such account exists, will refund said difference to Applicants as provided in Paragraph 14.

12. **No Work to be Done Prior to Compliance**: No work shall be performed nor installation made prior to Applicants's delivery to District of all fees, charges, deposits,

bonds, and guarantees required by Paragraph 6 nor prior to Applicants's furnishing to District all property and rights-of-way required by Paragraph 10, nor after 30 days has elapsed from District's request for additional deposit pursuant to Paragraph 11 unless said additional deposit has been made.

13. **Termination for Failure to Deliver Deposits, Bonds, Etc**.: Failure to deliver to District any fees, charges, deposit, bond, guarantee, property, or right-of-way, required by Paragraph 6 or 10 within the times set forth in said paragraphs, or failure to commence installation of facilities within the time set forth in Paragraphs 7 and 20, shall constitute a material breach of this agreement for which this agreement may be terminated by District without prior notice.

14. **Payment of Actual Costs:** Upon completion of installation of the facilities, District will determine the actual amount of its costs and expenses thereby incurred. If the actual amount exceeds the estimate previously paid, Applicants will pay to District the amount of such excess promptly upon demand. If the actual amount is less than the estimate previously paid, District will, upon completion and acceptance of the facilities, credit any excess money to any account then owed by Applicants or refund it. District's determination of such costs and expenses shall be final and binding provided that such determination shall be made upon the basis of generally accepted accounting principles consistently applied and shall be free of arithmetical error. In the event a performance bond or certificate of deposit is being held, it likewise will be released to Applicants upon acceptance of the work by District to the extent that it has not been used or required.

15. **No Interest on Deposits**: No interest shall accrue to or be paid to Applicants for any funds deposited with District pursuant to this agreement except insofar as required by Government Code 53079.

16. **Right to Approve Contractor**: In the event installation is to be made or work done under Method A, District reserves the right to approve or disapprove of the contractor or forces to be used; and no installation may be made except by those approved by District.

17. **Applicants's Responsibility**: Applicants shall take all responsibility for work under this agreement; shall bear all cost or loss resulting to him or to District on account of the nature or character of the work, through timeliness with which Applicants' contractor pursues the work, or because of the nature of the ground in or on which the work is done is different from what is assumed or expected, or on account of the weather, flood, earthquake, landslide, subsidence, unforeseen difficulties, accidents, or any other causes; and he shall assume the defense of, and indemnify and save harmless District and its officers, agents, and employees from all claims of any kind arising from the letting of bids or the performance of work under this agreement, including, but not limited to, claims for personal injury, death, property damage, loss of use, and loss of business, and

including all such claims as may be asserted by officers, agents or employees of Applicants, his contractor or subcontractors, District, or third parties.

Applicants agrees to provide in any contract entered into with any other party for the performance of work under this agreement, that all work be done pursuant to terms of the Standard Specifications of District, and that such other party indemnify and save harmless District and its officers, agents, and employees from all claims of any kind arising from performance of said contract or this agreement, including claims for personal injury, death, property damage, loss of use and loss of business, and including all such claims as may be asserted by officers, agents, or employees of Applicants, his contractor or subcontractors, District, or third parties for failure to so provide in any contract let by Applicants.

Applicants agrees to comply with that section of the Standard Specifications requiring public liability insurance which is primary and underlying to District's insurance and specifically naming District as an additional insured.

Before work is commenced, Applicants shall furnish District with a certificate of insurance demonstrating compliance with the worker's compensation insurance and public liability insurance requirements set forth in the Standard Specifications.

18. **Prevailing Wages**: Pursuant to Section 1770 et seq of the Labor Code of the State of California, the Contractor and all subcontractors under him shall pay not less than the prevailing wage rate. The Contractor shall forfeit to the District a penalty, $25 for each laborer, workman, or mechanic employed for each calendar day or portion thereof such laborer, workman, or mechanic is paid less than the prevailing wage rate for any work done under this contract by him or by any subcontractor under him. Contractor shall submit to the District completed certified payrolls on a weekly basis.

19. **Grade Established**: No work shall be performed or installation made until street subgrades have been established and until curbs and gutters have been installed.

20. **Commencement of Installation**: Applicants must commence installation of the facilities provided for herein within one year after execution of this agreement. Applicants shall give notice to District at least two work days before initially commencing work under this agreement. District shall be notified when work is stopped and when it is started again.

21. **Furnishing of Materials**: All materials will be supplied by District at District's Corporation Yard or Pipe Yard and at replacement cost. Risk of loss of, or damage to materials shall pass to Applicants at the time and place of delivery. Replacement cost will be based on the "moving average unit price" method employed by District.

22. **Inspection by District**: District shall provide an inspector to inspect the installation of facilities. The cost of inspection shall be charged against the job. No part of the facilities installed by Applicants shall be covered or obstructed until same has been inspected and approved by the District inspector.

23. **Acceptance**: District assumes no obligation as to maintenance of the facilities included in this agreement until such time as they are formally accepted. Applicants will be notified in writing of acceptance of the work at such time as all facilities are satisfactorily installed in accordance with the plans and specifications and all paving work is completed. Any cost incurred by District necessitated by emergency or other repairs prior to final acceptance by District will be charged against Applicants.

24. **Title**: Immediately upon acceptance, all right, title and interest in the pipeline extension and all other facilities herein mentioned shall vest in District.

25. **Fire Hydrants**: All fire hydrants will be turned over to the local public agency having control of public fire protection in the area, to be operated and maintained by it the same as other hydrants in the area.

26. **Area Not to be Served Before Acceptance**: Nothing herein contained and no temporary service from any facility herein provided for and no installation provided for herein shall be construed as an agreement or undertaking on the part of District to serve Applicants's property prior to the time this contract shall have been performed in its entirety by Applicants and the facilities shall have been accepted by District.

27. **No Refunds**: No refunds will be made from the sale of the water from this extension.

28. **Dispute Resolution**: Any dispute or claim in law or equity between District and Applicants or Contractor arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to guide the parties to a resolution of the case. If the parties cannot agree to a mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators numbering one more than there are parties will be sent to the parties, each of whom will strike one name leaving the remaining name as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

At the sole election of the District, any dispute or claim in law or equity between District and Applicants or Contractor arising out of this agreement which is not

settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration and Mediation Services, Inc. The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

29. **Merger**: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856, and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

30. **Attorney's Fees**: In the event of legal action by District to collect any sums due from Applicants hereunder, the prevailing party shall be entitled to reasonable attorney's fees to be set by the court.

31. **Interest on Unpaid Accounts**: Any monies owed the District shall begin accruing interest sixty days after the first billing date. Said interest will be the rate District earns on its investments plus one percent, but shall in no event exceed 10% per annum.

32. **Time of the Essence**: Time is of the essence.

33. **Non-Transferable**: This agreement applies only to the parcel(s) of land hereinabove described and may not be transferred to any other parcel(s) of land.

34. **Entire Agreement:** This document, including any exhibits or attachments, contains the entire agreement between the parties and supersedes whatever oral or written understanding the parties may have had prior to the execution of this Agreement. No alteration to the terms of this Agreement shall be valid unless approved in writing by all parties.

35. **Severability:** If any portion of this Agreement or the application thereof to any person or circumstance shall be held invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and shall be enforced to the greatest extent permitted by law.

36. **Waiver:** Neither District acceptance of, or payment for, any service performed by Applicants, nor any waiver of any default, breach or condition precedent, shall be construed as a waiver of any provision of this Agreement, nor as a waiver of any other default, breach or condition precedent or any other right hereunder.

37. **Enforcement of Agreement:** This Agreement shall be governed, construed and enforced in accordance with the laws of the State of California. Venue of any

litigation arising out of or connected with this Agreement shall lie exclusively in the state trial court located in Marin County in the State of California, and the parties consent to jurisdiction over their persons and over the subject matter of any such litigation in such court, and consent to service of process issued by such court.

38. **Notices:** Except as otherwise specifically provided in this Agreement, any notice, submittal or communication required or permitted to be served on a party hereto, may be served by personal delivery to the person or the office of the person identified below. Service may also be made by mail, by placing first-class postage affixed thereto, and addressed as indicated below, and depositing said envelope in the United States mail to:

DISTRICT:
MARIN MUNICIPAL WATER DISTRICT
Attn: Engineering Department
220 Nellen Avenue
Corte Madera CA 94925

APPLICANT:
PIERCE CO PROPERTIES
1601 Second St
San Rafael CA 94901

39. **Deadline to Activate Service**: The service connections covered under this agreement must be put to the use for which application was made within eight years of the completion of the facilities installed pursuant to this agreement. If activation is not achieved in the time specified, the District will cause the service to be abandoned and will refund the capacity charges, less the cost of abandoning the service, to the owner of record or his designee.

40. **Water Conservation**: Applicants shall install high-efficiency toilets not to exceed 1.28 gallons per flush, showerheads that use not more than 2.0 gallons of water per minute, kitchen and lavatory faucets that use not more than 1.5 gallons of water per minute, and pressure-reducing valves set to maintain a maximum of 60 p.s.i. static pressure at the regulator outlet. Drought-tolerant landscaping and drip irrigation shall be used except where demonstrated to be infeasible. All water conservation measures shall comply with the provisions of District rules and regulations in effect at the time water service is granted.

41. **Landscaping**: Final landscape and irrigation plans must be submitted and reviewed by District for compliance with District's current landscape water conservation ordinance. All plans must pass ordinance review before water service is granted to any portion of this project.

42. **System Protection**: Applicants shall install and maintain backflow protection on water services if deemed necessary by District.

43. **High Pressure**: Water service to said project will be granted only under the District's "High Pressure Application".

44. **Service Connections**: The individual service connections under this agreement will be granted under the District's rules and regulations in effect at the time service is granted.

45. **Satisfaction of District**: Whenever, in this agreement, the satisfaction of District must be met and District or its Board of Directors makes a determination in good faith of satisfaction or dissatisfaction, such determination shall be final and binding upon all parties hereto.

46. **Authority; Signatures Required for Corporations:** Applicants hereby represents and warrants to the District that they are (a) a duly organized and validly existing (enter type of entity, e.g. Corporation), formed and in good standing under the laws of the State of California, (b) have the power and authority and the legal right to conduct the business in which it is currently engaged, and (c) have all requisite power and authority and the legal right to consummate the transactions contemplated in this Agreement. Applicants hereby further represents and warrants that this Agreement has been duly authorized, and when executed by the signatory or signatories listed below, shall constitute a valid agreement binding on Contractor in accordance with the terms hereof.

If this Agreement is entered into by a corporation, it shall be signed by two corporate officers, one from each of the following two groups: a) the chairman of the board, president or any vice-president; b) the secretary, any assistant secretary, chief financial officer, or any assistant treasurer. The title of the corporate officer shall be listed under the signature.

APPLICANTS:

PIERCE CO PROPERTIES
1601 Second St
San Rafael CA 94901

TYPE OF BUSINESS ENTITY (Check one):

____ Individual/Sole Proprietor
____ Partnership
____ Corporation
____ Limited Liability Company
Other (please specify:

By _____

MARIN MUNICIPAL WATER DISTRICT

By_____
President, Board of Directors

By_____
Secretary

MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO. XXXX

RESOLUTION OF THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT MAKING DETERMINATIONS WITH RESPECT TO FEES AND CHARGES CONTAINED IN PIPELINE EXTENSION AGREEMENT AND APPROVING A PIPELINE EXTENSION AGREEMENT TO SERVE AUBURN GROVE

WHEREAS, Pierce Co Properties has applied to the District for a Pipeline Extension Agreement to serve Woodland Avenue, San Rafael – Auburn Grove, Assessor's Parcel Nos. 018-074-16, 018-075-28, 018-085-23, 018-086-17 and 018-086-18 and

WHEREAS, a study has been conducted of the impacts of this development on the District's existing services and facilities in the unincorporated area of San Rafael along with an analysis of new, improved or expanded District facilities and improvements as required or appropriate to serve said development. This study sets forth the relationship between this development, existing District services or facilities, and the estimated cost of the proposed improvements. The study (herein "Study") entitled, "Woodland Avenue, San Rafael – Auburn Grove", was prepared by Joseph Eischens and is dated April 13, 2026, and

WHEREAS, the Board of Directors finds as follows:

a. The purpose of the fees and charges set forth in paragraph 5 of the proposed pipeline extension agreement between the District and Pierce Co Properties is to pay for all required water facilities directly related to providing service to Woodland Avenue, San Rafael – Auburn Grove and to reimburse the District for constructing or provide funding to construct the necessary water supply, treatment, transmission, and terminal storage facilities for subject project;

b. The fees and charges specified in paragraph 5 of the proposed pipeline extension agreement shall be used to finance the following facilities: 1,150' of 6" pipe, 4-6" hydrants, 15-4" firelines, 11-1.5" services and 6-1" services and payment for constructed water supply improvements through the District's capacity charges set forth in its current capacity charge study;

c. It is appropriate and necessary for the properties to be served by the proposed pipeline extension agreement to provide for the facilities and improvements listed in Paragraph a. above, which have not been constructed, or have been constructed, but to which new development has not contributed its fair share because the development described in the pipeline extension agreement between the District and Pierce Co Properties will impose increased water supply and system capacity demands on existing District facilities;

e. The facts and evidence presented establish that there is a reasonable relationship between the need for the described public facilities and the development to be served by the proposed pipeline extension agreement between the District and Pierce Co Properties for which the corresponding fees and charges are imposed; and there is a reasonable relationship between the fees' and charges' use and the type of development for which the fees and charges are exacted, as these reasonable relationships are in more detail described in the Study;

f. The cost estimates set forth in the proposed pipeline extension agreement are reasonable cost estimates for constructing these facilities, and the fees and charges expected to be collected will not exceed the total of these costs.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors hereby adopts the above findings and after considering the District staff report, the Study and the proposed pipeline extension agreement, and the Board of Directors hereby approves and adopts the Study; and

BE IT FURTHER RESOLVED, that the Board of Directors determines that the fees and charges to be collected pursuant to paragraph 5 of the proposed pipeline extension agreement between the District and Pierce Co Properties shall be used solely to pay for the described public facilities to be constructed by the District, for reimbursing the District for the development's fair share of those capital improvements already constructed by the District, or to reimburse other developers who have constructed public facilities described in the pipeline extension agreement where those facilities were beyond that needed to mitigate the impacts of the other developer's project or projects; and

BE IT FURTHER RESOLVED, that the Board hereby approves the proposed pipeline extension agreement between the District and Pierce Co Properties to allow extension of the District's facilities as necessary to serve the Seventy-nine (79) living units to be constructed within 16 buildings containing a mix of single-family, duplex and multi-family residences accessed from Woodland Avenue known as Auburn Grove; and

BE IT FURTHER RESOLVED, that the Board hereby authorizes the District General Manager to accept and execute all suitable real property easements and right-of-way required by the pipeline extension agreement; and

BE IT FURTHER RESOLVED, that the County of Marin determined that the proposed development project is statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section 21159.25 ("County Infill Exemption"), and the County filed a Notice of Exemption for the project on June 12, 2025 as the lead agency and the Board of Director's consideration of approval of a pipeline extension agreement is a discretionary project, as defined by CEQA and therefore the District is a responsible agency pursuant to section 15051 of the CEQA Guidelines. While the installation of utilities was not expressly addressed in the County Infill Exemption, the Board of Directors finds that the pipeline extension agreement qualifies for statutory exemption pursuant to Public Resources Code section 21080.21, as the proposed project consists of installation of less than one mile of

new pipeline within a public right-of-way. Additionally, the Board of Directors finds that the proposed project also qualifies for categorical exemption pursuant to Section 15303 of the CEQA Guidelines, as the proposed project includes installation of a water main of reasonable length and other utility extensions necessary to serve the development project.

PASSED AND ADOPTED this 16th day of June 2026, by the following vote of the Board.

AYES:

NOES:

ABSENT:

President, Board of Directors

ATTEST:

Secretary

PIPELINE EXTENSION AGREEMENT STUDY

Title: Auburn Grove – San Rafael

Prepared by: Joseph Eischens **Date**: 04/13/2026

Type of Development: Residential Subdivision – 79-units

Area/System: Forbes Reservoir (11/04)

Lead Agency: County of Marin

CEQA Requirements: Categorically Exempt – Section 211.59.25

Fire Flow Requirement: 1,500gpm **Set By**: MCFD

Building Site Elevation: 0-10' **Pressure**: 120psi

Water Facilities Required: approximately 1150' of 6" pipe, 4-6" hydrants, 15-4" firelines, 11-1.5" services and 6-1" services (existing services – 2-3/4" residential)

Annual Consumption: 12.75af (1.37af for Irrigation) **Average Summer Day:** 255 gal./unit

	Before	**After**	**Dist. Standard/Minimum**
Tank Adequacy Rating:	1.46	1.45	2.00/1.25
Pump Adequacy Rating:	NA	NA	3.00/1.50

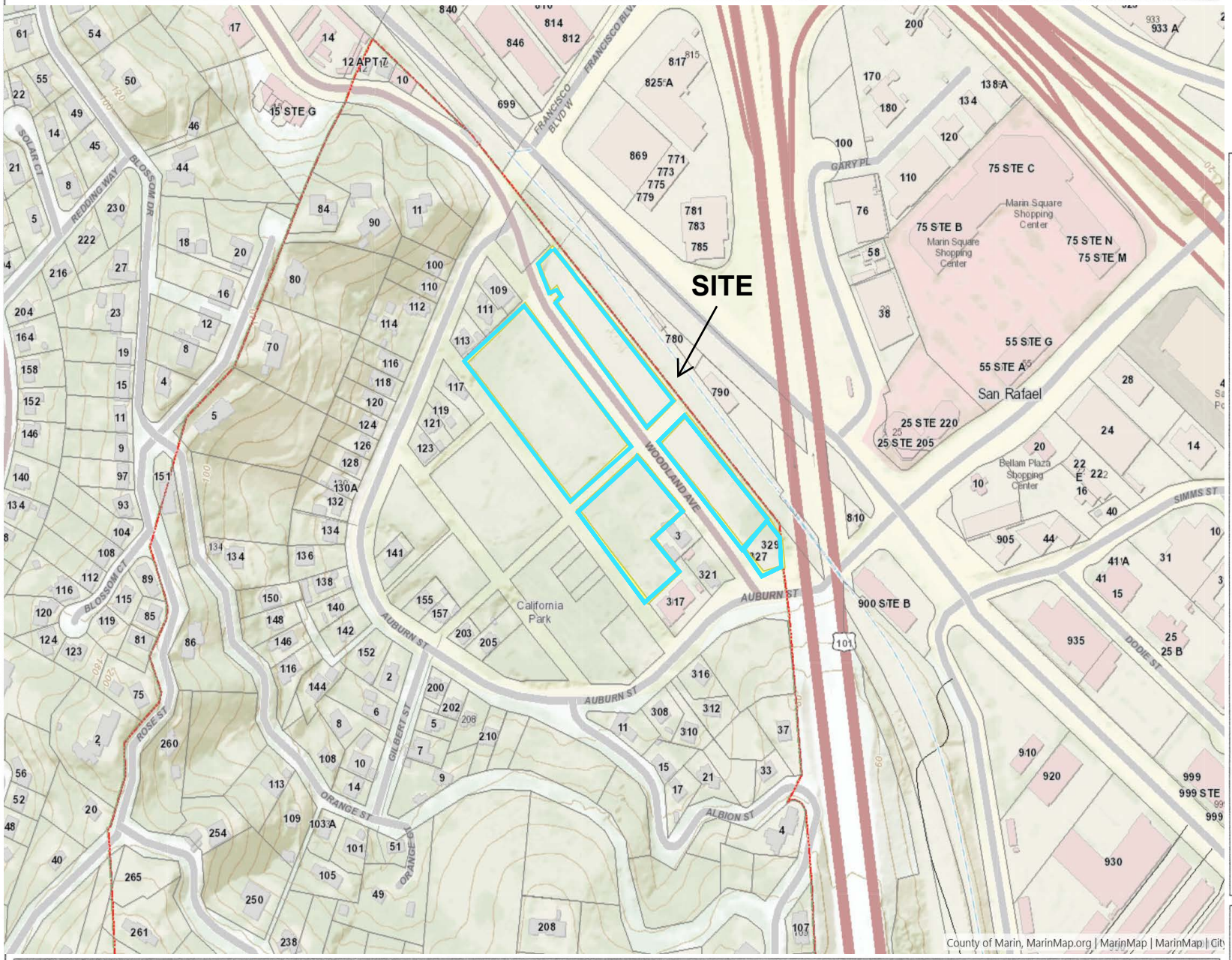
Estimated Cost of Work: A summary of the estimated costs to provide facilities and capacity for the pipeline extension applied for as developed in this report is as follows:

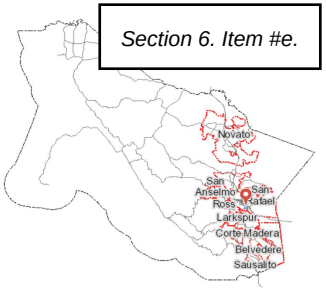
	Column 1: Materials, Fees, and Charges	**Column 2: Installation Costs**	**Column 3: Total**
Pipeline Installation	$33,806	$207,500	$241,306
Hydrant Installation	$24,184	$88,000	$112,184
Service Installation	$29,075	$91,395	$120,470
Fireline Installation	$53,685	$270,000	$323,685
District Labor and Equipment	$84,300	$0	$84,300
Capacity Charges	$987,660	$0	$1,004,400
TOTAL	$1,212,710	$656,895	$1,869,605

Said cost estimates are made solely for the convenience of District in determining required deposits, bonds, and guarantees; and they are based, in part, on information submitted by the applicant.

JM:@ \\MMWD-2\SYS\ENGINEER\WP\AGMT\AGMT-STD\PEA-Study.doc

Vicinity Map - Woodland Ave- SR - Auburn Grove





Legend

- Parcel Note
  - easement
  - centerline
- Parcel
- Condominium Common Area
- Mobile Home Pad
- City
- Community
- Marin County Legal Boundary
- Other Bay Area County
- Stream - Perennial (NHD)

Notes

800.0 0 400.00 800.0 Feet

NAD_1983_HARN_StatePlane_California_III_FIPS_0403_Feet

© Latitude Geographics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

MARIN WATER

MMWD Map

Legend

- Potable Installations
  - Fireline
  - Service
- Potable Taps
- Potable CTS
- Potable Hydrants
- Potable Pump Stations
- Potable Tanks
  - Storage Tanks
  - Pressure Tanks
  - Error/Null Values
- Potable Treatment Plants
- Potable Valves
  - AR, Off
  - AR, Static
  - BO, Static
  - CV, Static
  - DR, Static
  - LV, Off
  - LV, On
  - LV, Static
  - RA, Static
  - RC, Static
  - RF, Static
  - RG, Static
  - VA, Off

Notes

STAFF REPORT

Meeting Type:	Board of Directors
Title:	2025 Urban Water Management Plan and Water Shortage Contingency Plan
From:	Paul Sellier, Director of Water Resources
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: (1) Conduct a Public Hearing on the draft 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP), and (2) approve a resolution to adopt the 2025 Urban Water Management Plan and a resolution to adopt the Water Shortage Contingency Plan

SUMMARY: In 1983, the California Legislature enacted the Urban Water Management Planning Act (Act) that requires an urban water supplier to adopt an Urban Water Management Plan (UWMP) every five years demonstrating water supply reliability in normal, single dry, and multiple dry years. In this update of the UWMP, population, demand projections, and supply availability are evaluated over the planning horizon from 2030 through 2050. The 2025 Urban Water Management Plan is required to be adopted and submitted to the California Department of Water Resources by July 1, 2026. Staff will present an overview of the District's updated 2025 UWMP and WSCP. Following staff's presentation, a public hearing will be conducted. Then, the Board will consider approval of resolutions adopting the draft UWMP and WSCP.

DISCUSSION: Every five years, urban water suppliers in California are required by State law to prepare an Urban Water Management Plan (UWMP), which is a prescriptive planning document intended to help ensure that adequate water supplies are available to meet existing and future water needs within the service area.

The Distsrict has prepared the draft 2025 UWMP in accordance with the requirements outlined in California Water Code §§10608–10657 and in accordance with Department of Water Resources (DWR) guidelines. Key elements of the plan include the District's water system, demand projections, existing and future water supply, water supply reliability, water shortage contingency plan, and demand management programs. These requirements include evaluations of current and projected water supplies and demands over the next 25 years during normal and drought years, as well as water reliability analysis and conservation efforts in the District's service area.

Water Demand Projections

The Association of Bay Area Governments (ABAG) population projections provide the basis for demand forecast and include the updated Regional Housing Needs Assessment growth rates for the 2025 UWMP. ABAG projections include an increase of total population in the District's service area from approximately 188,116 in 2025 to 230,680 by 2035 and 247,674 by 2050. Demand projections take into account the ABAG population growth through 2050. In the 2025 UWMP, total potable and untreated water demand within the District (excluding environmental releases) was projected to be 25,730 acre feet (AF) by 2035 and 26,675 AF by 2050. In comparison, actual potable water use in 2025 was 21,232 AF.

Water Supply Reliability

The UWMP regulations prescribe three scenarios for evaluating a water provider's available supply and its associated reliability. These reliability analyses include modelling a single normal year, a single drought year, and a 5-year drought. Each of these scenarios is based on historic local hydrology. Based upon the UWMP prescriptive guidelines, the District has enough water to meet the forecasted demand without additional water supplies over the 25-year UWMP planning horizon.

The UWMP also allows an alternative supply scenario in addition to the three prescriptive scenarios described above. For the 2025 UWMP, staff have included a drought scenario that is based on the hydrologic data taken from the Strategic Water Supply Assessment (SWSA) and combined with the demand forecast from the 2025 UWMP. Results of this alternative 4-year drought scenario indicate low reservoir storage levels in years two and three and a supply shortfall in the final year indicating that additional supply is needed to assure resiliency in the face of climate change and severe drought scenarios.

Water Shortage Contingency Plan

The primary objective of the Water Shortage Contingency Plan is to ensure that the District has a plan in place with resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The current WSCP was updated in response to the last drought and previously adopted by the Board in 2023 and it continues to provide appropriate action levels, response actions, and supply benefits that will support the District in a future water shortage. No changes to the existing WSCP are proposed at this time. While no changes to the Water Shortage Contingency Plan (WSCP) are recommended at this time, the WSCP must be re-adopted alongside the 2025 UWMP.

ENVIRONMENTAL REVIEW: Not applicable.

FISCAL IMPACT: None.

ATTACHMENT(S):

1. Draft Resolution Adopting the 2025 UWMP
2. Draft Resolution Adopting the WSCP
3. DRAFT 2025 UWMP and WSCP

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Water Resources	**Paul Sellier** **Water Resources Director**	**Ben Horenstein** **General Manager**

Item Number: 8a
Attachment: 1

MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO.

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT ADOPTING THE 2025 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act requires urban water suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually for municipal purposes to prepare and adopt an Urban Water Management Plan every five years; and

WHEREAS, the Marin Municipal Water District (District) meets the definition of an urban water supplier and has prepared Urban Water Management Plans since 1985, with the last update in 2024; and

WHEREAS, the District prepared the draft 2025 Urban Water Management Plan in accordance with the requirements and procedures set forth in the Urban Water Management Planning Act; and

WHEREAS, a public hearing for the 2025 Urban Water Management Plan was scheduled on the 16th day of June 2026; and

WHEREAS, notice of the time and place of said public hearing was duly given and published pursuant to California Government Code 6066 and the draft Urban Water Management Plan was made available to the public for review in accordance with California Water Code Section 10642 two weeks prior to the public hearing; and

WHEREAS, the District Board of Directors considered the 2025 Urban Water Management Plan and other testimony and public comments provided at the June 16, 2026 public hearing.

NOW THEREFORE, BE IT HEREBY RESOLVED, that the Board of Directors adopts the 2025 Urban Water Management Plan; and

BE IT FURTHER RESOLVED, that the Board of Directors authorizes the General Manager to file the 2025 Urban Water Management Plan with the California Department of Water Resources, the California State Library, the County of Marin, local cities and towns within 30 days of adoption as required by Section 10644(a) of the California Water Code, as well as the North Marin Water District and the Sonoma County Water Agency; and

BE IT FURTHER RESOLVED that the Board of Directors authorizes and directs

the General Manager to implement the 2025 Urban Water Management Plan in accordance with the Urban Water Management Planning Act.

PASSED AND ADOPTED this 16th day of June, 2026, by the following vote of the Board of Directors.

AYES:

NOES:

ABSENT:

_____
President, Board of Directors

ATTEST:

_____
Board Secretary

MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO.

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT ADOPTING THE WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Urban Water Management Planning Act requires urban water suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually for municipal purposes to prepare and adopt an Urban Water Management Plan every five years; and

WHEREAS, the Marin Municipal Water District (District) meets the definition of an urban water supplier and has prepared Urban Water Management Plans since 1985, with the last update in 2024; and

WHEREAS, the District prepared the draft 2025 Urban Water Management Plan in accordance with the requirements and procedures set forth in the Urban Water Management Planning Act; and

WHEREAS, as part of the 2025 Urban Water Management Plan, the District developed a standalone Water Shortage Contingency Plan to establish actions and procedures for management water supplies and demands during water shortages due to droughts and other emergencies; and

WHEREAS, a public hearing on the Water Shortage Contingency Plan was scheduled on the 16th day of June, 2026; and

WHEREAS, notice of the time and place of said public hearing was duly given and published pursuant to California Government Code 6066 and the draft Water Shortage Contingency Plan was made available to the public for review in accordance with California Water Code Section 10642 two weeks prior to the public hearing; and

WHEREAS, the District Board of Directors considered the Water Shortage Contingency Plan and other testimony and public comments provided at the June 16, 2026 public hearing.

NOW THEREFORE, BE IT HEREBY RESOLVED, that the Board of Directors adopts the Water Shortage Contingency Plan as part of the 2025 UWMP and as a standalone plan.

BE IT FURTHER RESOLVED, that the Board of Directors directs the General

Manager to file the 2025 Water Shortage Contingency Plan with the California Department of Water Resources, within 30 days of adoption as required by Section 10644(b) of the California Water Code, as well as the North Marin Water District and the Sonoma County Water Agency; and

PASSED AND ADOPTED this 16th day of June, 2026, by the following vote of the Board of Directors.

AYES:

NOES:

ABSENT:

_____
President, Board of Directors

ATTEST:

_____
Board Secretary

PUBLIC DRAFT

2025 URBAN WATER MANAGEMENT PLAN

MARIN MUNICIPAL WATER DISTRICT

JUNE 2026

PREPARED BY:

eki environment & water

2025 URBAN WATER MANAGEMENT PLAN

PUBLIC DRAFT | June 2026

Prepared for:

Marin Municipal Water District
Marin, California

Prepared by:

EKI Environment & Water, Inc.
2001 Junipero Serra Blvd., Suite 300
Daly City, California 94014
(650) 292-9100
www.ekiconsult.com
EKI C50313.00

2025 URBAN WATER MANAGEMENT PLAN

Marin Municipal Water District

TABLE OF CONTENTS

ES EXECUTIVE SUMMARY ES-1

1 INTRODUCTION 1-1

1.1 Background and Purpose 1-1
1.2 Urban Water Management Planning and CWC 1-1
1.3 Plan Organization 1-2
1.4 UWMP Relationship to Other Efforts 1-2
1.5 Special Considerations 1-3
1.5.1 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions 1-3
1.5.2 Permitting for Ocean Desalination Projects 1-3

2 UWMP PREPARATION 2-1

2.1 Basis for Preparing the UWMP 2-1
2.2 Individual or Regional UWMP 2-2
2.3 Fiscal or Calendar Year and Units of Measure 2-3
2.4 Standard Submittal Tables and Alignment with UWMP Act Requirements 2-3
2.5 Coordination and Outreach 2-3
2.5.1 Wholesale and Retail Coordination 2-4
2.5.2 Coordination with Other Agencies and the Community 2-4
2.5.3 Notice to Cities and Counties 2-5

3 SERVICE AREA DESCRIPTION 3-1

3.1 General Description 3-1
3.2 Service Area Climate 3-4
3.3 Service Area Population and Demographics 3-6
3.3.1 Future Population Growth 3-6
3.3.2 Future Employment Growth 3-7
3.3.3 Other Social, Economic, and Demographic Factors 3-7
3.4 Land Uses within Service Area 3-9
3.5 Water Distribution System 3-9

4 WATER USE CHARACTERIZATION 4-1

4.1 Non-Potable Versus Potable Water Use 4-1
4.2 Water Use Sectors 4-2
4.3 Past and Current Water Demand 4-3
4.4 Distribution System Water Loss 4-5
4.5 Projected Water Demand 4-8
4.5.1 Basis of Demand Projections 4-8

4.5.2 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans 4-9
4.5.3 Projected Total Water Demand 4-10
4.5.4 Water Use by Lower Income Households 4-13
4.5.5 Characteristic Five-Year Water Use 4-13
4.6 Water Use Sectors Not Included in Demand Projections 4-14
4.7 Coordinating Water Use Projections 4-14
4.8 Urban Water Use Objective 4-15
5 SB X7-7 REPORTING 5-1
6 NORMAL YEAR WATER SUPPLY CHARACTERIZATION 6-1
6.1 Purchased Water 6-1
6.1.1 Sonoma County Water Agency Surface Water Supply 6-1
6.1.2 Sonoma County Water Agency Surface Water Rights 6-2
6.1.3 Sonoma County Water Agency Groundwater Supply 6-3
6.2 Groundwater 6-3
6.2.1 Basin Description and Status 6-4
6.2.2 Groundwater Management 6-4
6.2.3 Historical Pumping and Supply Sufficiency 6-4
6.3 Surface Water 6-4
6.4 Stormwater 6-5
6.5 Wastewater and Recycled Water 6-5
6.5.1 Recycled Water Coordination 6-5
6.5.2 Wastewater Collection, Treatment, and Disposal 6-6
6.5.3 Recycled Water System and Recycled Water Beneficial Uses 6-10
6.5.4 Actions to Encourage and Optimize Future Recycled Water Use 6-13
6.6 Desalinated Water Opportunities 6-14
6.7 Water Exchanges and Transfers 6-15
6.8 Future Water Projects 6-15
6.9 Summary of Existing and Planned Sources of Water 6-18
6.10 Special Conditions 6-21
6.10.1 Climate Change Effects 6-21
6.10.2 Regulatory Conditions and Project Development 6-23
6.10.3 Other Locally Applicable Criteria 6-23
6.11 Energy Intensity 6-23
7 WATER SUPPLY RELIABILITY ASSESSMENT 7-25
7.1 Constraints on Water Sources 7-25
7.1.1 Supply Availability 7-26
7.1.2 Water Quality 7-28
7.1.3 Climate Change 7-29
7.2 Reliability by Type of Year 7-29
7.2.1 Purchased Water 7-30

7.2.2 Surface Water 7-31
7.2.3 Recycled Water 7-31
7.2.4 Raw Water 7-31
7.3 Supply and Demand Assessment 7-32
7.4 Water Supply Management Tools and Options 7-34
7.5 Drought Risk Assessment 7-34
7.5.1 Data, Methods, and Basis for Water Shortage Condition 7-35
7.5.2 Drought Risk Assessment - Individual Water Source Reliability 7-35
7.5.3 Drought Risk Assessment - Total Water Supply and Use Comparison 7-35
7.5.4 Risk Assessment Projections – Extreme Drought Scenario 7-36
8 WATER SHORTAGE CONTINGENCY PLANNING 8-1
9 DEMAND MANAGEMENT MEASURES 9-1
9.1 Regional Water Conservation 9-1
9.2 Agency Water Conservation 9-3
9.3 Demand Management Measures for Retail Suppliers 9-3
9.3.1 DMM 1 – Water Waste Prevention Ordinances 9-4
9.3.2 DMM 2 – Metering 9-4
9.3.3 DMM 3 – Conservation Pricing 9-4
9.3.4 DMM 4 – Public Education and Outreach 9-5
9.3.5 DMM 5 – Programs to Assess and Manage Distribution System Real Loss 9-11
9.3.6 DMM 6 – Water Conservation Program Coordination and Staffing Support 9-11
9.3.7 DMM 7 – Other Demand Management Measures 9-11
9.4 Implementation to Achieve Water Use Targets and Urban Water Use Objectives 9-12
10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION 10-1
10.1 Inclusion of All 2025 Data 10-1
10.2 Notice of Public Hearing 10-1
10.2.1 Notice to Cities and Counties 10-2
10.2.2 Notice to the Public 10-3
10.3 Public Hearing and Adoption 10-3
10.4 Plan Submittal 10-3
10.5 Public Availability 10-4
10.6 Amending an Adopted UWMP or Water Shortage Contingency Plan 10-4
11 REFERENCES 11-1

TABLES

Table 2-1 Public Water Systems (DWR Table 2-1) 2-2
Table 2-2 Plan Identification (DWR Table 2-2) 2-2
Table 2-3 Supplier Identification (DWR Table 2-3) 2-3
Table 2-4 Water Supplier Information Exchange (DWR Table 2-4) 2-4
Table 3-1 Climate Characteristics 3-4
Table 3-2 Population – Current and Projected (DWR Table 3-1) 3-7
Table 3-3 Employment – Current and Projected 3-7
Table 3-4 Demographic and Housing Characteristics, 2020-2024 3-8
Table 4-1 2025 Actual Total Uses for Potable and Non-Potable Water (DWR Table 4-1) 4-3
Table 4-2 Water Loss Audit Reporting Water Code Section 10631(d)(3)(A) (DWR Table 4-5) 4-5
Table 4-3 Progress Towards 2028 Water Loss Standard (DWR Table 4-6) 4-7
Table 4-4 Projected Potable Water Demand and Projected Passive Conservation 4-9
Table 4-5 Total Uses of Potable and Non-Potable Water - Projected (DWR Table 4-2) 4-11
Table 4-6 Inclusion in Water Use Projections (DWR Table 4-3) 4-12
Table 4-7 Projected Water Use for Lower Income Households 4-13
Table 4-8 Characteristic Five-Year Water Use (AF) 4-14
Table 4-9 Current and Projected Urban Water Use Objectives Compliance 4-16
Table 5-1 SB X7-7 2020 Target Progress (DWR Table 5-1) 5-2
Table 6-1 Groundwater Volume Pumped (DWR Table 6-1) 6-4
Table 6-2 District Surface Water Reservoir System 6-5
Table 6-3 Wastewater Collected Within Service Area in 2025 (DWR Table 6-2) 6-7
Table 6-4 Wastewater Treatment and Outcomes Within UWMP Service Area in 2025 (DWR Table 6-3) 6-9
Table 6-5 Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4) 6-12
Table 6-6 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual (DWR Table 6-5) 6-13
Table 6-7 Methods to Encourage Future Recycled Water Use (DWR Table 6-6) 6-14
Table 6-8 Expected Future Water Supply Projects or Programs (DWR Table 6-7) 6-17
Table 6-9 Water Supplies – 2025 Actual (DWR Table 6-8) 6-19
Table 6-10 Source Water Desalination by Urban Water Supplier (DWR Table 6-8 DS) 6-19
Table 6-11 Water Supplies – Projected (DWR Table 6-9) 6-20
Table 6-12b Recommended Energy Reporting: Single Delivery Product, Total Utility Approach (DWR Table O-1B) 6-24
Table 7-1 Potential Supply Constraints 7-26
Table 7-2 Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1) 7-30
Table 7-3 Projected Availability of Sonoma Water Supply (Responds to DWR Table 7-1) 7-30
Table 7-4 Projected Availability of Local Surface Water Supply (Responds to DWR Table 7-1) 7-31
Table 7-5 Projected Availability of Recycled Water Supply (Responds to DWR Table 7-1) 7-31

Table 7-6 Projected Availability of Raw Water Supply (Responds to DWR Table 7-1) 7-32
Table 7-7 Normal Year Supply and Demand Comparison (DWR Table 7-2) 7-32
Table 7-8 Single Dry Year Supply and Demand Comparison – District Total (DWR Table 7-3) 7-33
Table 7-9 Five Consecutive Dry Years Supply and Demand Comparison (DWR Table 7-4) 7-33
Table 7-10 Five-Year Drought Risk Assessment Tables (DWR Table 7-5) 7-36
Table 7-11 Four-Year Drought Risk Assessment Tables - Extreme Drought Scenario 7-37
Table 8-1 Water Shortage Contingency Plan Levels (DWR Table 8-1) 8-1
Table 8-2 Demand Reduction Actions (DWR Table 8-3) 8-3
Table 8-3 Supply Augmentation and Other Actions (DWR Table 8-2) 8-10
Table 9-1 Current Conservation Programs 9-6
Table 10-1 Notification to Cities and Counties (DWR Table 10-1) 10-2

FIGURES

Figure 3-1 Regional Vicinity 3-2
Figure 3-2 District Service Area 3-3
Figure 3-3 Average Monthly Climatic Conditions 3-5
Figure 3-4 Observed and Forecasted Temperature for District's Service Area 3-5
Figure 3-5 Population – Historic and Projected 3-7
Figure 3-6 District Water System 3-10
Figure 4-1 Total Uses for Potable and Non-Potable Water - 2010 – 2025 Actual 4-4
Figure 4-2 Per Capita Water Use 4-4

APPENDICES

Appendix A UWMP Checklist
Appendix B 2025 Water Demand Analysis and Water Conservation Measure Update
Appendix C UWMP Preparation Notices
Appendix D Public Hearing Notice
Appendix E Amended and Restated Water Supply Agreement with Sonoma County Water Agency
Appendix F District Board Policy No. 2
Appendix G Water Shortage Contingency Plan
Appendix H 2007 Water Conservation Plan
Appendix I Title 13
Appendix J Adoption Resolution

ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACS	American Community Survey
AF	Acre-Feet
AFY	Acre-Feet per Year
AMI	Advanced metering infrastructure
AWE	Alliance for Water Efficiency
AWWA	American Water Works Association
BCM	Basin Characterization Model
BTTP	Bon Tempe Treatment Plant
CAP	Climate Adaptation Plan
CCR	California Code of Regulations
cfs	Cubic Feet per Second
CGC	California Government Code
CII	Commercial, Industrial, and Institutional
CMIP	Coupled Model Intercomparison Project
CWC	California Water Code
DDW	Division of Drinking Water
DIM	Dedicated Irrigation Meter
DMM	demand management measure
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
EO	Executive Order
ETWU	Estimated total water use
GCM	Global circulation models
GPCD	Gallons per capita per day
GPSCD	Gallons per Service Connection per Day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
kWh	Kilowatt-hour
kWh/AF	Kilowatt-hours per Acre-Foot
kWh/vol	Kilowatt-hours per Volume

LGVSD	Las Gallinas Valley Sanitary District
MAWA	Maximum applied water allowance
MCCWL	Making Conservation a California Way of Life
MCLs	Maximum Contaminant Levels
MG	Million gallons
mgd	Million Gallons per Day
MMWD	Marin Municipal Water District
NBWRA	North Bay Water Reuse Authority
PVP	Potter Valley Project
PWS	Public Water System
RHNA	Regional Housing Needs Allocation
SASM	Sewerage Agency of Southern Marin
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
SGTP	San Geronimo Treatment Plant
SMCSD	Sausalito-Marin City Sanitary District
SMSWP	Sonoma Marin Saving Water Partnership
SWRCB	State Water Resources Control Board
SWSA	Strategic Water Supply Assessment
TAC	Technical Advisory Committee
TDS	Total Dissolved Solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
UWUO	Urban Water Use Objective
WAC	Water Advisory Committee
WBIC	weather based irrigation controller
WSCP	Water Shortage Contingency Plan
WUE	Water use efficiency
WWTP	Wastewater Treatment Plant
WY	Water years

EXECUTIVE SUMMARY

☑ ***CWC §10630.5***

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This Urban Water Management Plan (UWMP) is prepared for Marin Municipal Water District (District), which serves drinking water to a population of 188,116 in Marin County, California. This UWMP includes descriptions of historical and projected water demands and water supplies and reliability over the UWMP planning horizon. This document also describes the actions the District is taking to promote water conservation, both by the District and by its customers (referred to as "demand management measures"), and includes a plan to address potential water supply shortages such as drought or other impacts to supply availability (the "Water Shortage Contingency Plan"). This UWMP is updated every five years in accordance with state requirements under the Urban Water Management Planning Act (UWMP Act) and amendments (Division 6 Part 2.6 of CWC §10610 – 10656). Past plans developed for the District are available on the California Department of Water Resources (DWR) Water Use Efficiency Data Portal website: https://wuedata.water.ca.gov/. This Plan includes eleven chapters, which are summarized below.

Chapter 1 – Introduction

This chapter presents the background and purpose of the UWMP, identifies the Plan organization, and provides this lay description overview of the document.

Chapter 2 – UWMP Preparation

This chapter discusses key structural aspects related to the preparation of the UWMP, and describes the coordination and outreach conducted as part of the preparation of the Plan, including coordination with local agencies (i.e., members of the Sonoma-Marin Saving Water Partnership [SMSWP] and Marin County) and the public.

Chapter 3 – Service Area Description

This chapter provides a description of the District's water system and service area, including information related to the climate, population, and demographics. The District serves a population of 188,116 and has a moderate climate characterized by mild dry summers and cool wet winters. The majority of precipitation falls during late autumn, winter, and spring, averaging 51 inches of rainfall annually.

Chapter 4 – Water Use Characterization

This chapter provides a description and quantifies the District's current and projected demands through the year 2050. The District provides drinking water (also referred to as "potable water"), raw water, and recycled water to its customers. Water demands refer not only to the water used by customers, but also includes the water used as part of the system maintenance and operation, as well as unavoidable losses inherent in the operation of a water distribution system. The District also provides raw water environmental releases from Kent and Soulajule Lakes to meet environmental flow requirements that benefit silver salmon and steelhead populations in Walker Creek and Lagunitas Creek. Total water demand within the District was 31,257 acre-feet per year (AFY) in 2025. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, total water

demand within the District is projected to increase to 37,822 AFY by 2050. These water demands include potable, raw (including environmental releases) and recycled water demand.

Chapter 5 - SB X7-7 Reporting

In this chapter, the District demonstrates compliance with its per capita water use target for the year 2020. The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009 and requires the state of California to achieve a 20 percent reduction in urban per capita water use by 31 December 2020. In order to achieve this, each urban retail water supplier was required to establish water use targets for 2015 and 2020 using methodologies established by DWR. The 2025 UWMPs are required to continue report progress in meeting the 2020 target. The District is a member of a "Regional Alliance" for purposes of SB X7-7 compliance. The Regional Alliance's 2020 water use is 113 GPCD, and the Regional Alliance remains in compliance with its 2020 target of 129 GPCD.

Chapter 6 - Normal Year Water Supply Characterization

This chapter presents an analysis of the District's water supplies, as well as an estimate of water-related energy consumption. The intent of this chapter is to present a comprehensive overview of the District's water supplies, estimate the volume of available supplies over the UWMP planning horizon, and assess the sufficiency of the District's supplies to meet projected demands under "normal" hydrologic conditions.

Most of the District's water supply comes from a network of seven local, rain-fed reservoirs operated by the District. This supply is supplemented with water purchased from the Sonoma County Water Agency (Sonoma Water). The District has contracted with Sonoma Water for this source of water since 1975. The current contract allows for the District to purchase up to 14,300 AF, with a minimum purchase requirement of 5,300 AF.

Within the District's service area, wastewater is sent to six wastewater treatment plants. There are also five wastewater treatment plants within the District's service area. The District's recycled water is produced at the Las Gallinas Valley Sanitary District to tertiary levels before being distributed to customers. The District's recycled water system consists of nearly 25 miles of pipeline, which delivered about 633 AFY to recycled water customers in 2025.

Energy intensity is defined as the net energy used for water treatment, conveyance, and distribution for all water entering the distribution system and does not include the energy used to convey or treat wastewater. The energy intensity for the District is estimated to be 647 kilowatt hours per acre-foot of water (kWh/AF).

Chapter 7 – Drought Risk Assessment

This chapter assesses the reliability of the District's water supplies, with a specific focus on potential constraints such as water supply availability, water quality, and climate change. The intent of this chapter is to identify any potential constraints that could affect the reliability of the District's supply (such as drought conditions) to support the District's planning efforts. Water service reliability is assessed during normal, single dry-year, and multiple dry-year hydrologic conditions. Based on this analysis, the District expects the available supplies to be sufficient to meet projected demands in all hydrologic conditions, including a five-year drought period, and considering the impacts of climate change.

Further, potential water quality issues are not expected to affect the quality of water served to the District's customers, as water quality is routinely monitored and the District is able to make all appropriate adjustments to its treatment and distribution system to ensure only high-quality drinking water is served.

Chapter 8 – Water Shortage Contingency Planning

This chapter describes the Water Shortage Contingency Plan (WSCP) for the District. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. For example, implementing customer water budgets and surcharges, or restricting landscape irrigation to specific days and/or times. Consistent with DWR requirements, the WSCP includes six levels to address shortage conditions ranging from up to 10% to greater than 50% shortage.

Chapter 9 – Demand Management Measures

This chapter includes descriptions of past and planned conservation programs that the District and the Sonoma-Marin Saving Water Partnership (SMSWP) operate within each demand management measure (DMM) category outlined in the UWMP Act, specifically: (1) water waste prevention ordinances, (2) metering, (3) conservation pricing, (4) public education and outreach, (5) distribution system water loss management, (6) water conservation program coordination and staffing support, and (7) "other" DMMs. The District has developed a suite of conservation programs and policies which address each DMM category.

Chapter 10 – Plan Adoption, Submittal, and Implementation

This chapter provides information on a public hearing, the adoption process for the UWMP Update, the adopted UWMP submittal process, UWMP implementation, and the process for amending the adopted UWMP. Prior to adopting the Plan, the District held a formal public hearing to present information on its UWMP on 16 June 2026.

Chapter 11 - References

This chapter contains key references and sources used throughout the Plan.

1 INTRODUCTION

This chapter introduces the importance and uses of this Urban Water Management Plan (UWMP or Plan), the relationship of this Plan to the California Water Code (CWC), the relationship of this Plan to other local and regional planning efforts, and how this Plan is organized and developed in general accordance with the California Department of Water Resources' (DWR) 2025 UWMP Guidebook.[1]

1.1 Background and Purpose

This UWMP addresses the Marin Municipal Water District (District) water system. Most of the District's water supply comes from a network of seven local, rain-fed reservoirs. This supply is supplemented with water purchased from Sonoma County Water Agency (Sonoma Water). Recycled water is also used for non-potable uses such as landscape irrigation, cooling towers, car washes, and toilet flushing.

This UWMP is a source of information about the District's historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. The UWMP may also be used to inform a variety of planning activities. The District's last UWMP was adopted in January 2024, referred to herein as the "2024 UWMP." This UWMP is an update to the 2024 UWMP, carries forward information from that plan that remains current and relevant, and provides additional information as required by subsequent amendments to the UWMP Act (CWC §10610-10657). Although this UWMP is an update to the 2024 UWMP, it was developed to be a self-contained, stand-alone document and does not require readers to reference information contained in previous UWMP updates.

1.2 Urban Water Management Planning and CWC

The UWMP Act requires urban water suppliers to prepare a UWMP every five years and submit this plan to the DWR, the California State Library, and any city or county within which the supplier provides water supplies. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet per year (AFY) are required to prepare a UWMP (CWC §10617).

The UWMP Act was enacted in 1983. Over the years it has been amended in response to water resource challenges and planning imperatives confronting California. A significant amendment was made in 2009 following the Governor's call for a statewide 20% reduction in urban water use by 2020, referred to as the Water Conservation Act of 2009, or "SB X7-7." This amendment required urban retail water suppliers to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20% by 2020. Beginning in 2016, urban retail water suppliers were required to comply with the water conservation requirements in SB X7-7 to be eligible for state water grants or loans. **Chapter 5** of this UWMP contains the data and calculations used to determine compliance with these requirements.

In 2016, Governor Brown signed Executive Order (EO) B-37-16 Making Conservation a California Way of Life (MCCWL). Subsequently, the Legislature passed Senate Bill (SB) 606 and Assembly Bill (AB) 1668, which added drought planning requirements, including:

1) Additional Water Shortage Contingency Plan (WSCP) requirements (CWC §10640),

[1] The 2025 UWMP Guidebook is available at:
https://wuedata.water.ca.gov/public/public_resources/4825681388/2025_Draft_UWMP_Guidebook_Release.zip

2) Drought risk assessments to assess water supply reliability in UWMPs for a drought period lasting five consecutive water years (WY) (CWC §10635(b)), and

3) Annual water supply and demand assessments to determine water supply reliability for the current year and one subsequent dry year (CWC §10632(a)).

These elements are included in **Chapter 7** and **Chapter 8** of this UWMP. Additionally, SB 606/AB 1668 set new requirements for urban water suppliers to further increase water use efficiency beyond SB X7-7. Beginning in 2024, agencies were required to report an annual Urban Water Use Objective (UWUO). **Section 4.8** of this UWMP documents the District's progress in meeting the UWUOs.

The UWMP Act contains numerous other requirements that a UWMP must satisfy. **Appendix A** lists each of these requirements and where in the UWMP they are addressed.

1.3 Plan Organization

The organization of this Plan follows the same sequence as outlined in the 2025 UWMP Guidebook.

- Chapter 1 Introduction
- Chapter 2 UWMP Preparation
- Chapter 3 Service Area Description
- Chapter 4 Water Use Characterization
- Chapter 5 SB X7-7 Baseline, 2020 Target, and 2025 Reporting
- Chapter 6 Normal Year Water Supply Characterization
- Chapter 7 Water Supply Reliability Assessment
- Chapter 8 Water Shortage Contingency Planning
- Chapter 9 Demand Management Measures
- Chapter 10 Plan Adoption, Submittal, and Implementation
- Chapter 11 References

In addition to these sections, this Plan includes appendices providing supporting documentation and supplemental information. Pursuant to CWC §10644(a)(2), this Plan utilizes the standardized forms, tables, and displays developed by DWR for the reporting of water use and supply information required by the UWMP Act. This Plan also includes additional tables, figures, and maps to augment the set developed by DWR, as appropriate. The table headers indicate if the table is part of DWR's standardized set of submittal tables. A lay description of the UWMP, including information related to water service reliability, potential issues, and strategies for managing reliability risks, is provided at the beginning of this UWMP.

1.4 UWMP Relationship to Other Efforts

This Plan provides information specific to water management and planning within the District's service area. However, water management does not happen in isolation; there are other planning processes that integrate with the UWMP to accomplish urban planning. Some of these relevant planning documents include relevant city and county General Plans, Water Master Plans and others. This Plan is informed by and helps to inform these other planning efforts.

1.5 Special Considerations

This Plan includes information beyond the requirements of the UWMP Act to support other regulatory processes that rely on UWMP data, including the Delta Plan and permitting for ocean desalination projects.

1.5.1 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

Although not required by the UWMP Act, in the 2025 UWMP Guidebook, DWR recommends that all suppliers that are participating in, or may participate in, receiving water from a proposed project that is considered a "covered action" under The Delta Plan by the Delta Stewardship Council—such as a (1) multiyear water transfer, (2) conveyance facility, or (3) new diversion that involves transferring water through, exporting water from, or using water in the Delta—provide information in their UWMP to demonstrate consistency with the Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code of Regulations [CCR], Title 23, Section 5003).

The District's source of water supply is from a network of local, rain-fed reservoirs, imported water purchased from Sonoma Water, and recycled water, and therefore the District does not receive water or plan to receive water from a "covered action" under the Delta Plan. As such, demonstration of consistency with the Delta Plan is not applicable.

1.5.2 Permitting for Ocean Desalination Projects

California's *Water Supply Strategy: Adapting to a Hotter, Drier Future* updates state priorities to address water supply shortages due to long-term drought and the accelerating impacts of climate change, including identifying opportunities to access new water sources such as ocean desalination. To streamline permitting for ocean desalination projects, the *Seawater Desalination Siting and Streamlining Report to Expedite Permitting* recommends that UWMPs clearly demonstrate the need for future or proposed ocean desalination projects.

As discussed in Chapter 7, the District has sufficient water supplies available to meet projected demands through the 2050 planning horizon and does not anticipate the need for an ocean desalination project. Therefore, the District will not pursue ocean desalination to augment its supply portfolio.

2 UWMP PREPARATION

This section discusses the type of UWMP prepared by the District and includes information that applies throughout the UWMP. It also summarizes coordination and outreach during UWMP development.

Text from the Urban Water Management Planning Act (UWMP Act) has been included in grey text boxes with italicized font at beginning of relevant sections of this UWMP. The information presented in the respective UWMP sections and the associated text, figures, and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act. To the extent practicable, supporting documentation has also been provided in A**ppendix A** through **Appendix J**. Other sources for the information contained herein are provided in the references section of this document.

Per CWC §10644(a)(2), selected information for the 2025 UWMP updates must be presented in standardized tables for electronic submittal to DWR. The tables presented in this UWMP have been re-numbered, but the content has been preserved, and the original DWR table numbers are included in parentheses in the table titles.

2.1 Basis for Preparing the UWMP

☑ ***CWC §10617***

"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

☑ ***CWC §10608.12***

(t) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(w) "Urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

☑ ***CWC §10620***

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

☑ ***CWC §10621***

(a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

☑ ***California Health and Safety Code §116275***

(h) "Public Water System" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

In 1983, the California Legislature enacted the UWMP Act (CWC §10610 - §10657). The UWMP Act states that every urban water supplier that provides water to 3,000 or more connections or that provides over 3,000 acre-feet of water per year (AFY) should make every effort to ensure the appropriate level of water service reliability to meet the needs of its customers during normal, dry, and multiple dry years.

As a water system that provides drinking water for human consumption, the District is regulated as a Public Water System (PWS) by the State Water Resources Control Board (SWRCB), Division of Drinking Water. **Table 2-1** lists the District's PWS identification number, number of municipal connections, and volume of water supplied. The SWRCB requires that water agencies report water usage and other relevant PWS information via the electronic Annual Reports to the Drinking Water Program (eARDWP). These data are used by the state to determine, among other things, whether an urban retail water supplier has reached the threshold (3,000 or more connections or 3,000 acre-feet [AF] of water supplied) for submitting a UWMP.

Table 2-1 Public Water Systems (DWR Table 2-1)

Has there been a change in the number of affiliated PWSs since the 2020 UWMP?			No
PWS Number	**PWS Name**	**Number of Municipal Connections 2025[2]**	**Volume of Water Supplied 2025 (AF)**
CA2110002	Marin Municipal Water District	60,898	31,257
	Total	**60,898**	**31,257**

2.2 Individual or Regional UWMP

Urban water suppliers may elect to prepare individual or regional UWMPs. The District has elected to prepare an individual (**Table 2-2**). However, the 2025 UWMP was developed with close coordination with its wholesaler (Sonoma Water), and other parties that receive water from Sonoma Water (Water Contractors). Furthermore, a regional Alliance was formed in 2011 among the Water Contractors including the cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Town of Windsor, Marin Municipal Water District, Valley of the Moon Water District, and North Marin Water District to comply with Senate Bill (SB) X7-7, the Water Conservation Act of 2009. This regional Alliance, referred to in **Table 2-2** as the "North Marin-Sonoma Alliance" but more typically referred to as the Sonoma-Marin Saving Water Partnership (SMSWP), is used within the 2024 UWMP for reporting on regional 2015 and 2020 water use targets (see Chapter 5). All other elements of the CWC requirements are addressed in the District's individual UWMP.

Table 2-2 Plan Identification (DWR Table 2-2)

Type of Plan			Name of Regional Alliance or RUWMP
☒	Individual UWMP		
	☒	Water Supplier is also a member of a SB X7-7 Regional Alliance	North Marin-Sonoma Alliance
☐	RUWMP		

[2] Number of municipal connections includes single-family, multi-family, commercial, institutional, and landscape connections.

2.3 Fiscal or Calendar Year and Units of Measure

☑ *CWC §10608.20*

(a)(1) Urban retail water suppliers … may determine the targets on a fiscal year or calendar year basis.

Per CWC §10617, the District is an urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually. It is therefore obligated under CWC §10621(f) to develop and submit a UWMP to DWR by July 1, 2026. The District is an urban retail water supplier, as defined by CWC §10608.12(t) and §10617, and as identified in **Table 2-3**. The District is not a wholesale water supplier.

Annual volumes of water reported in this UWMP are measured in AF and are reported on a calendar year basis (**Table 2-3**). Water use and planning data reported in this UWMP for calendar 2025 cover the full twelve months of the year, as required by the UWMP Guidelines.

Table 2-3 Supplier Identification (DWR Table 2-3)

Type of Supplier	
☐	Supplier is a wholesale supplier.
☒	Supplier is a retail supplier.
Fiscal or Calendar Year	
☒	UWMP tables are in calendar years.
☐	UWMP tables are in fiscal years.
Units of measure used in UWMP	
Unit	AF

2.4 Standard Submittal Tables and Alignment with UWMP Act Requirements

The UWMP has been prepared in general accordance with the format suggested in DWR's 2025 UWMP Guidebook. Text from the UWMP Act has been included in text boxes at the beginning of relevant sections of this UWMP. The information presented in the respective UWMP sections, and the associated text, figures, and charts are collectively intended to fulfill the requirements of that subsection of the UWMP Act. To the extent practicable, supporting documentation has also been provided in **Appendix A** through **Appendix J**. Other sources for the information contained herein are provided in the references section of the document.

Per CWC §10644(a)(2), selected information for the UWMP updates must be presented in standardized tables for electronic submittal to DWR. Text and tables in the main body of the UWMP document have been cross-referenced to the companion DWR tables. UWMP preparers are also requested to complete a checklist of specific UWMP requirements to assist the DWR review of the submitted UWMP. The completed checklist is included in **Appendix A**.

2.5 Coordination and Outreach

Coordination with other water suppliers, cities, counties, and community organizations in the region is an important part of preparing the updated UWMP and WSCP. This section identifies the agencies and organizations the District sought to coordinate during the preparation of this UWMP.

2.5.1 Wholesale and Retail Coordination

☑ ***CWC §10631***

(h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision.

(f) An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

Urban retail water suppliers relying on one or more wholesalers for water supply are required to provide these wholesalers with information regarding projected water supply and demand. The District meets regularly with other water purveyors to discuss water supply and demand planning. In particular, the District meets at least monthly with its water wholesaler, Sonoma Water, and with other Water Contractors who purchase water from Sonoma Water. These monthly meetings occur through the District's participation in the Sonoma Water Technical Advisory Committee (TAC). The primary mission of the TAC is to provide input and guidance to Sonoma Water regarding technical issues that may have an impact on the Water Contractors (i.e., UWMP coordination, capital projects, operational changes, etc.). Additionally, the District participates in quarterly meetings of the Water Advisory Committee (WAC). The WAC's objectives are to advise Sonoma Water's Board of Directors on policy and fiscal matters affecting the Water Contractors. The District's participation in the TAC and WAC has been instrumental in coordinating water supply and demand analyses for the preparation of this UWMP.

The District's local water supply is supplemented with water purchased from Sonoma Water. The District's water supply agreement is separate from that of the other eight Water Contractors that purchase water from Sonoma Water. The District has provided demand projections through 2050 to Sonoma Water.

Table 2-4 Water Supplier Information Exchange (DWR Table 2-4)

Wholesale Water Supplier Name
Sonoma County Water Agency

2.5.2 Coordination with Other Agencies and the Community

☑ ***CWC §10620***

(d)(3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

☑ ***CWC §10642***

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan…

The District coordinated with other regional and neighboring entities during preparation of this UWMP to ensure that data and issues are presented accurately, including North Marin Water District, County of Marin, Sewerage Agency of Southern Marin, Sausalito-Marin City Sanitary District, Central Marin

Sanitation Agency, and Sanitary District No. 5. The agencies, cities, and counties that were notified by the District during the development of this UWMP are listed in **Chapter 10.10 (Table 10-1)**. A sample copy of the notices is provided in **Appendix C**.

2.5.3 Notice to Cities and Counties

☑ ***CWC §10621***

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

The District provided a 60 Day Notice to the entities and the communities it serves more than 60 days prior to the public hearing it held on June 16, 2026, informing them that the UWMP was going to be reviewed and updated. As a courtesy, the District also provided a 60 Day Notice to other entities due to geographical proximity and to ensure regional alignment in water management. The 60 Day Notice recipients are listed in **Chapter 10 (Table 10-1),** and copies of correspondence with the agencies are provided in **Appendix C**.

The District also sought public participation and notified the public of its intent to adopt its UWMP through a public hearing and notices to members of the community. Additional information on public participation, including information on notifications, is provided in Chapter 10 and in **Appendix D**.

3 SERVICE AREA DESCRIPTION

This section describes the District's water system and service area, including climate, population, demographics, and land uses to help in understanding various elements of water supply and demand.

3.1 General Description

☑ ***CWC §10631***

(a) Describe the service area of the supplier…

As shown in **Figure 3-1**, the District serves the populous eastern corridor of Marin County from the Golden Gate Bridge northward up to, but not including, the City of Novato. The District is bounded by the San Francisco Bay on the east and stretches through the San Geronimo Valley in the west. The incorporated cities and towns of San Rafael, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Corte Madera, Tiburon, Belvedere and Sausalito, as well as unincorporated areas of Marin County, are within the District's service area.

The District covers approximately 147 square miles and serves customers through 60,898 active service connections. Five of the seven District reservoirs (Alpine, Bon Tempe, Kent, Lagunitas, and Phoenix Lake) are located on the north slope of Mt. Tamalpais. The remaining two District reservoirs (Nicasio and Soulajule) are situated outside the District's service area in western Marin County. The District's service area is shown in **Figure 3-2**.

Figure 3-1 Regional Vicinity

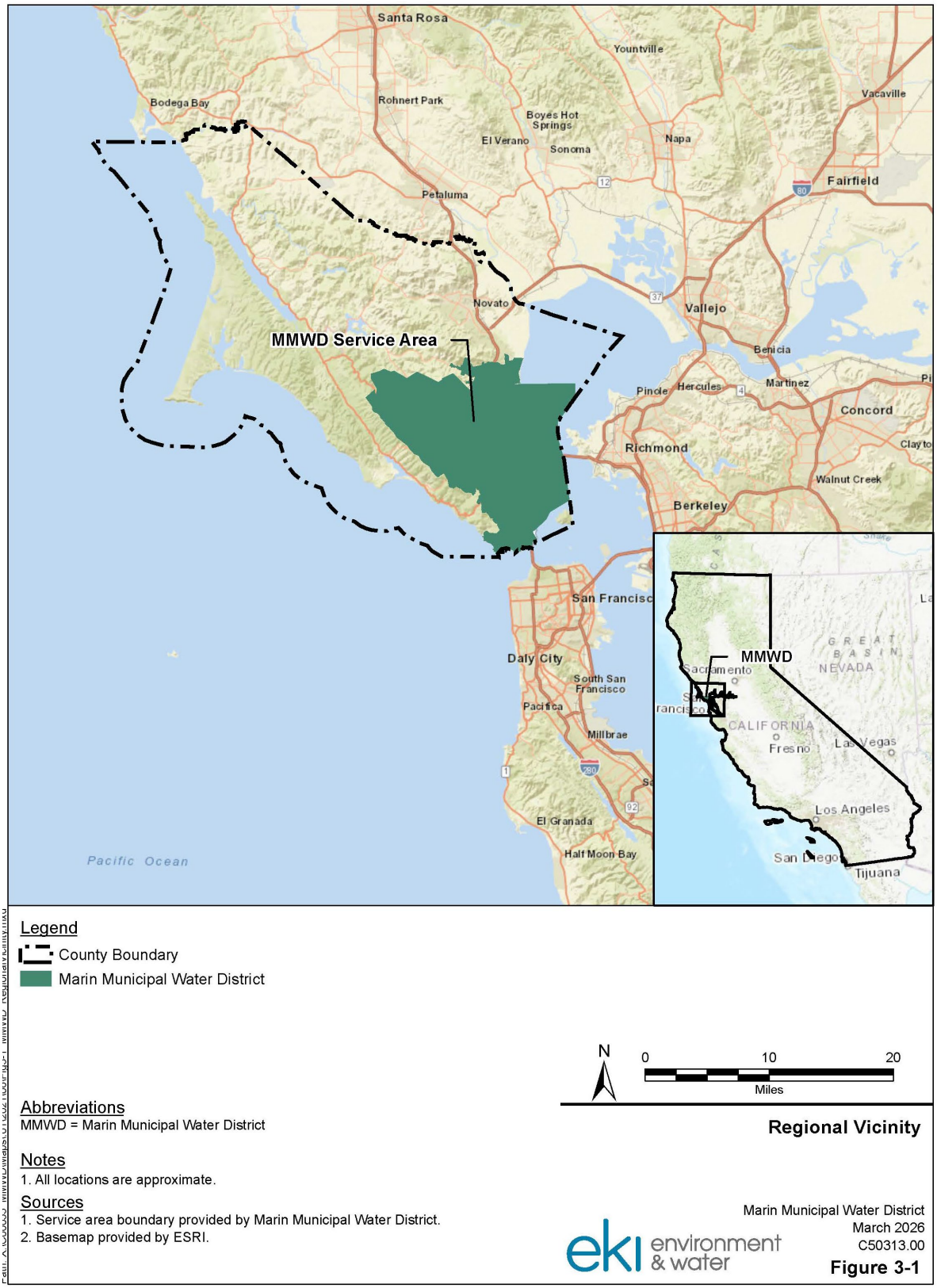
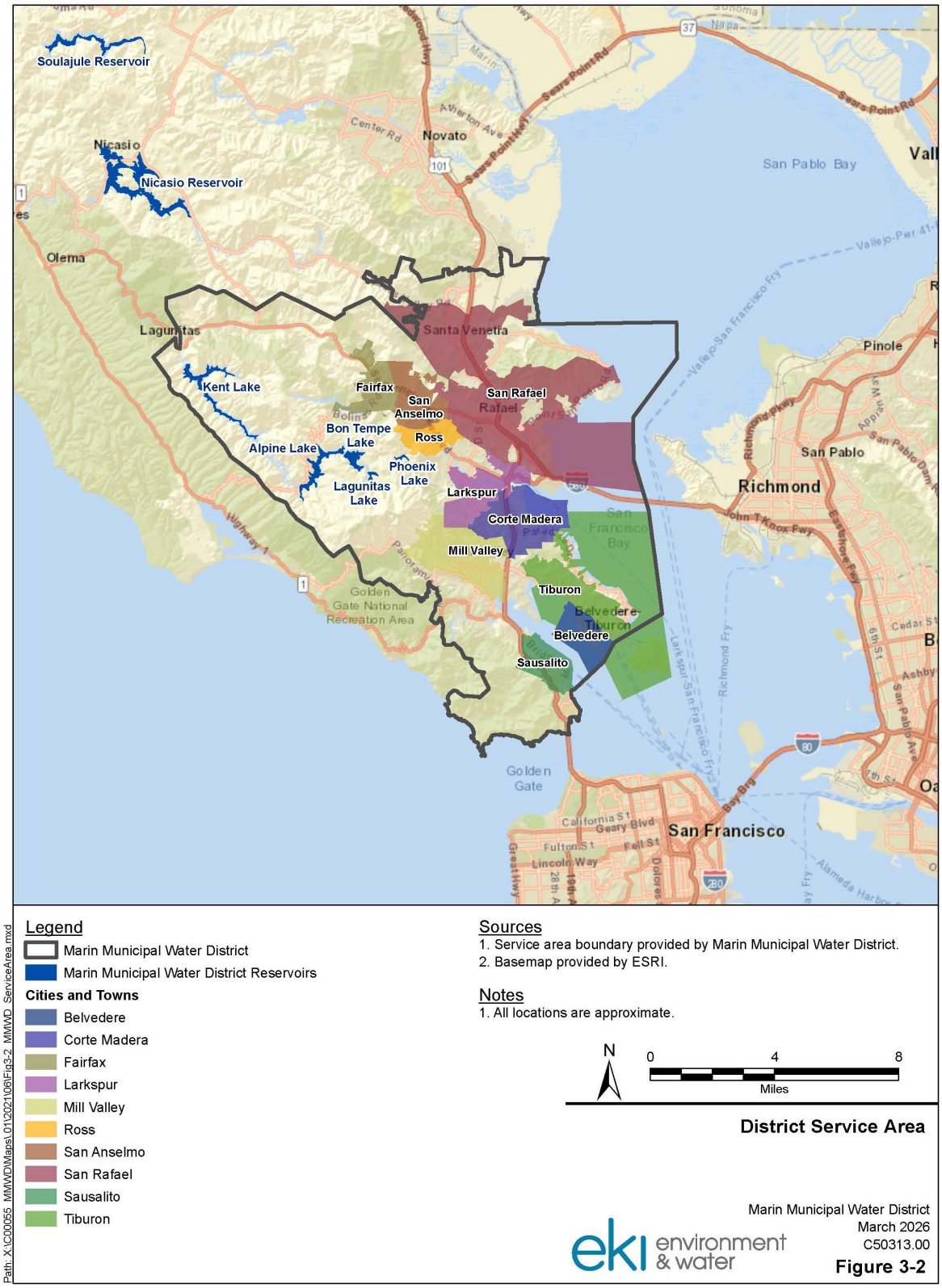


Figure 3-2 District Service Area



3.2 Service Area Climate

☑ ***CWC §10631***

(a) Describe the service area of the supplier, … "climate…"

☑ ***CWC §10635***

(b)(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

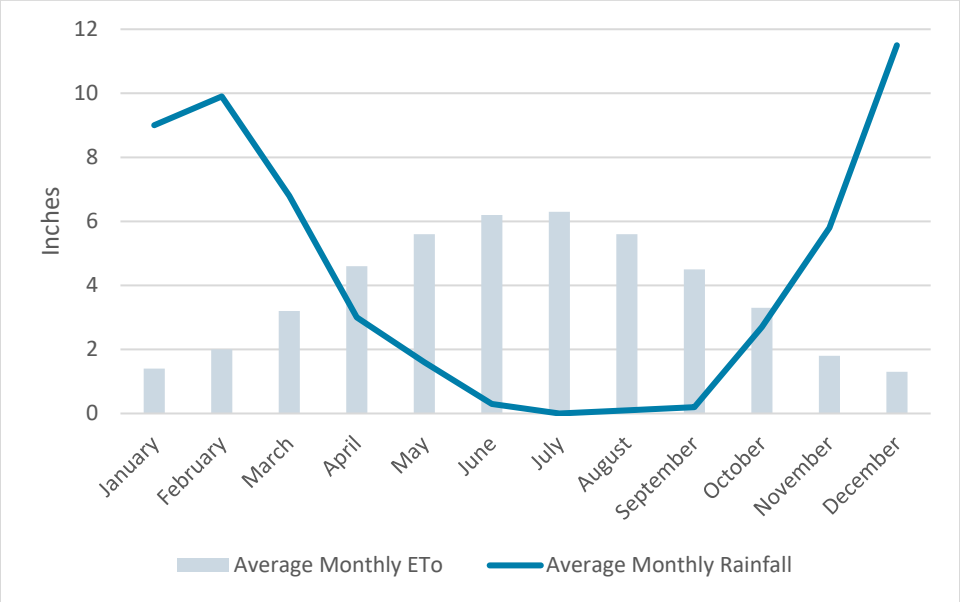
The District's climate has a Mediterranean coastal climate. Summers are mild and dry, and winters are cool and wet. Based on data downloaded from the California Irrigation Management System (CIMIS) for 2002 through 2026, most rainfall occurs between November and March (see **Table 3-1** and **Figure 3-3**). On average, the District receives 50.9 inches of rainfall annually. Maximum daily air temperature averages 67.5 degrees Fahrenheit (°F) while minimum daily air temperature averages 45.4°F.

Table 3-1 Climate Characteristics

Month	Average Temperature		Average Rainfall (inches)	ETo (inches)
	Min (°F)	Max (°F)		
January	39.6	57.4	9.0	1.4
February	39.8	60.7	9.9	2.0
March	41.5	63.4	6.8	3.2
April	43.5	66.6	3.0	4.6
May	46.8	70.1	1.6	5.6
June	50.4	73.9	0.3	6.2
July	52.3	73.7	0.0	6.3
August	52.6	74.7	0.1	5.6
September	50.4	76.2	0.2	4.5
October	46.2	72.7	2.7	3.3
November	41.8	63.9	5.8	1.8
December	39.6	56.6	11.5	1.3
Annual	**45.4**	**67.5**	**50.9**	**45.8**

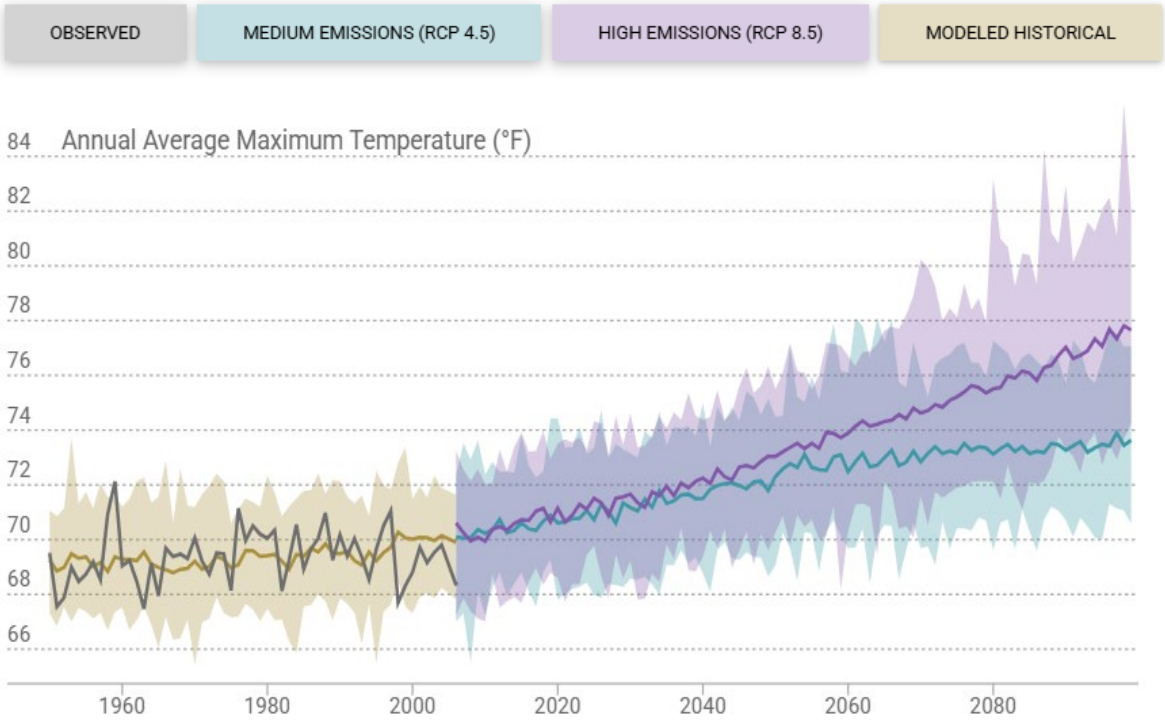
NOTES:
(a) Average temperature and ETo data taken from the CIMIS Point San Pedro station (157) and has a period of record from 2002-2026. Average rainfall data is from MMWD's Lake Lagunitas weather station averages from 1997-2026.

Figure 3-3 Average Monthly Climatic Conditions



According to the Cal-Adapt tool, future projections for the District's service area using Localized Constructed Analogs (LOCA) downscaled Coupled Model Intercomparison Project (CMIP5) model indicate an average increase in temperature of 3.0°F for medium emissions (RCP 4.5) models and 3.7°F for high emissions (RCP 8.5) models by mid-century (2035-2064) **(Figure 3-4)**. In addition to increasing average temperatures, climate change is expected to bring more extreme swings between wet and dry years, and impact environmental conditions and fire behavior.

Figure 3-4 Observed and Forecasted Temperature for District's Service Area



Chapter 4 discusses potential climate change impacts on water demands, and Chapter 6 discusses potential climate change impacts on supplies. Pursuant to the CWC requirements and the 2025 UWMP Guidebook, this UWMP incorporates climate change considerations into following relevant sections:

- Chapter 3 Service Area Description;
- Chapter 4 Water Use Characterization;
- Chapter 6 Normal Year Water Supply Characterization; and
- Chapter 7 Water Supply Reliability Assessment.

In addition, this UWMP incorporates the following documents by reference that include information on climate change hazards and mitigation actions within the District service area:

- 2023 Marin County Operational Area Multi-Jurisdictional Hazard Mitigation Plan
- 2024 Sonoma County Water Agency Local Hazard Mitigation Plan
- 2022 Marin Municipal Water District Hazard Mitigation Plan

3.3 Service Area Population and Demographics

☑ ***CWC §10631***

(a) Describe the service area of the supplier, including current and projected population … other social, economic and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

Residential growth in Marin County boomed during the period following World War II up to the early years of the 1970s. Growth during the last two decades has averaged less than 1% per year, and the County Planning Department indicates that only 4% of lands within the County remain available for new development (MMWD, 2016). The population within the District remained level during the 1970s and 1980s. During that same period, the number of water service connections increased by 21%, from 46,000 to 58,000, with the majority being residential services, and the number of people per household declined from 3.1 to 2.5 (MMWD, 2016).

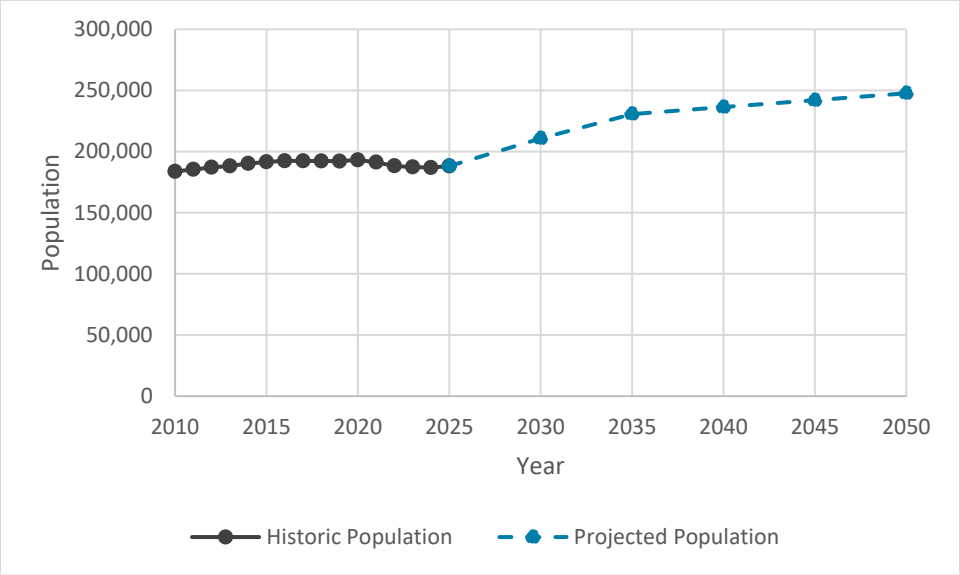
3.3.1 Future Population Growth

Table 3-2 and **Figure 3-5** show the current and projected population for the District's service area through the year 2050. Historic and 2025 population was provided by MMWD staff and are based on adjusted DOF estimates for MMWD's service area (EKI, 2025). Population projections were developed separately based on population projections by the Association of Bay Area Governments (ABAG) Plan Bay Area Projections 2050 (ABAG, 2021), as described further in the 2025 Water Demand Analysis and Water Conservation Measure Update (EKI, 2025; **Appendix B**).

Table 3-2 Population – Current and Projected (DWR Table 3-1)

Population Served	2025	2030	2035	2040	2045	2050
	188,116	210,778	230,680	236,345	242,009	247,674
NOTES: 2025 Water Demand Analysis and Water Conservation Update, Marin Municipal Water District, Table 5-2 Population and Employment Growth Projections (EKI, 2025)						

Figure 3-5 Population – Historic and Projected



3.3.2 Future Employment Growth

Current and projected service area employment estimates from 2025 through 2050 were developed based on employment projections by the Association of Bay Area Governments (ABAG) Plan Bay Area Projections 2050 (ABAG, 2021), as described further in the *2025 Water Demand Analysis and Water Conservation Measure Update* (EKI, 2025; **Appendix B**). As shown in **Table 3-3**, service area employment is projected to decline from 78,680 in 2025 to 68,340 by 2035, followed by a modest recovery through 2050, reaching approximately 70,104 jobs. Overall, employment is expected to remain below 2025 levels, indicating a slight long-term decrease with gradual stabilization in later years.

Table 3-3 Employment – Current and Projected

Service Area Employment	2025	2030	2035	2040	2045	2050
	78,680	73,520	68,340	68,941	69,523	70,104

3.3.3 Other Social, Economic, and Demographic Factors

The District service area includes the majority of the population within Marin County, excluding the City of Novato and selected unincorporated areas. Demographics for Marin County are summarized in **Table 3-4.** The same data are also provided for the state of California as a whole and were obtained from the

U.S. Census American Community Survey (ACS) 2024 5-Year Estimates.[3]. Relative to the rest of California, Marin County's population is slightly older and somewhat less racially diverse. Educational attainment and median household income in Marin County are higher than for the state as a whole, while persons below the poverty level is comparatively lower.

Table 3-4 Demographic and Housing Characteristics, 2020-2024

Demographics	Marin County	California
Age and Sex		
Persons under 5 years	4.4%	5.3%
Persons under 18 years	18.7%	21.3%
Persons 65 years and older	25.0%	16.5%
Female persons	50.9%	50.1%
Race and Hispanic Origin		
White alone	83.9%	69.8%
Black or African American alone	2.9%	6.4%
American Indian and Alaska Native alone	1.3%	1.8%
Asian alone	7.2%	17.0%
Native Hawaiian and Other Pacific Islander alone	0.3%	0.5%
Two or More Races	4.4%	4.4%
Hispanic or Latino	20.4%	40.8%
White alone, not Hispanic or Latino	66.3%	33.6%
Families & Living Arrangements		
Persons per household	2.44	2.84
Living in same house 1 year ago, percent of persons age 1 year+	89.7%	89.2%
Language other than English spoken at home, age 5 years+	23.9%	44.1%
Education		
High school graduate or higher, persons age 25 years+	92.8%	84.7%
Bachelor's degree or higher, persons age 25 years+	61.1%	37.1%
Income & Poverty		
Median Household Income (2024 dollars)	$149,901	$96,334
Per capita income in past 12 months (2024 dollars)	$93,920	$47,977
Persons in poverty	9.9%	11.8%

[3] U.S. Census Bureau, 2024. *2020-2024 ACS 5-year Estimates*. United States Census Bureau, dated 2024. Retrieved from: https://data.census.gov/cedsci/

3.4 Land Uses within Service Area

☑ ***CWC §10631***

(a) ...The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities…

General Plans are required by State law to guide land use and development within cities (California Government Code [CGC] §65030.1). Land use within the District is primarily residential, but also includes agricultural, industrial, commercial, and recreational land uses. Current land use maps within the District, per the Land Use Element of the Marin Countywide Plan can be found in Section 3.12 of the Countywide Plan (Marin County, 2023). Future land uses are expected to remain generally consistent with current land uses.

3.5 Water Distribution System

The District's service area boundaries, location of water treatment plants, and potable water distribution system are illustrated in **Figure 3-6**. The District's potable and raw water distribution system includes approximately 908 miles of pipes, 97 pump stations, and 130 treated water storage tanks[4] with a total storage capacity of 74.9[5] million gallons (MG). The District treats water at its three treatment plants, the Bon Tempe Treatment Plant (BTTP) near Ross, the San Geronimo Treatment Plant (SGTP) in Woodacre, and the Ignacio treatment facility in Novato. Together, these facilities have a combined design capacity of 71 million gallons per day (mgd). Observed high flows have reached 45 mgd in July 2006; however, the average daily maximum flow is approximately 22.4 mgd over the last 10 years. In 2025, the total production of the three plants averaged 18.9 mgd.

The District's potable water system includes pipelines ranging in size from 3/4-inch pipes connecting customers' water meters to the District's mains, to the 42-inch transmission mains that carry source water to the treatment plants. In addition to the District's potable water system, the District also owns and operates a recycled water system, which is described in detail in Chapter 6.5.

[4] This total does not include 3 clearwells and 7 hydropneumatic tanks.
[5] Excludes 7 MG from clearwells and 12,000 gallons from hydropneumatic tanks.

Figure 3-6 District Water System

Sources
1.Marin Municipal Water District 2015 Urban Water Management Plan, prepared by RMC, dated June 2016.

Notes
1. All locations are approximate.
2. Not to scale.

Abbreviations
MMWD = Marin Municipal Water District
WTP = Water Treatment Plant

District Water System

Marin Municipal Water District
March 2026
C50313.00
Figure 3-3

eki environment & water

Path: X:\C00055\Maps_01\2026\Fig3-3_MMWD_DistributionSystem.mxd

4 WATER USE CHARACTERIZATION

☑ ***CWC §10635***

(a) Every urban water Supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

☑ ***CWC §10631***

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following…

(d)(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(d)(4)(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(d)(4)(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections. (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

This chapter describes and quantifies the District's historical, current, and projected water uses through 2050. For the purposes of this UWMP, the terms "water use" and "water demand" are used interchangeably. All water served by the District is potable.

4.1 Non-Potable Versus Potable Water Use

Potable and non-potable water uses are accounted for separately herein. Potable uses are served by the District's potable water delivery system. Potable water deliveries comply with Title 22 Drinking Water Standards. Non-potable water uses include recycled and untreated raw water deliveries, such as tertiary treated recycled water or surface or groundwater supplies that do not meet potable drinking water standards. Uses of potable versus non-potable water are clearly distinguished in the tables included in this chapter.

4.2 Water Use Sectors

☑ ***CWC §10631***

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

Demand within the District's water service area is measured using water meters installed at each customer account. Records of current and historical water use at each account are maintained by the District. Demand within the District's service area is tracked and reported for the following sectors:

- **Single Family Residential**: Attached or detached dwelling units that are individually metered.
- **Multi-Family Residential**: Two or more dwelling units served by a common water meter. Water use is predominately for indoor water uses.
- **Commercial**: Includes commercial customers. Irrigation water use at these sites is usually separately metered and listed in the irrigation sector.
- **Institutional/Governmental:** Includes institutional and governmental customers such as schools, government facilities, hospitals, churches or other public/non-profit customers.
- **Landscape**: Water meters used for landscape irrigation.
- Wetlands or wildlife habitats: Includes environmental releases from Kent Lake and Soulajule Lake.
- **Other**: Includes temporary meters and miscellaneous customers not listed elsewhere.

The District's total water demand includes water consumed by metered accounts in the service area (metered water use), authorized but unbilled uses, and water losses within the system. The latter accounts for physical losses within the distribution system caused by seepage, leaks, and spills, while the former accounts for accounting losses due to meter inaccuracies, data handling errors, and unauthorized consumption.

4.3 Past and Current Water Demand

☑ *CWC §10631*

(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use… based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors…

Past water uses inform an understanding of water use trends which are crucial for developing water use projections. **Table 4-1** shows the 2025 actual water use by sector, while **Figure 4-1** shows historical and current water use from 2010 through 2025, and **Figure 4-2** shows total gallons per capita per day (GPCD) from 2010 through 2025**.** As shown in **Figure 4-1** and **Figure 4-2**, total and per capita demand have fluctuated since 2010, primarily influenced by drought conditions, mandatory state-wide restrictions in urban water use imposed by the State Water Resources Control Board (SWRCB), and local drought response. **Figure 4-2** shows that per capita demand has generally not rebounded after drought periods. This trend reflects the impact of water efficiency improvements, as well as demand hardening.

Table 4-1 2025 Actual Total Uses for Potable and Non-Potable Water (DWR Table 4-1)

Use Type	Additional Description	2025 Actual Water Use	
		Level of Treatment When Delivered	Volume (AF)
Single Family		Potable	11,441
Multi-Family		Potable	2,928
Commercial	Business/Industrial	Potable	2,246
Institutional/Governmental		Potable	1,335
Landscape		Potable	1,153
Other (optional)	Fireline/Hydrant	Potable	23
Distribution System Water Loss	Potable system (b)	Potable	1,979
Other (optional)	Other non-revenue water (c)	Potable	127
Other (optional)	Water sold to the Meadow Club	Non-Potable	151
Landscape	Recycled water system	Non-Potable	633
Wetlands or wildlife habitat	Environmental releases from Kent and Soulajule Lakes	Non-Potable	9,241
		Subtotal Potable	**21,232**
		Subtotal Non-Potable	**10,025**
		Total	**31,257**

NOTES**:**
(a) Volumes are in units of AF.
(b) Potable system "losses" are estimated using the AWWA Free Water Audit Software.
and includes both real and apparent losses and are based on the average of CY 2021-2024.
(c) "Other non-revenue water" includes authorized but unbilled, unmetered consumption that does not fall under the category of "losses", such as fire flow, system flushing, hydrant leaks, etc. Other non-revenue water is calculated as the difference between "water losses" and "non-revenue water" as reported in the AWWA Water Loss Worksheets and is the average of CY 2021-2024.

Figure 4-1 Total Uses for Potable and Non-Potable Water - 2010 – 2025 Actual

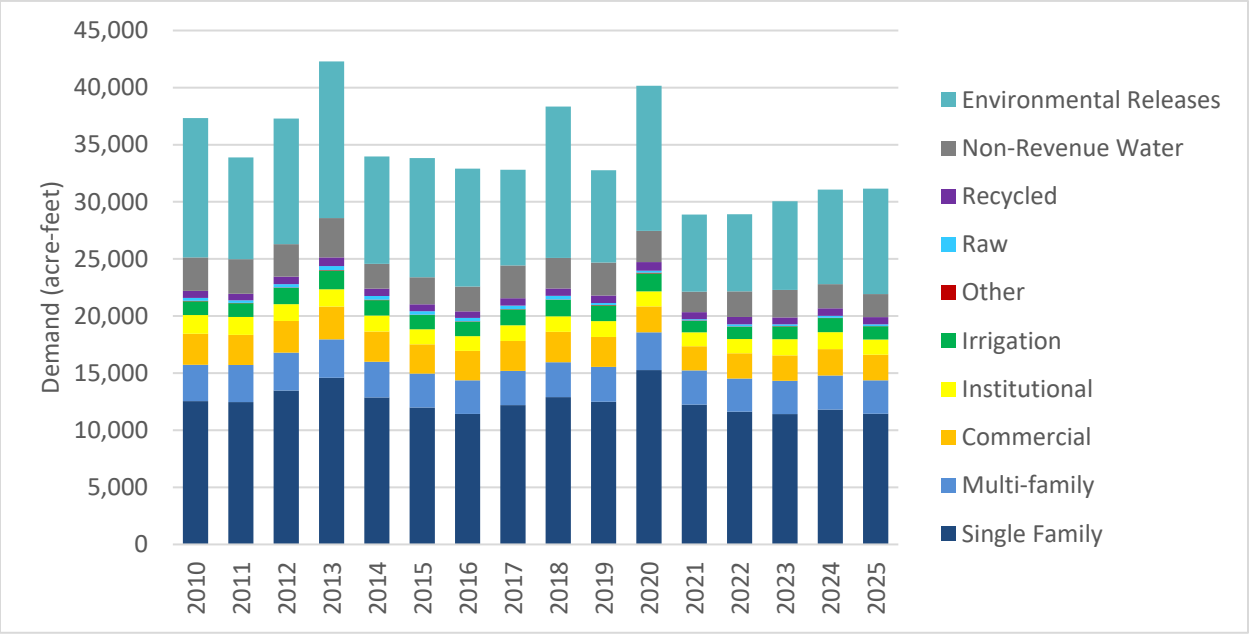
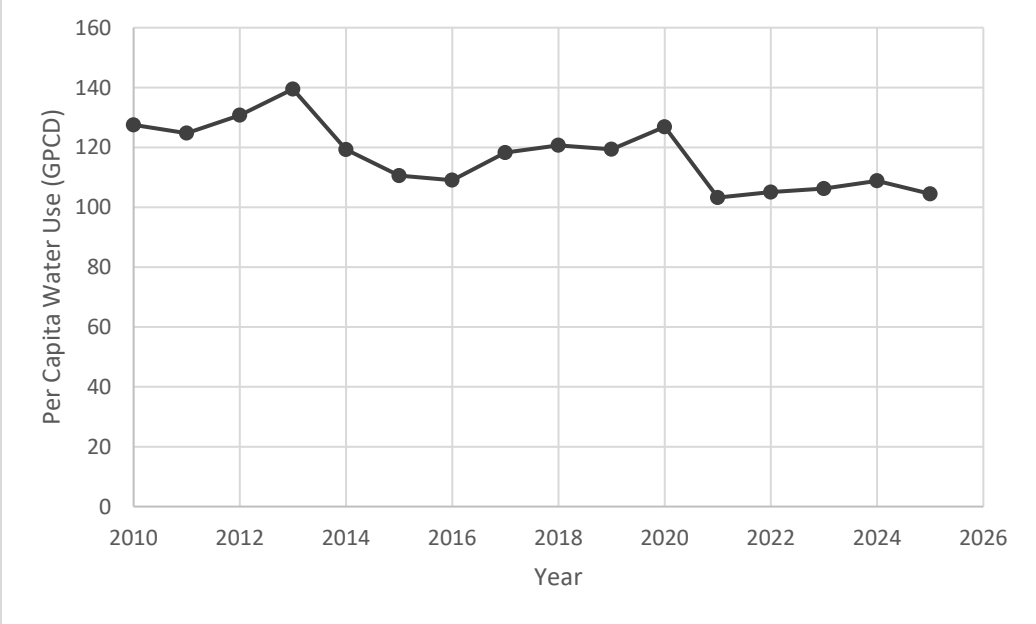


Figure 4-2 Per Capita Water Use



Note: Per capita water use is based on total demand, including potable, raw and recycled water use, but excluding environmental releases.

4.4 Distribution System Water Loss

☑ ***CWC §10631(3)***

(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Water loss is the sum of apparent and real losses. Apparent loss is associated with metering inaccuracies, billing and administrative errors, authorized unmetered uses (e.g., system flushing and firefighting), and unauthorized uses. Real loss is associated with physical loss of water through line breaks, leaks and seeps, and overflows of storage tanks. Since 2016, urban retail water suppliers have been required under CWC §10608.34 and California Code of Regulations (CCR) §638.1 et seq to quantify distribution system water losses using the American Water Works Association (AWWA) Free Water Audit Software (referred to as "water loss audit reports"). Table 4-2 summarizes the water loss audit reports submitted to DWR for the PWS in the District since 2021. The water loss audit reports are available through DWR's Water Use Efficiency Data.[6]

Table 4-2 Water Loss Audit Reporting Water Code Section 10631(d)(3)(A) (DWR Table 4-5)

PWS ID # (reported in DWR Table 2-1)	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
CA2110002	2020	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes

NOTES:

1. 2020:https://wuedata.water.ca.gov/public/awwa_uploads/5626172721/Marin%20Municipal%20Water%20District%20%2D%20Validated%20Audit%20CY2020%2Exls
2. 2021:https://wuedata.water.ca.gov/public/awwa_uploads/9493360221/Marin%20Municipal%20Water%20District%20%2D%20Validated%20Audit%20CY2021%2Exls
3. 2022:https://wuedata.water.ca.gov/public/awwa_uploads/5535947501/Marin%20Municipal%20Water%20District%20%2D%20Validated%20Audit%20CY2022%20v6%2Exlsx
4. 2023:https://wuedata.water.ca.gov/public/awwa_uploads/1543653190/Marin%20Municipal%20Water%20District%20%2D%20Validated%20CY2023%20v6%2Exlsx
5. 2024:https://wuedata.water.ca.gov/public/awwa_uploads/5429792106/Marin%20Municipal%20Water%20District%20%2D%20Validated%20CY2024%20v6%2Exlsx

[6] DWR's Water Use Efficiency Data Portal: https://wuedata.water.ca.gov/awwa_plans

In 2022, the SWRCB adopted water loss performance standards for urban retail water suppliers, aiming for a significant long-term reduction in real losses. Effective starting in 2023, the SWRCB established individual volumetric standards for each urban retail water supplier, calculated to reflect the life-cycle cost-effective level of water loss based on specific system characteristics. While annual reporting is ongoing, suppliers will be required to start meeting individual volumetric loss standards over a three-year period, with full compliance required by January 1, 2028. These standards constitute the water loss component of the MCCWL regulatory framework (SWRCB, 2022).

CWC §10631 (3)(c) requires that this UWMP demonstrate whether the District has met the distribution loss standards enacted by the SWRCB pursuant to CWC §10608.34. Table 4-3 demonstrates the District's progress towards meeting the 2028 water loss standard. Based on the most recent AWWA Water Loss Audit, both real water loss and apparent water loss are below the State Water Resources Control Board's 2028 standards of 26.2 GPCD and 11.6 GPCD, respectively; therefore, the District currently meets the 2028 water loss standards.

Table 4-3 Progress Towards 2028 Water Loss Standard (DWR Table 4-6)

PWS ID # (reported in DWR Table 2-1)	Did the SWRCB Calculate a Water Loss Standard for this PWS? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit)	Apparent Water Loss Per Unit per Day
CA2110002	Yes	26.2	Gallons per Service Connection per Day (GPSCD)	63,863	1124.435	15.7	11.6	Gallons per Service Connection per Day (GPSCD)	63,863	714.246	10.0

NOTES: Latest AWWA Water Loss Audit is for CY 2024.

4.5 Projected Water Demand

The District's water demand projections were prepared as part of the 2025 Water Demand Analysis and Water Conservation Measures Update (Water Demand Report; EKI, 2025), which is provided in **Appendix B** and documents in detail the methods and assumptions used to project future water demand.

Projected total water demand is summarized in the following subsections.

4.5.1 Basis of Demand Projections

As described in more detail below and in the Water Demand Report (**Appendix B**), projected potable water demands for the District were estimated by:

1. Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,
2. Evaluating and selecting water demand factors for each water use sector based on a review of recent average per-account water use
3. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and
4. Calculating estimated future water demand that incorporates the anticipated account.

This methodology is consistent with CWC §10631(d)(4)(A), which requires that "water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the District and reflect a land-use based approach consistent with community planning within the District.

Minimal growth is expected in the recycled and raw water sectors.

4.5.2 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

☑ ***CWC §10631(d)(4)***

(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

"Passive conservation" refers to water savings resulting from actions and activities that do not depend on direct financial assistance (e.g., rebate) programs from the District. These savings result primarily from (1) the natural replacement of existing plumbing fixtures with water-efficient models required under current plumbing code standards, and (2) the installation of water-efficient fixtures and equipment in new buildings and retrofits as required under California Green Building Standards Code (CALGreen) Building Code Standards. The water use projections discussed in **Section 4.5.3** include water savings associated

with these codes and standards. Specifically, as shown in **Table 4-4** and its associated chart, passive water savings for the District were calculated using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (referred to as the AWE model which was released in 2021). The AWE model is an industry standard tool that incorporates historical population, residential building stock, number of accounts, and projected population and account growth to estimate future passive savings. More information regarding the passive savings estimated using the AWE model can be found in **Appendix B**.

While projections account for passive savings, the District has taken a more conservative approach to demand projections by not accounting for savings associated with future active conservation measures[7]. However, savings associated with all historic conservation efforts are embedded into the demand projections. This approach is conservative, as it projects the higher projected demands used for future supply planning. Active conservation thus increases resiliency for District customers by further increasing efficient utilization of available supplies.

Table 4-4 Projected Potable Water Demand and Projected Passive Conservation

	Projected Total Water Demand				
	2030	2035	2040	2045	2050
Baseline Potable Water Demand	25,991	27,647	28,236	28,825	29,414
Passive Water Conservation	-1,117	-1,917	-2,238	-2,505	-2,740
Total Potable Water Demand	**24,874**	**25,730**	**25,998**	**26,321**	**26,674**

NOTES:
(a) Volumes are in units of AF.
(b) Totals may not sum due to rounding.

4.5.3 Projected Total Water Demand

Projected customer water demands for years 2030 through 2050 are presented in **Table 4-5**. These demands are broken down by sector, including water loss. As affirmed in **Table 4-6**, both future water savings (Section 0) and lower income residential demands (Section 4.5.4) are included in the projections of future water use.

[7] Active conservation includes direct actions to reduce water use through rebates, audits, restrictions, and education programs.

Table 4-5 Total Uses of Potable and Non-Potable Water - Projected (DWR Table 4-2)

Use Type	Additional Description	Projected Water Use (a)					
		Level of Treatment When Delivered	2030	2035	2040	2045	2050
Single Family		Potable	13,906	14,501	14,638	14,810	15,001
Multi-Family		Potable	3,238	3,462	3,500	3,549	3,606
Commercial	Business/ Industrial	Potable	2,171	1,949	1,936	1,927	1,920
Institutional/ Governmental		Potable	1,391	1,249	1,241	1,234	1,230
Other (optional)		Potable	29	27	27	27	28
Landscape		Potable	1,651	1,889	1,951	2,014	2,076
Distribution System Water Loss	Non-revenue water	Potable	2,488	2,651	2,705	2,760	2,814
Other (optional)	Raw water	Non-Potable	191	191	191	191	191
Landscape	Recycled water system	Non-Potable	656	656	656	656	656
Wetlands or wildlife habitat	Environmental releases from Kent and Soulajule Lakes (c)	Non-Potable	10,300	10,300	10,300	10,300	10,300
Subtotal Potable			**24,874**	**25,728**	**25,998**	**26,321**	**26,675**
Subtotal Non-Potable			**11,147**	**11,147**	**11,147**	**11,147**	**11,147**
Total			**36,021**	**36,875**	**37,145**	**37,468**	**37,822**

NOTES:
(a) Volumes are in units of AF.
(b) Potable, raw and recycled demand forecasts are from the 2025 Water Demand Analysis and Water Conservation Update, Marin Municipal Water District, Table 5-2 Population and Employment Growth Projections (EKI, 2025).
(c) Environmental releases from Kent Lake and Soulajule Lake, and is estimated as the average releases from 2010-2025.

Table 4-6 Inclusion in Water Use Projections (DWR Table 4-3)

Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Refer to Section 4.5.2 and Table 5-4 of **Appendix B**.
Are Lower Income Residential Demands Included In Projections?	**Yes**
If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found.	Refer to Section 4.5.4

4.5.4 Water Use by Lower Income Households

☑ ***CWC §10631.1***

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirements under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

As affirmed in **Table 4-6**, lower income residential demands are included in the projections of future water use. A "lower income household" is defined under California Health and Safety Code §50079.5(a) to be a household with less than 80% of median income, adjusted for family size. The Association of Bay Area Governments' (ABAG's) Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031 (ABAG, 2025) was used to estimate the proportion of new lower income households anticipated within the District. New lower income households for all cities within the District's service area, as well as the unincorporated area within Marin County, were estimated to comprise approximately 46% of all new households needed in the District's service area, as shown in **Table 4-7.**

Table 4-7 Projected Water Use for Lower Income Households

Lower-Income Water Demand Sector	Projected Water Use (AFY)				
	2030	2035	2040	2045	2050
Single Family Residential	6,664	7,122	7,263	7,404	7,545
Multi-Family Residential	1,673	1,911	1,974	2,037	2,100
Total	**8,337**	**9,033**	**9,237**	**9,441**	**9,645**
NOTES: (a) Volumes are in units of AF					

4.5.5 Characteristic Five-Year Water Use

☑ ***CWC §10635***

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following…

(3) A comparison of the total water supply sources available to the water supplier with ***the total projected water use for the drought period.*** (Emphasis added).

In accordance with CWC §10635(b)(3), UWMPs must provide a five-year Drought Risk Assessment (see **Section 7.5**). As a first step, DWR suggests that water suppliers estimate their unconstrained water demand for the next five years (2026-2030). Unconstrained water demand is water use in the absence of drought water use restrictions. These numbers can then be adjusted to estimate the five-years' cumulative drought effects. The Drought Risk Assessment presented in **Section 7.5** accounts for this increase in unconstrained water demand. **Table 4-8** shows unconstrained demands for 2026-2030 for normal weather and multiple-dry-year scenarios.

Table 4-8 Characteristic Five-Year Water Use (AF)

2026	2027	2028	2029	2030
32,210	33,162	34,115	35,068	36,021
NOTES: The table shows unconstrained demand (i.e., demand in the absence of drought water use restrictions).				

4.6 Water Use Sectors Not Included in Demand Projections

Historical and projected water demands for the water use sectors described in CWC §10631(d)(1)(G) through (I) and listed below were not included in the District's water demand calculations because they are not applicable to the District:

- Sales to other agencies;
- Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and
- Agricultural.

4.7 Coordinating Water Use Projections

☑ ***CWC § 10631(h)***

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

The District purchases water from Sonoma Water. As part of the coordination effort for the UWMP, and in compliance with CWC §10631(h), the District supplied Sonoma Water with its water demand projections through 2050, as described in Chapter 2.

4.8 Urban Water Use Objective

☑ ***CWC § 10609.20***

(a) Each urban retail water supplier shall calculate its urban water use objective no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier's water use conditions for the previous calendar or fiscal year.

☑ ***CWC § 10609.22***

(a) An urban retail water supplier shall calculate its actual urban water use no later than January 1, 2024, and by January 1 every year thereafter.

(b) The calculation shall be based on the urban retail water supplier's water use for the previous calendar or fiscal year.

☑ ***CWC § 10609.24***

(a) An urban retail water supplier shall submit a report to the department no later than January 1, 2024, and by January 1 every year thereafter. The report shall include all of the following:

(1) The urban water use objective calculated pursuant to Section 10609.20 along with relevant supporting data.

(2) The actual urban water use calculated pursuant to Section 10609.22 along with relevant supporting data.

(3) Documentation of the implementation of the performance measures for CII water use.

(4) A description of the progress made towards meeting the urban water use objective.

(5) The validated water loss audit report conducted pursuant to Section 10608.34.

(b) The department shall post the reports and information on its internet website.

(c) The board may issue an information order or conservation order to, or impose civil liability on, an entity or individual for failure to submit a report required by this section.

In July 2024, California enacted the MCCWL regulation (implementing SB 606 and AB 1668) to support long-term water conservation and drought resilience. These regulations establish annual UWUOs for water suppliers and introduce Performance Measures for CII water users.

The UWUO is a water budget-based approach to water use efficiency unique to each urban water supplier and consists of the following components: (1) residential indoor water standard, (2) residential outdoor water budget, (3) CII landscape outdoor water use standard (for landscapes with dedicated irrigation meters, (4) water loss standard, (5) variance, and (6) bonus. Suppliers will need to assess whether they meet their UWUO collectively (i.e., they are not required to comply with the individual standards if they

meet the overall UWUO). Compliance with UWUOs is required beginning January 2027. Per the MCCWL regulation, over the next 25 years, the water efficiency standards for residential indoor and outdoor water use as well as CII outdoor water use will become increasingly stringent.

The state standards underlying the residential indoor, residential outdoor, and CII outdoor components of the UWUO will become increasingly stringent over time. As a result, compliance is expected to require continued reductions in water use beyond those achieved under the SB X7-7 framework.[8] Urban retail water suppliers are required to report annually to the State Water Resources Control Board on water use relative to their UWUOs. The District submits UWUO compliance data through the Department of Water Resources' Water Use Efficiency Data portal.[9] As part of the 2025 Water Demand Analysis and Water Conservation Measure Update prepared for the District, the District's UWUO compliance was forecasted using the following data sources and assumptions (EKI, 2025; **Appendix B**):

- Projected population, water use components subject to the objectives (e.g., residential water use and dedicated irrigation water use), and real water loss
- Decreasing Objective water use standards through 2040
- Residential landscape area based on values reported in the District's FY 2023-24 UWUO Annual Report and increasing proportional to population projections
- Existing (2025) CII landscape area on DIMs irrigated with potable water estimated from projected 2025 water use assuming a LEF of 0.80
- Future CII landscape area on DIMs increasing proportionally with the District's irrigation and recycled water accounts
- CII landscape area on DIMS irrigated with recycled water (i.e., Special Landscape Area) estimated from a water use of 55 AFY assuming a LEF of 1.0.

The results of the analysis, described further in Section 5.6 of **Appendix B**, indicate that the District is anticipated to comply with its UWUOs through 2035, but in 2040 is anticipated to be slightly above its objective as shown in **Table 4-9**.

Table 4-9 Current and Projected Urban Water Use Objectives Compliance

Year	Water Demand Subject to UWUO Compliance (b)	UWUO Projections (b)
2025 (c)	18,109	22,048
2030	21,090	26,397
2035	22,254	28,450
2040	22,526	27,420

NOTES:
(a) Volumes are in units of AF.
(b) Water demand subject to UWUO compliance includes single family, multi-family water, irrigation, and water loss sectors and is detailed in Appendix B.
(c) 2025 uses actual data as reported on the Water Use Efficiency Data Portal.

[8] Under the MCCWL regulation, the SB X7-7 target serves as a backstop on the UWUO. If a supplier's UWUO exceeds its SB X7-7 target, its UWUO becomes its SB X7-7 target.
[9] DWR's Water Use Efficiency Data Portal: https://wuedata.water.ca.gov/uwuo_plans

5 SB X7-7 REPORTING

☑ ***CWC §10608.24 (b)***

Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

☑ ***CWC §10608.28***

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

The Water Conservation Act of 2009, also known as Senate Bill (SB) X7-7, required that urban retail water suppliers[10] reduce their baseline per capita water use by 20% by 2020. Instead of, or in addition to, individual water use targets, urban water retail suppliers may plan, comply, and report on SB X7-7 requirements on a regional basis as part of a "Regional Alliance." As described in Chapter 2, the District is one of eight Water Contractors to the Sonoma County Water Agency (Sonoma Water) for purchase of Russian River water supply. As such, the Water Contractors formed a regional in 2011 Alliance under the provisions of SB X7-7 because they are recipients of water from a common wholesale water supplier.

The membership of the Alliance is consistent with that of a previously established water conservation regional partnership of Sonoma Water Contractors, known as the Sonoma Marin Saving Water Partnership (SMSWP). This regional group, which collaborates on regional water conservation efforts, formed a Regional Alliance for the purposes of meeting regional water use targets. The members of the North-Marin Sonoma Alliance include: the District, City of Sonoma, City of Santa Rosa, Town of Windsor, City of Rohnert Park, City of Cotati, City of Petaluma, North Marin Water District, and Valley of the Moon Water District[11].

As shown in **Table 5-1**, the Alliance was in full compliance with the SB X7-7 2020 target. Details regarding calculation of the target and target progress can be found in the District's 2020 UWMP.

[10] CWC §10608.12 defines an urban retail water supplier as "a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes."
[11] The letter approving the District's membership in the regional Alliance is available at the following link: http://www.savingwaterpartnership.org/wp-content/uploads/20x2020-regional-alliance-agreement.doc.pdf.

Table 5-1 SB X7-7 2020 Target Progress (DWR Table 5-1)

Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target?	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
No	Regional Alliance Target	129	113	**Yes**

6 NORMAL YEAR WATER SUPPLY CHARACTERIZATION

☑ ***CWC §10631(b)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

This section describes existing and future sources of water available to the District. It includes a description of each water source, source limitations, water quality, and future opportunities for additional supply development. The District's water supplies presently come from a combination of local surface water supplies, imported water from Sonoma County Water Agency, and recycled water. Each water supply is described further in the following sections.

6.1 Purchased Water

☑ ***CWC §10631(h)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

6.1.1 Sonoma County Water Agency Surface Water Supply

The District receives its supplemental water supply from Sonoma Water's transmission system, which provides treated water purchased from Sonoma Water's Russian River Project. The Russian River flows have historically been augmented by Pacific Gas and Electric's (PG&E's) Potter Valley Project (PVP), which diverts a portion of the Eel River flows to the East Fork of the Russian River. Water is diverted and extracted from the stretch of the Russian River located just upstream of Wohler Bridge via six radial wells known as "Ranney collectors." The diverted river water percolates through sand and gravel and only needs the addition of chlorine to meet drinking water quality standards. Although the water extracted via Ranney collectors does percolate through the ground, due to the connection to the surface water source, this diversion is considered and is permitted as a surface water supply under existing surface water rights to the Russian River and Dry Creek water, described further in Section 6.1.2. The Sonoma Water supply also includes a relatively small amount of groundwater from groundwater supply wells located in the central Santa Rosa Plain Subbasin (Sonoma Water, 2026). Water imported from Sonoma Water is naturally filtered in the deep sand and gravel below the riverbed and requires no further clarification. This water enters the District's system at the Ignacio Water Quality and Pumping Station, where water quality is monitored continually and adjusted as needed.

The District's present contract with Sonoma Water is based on two documents: the 1975 Off-Peak Water Supply Agreement (Off-Peak Agreement) and its amendments, and the 1991 Agreement for the Sale of Water between Sonoma Water and the District. In 1996, these two contracts were combined into a single new agreement, the Supplemental Water Supply Agreement (Agreement).

In its original form, the Off-Peak Agreement allowed the District to take delivery, in the months of October through April, of up to 4,300 acre-feet (AF) of water surplus to the needs of all other Sonoma Water customers. The contract was amended twice before its inclusion in the Supplemental Water Supply

Agreement of 1996. The first amendment changed the basis of delivery of this water from "surplus" to "firm," meaning that the District's water deliveries would be as reliable as that provided to Sonoma Water's other contractors. The second amendment allowed deliveries up to 360 AF per month from May to September.

The 1991 Agreement for Water Supply allowed the District to take deliveries of up to 10,000 AF of water per year beyond the amount included in the Off-Peak Agreement. These water deliveries were classified as "as available." This meant that the contracted water supply was secondary to water provided to Sonoma Water's other contractors and to water provided under the Off-Peak Agreement but would be provided unless certain predefined conditions existed.

The Supplemental Water Supply Agreement combined the two prior agreements such that the District can now take deliveries of up to 14,300 acre-feet per year (AFY) from Sonoma Water. All of these deliveries are also now classified as "firm" water and placed seasonal limitations on water deliveries.

The District renewed the agreement with Sonoma Water in August 2025. This Amended and Restated Water Supply Agreement pulls forward many of the same provisions from previous agreements, while also adding new or revised provisions. The Amended and Restated Agreement continues to include from previous agreements: the 14,300 AFY that the District may take delivery of, the 5,300 AFY annual minimum take-or-pay amount, and the transmission system capacity requirements and water shortage allocation approaches. Examples of revisions include: addition of a roll over provision for the minimum take-or-pay amount, elimination of the ramp-up/ramp-down provision simplified delivery caps, and participation in future planning discussions. A copy of the Amended and Restated Agreement is included in **Appendix E.**

In addition to contractual delivery limits, Russian River water deliveries to the District are subject to available pipeline capacity in facilities owned by Sonoma Water and North Marin Water District (NMWD). The Interconnection Agreement from 2014 describes the District's rights to use the excess capacity in NMWD's facilities. The Interconnection Agreement runs contiguous with the Sonoma Water Restructured Agreement for Water Supply, which will expire on 30 June 2040 and has renewal options.

6.1.2 Sonoma County Water Agency Surface Water Rights

As described in Sonoma Water's 2025 UWMP, currently, four water rights permits (Permits 12947A, 12949, 12950, and 16596) issued by the SWRCB authorize Sonoma Water to store up to 122,500 AFY of water in Lake Mendocino and up to 245,000 AFY of water in Lake Sonoma, and to divert or redivert up to 180 cubic feet per second (cfs) of water from the Russian River with a limit of 75,000 AFY (Sonoma Water, 2026).

The permits also establish minimum instream flow requirements for fish and wildlife protection and recreation. These requirements vary based on hydrologic classifications (normal, dry, and critical) defined in Sonoma Water's permits and SWRCB Decision 1610 (1986), as modified by Temporary Urgency Change Petitions (TUCPs) filed by Sonoma Water. Since 2010, summer-period instream flows have been adjusted through the TUCP process to comply with the 2008 Russian River Biological Opinion and its successor, the 2025 Biological Opinion (described in Chapter 7).

While Sonoma Water generally follows the minimum instream flow schedule established in Decision 1610 for most of the year, the hydrologic index used in that decision—based on cumulative inflow to Lake Pillsbury in the Eel River watershed—reflects historical operations of the Potter Valley Project, when substantial inter-basin transfers from the Eel River to the Russian River occurred. Because those transfers have declined and no longer reliably represent current Russian River water supply conditions, the Decision 1610 hydrologic index is not well aligned with present-day system operations. Therefore, Sonoma Water has been filing TUCPs biannually to request that Lake Mendocino storage thresholds—which are more

representative of water supply conditions in the Russian River System— be used as the hydrologic index for determining instream flow requirements. As discussed in the 2025 UWMP, Sonoma Water assumes it will continue to operate under these Lake Mendocino storage thresholds. Minimum instream flow requirements for the Russian River and Dry Creek are met through releases from Coyote Valley Dam and Warm Springs Dam (Sonoma Water, 2026).

6.1.3 Sonoma County Water Agency Groundwater Supply

Sonoma Water pumps a portion of its supply from the Santa Rosa Plain Subbasin of the Santa Rosa Valley Basin (DWR Basin 1-55.01). Groundwater is used primarily as a drought period supply, or when Russian River supplies are otherwise constrained. In 2025, no groundwater was used to meet retail demands. In the future, groundwater is planned to continue to be used as a drought supply or when Russian River supplies are otherwise constrained (Sonoma Water, 2026). Sonoma Water's groundwater supply is discussed further in **Section 6.2**.

6.2 Groundwater

☑ ***CWC §10631***

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

There are three groundwater basins identified in DWR's Bulletin 118 that are at least partially within the District's service area. These three basins include Ross Valley Groundwater Basin (DWR Basin 2-18), San Rafael Valley Groundwater Basin (DWR Basin 2-29), and part of the Novato Basin (DWR Basin 2-30). All three basins are categorized by the California Statewide Groundwater Elevation Monitoring (CASGEM) program as low or very low priority basins (DWR, 2019). Studies that have been conducted by the District over the last 40 years have determined that groundwater within the boundaries of the District's service area is very limited as it is either found in fractures in the Franciscan Formation (bedrock) or in shallow

alluvial deposits in valleys. Therefore, the District does not pump groundwater and does not plan to use groundwater as a supply source in the future (see **Table 6-1**).

Although the District does not pump groundwater directly, a small portion of Sonoma Water water supply imported by the District is comprised of groundwater from the Santa Rosa Plain Subbasin of the Santa Rosa Valley Basin (DWR Basin 1-55.01). Groundwater is used primarily as a drought period supply, or when Russian River supplies are otherwise constrained (Sonoma Water, 2026). Given this, characteristics and groundwater management of the Santa Rosa Plain Subbasin are provided below.

6.2.1 Basin Description and Status

DWR determined that the Santa Rosa Valley Basin is not in a condition of critical overdraft (DWR, 2019). The Santa Rosa Plain Subbasin is currently categorized by the DWR program as a medium priority basin (DWR, 2019). Geologically, the Santa Rosa Plain Subbasin has one main water-bearing unit, the Merced Formation, and several units with lower water-bearing capacities, including the Glen Ellen Formation and the Alluvium. (DWR, 2006).

6.2.2 Groundwater Management

The Santa Rosa Plain Subbasin is subject to the requirements of SGMA, which include the formation of one or more GSAs and the development and implementation of one or more GSPs. The Santa Rosa Plain GSA was formed in June 2017 through a Joint Powers Agreement entered into by Sonoma Water, City of Cotati, City of Rohnert Park, City of Santa Rosa, City of Sebastopol, Town of Windsor, County of Sonoma, Gold Ridge Resource Conservation District, Sonoma Resource Conservation District, Branger Mutual Water Company, California American Water, Willowside Mutual Water Company, and Penngrove Water Company, and covers the entire Subbasin. The GSP for the Santa Rosa Plain Subbasin was submitted to DWR in January 2022 and approved by DWR in January 2023 (Sonoma Water, 2021b). The GSA is currently implementing and preparing Periodic Evaluations for the GSP which are required to be prepared at least every five years, with the next being due in January 2027.

6.2.3 Historical Pumping and Supply Sufficiency

As discussed in Section 6.2.1, the District does not extract groundwater as a source of supply and therefore **Table 6-1** does not include groundwater production. Sonoma Water's 2025 UWMP provides historical pumping and supply sufficiency information related to their use of groundwater and has factored this into the supply reliability information provided to the District and other Sonoma Water Contractors.

Table 6-1 Groundwater Volume Pumped (DWR Table 6-1)

☒	Checked box indicates the Supplier does not pump groundwater. Proceed to the next table.
☐	Checked box indicates that all or part of the groundwater described below is desalinated. (OPTIONAL)

Groundwater Type	Water Type (OPTIONAL)	Location or Basin Name	2021	2022	2023	2024	2025

6.3 Surface Water

The District's primary water supply is local surface water. Until 1976, all of the District's water supply was obtained solely from rainfall collected from 22,000 acres of the Mt. Tamalpais Watershed and in the hills of west Marin. The District maintains seven reservoirs which together are capable of holding 79,566 AF of water. Information regarding potential constraints on local surface water supply is provided in Section

7.1.A chronology of the District's water rights, and development of its reservoir system is provided in **Table 6-2**. A map of the reservoir system is shown in **Figure 3-6.**

Table 6-2 District Surface Water Reservoir System

Reservoir Name	Year Constructed	Water Rights
Lake Lagunitas	1873	Pre-1914
Phoenix Lake	1905	Pre-1914
Bon Tempe Reservoir	1948	Appropriative Permit No. 05633
Alpine Lake	1918	Pre-1914
	1924	Appropriative Permit No. 05633
	1941	
Kent Lake	1953	Appropriative Permit No. 05633, 09390, 18546
	1982	
Nicasio Reservoir	1960	Appropriative Permit No. 12800
Soulajule Reservoir	1980	Appropriative License 12807 and Permit No. 16892

On average, the District has an average annual runoff of 83,000 AF (10-year average). The range of annual runoff received into the reservoirs ranges widely from a low of 4,000 AF in 1977 to over 212,000 AF in 2017. Surface water from the Mt. Tamalpais watershed is aerated seasonally in the reservoirs to maintain adequate dissolved oxygen concentration. From the reservoirs, the water is conveyed to either the Bon Tempe Treatment Plant (BTTP) near Ross or the San Geronimo Treatment Plant (SGTP) in Woodacre. Suspended matter is removed in clarifiers, microscopic particles are removed in deep-bed, multi-media filters, and bacteria and pathogens are inactivated by disinfectants. The water is then treated for control corrosion. The District has been fluoridating its water since 1973 as required by a voter approved ballot measure in 1972.

6.4 Stormwater

There are no plans to divert stormwater for beneficial uses in the District.

6.5 Wastewater and Recycled Water

☑ ***CWC §10633***

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

This section provides information on the amount of generated wastewater and existing disposal of wastewater to determine the potential for recycled water use by the District. The amount of recycled water currently used, potentially available, and future potential uses for recycled water for the District are also described.

6.5.1 Recycled Water Coordination

The majority of recycled water used within the District's service area is distributed by the District. The Sewerage Agency of Southern Marin (SASM) produces approximately 20 AFY of tertiary-treated recycled

water that is used to irrigate playing fields situated adjacent to the SASM treatment plant. SASM treats and distributes this water. Recycled water distributed by the District is produced at the Las Gallinas Valley Sanitary District (LGVSD) Recycled Water Treatment Facility (RWTF). The wastewater originates from within the LGVSD service area, which is also within the District's service area. The collected wastewater is treated to secondary levels at LGVSD's wastewater treatment plant and then receives further treatment at the RWTF before being distributed to customers.

In 2014 the LGVSD began supplying approximately 150 AFY of tertiary-treated recycled water produced at the newly constructed Las Gallinas Valley RWTF to NMWD. In 2019, LGVSD began construction on a major expansion and upgrade to the RWTF, to expand the facility's capacity from 1.4 mgd to over 5 mgd. The RWTF expansion is now complete and the RWTF has been producing water since April 2021.

The District has a close working relationship with the LGVSD. Prior to each irrigation season (April through October), the District provides a written estimate of the quantity of recycled water that will be needed for the season. The LGVSD attempts to provide the District with enough recycled water to meet its projected demand, and if the LGVSD is not able to meet the entire demand of the recycled water system, the system is supplemented by potable water.

6.5.2 Wastewater Collection, Treatment, and Disposal

☑ ***CWC §10633 (a)***

A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

☑ ***CWC §10633 (b)***

A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Within the District's service area, there are 14 wastewater collection entities that send wastewater to six wastewater treatment plants that are owned and operated by five entities. Three of the five treatment entities utilize secondary effluent for landscape irrigation at their wastewater treatment plant. The Richardson Bay Sanitary District irrigates an adjacent park with secondary effluent. This water does not meet current recycled water regulations, but the existing practice has been "grandfathered." SASM has a small tertiary treatment facility and irrigates an adjacent park; however, saltwater intrusion limits this operation to low tide cycles only. **Table 6-3** summarizes the wastewater collection and treatment entities within the District's service area. Development within Marin County is limited due to space constraints; therefore, wastewater projections are estimated to remain steady over the planning horizon.

Table 6-4 provides a summary of the volumes of treated effluent discharged and recycled within the District's service area in 2025.

Table 6-3 Wastewater Collected Within Service Area in 2025 (DWR Table 6-2)

☐	Checked box indicates there is no wastewater collection system. Proceed to the next table.
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)

Wastewater Collection			Recipient of Collected Wastewater	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? (OPTIONAL)	Volume of Wastewater Collected from UWMP Service Area 2025 (a)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number	Is WWTP Located Within UWMP Area?
Almonte Sanitary District	Estimated	132	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
Alto Sanitary District	Estimated	96	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
Homestead Valley Sanitary District	Estimated	184	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
City of Mill Valley	Estimated	1,218	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
Richardson Bay Sanitary District	Estimated	812	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
Tamalpais Community Services District	Estimated	40	Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	Yes
Tamalpais Community Services District	Estimated	399	Sausalito Marin City STP, Place ID 255802	Yes
National Park Service (Fort Baker)	Estimated	80	Sausalito Marin City STP, Place ID 255802	Yes

Table 6-3 (continued) Wastewater Collected Within Service Area in 2025 (DWR Table 6-2)

Wastewater Collection			Recipient of Collected Wastewater	
Name of Wastewater Collection Agency	**Wastewater Volume Metered or Estimated? (OPTIONAL)**	**Volume of Wastewater Collected from UWMP Service Area 2025 (a)**	**Name of Wastewater Treatment Plant (WWTP) and Place ID Number**	**Is WWTP Located Within UWMP Area?**
Sausalito-Marin City Sanitary District (SMCSD)	Estimated	1,118	Sausalito Marin City STP, Place ID 255802	Yes
San Rafael Sanitation District	Metered	5,154	Central Marin San. Agcy. WWTP, Place ID 213889	Yes
Sanitary District No. 1 (Ross Valley)	Metered	6,156	Central Marin San. Agcy. WWTP, Place ID 213889	Yes
Sanitary District No. 2 (Corte Madera)	Metered	1,464	Central Marin San. Agcy. WWTP, Place ID 213889	Yes
Sanitary District No. 5 (Tiburon)	Metered	684	Marin CSD 5 - Tiburon WWTP, Place ID 239497	Yes
Sanitary District No. 5 (Paradise Cove)	Metered	15	Marin CSD 5 Paradise Cove WWTP, Place ID 239498	Yes
Las Gallinas Valley Sanitary District (LGVSD)	Metered	2,812	Las Gallinas WWTP, Place ID 236598	Yes
Total Wastewater Received from UWMP Service Area in 2025:		**20,365**		

NOTES:
(a) Volumes are in units of AF.

Table 6-4 Wastewater Treatment and Outcomes Within UWMP Service Area in 2025 (DWR Table 6-3)

☐	Checked box indicates no wastewater is treated or disposed of within the UWMP service area. Proceed to the next table.

Wastewater Treatment Plant Name and Place ID Number	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area?	2025 Volume of Wastewater Received from UWMP Service Area (as Reported in DWR Table 6-2)	Total 2025 Volume of Water Treated	2025 Outcomes of Treated Wastewater (b)										
				Water Recycled Within UWMP Service Area		Water Recycled Outside of UWMP Service Area		Effluent Discharge that is not a Permitted Recycled Water Use		Required Discharge for Instream Flow		Delivered to Another Entity for Additional Treatment		
				Treatment Level	Volume	Treatment Level	Volume	Treatment Level	Volume	Treatment Level	Volume	Treatment Level	Volume	Name of other entity
Central Marin San. Agcy. WWTP, Place ID 213889	No	12,774	12,774	-	-	Secondary, Disinfected - 23	4,384 (c)	Secondary, Disinfected - 23	8,390		0		0	
Las Gallinas WWTP, Place ID 236598	No	2,812	2,812	Tertiary	613	Tertiary	291 (c)	Secondary, Disinfected - 23	1,908		0		0	
Marin CSD 5 Paradise Cove WWTP, Place ID 239498	No	15	15	-	-	-	-	Secondary, Disinfected - 23	13		0		0	
Marin CSD 5 - Tiburon WWTP, Place ID 239497	No	684	684	-	-	-	-	Secondary, Disinfected - 23	618		0		0	
Sausalito Marin City STP, Place ID 255802	No	1,597	1,597	-	-	-	-	Secondary, Disinfected - 23	1,233		0		0	
Sewerage Agency of Southern Marin (SASM) WWTP, Place ID 255788	No	2,482	2,482	Tertiary	20	-	-	Secondary, Disinfected - 23	2,640 (d)		0		0	
		20,365	20,365		633		4,675		14,802		0		0	

NOTES:
(a) Volumes are in units of AF.
(b) The discharged volume may differ from the treated volume due to recirculation of flow within the plant and flow meter discrepancies.
(c) Recycled water outside of UWMP service area from Central Marin San Agency WWTP and Las Gallinas WWTP is assumed to be the difference of influent minus effluent and recycled water use within the UWMP service area.
(d) Information is not available on why SASM WWTP effluent exceeds influent.

6.5.3 Recycled Water System and Recycled Water Beneficial Uses

☑ ***CWC §10633 (c-g)***

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

The District started water recycling during the drought of 1976-77 when a pilot plant was commissioned for drought relief. The pilot plant demonstrated that recycled water was available when other sources were not. Increased concern about limited potable supplies led to a joint effort with the LGVSD to build a permanent facility. In 1981, a 1.0 mgd direct filtration plant was completed and served 60 AFY to nearby McInnis Park and to highway landscaping. Plans for further expansion were set back when the state water reclamation regulations (Title 22) were made more stringent. The water quality that the plant was capable of producing was no longer adequate for irrigating parks, playgrounds, and greenbelts.

In 1989, the District upgraded the recycled water facility from direct filtration to full conventional treatment and increased capacity to 2.0 mgd. With improved water quality, the District was able to expand its recycled water market. From 1990 through 1994, the distribution system was enlarged using District funds plus a $5 million low-interest loan from the State Revolving Fund. Today, the District's recycled water system serves about 630 AF of recycled water per year through 330 service connections.

Over the past 25 years, the District has consistently strived to expand the use of recycled water, number of sites served, and the total amount of recycled water put to use. The system is located in the northern part of the District's service area from the Marin County Civic Center through Marinwood. All customers on the system are served recycled water from the District's Las Gallinas Valley RWTF, operated in conjunction with the LGVSD.

The RWTF produces highly treated recycled water year-round. Marin County experiences a relatively wet rainy season which decreases the demand season for landscape irrigation to about six months of the year (May through October).

Although irrigation remains the primary use (95%) for recycled water in the District's service area, there are virtually no large-scale irrigation accounts and no major industrial water users in the area. Therefore, the District has turned to alternative uses of recycled water to optimize the efficiency of the system, including the following.

- **Flushing Toilets with Recycled Water** – As a result of efforts launched in 1991, there are now 38 buildings in the District's service area that use recycled water to flush toilets and urinals. This includes the 330-bed Marin County Jail, which was the first indoor use of recycled water in a penal

institution. All new buildings in the recycled water service area are now required to be constructed with dual plumbing to use recycled water indoors as well as for landscape irrigation. In September 2011, the District began providing recycled water to 33 San Pedro, the first residential condominium complex in California to be dual plumbed to use recycled water for toilet flushing.

- **Car Washes with Recycled Water** – In 1995, the District was the first in California to use recycled water in a car wash. Building on that success, two new car washes were constructed to use recycled water. All new car washes in the recycled water service area are now required to use recycled water.
- **Heating, ventilation, and air conditioning (HVAC) Cooling Towers with Recycled Water** – The District successfully pioneered the first use of recycled water in a HVAC cooling tower in 1995. Since then, two more buildings have had the HVAC system converted to recycled water.

Table 6-5 below provides the anticipated future recycled water within the District. As discussed in further detail in **Appendix B**, total recycled water use is projected to be 657 AFY by 2050, to be fully met with recycled water from the Las Gallinas Valley RWTF. **Table 6-6** provides a summary comparison of 2025 recycled water use that was projected in the 2020 UWMP versus actual 2025 recycled water use. Actual 2025 recycled water use is 116 AF lower than projected in the 2020 UWMP. This is likely due to reduced irrigation demand due to wet periods, reduced irrigation during drought, less new customer connections than projected.

Table 6-5 Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4)

☐	Checked box indicates recycled water is not used and is not planned for use within the service area of the supplier.
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL):	Las Gallinas Valley Sanitary District Recycled Water Facility
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL):	Marin Municipal Water District
Supplemental Water Added in 2025 (volume). Include units (OPTIONAL):	
Source of 2025 Supplemental Water (OPTIONAL):	

Use Type	Water Type (after treatment if treated)	Additional Information (as needed)	2025	2030	2035	2040	2045	2050 (opt)	Potential Recycled Water Use	
									Volume	Narrative page number (OPTIONAL)
Landscape irrigation (exc golf courses)	Non-Potable		333	345	345	345	345	345	345	6-14
Golf course irrigation	Non-Potable		73	76	76	76	76	76	76	6-14
Commercial use	Non-Potable		176	183	183	183	183	183	183	6-14
Industrial use	Non-Potable		14	15	15	15	15	15	15	6-14
Other (Description Required)	Non-Potable	Toilet/urinal flushing in commercial and residential settings	37	38	38	38	38	38	38	6-14
Subtotal Potable			**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Subtotal Non-Potable			**633**	**657**	**657**	**657**	**657**	**657**	**657**	
Total			**633**	**657**	**657**	**657**	**657**	**657**	**657**	

NOTES:
Volumes are in units of AF.

Table 6-6 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual (DWR Table 6-5)

☐	Checked box indicates recycled water was not used in 2025 nor previously projected for use in 2020.

Use Type	2020 Projection for 2025 (a)	2025 Actual Use (a)
Landscape irrigation (excl. golf courses)	443	332
Golf course irrigation	88	73
Commercial use	162	176
Industrial reuse	33	14
Other (Description Required)	23	37
Total	**749**	**633**

NOTES:
(a) Volumes are in units of AF.

6.5.4 Actions to Encourage and Optimize Future Recycled Water Use

The District uses a variety of incentives to encourage recycled water use. One of the more positive marketing aspects of recycled water is reliability. The droughts of 1976-77 and 1987-92 necessitated severe rationing with resultant damage to customers' landscape plantings. With recycled water used for landscaping during droughts, customers' investments in landscaping are protected.

District Board Policy No. 2, included in **Appendix F**, contains the District policy on recycled water. The policy states that, "at the District's discretion, certain areas in and around a water recycling facility may be designated as "recycled water use areas" which may require, as a condition of water service, the use of recycled water for irrigation, indoor water use, and other types of non-potable use.

The District has thoroughly explored ways to expand water recycling. However, with few large users of non-potable water (such as golf courses and heavy industry) within the District's service area, the District's remaining water recycling options are more expensive and less feasible than continuing to use potable infrastructure. As more customers improve irrigation efficiency, reduce turf areas, switch to native and drought-tolerant landscapes, and convert parks and athletic fields to artificial turf, there are fewer opportunities and lower demand for recycled water. For example, the total water entitlement of all recycled water customers connected to the recycled water system is 956 AF.

Another obstacle to increased water recycling in the District's service area is severe saltwater intrusion into the sewer collection systems of most of the local sanitation agencies, including that of the community's largest wastewater agency, Central Marin Sewer Agency. Rehabilitation of the sewer collection system was explored, but intrusion is so widespread that the cost to repair the sewers is much more than the cost of the water recycling project. Reducing salt in wastewater using membrane processes has also been explored, but the high cost and increased concentration of contaminants remaining in the wastewater discharge render that alternative infeasible from both a cost and regulatory perspective.

Satellite recycling plants, which can intercept sewage above the zones of saltwater intrusion and process the sewage to tertiary recycled water, appeared to be a promising avenue for enlarging the District's recycled water program. In 2001, the District conducted a study, partially funded through a grant from the DWR, to investigate the viability and cost of incorporating satellite water recycling plants into the

District's distribution system. However, while the study concluded that this approach was technically feasible, it would cost over $3,000 per AF (in 2001 dollars), making it prohibitively expensive.

The District continues to investigate the potential for expansion of recycled water, which, along with conservation, is a high priority in the District's vision of sustainable water resource management. As part of its Strategic Water Supply Assessment (2023), the District evaluated recycled water and potable reuse opportunities for its various treatment plants. At this time, the District is exploring opportunities for grant funding to offset the cost of recycled water projects.

In 2022, the District completed a pre-design report that evaluated alternatives for a recycled water system expansion to the Peacock Gap area of San Rafael to capitalize on available capacity from the RWTF. The preferred project was estimated to provide an average annual demand offset of 285 AFY and cost $26.4M, and is reflected in Table 6-7.

Table 6-7 provides a summary of estimated recycled water use that are expected to be realized by implementing these methods (i.e., required use of recycled water in recycled water use areas and recycled water system expansion) to encourage recycled water use.

Table 6-7 Methods to Encourage Future Recycled Water Use (DWR Table 6-6)

☐	Checked box indicates that Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.
	Provide page location of narrative in UWMP

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (a)
Recycled water Board Policy	Requires the use of recycled water for irrigation, indoor water use, and other types of non-potable use for areas designated as "recycled water use areas".	Not applicable	Unknown
Recycled water system expansion	Extend the recycled water system to the Peacock Gap area of San Rafael	Unknown	285
		Total	**285**

NOTES:
(a) Volumes are in units of AF.

6.6 Desalinated Water Opportunities

☑ ***CWC §10631(g)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

During August of 2010, the District adopted Ordinance 420, which states that the District shall not approve construction, or financing for construction, of a desalination facility unless such construction is approved by a majority of District voters voting in an election held within the District's service area for that purpose. While the District has, in the past, explored desalination as a potential supply option, the District does not intend to pursue desalination to augment water supplies at this time.

6.7 Water Exchanges and Transfers

☑ ***CWC §10631 (c)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

The District's service area is entirely within Marin County. Marin County is a peninsula surrounded on three sides by water. The physical barriers imposed by these water bodies severely limit the water transfer opportunities available to the District.

However, during the drought of the 1970s, the District made use of water transfers to augment its supplies. Emergency pipeline connections were made to Sonoma Water, north of the District, and to the East Bay Municipal Utility District (EBMUD) water system to the east. Water was delivered to the District from the State Water Project through the EBMUD system and from the Russian River via the Sonoma Water and NMWD water systems.

The temporary connection with EBMUD was installed in the emergency pull-out lane of the Richmond-San Rafael Bridge. It was removed from the bridge in the early 1980s when traffic increased, making the pipeline a safety hazard. However, the connection to the NMWD and Sonoma Water systems was improved into a permanent connection, and contracts allowing delivery of water during non-emergency periods have been implemented as described in Section 6.1.

MMWD assessed, as one of many resiliency options, the feasibility of transfers with EBMUD and other local water suppliers as part of its 2040 Water Resources Plan (Woodard & Curran, 2018) and Strategic Water Supply Assessment (Marin Water, 2023), and as part of its involvement in the Bay Area Regional Reliability Drought Contingency Plan. The 2040 Water Resources Plan recommended that the District explore groundwater partnering opportunities with a partner that uses groundwater supplies to implement an in-lieu groundwater recharge program. The conjunctive groundwater use is part of Sonoma Water's resiliency planning efforts and the District hopes to participate in a future project.

6.8 Future Water Projects

☑ ***CWC §10631*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

(b) (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

The District has actively worked to identify and advance its most promising and cost-effective projects while remaining flexible to new information and opportunities. In 2017, the District prepared the 2040 Water Resources Plan to evaluate various potential projects to increase supply reliability in the future. Following the 2020-2022 drought emergency, the District prepared the Strategic Water Supply Assessment (SWSA) in 2023 to consider and develop a robust set of water management alternatives and portfolios to address supply availability under various future scenarios. The resulting long-term, adaptive strategy was designed to ensure a reliable, resilient water supply which can be found, along with the

SWSA, at https://marinwater.org/yourwater/water-supply-planning/water-supply-roadmap/. Because planning has not yet been completed for these projects, they are not reflected in **Table 6-8**.

Table 6-8 Expected Future Water Supply Projects or Programs (DWR Table 6-7)

☒	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☒	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
6-16	Provide page location of narrative in the UWMP.

Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Water Type (after treatment if treated) (OPTIONAL)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (a)
	Yes/no	If Yes, Supplier Name					

6.9 Summary of Existing and Planned Sources of Water

☑ ***CWC §10631(b)***

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

☑ ***CWC §10631(b)(2)***

When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

☑ ***CWC §10631(b)(4)(D)***

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Table 6-9 summarizes the actual sources and water supply volumes for 2025. **Table 6-10** summarizes the projected source and water supply volume in five-year increments over the next 25 years.

Projected water supplies from Sonoma Water reflect the anticipated purchases from Sonoma Water. The District's contract with Sonoma Water allows for purchases of up to 14,300 AFY. Projected surface water supplies are based on modelling performed by Woodard and Curran. Recycled and raw water projections were developed as part of the 2025 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update and are discussed in more detail in **Appendix B.**

Table 6-9 Water Supplies – 2025 Actual (DWR Table 6-8)

Water Supply	Additional Description (as needed)	2025		
		Water Type (after treatment if treated) (OPTIONAL)	Actual Volume	Total Entitlement (OPTIONAL)
Purchased or Imported Water	Sonoma Water	Potable	5,891	-
Surface water (not desalinated)	MMWD Lakes, treatment at SGTP or BTTP	Potable	15,289	-
Recycled Water	LGVSD RWTF	Non-Potable	633	-
Surface water (not desalinated)	Raw water	Non-Potable	151	-
Surface water (not desalinated)	Environmental releases from Kent and Soulajule Lakes	Non-Potable	9,241	-
		Subtotal Potable	**21,180**	-
		Subtotal Non-Potable	**10,025**	-
		Total	**31,205**	**-**

NOTES:
Volumes are in units of AF.
Supplies may not equal Table 4-1 demands due to estimation of water loss and other non-revenue water.

Table 6-10 Source Water Desalination by Urban Water Supplier (DWR Table 6-8 DS)

☒	Checked box indicates Supplier does not reduce salinity in either groundwater or surface water prior to distribution.

Desalination Facility	Plant Capacity	Intake Type	Source Water Type	Influent TDS	Brine Discharge	Volume of Water Desalinated					Name(s) of Agencies Receive this Water
						2021	2022	2023	2024	2025	

Table 6-11 Water Supplies – Projected (DWR Table 6-9)

Water Supply	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated	Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050	
			Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)
Purchased or Imported Water	Sonoma Water	Potable	5,300		5,300		5,300		5,300		5,300	
Surface water (not desalinated)		Potable	78,793		78,525		78,558		78,626		78,626	
Recycled Water		Non-Potable	656		656		656		656		656	
Surface water (not desalinated)	Raw water	Non-Potable	191		191		191		191		191	
Surface water (not desalinated)	Environmental releases	Non-Potable	10,300		10,300		10,300		10,300		10,300	
Subtotal Potable			**84,093**	**0**	**83,825**	**0**	**83,858**	**0**	**83,926**	**0**	**83,926**	**0**
Subtotal Non-Potable			**11,147**	**0**	**11,147**	**0**	**11,147**	**0**	**11,147**	**0**	**11,147**	**0**
Total			**95,240**	**0**	**94,972**	**0**	**95,005**	**0**	**95,073**	**0**	**95,073**	**0**

NOTES:
(a) Volumes are in units of AF.
(b) Reasonably available volume for Sonoma Water reflects the minimum contractual allotment from Sonoma Water. MMWD's contract with Sonoma Water allows for purchases of up to 14,300 AFY but includes a minimum supply of 5,300 AFY.
(c) Surface water volumes are estimated based on modeling performed by Woodard and Curran for the period of 2030 to 2045. The 2050 surface water volume is assumed to be the same as the 2045 volume. Environmental release supplies are equal to environmental release demand.

6.10 Special Conditions

Special conditions including climate change effects, regulatory conditions and project development, and other locally applicable criteria may affect supply availability, as described in the following subsections.

6.10.1 Climate Change Effects

As discussed in Sonoma Water's 2025 Urban Water Management Plan (Sonoma Water, 2026), Sonoma Water has been evaluating the effects of climate change. As stated by Sonoma Water in its Draft 2025 UWMP:

> Sonoma Water has investigated whether downscaled climate models can be used or modified to provide reliable estimates of the effects of increased concentrations of carbon dioxide and other greenhouse gases on temperatures and precipitation patterns within Sonoma Water's service area and within the watersheds from which Sonoma Water obtains its water supply during the 25-year planning horizon.
>
> Following prior work with the United States Geological Survey (USGS) to analyze how projected changes in climate may affect Russian River basin hydrology and unimpaired flows, Sonoma Water recently collaborated with DWR to develop a climate resilience plan for water resources within a study area that includes the Russian River Watershed and Sonoma Water's water supply service areas outside of the watershed (Sonoma Water, 2026 [in References of Sonoma Water's 2025 UWMP]). As part of this project, the climate change meteorological forcings used in the Russian River Basin Characterization Model (BCM) to develop future climate hydrology was updated with the latest downscaled Localized Constructed Analogs Version 2 (LOCA2) using Coupled Model Intercomparison Project Phase 6 (CMIP6) climate projections. The climate projections included 15 global circulation models (GCMs) and 3 Shared Socioeconomic Pathways for a total of 41 future climate scenarios simulated with the GCM. Analysis of the BCM simulated hydrology showed results that were consistent with previous climate change hydrology developed for the Russian River, as discussed in Section 3.2.1 (in Sonoma Water's 2025 UWMP). Additionally, the frequency of drought for most of the projections are consistent with historical hydrology.
>
> Given the results of this analysis, this Plan assumes that the climatic patterns and associated hydrology experienced over the past 114 years of record (water years 1911-2024) provide a reasonable basis for the 25-year planning horizon that would impact the water supply and water demand analysis set forth in the Plan. However, Sonoma Water continues to study the effects of climate change and may adjust future assumptions accordingly. Customers of Sonoma Water, local planning agencies, and other people relying on this Plan as a reference for analysis of water supply availability are encouraged to check with Sonoma Water for the latest information and related assumptions.
>
> Furthermore, Sonoma Water has developed the Sonoma Water Climate Adaptation Plan (CAP), a forward-looking plan that serves as a roadmap for Sonoma Water's assessment of climate risks and potential adaptation strategies related to its water supply, sanitation, and flood control infrastructure and operations (Sonoma Water, 2021). The CAP, finalized in 2021, guides Sonoma Water in terms of prioritizing and allocating resources towards practices and projects that will improve resiliency of its operations and facilities to climate variability and change.

Additionally, SGMA requires that GSPs include basin-wide water budget models under various climate change scenarios, including future conditions that account for the effects of estimated climate change. The water budget section of the Santa Rosa Plain GSA includes consideration of the effects of climate change for groundwater sustainability planning purposes.

Coping with inter-annual variability has always been a challenge for long-term water supply planning in the Bay Area, and climate change may intensify variability in coming decades. With potential additional changes imposed by climate change, there will be a heightened need to evaluate and respond to increased water supply variability.

The District's water supply comes from local runoff and the Russian River, which is dependent on local rainfall. Precipitation is stored in local reservoirs and released during the drier summer months. The District is currently storage-limited; existing storage capacity represents only about two years of demand. There are no remaining economically feasible sites for new surface water storage facilities, and the underlying groundwater basins are not considered feasible as a municipal supply source.

Historically, MMWD has been able to meet demands during prior periods of extreme drought with rationing, conservation, and increased purchases from Sonoma Water. Given that the District is storage-limited, it can and has experienced changes in storage very quickly. For example, from December 2012 to January 2014, MMWD experienced a period of very low precipitation, and its reservoirs reached significantly low storage conditions that nearly triggered significant mandatory reductions. Water supply circumstances then changed in early February 2014 when the district received 15 inches of rain, more than the total rain during the prior 400 days combined.

Over the last 30 years, mean sea level around the San Francisco Bay area has been observed to change between 0 and 3 millimeters per year (NOAA, 2021). Sea level rise associated with climate change also has the potential to negatively impact the District's service area. There are a number of developed low-lying areas within the District's service area that could become inundated with sea level rise. Other areas may see an increase in the regularity of flood events. This could result in reduced overall water use in the service area, or shifts in the location of uses, as customers are either forced or opt to move elsewhere.

As climate change advances, there is also a potential for increased ecological vulnerability to currently identified invasive species as well as to new invasive species. According to Cal WeedMapper, Marin County has over 150 invasive flora species, including water hyacinth (*elchhornia crassipes*), European beachgrass (*ammophilia arenaria*), and red brome (*bromus madritensus* ssp. *rubens*). There are also 19 invasive flora species that, while not yet in Marin County, have been identified within 50 miles of the County. These include spotted knapweed (*centaurea maculosa*), alligator weed (*alternanthera philoxeroides*), and the South American spongeplant (*limnobium laevigatum*). There are also 11 invasive fauna species within Marin County, including the Asian estuarine mudsnail (*batillaria attramentaria*), the amethyst gem clam (*gemma gemma*), and the American oyster drill (*urosalpinx cinerea*). Invasive species could impact the District's water supply by negatively affecting water quality and infrastructure systems.

Climate change is expected to affect the District's supply as follows:

- Total precipitation is not projected to change significantly, although there may be less precipitation in the spring.
- Timing of runoff is expected to shift to earlier in the year, affecting reservoir storage, especially in the spring and summer months.
- Variability in annual precipitation is expected to continue, with vulnerability to droughts and dry periods.
- More intense storms anticipated that may affect surface water runoff and storage and stored water quality.
- Sea level rise could inundate some of the developed low-lying areas and increase flooding regularity in other areas.

The District's Water Resources Plan 2040 and Water Supply Roadmap both considered the impact of climate change on the District's supply. As part of the Water Resources Plan, climate change scenarios

were developed and modeled using Marin WaterSim, a dynamic systems model built within the commercial software GoldSim, to evaluate the District's water supply resiliency. The modeling used precipitation and inflow data for 2010 through 2099 for each of the District's lakes under four climate change models. Based on the modeling performed in 2017, there were no predicted shortages through 2040 under the modeled climate change scenarios, although overall reservoir levels were projected to significantly decrease under the modeled climate change conditions. These findings were incorporated into the recommendations in the Water Resources Plan and later into the Water Supply Roadmap.

6.10.2 Regulatory Conditions and Project Development

Emerging regulatory conditions may affect planned future projects and the characterization of future water supply availability and analysis. As the District moves forward with plans to develop supply projects, emerging regulatory conditions will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.10.3 Other Locally Applicable Criteria

Other locally applicable criteria may affect characterization and availability of an identified water supply (e.g., changes in regional water transfer rules may alter the availability of a water supply that had historically been readily available). As the District moves forward with projects to improve water supply reliability, it is considering locally applicable criteria such as local surface water hydrology, system limitations, and economic and environmental factors.

6.11 Energy Intensity

☑ ***CWC §10631.2***

(a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.
(7) Any other energy-related information the urban water supplier deems appropriate.
(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.
(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

The "Total Utility Approach" as defined by DWR in the 2025 UWMP Guidebook is used to report water-related energy-consumption data for the District. Fiscal year 2025 is selected as the one-year reporting period, and utility bills for the associated time period are used as the source for energy consumption data. Total energy consumed by the District during fiscal year 2025 based on reported utility bills is 14,518,201 kilowatt hours (kWh) to deliver 22,453 AFY of potable and non-potable water (excluding environmental releases). **Table 6-12** shows the energy consumed for each AF of water entering the distribution system in the District, including energy associated with extracting and diverting, placing into storage, treating, conveying, and distributing drinking water, but not including energy associated with the treatment of

wastewater. Based on this, the energy intensity is estimated to be 1,984 kilowatt hour per million gallons (kWh/MG), which is equal to 647 kWh/AF. Sonoma Water uses energy to treat and distribute water before delivery to the District. However, the energy is used outside of the District's service area, and the energy consumption information is not typically shared with the District.

Table 6-12b Recommended Energy Reporting: Single Delivery Product, Total Utility Approach (DWR Table O-1B)

Water Delivery Product	Multiple Products (if unable to use table O-1C)	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**		
Start Date of Reporting Period	7/1/2024	**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
End Date of Reporting Period	6/30/2025			
Is upstream embedded energy in the values reported?	No			
Units of Measure for Water	AF	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process		22,453		22,453
Energy Consumed (kWh)		14,518,201		14,518,201
Energy Intensity (kWh/vol. converted to MG)		1,984	-	1,984
Quantity of Self-Generated Renewable Energy				
0	kWh			
Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)				
Metered Data				
Data Quality Narrative:				
Utility bills for the associated time period are used as the source for energy consumption data.				
Narrative:				
Total energy consumption represents the energy consumed during pumping, treatment, conveyance and distribution.				

7 WATER SUPPLY RELIABILITY ASSESSMENT

☑ ***CWC §10620 (f)***

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

☑ ***CWC §10630.5***

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This chapter describes the reliability of the District's water supplies. Assessment of water supply reliability is complex and dependent upon several factors, such as the number of water sources, regulatory and legal constraints, hydrological and environmental conditions, climate change, and expected growth, among others. Based on available historical information and projections of future water uses, regulatory and legal constraints, and hydrological and environmental conditions, including climate change, the District has made its best determination of future water supply reliability for the District, as described below.

7.1 Constraints on Water Sources

Purchased water from Sonoma County Water Agency (Sonoma Water) and local surface water are the primary supply sources for the District. Several factors pose potential constraints on the District's water supply, including limits on the amount available, water quality, climatic conditions, or a combination of these. **Table 7-1** lists the District's sources of water supply and the potential factors that could impact the District's supply. These constraints, along with associated management strategies, are summarized in the following sections.

Table 7-1 Potential Supply Constraints

Factors	Sonoma Water Supply	District Produced Surface Water	Recycled Water
Limitation Quantification	Quantity limited by contractual limits and available pipeline capacity. When pipeline capacity impacts deliveries, the District/Sonoma Water will have to construct new conveyance facilities to supplement capacity.	Climatic variation could result in limited storage carryover.	None
Legal	Supplies could potentially be reduced subject to unanticipated regulatory requirements.	None	None
Environmental	Fish habitat protection could result in summertime diversion curtailments on the Russian River. Future supply increases may not be consistent due to delays in construction, approval of water rights applications, or environmental documentation.	Future increases in instream flow requirements could decrease supply.	None
Water Quality	None	None	Salt-water intrusion in low-lying areas of sewer collection system, in some parts of the District, could impact recycled water quality.
Climatic	Drought could reduce available surface water supply.	Drought could reduce available surface water supply.	Drought could reduce indoor water use, resulting in reduced wastewater flow and therefore reduced recycled water supply

7.1.1 Supply Availability

Additional information regarding supply availability, including under various hydrologic conditions, is provided here.

Purchased Water

The water available to Sonoma Water's customers is constrained by both physical and legal constraints. The capacity of Sonoma Water's transmission system is a physical constraint that can limit the District's water supply from Sonoma Water. The District receives Sonoma Water supply through an 8-mile-long aqueduct, which is a 30, 36, and 42-inch diameter steel transmission main that runs from Sonoma Water's Petaluma Aqueduct near Kastania Tank in south Petaluma. From Kastania Tank the water flows to Kastania pumpstation (owned by MMWD) then into the North Marin Aqueduct (owned by North Marin Water District) that the District (MMWD) has use of so long as there is capacity.

Legal constraints include the Amended and Restated Water Supply Agreement, Sonoma Water Rights, the Russian River Biological Opinion, and decommissioning of the Potter Valley Project.

The Amended and Restated Agreement (2025) states that Sonoma Water is not obligated to provide the District with more than 14,300 AFY and a minimum take-or-pay supply of 5,300 AFY. The Agreement also places seasonal limitations on water delivery rates, with deliveries limited to 25 MGD from November through April, and 12.5 MGD from May through October. The District may also request greater maximum deliveries, provided there is sufficient transmission system capacity and available water.

Sonoma Water incorporates water rights, the Russian River Biological Opinion, the Potter Valley Project, and climate change into its surface water modeling which was used to determine reliability for its 2025 UWMP. The following excerpt is from Sonoma Water's 2025 UWMP, Section 6.2 Reliability by Type of Year:

> *Sonoma Water's surface water supply is subject to reductions during dry years. When the Lake Sonoma water volume is less than 100,000 ac-ft before July 15, a 30 percent reduction of diversions compared to the same time period the previous year is required, as dictated by Sonoma Water's water rights permits and Decision 1610 and as described in Section 5.1.6.1 . Sonoma Water's groundwater supply capacity is assumed to not be impacted by single-dry years given the short duration and low frequency of occurrence and Sonoma Water staff analysis of existing pumping data.*
>
> *Sonoma Water will continue to work with its customers to conjunctively manage Russian River and groundwater supplies to promote sustainability of these resources. These strategies may include using groundwater supplies during hydrologic dry years for the Russian River or conversely, reducing groundwater pumping from non-Russian River aquifers during years when there are high Russian River flows. In addition, as discussed in Sections 5.2 and 5.3, Sonoma Water and its partners continue to advance ASR projects and explore groundwater recharge and banking opportunities to enhance long-term water supply reliability in the region.*

The following excerpt from Section 6.3 of Sonoma Water's 2025 UWMP summarizes Sonoma Water's reliability assessment:

> *The overall conclusion is that Sonoma Water has adequate water supply through the 2050 planning horizon of this Plan for all scenarios. Although it never gets triggered in the model simulations, if storage levels in Lake Sonoma drop below 100,000 ac-ft prior to July 15th, it would require demand curtailments by Sonoma Water customers per Decision 1610 (Section 5.1.6.1) for some portion of the year. In these circumstances, Sonoma Water will work with its customers to reduce water demands as described in the WSCP (Appendix C), or to utilize additional local sources, or both.*

District-Produced Surface Water

As described in Section 6.3, the District has an average annual runoff of 83,000 AF (10-year average). The range of annual runoff received into the reservoirs ranges widely from a low of 4,000 AF in 1977 to over 212,000 AF in 2017. The District is authorized to store and divert water from the local watershed by the permits listed in **Table 6-2**. Future availability of local surface water could be impacted by future changes in climate, in-stream flow requirements, watershed quality, or other constraints.

Recycled Water

As described in Section 6.5.1, LGVSD provides the District with recycled water that is treated to a level that meets or exceeds Californias Title 22 recycled water standard. LGVSD's RWTF can produce 5 mgd of recycled water. The District has a close working relationship with the LGVSD. Prior to each irrigation

season (April through October), the District provides a written estimate of the quantity of recycled water that will be needed for the season. The LGVSD attempts to provide the District with enough recycled water to meet its projected demand, and if the LGVSD is not able to meet the entire demand of the recycled water system, the system is supplemented by potable water.

7.1.2 Water Quality

☑ ***CWC §10634***

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Impaired water quality also has the potential to affect water supply reliability. The District has and will continue to meet all state and federal water quality regulations. All drinking water standards are set by the U.S. Environmental Protection Agency (USEPA) under the authorization of the Federal Safe Drinking Water Act of 1974. In California, the SWRCB Division of Drinking Water (DDW) can either adopt the USEPA standards or set more stringent standards, which are then codified in Title 22 of the CCR. There are two general types of drinking water standards:

- **Primary Maximum Contaminant Levels (MCLs)** are health protective standards and are established using a very conservative risk-based approach for each constituent that takes into potential health effects, detectability and treatability, and costs of treatment. Public water systems may not serve water that exceeds Primary MCLs for any constituent.
- **Secondary MCLs** are based on the aesthetic qualities of the water such as taste, odor, color, and certain mineral content, and are considered limits for constituents that may affect consumer acceptance of the water.

The District routinely monitors the water that is treated and served to customers to ensure that water delivered to customers meets these drinking water standards. The results of this testing are reported to the SWRCB DDW following each test and are summarized annually in Water Quality Reports (also known as “Consumer Confidence Reports”), which are provided to customers by mail and made available on the District’s website at https://www.marinwater.org/water-quality.https://www.marinwater.org/water-quality#button-1.

Five of the seven local surface water reservoirs are located in a District-owned and protected watershed that substantially reduces the potential for contamination. The two reservoirs outside the protected watershed are located in rural areas with low population densities that are maintained by strict zoning requirements. In addition, the district has established Watershed Protection Agreements with landowners in these watersheds. Accordingly, the excellent water quality that the district has historically enjoyed is expected to continue into the future. There have been no instances when water quality issues have limited water supply or affected reliability.

Given the District’s proactive monitoring and management of water quality in its source water supplies, water quality is not expected to impact the reliability of the District’s available potable water supplies within the planning horizon (i.e., through 2050).

7.1.3 Climate Change

☑ ***CWC §10631 (b) (1)***

…For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

Section 4.4 of this UWMP presents information on how the impacts of climate change are considered in projected demands in the District, and Section 6.10.1 provides a summary of potential climate change impacts on supplies.

7.2 Reliability by Type of Year

☑ ***CWC §10631 (b)***

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

☑ ***CWC §10631 (b)(1)***

A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

☑ ***CWC §10635 (a)***

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

Consistent with the 2025 UWMP Guidebook, the water service reliability assessment includes three unique types of years based on hydrologic conditions:

- A normal hydrologic year represents the water supplies available under normal conditions; this could be an average over a range of years or a single representative year,
- A single dry year represents the lowest available water supply, and
- A five-consecutive year drought represents the driest five-year period in the historical record.

Identification of these dry year periods consistent with the 2025 UWMP Guidebook methodology is provided below.

Table 7-2 Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1)

	Available Supplies if Year Type Repeats	
	☒	Checked box indicates quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location: **Sections 7.2.1 - 7.2.4**

Year Type	Base Year	Volume Available	% of Average Supply
Average Year	2004		**100%**
Single-Dry Year	1977		
Consecutive Dry Years 1st Year	1987		
Consecutive Dry Years 2nd Year	1988		
Consecutive Dry Years 3rd Year	1989		
Consecutive Dry Years 4th Year	1990		
Consecutive Dry Years 5th Year	1991		

7.2.1 Purchased Water

Sonoma Water reviewed historical hydrologic data for its system, and has identified 1999 as the basis for its average year supply, 1977 as the basis for single-dry year supply, and the period of 1987-1991 as the basis for a five-year drought supply. As described in Section 7.1.1, Sonoma Water expects that its supply will be sufficient to meet customers' projected demands under all year types. As part of development of its 2025 UWMP, Sonoma Water requested purchased water projections from each member agency for incorporation into reliability modeling, and are therefore carried forward into the District's purchased water reliability assumptions.

Purchases from Sonoma Water are assumed to increase in dry years to supplement available local surface water supplies. In average years, Sonoma Water purchases are assumed to be equal to the District's minimum purchase requirement of 5,300 AF. In single dry and multiple dry years, projected demand for Sonoma Water purchases are expected to start at 8,500 AF in 2030, and increase to 10,000 AF from 2035 through 2050, as shown in **Table 7-3**.

Table 7-3 Projected Availability of Sonoma Water Supply (Responds to DWR Table 7-1)

Year Type		Base Year	2030	2035	2040	2045	2050
Normal Year		2004	5,300	5,300	5,300	5,300	5,300
Single-Dry Year		1977	8,500	10,000	10,000	10,000	10,000
Extended Drought	**First Year**	1987	8,500	10,000	10,000	10,000	10,000
	Second Year	1988	8,500	10,000	10,000	10,000	10,000
	Third Year	1989	8,500	10,000	10,000	10,000	10,000
	Fourth Year	1990	8,500	10,000	10,000	10,000	10,000
	Fifth Year	1991	8,500	10,000	10,000	10,000	10,000

NOTES:
(a) Volumes are in units of AF.

7.2.2 Surface Water

The projected availability of local surface water supplies by type are provided in **Table 7-4** below.

Table 7-4 Projected Availability of Local Surface Water Supply (Responds to DWR Table 7-1)

Year Type		Base Year	2030	2035	2040	2045	2050
Normal Year		2004	78,793	78,525	78,558	78,626	78,626
Single-Dry Year		1977	44,013	44,009	44,013	44,023	44,023
Extended Drought	**First Year**	1987	71,436	71,434	71,436	71,441	71,441
	Second Year	1988	76,189	76,216	76,188	76,136	76,136
	Third Year	1989	80,927	80,896	80,930	81,007	81,007
	Fourth Year	1990	67,471	67,502	67,470	67,401	67,401
	Fifth Year	1991	64,208	64,245	64,206	64,102	64,102

NOTES:
(a) Volumes are in units of AF.
(b) Supplies are estimated based on modeling performed by Woodard and Curran.

7.2.3 Recycled Water

Supply availability for recycled water is not assumed to be impacted in dry years, as reflected in **Table 7-5** below, and is consistent with the demand projections identified in **Table 6-11.**

Table 7-5 Projected Availability of Recycled Water Supply (Responds to DWR Table 7-1)

Year Type		2030	2035	2040	2045	2050
Normal Year		656	656	656	656	656
Single-Dry Year		656	656	656	656	656
Extended Drought	**First Year**	656	656	656	656	656
	Second Year	656	656	656	656	656
	Third Year	656	656	656	656	656
	Fourth Year	656	656	656	656	656
	Fifth Year	656	656	656	656	656

NOTES:
(a) Volumes are in units of AF.

7.2.4 Raw Water

Supply availability for raw water is not assumed to be impacted in dry years, as reflected in **Table 7-6** below, and is consistent with the demand projections identified in **Table 4-5**.

Table 7-6 Projected Availability of Raw Water Supply (Responds to DWR Table 7-1)

Year Type		2030	2035	2040	2045	2050
Normal Year		191	191	191	191	191
Single-Dry Year		191	191	191	191	191
Extended Drought	**First Year**	191	191	191	191	191
	Second Year	191	191	191	191	191
	Third Year	191	191	191	191	191
	Fourth Year	191	191	191	191	191
	Fifth Year	191	191	191	191	191
NOTES: (a) Volumes are in units of AF.						

7.3 Supply and Demand Assessment

☑ ***CWC §10635(a)***

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

As identified in Section 7.2 and associated tables, water supply availability differs for the District's supply sources during normal, single dry, and multiple dry years. **Table 7-7** shows the projected supply and demand totals for a normal year, consistent with those in **Table 6-11** and **Table 4-4**. **Table 7-8** shows the projected supply and demand totals for a single dry year, and **Table 7-9** shows the projected supply and demand totals for multiple dry year periods extending five years. The District is projected to have sufficient supplies to meet projected demands in normal years, single dry years, and multiple dry years through 2050.

Table 7-7 Normal Year Supply and Demand Comparison (DWR Table 7-2)

	2030	2035	2040	2045	2050
Supply totals (from **Table 6-11** [DWR Table 6-9])	95,240	94,972	95,005	95,073	95,073
Use totals (from **Table 4-5 [**DWR Table 4-2)]	36,021	36,875	37,145	37,468	37,822
Surplus/(shortfall)	**59,219**	**58,097**	**57,860**	**57,605**	**57,251**
NOTES: Volumes are in units of AF.					

Table 7-8 Single Dry Year Supply and Demand Comparison – District Total (DWR Table 7-3)

	2030	2035	2040	2045	2050
Supply totals (b)	53,360	54,856	54,860	54,870	54,870
Use totals (from DWR Table 4-2)	36,021	36,875	37,145	37,468	37,822
Surplus/(shortfall)	**17,339**	**17,981**	**17,715**	**17,402**	**17,048**

NOTES:
(a) Volumes are in units of AF.
(b) Supply totals are summed from single dry year values provided in **Table 7-3** through **Table 7-6.**
(c) Use totals are from **Table 4-5** (DWR Table 4-2)

Table 7-9 Five Consecutive Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2030	2035	2040	2045	2050
First year	Supply totals (b)	80,783	82,281	82,283	82,288	82,288
	Use totals (c)	36,021	36,875	37,145	37,468	37,822
	Surplus/(shortfall)	**44,762**	**45,406**	**45,138**	**44,820**	**44,466**
Second year	Supply totals (b)	85,536	87,063	87,035	86,983	86,983
	Use totals (c)	36,021	36,875	37,145	37,468	37,822
	Surplus/(shortfall)	**49,515**	**50,188**	**49,890**	**49,515**	**49,161**
Third year	Supply totals (b)	90,274	91,743	91,777	81,854	81,854
	Use totals (c)	36,021	36,875	37,145	37,468	37,822
	Surplus/(shortfall)	**54,253**	**54,868**	**54,632**	**44,386**	**44,032**
Fourth year	Supply totals (b)	76,818	78,349	78,317	78,248	78,248
	Use totals (c)	36,021	36,875	37,145	37,468	37,822
	Surplus/(shortfall)	**40,797**	**41,474**	**41,172**	**40,780**	**40,426**
Fifth year	Supply totals (b)	73,555	75,092	75,053	74,949	74,949
	Use totals (c)	36,021	36,875	37,145	37,468	37,822
	Surplus/(shortfall)	**37,534**	**38,217**	**37,908**	**37,481**	**37,127**

NOTES:
(a) Volumes are in units of AF.
(b) Supply totals are summed from multiple dry year values provided in **Table 7-3** through **Table 7-6.**
(c) Use totals are from **Table 4-5** (DWR Table 4-2)

7.4 Water Supply Management Tools and Options

☑ ***CWC §10620 (f)***

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

The District's *Water Resources Plan 2040* dated March 2017 (Water Resources Plan; MMWD, 2017) evaluated various options and tools to improve water supply resiliency. A total of 40 resiliency options were developed and grouped into alternatives to be evaluated. Based on the analysis, the Water Resources Plan recommended the "Expand Existing Programs" alternative, which focused on increasing conservation, investing in watershed management, and exploring groundwater partnering opportunities.

Following development of the Water Resources Plan and after the 2020-2022 drought emergency, the District prepared its Water Supply Roadmap, which is a long-term adaptive strategy designed to ensure a reliable, resilient water supply. The Roadmap, described in Section 6.8, identifies a portfolio of projects to address projected supply gaps and changing climate conditions.

In addition, the District is a member of the North Bay Water Reuse Authority (NBWRA), which is a regional water recycling organization formed to put recycled water to its broadest and most beneficial use. NBWRA consists of ten local agencies covering 315 square miles in the portions of Marin, Sonoma, and Napa counties that surround the northern rim of the San Francisco Bay. As part of NBWRA, the District has made great strides to expand recycled water use.

The District has begun work to upgrade to the Kastania Pump Station to optimize the capacity of the pipeline from Sonoma Water by installing new variable speed pumps, and expects work to be complete in 2027. The District also continues to work to expand the use of recycled water to include non-irrigation uses.

7.5 Drought Risk Assessment

☑ ***CWC §10635(b)***

Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

In addition to the long-term water service reliability assessment presented above, the Drought Risk Assessment evaluates the District's supply risks under a severe drought period lasting for the next five consecutive years after the assessment is completed, i.e., from 2026 through 2030. The Drought Risk Assessment is intended to inform the demand management measures (DMMs) and water supply projects and programs to be included in the UWMP (**Section 9**). Suppliers may conduct an interim update or updates to this Drought Risk Assessment within the five-year cycle of its UWMP update (i.e., before the 2030 UWMP).

7.5.1 Data, Methods, and Basis for Water Shortage Condition

This evaluation considers historical drought hydrology and plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

As a first step to the Drought Risk Assessment, the District estimated unconstrained water demand for the next five years (i.e., 2026-2030). Unconstrained water demand is the expected water use in the absence of drought water use restrictions. The characteristic five-year water demand is described in Section 4.5.5.4.5.5.

The available potable water supplies assumed in the Drought Risk Assessment are based upon the same methodology and assumptions used for the long-term water service reliability assessment (Section 7.2). The approach for estimating District's available supplies follow below, as part of the Drought Risk Assessment.

7.5.2 Drought Risk Assessment - Individual Water Source Reliability

As described in Section 7.1, the District relies on water purchases from Sonoma Water, as well as local surface water supply and recycled water. The District's available supplies during the five-consecutive-year drought are based supply reliability information provided by Sonoma Water, as well as local supplies available in 2030 under a 5-year drought as described in Sections 7.2.2 through 7.2.4.

7.5.3 Drought Risk Assessment - Total Water Supply and Use Comparison

Table 7-10 provides a comparison of the water supply sources available to District with the total projected water use for an assumed drought period of 2026 through 2030.

The District's supply is expected to be sufficient to meet demands in all hydrologic conditions, including an extended five-year drought period. **Table 7-10** also summarizes planned WSCP actions that District will implement to augment supply and/or reduce demands (see **Appendix G**).

Table 7-10 Five-Year Drought Risk Assessment Tables (DWR Table 7-5)

2026	Total
Total Water Use	32,433
Total Supplies	80,783
Surplus/Shortfall without WSCP Action	**48,350**
2027	**Total**
Total Water Use	33,609
Total Supplies	85,536
Surplus/Shortfall without WSCP Action	**51,927**
2028	**Total**
Total Water Use	34,786
Total Supplies	90,274
Surplus/Shortfall without WSCP Action	**55,488**
2029	**Total**
Total Water Use	35,962
Total Supplies	76,818
Surplus/Shortfall without WSCP Action	**40,856**
2030	**Total**
Total Water Use	37,138
Total Supplies	73,555
Surplus/Shortfall without WSCP Action	**36,417**
NOTES: Volumes are in units of AF.	

7.5.4 Risk Assessment Projections – Extreme Drought Scenario

As part of the District's drought supply projection modelling efforts, an alternative drought risk assessment scenario was also explored. Under this scenario, an extreme drought event was assessed in accordance with the Short and Severe 4-year drought scenario of the Strategic Water Supply Assessment. **Table 7-11** shows a comparison between projected supplies and demands (including reservoir evaporation) for the final four years of the 2025-2050 UWMP planning horizon, from 2047 through 2050. Under this scenario, supply shortfalls would result in implementation of the WSCP water use reduction actions beginning in 2047. A resulting supply shortfall of 5,926 AF occurs in Year 4 of the scenario.

Table 7-11 Four-Year Drought Risk Assessment Tables - Extreme Drought Scenario

2047	Total
Total Water Use	40,375
Total Supplies	90,924
Surplus/Shortfall without WSCP Action	**50,549**
WSCP - supply augmentation benefit	-
WSCP - use reduction savings benefit	2,646
Revised Surplus/(shortfall)	**53,195**
Resulting % Use Reduction from WSCP action	**10%**
2048	**Total**
Total Water Use	39,437
Total Supplies	68,804
Surplus/Shortfall without WSCP Action	**29,367**
WSCP - supply augmentation benefit	-
WSCP - use reduction savings benefit	5,307
Revised Surplus/(shortfall)	**34,674**
Resulting % Use Reduction from WSCP action	**20%**
2049	**Total**
Total Water Use	38,660
Total Supplies	52,031
Surplus/Shortfall without WSCP Action	**13,372**
WSCP - supply augmentation benefit	-
WSCP - use reduction savings benefit	5,321
Revised Surplus/(shortfall)	**18,692**
Resulting % Use Reduction from WSCP action	**20%**

Table 7-11 (continued) Four-Year Drought Risk Assessment Tables - Extreme Drought Scenario

2050	Total
Total Water Use	38,032
Total Supplies	26,771
Surplus/Shortfall without WSCP Action	**-11,261**
WSCP - supply augmentation benefit	-
WSCP - use reduction savings benefit	5,335
Revised Surplus/(shortfall)	**-5,926**
Resulting % Use Reduction from WSCP action	**20%**

NOTES:
(a) Volumes are in units of AF.
(b) Resulting % use reduction from WSCP action is calculated based on potable demands only.

8 WATER SHORTAGE CONTINGENCY PLANNING

☑ ***CWC §10640***

(a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

The WSCP for the District is included in this UWMP as **Appendix G**. The WSCP was last updated in February 2023 and adopted by the District on 9 January 2024. The WSCP was reviewed in light of the District's current water supply reliability analysis, and has determined that the WSCP continues to adequately enable the District to prepare for and respond to various levels of shortage as required by statute.

The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. The primary objective of the WSCP is to ensure that the District has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. Consistent with CWC §10632, the WSCP includes six levels to address shortage conditions ranging from up to 10% to greater than 50% shortage, identifies a suite of demand mitigation measures for the District to implement at each level, and identifies procedures for the District to annually assess whether or not a water shortage is likely to occur in the coming year, among other things. In cases where Executive Order N-7-22 mandates are more stringent than the WSCP, the more stringent mandates shall supersede the mandates in the WSCP.

A summary of the key elements of the WSCP including water shortage levels and demand-reduction actions is shown in **Table 8-1**, **Table 8-2** and **Table 8-3**. Additional details are provided in **Appendix G.**

Table 8-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)

☒	Checked box indicates the supplier uses the standard six levels of water shortage.	
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions**
0	0%	• Includes water waste prohibitions effective at all times.
1	Up to 10%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 70,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).
2	Up to 20%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 65,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).

☒	Checked box indicates the supplier uses the standard six levels of water shortage.

Shortage Level	Percent Shortage Range	Shortage Response Actions
3	Up to 30%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 55,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).
4	Up to 40%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 45,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).
5	Up to 50%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 35,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).
6	>50%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 25,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table** 8-2) as well as agency actions (see **Table** 8-3).

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
Landscape Irrigation				
0, 1, 2, 3, 4, 5, 6	Other landscape restriction or prohibition	5%	The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Restrict or prohibit runoff from landscape irrigation	5%	Irrigation shall not be conducted in a manner or to an extent that allows water to run off or overspray the areas being watered. Every customer is required to have his or her water distribution lines and facilities under control at all times to avoid water waste.	Y
0, 1, 2, 3, 4, 5, 6	Limit landscape irrigation to specific times	5%	Any landscape irrigation between the hours of 9:00 a.m. and 7:00 p.m. is prohibited. Necessary testing and repair of irrigation systems for the purpose of eliminating water waste is permitted during the hours of 9:00 a.m. and 7:00 p.m. Customers shall maintain appropriate documentation of any necessary testing and repairs for these purposes. For example, this documentation may include, but not be limited to, any applicable reports, invoices, photos, videos, and/or receipts for materials and labor related to the testing and repairs.	Y

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Limit landscape irrigation to specific days	5%	Increase restrictions on irrigation. For example, operating outdoor irrigation systems using potable water for the purpose of irrigating with overhead spray more than two days, as assigned by the District, within any calendar week may be prohibited. For the purposes of this section, "calendar week" shall mean a period running from Monday-Sunday.	Y
0, 1, 2, 3, 4, 5, 6	Other landscape restriction or prohibition	5%	Irrigating ornamental turf on public street medians is prohibited.	Y
3	Prohibit certain types of landscape irrigation	30%	Golf course irrigation, with potable or raw water, shall be irrigated up to 70% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code WSCP.	Y
4	Limit landscape irrigation to specific days	40%	Limit irrigation to 1 day per week, assigned by the District.	Y
4	Prohibit certain types of landscape irrigation	40%	Golf course irrigation, with potable or raw water, shall be irrigated up to 60% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code WSCP.	Y

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
5	Other landscape restriction or prohibition	50%	Irrigation restricted to maintain tree health for all potable and raw water customers, including golf courses.	Y
5	Other	50%	Establish, or implement, Water Use Limits and associated penalties.	Y
Restrictions on Consumer Products				
0, 1, 2, 3, 4, 5, 6	Other	5%	The installation of reverse osmosis water purifying systems not equipped with an automatic shutoff unit is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Pools and Spas - Require covers for pools and spas	30%	All recreational pools and spas shall have covers.	Y
Restrictions on New Connections and Landscaping				
0, 1, 2, 3, 4, 5, 6	Other	5%	Single pass cooling systems for air conditioning or other cooling system applications are prohibited, unless required for health or safety reasons.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	New non-recirculating systems for conveyer car wash applications is prohibited.	Y
4, 5, 6	Other	40%	No installation of new landscapes including no expansion of existing landscapes.	Y

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
5	Moratorium or Net Zero Demand Increase on New Connections	50%	The Board shall consider a moratorium on new water service connections, or no net water use requirements for new connections.	Y
6	Other	55%	New water service applications will not be granted.	Y
6	Other	55%	The use of potable water for any purpose other than human health and sanitation is prohibited.	Y
Restrictions on Commercial Operations				
0, 1, 2, 3, 4, 5, 6	Lodging establishment must offer opt out of linen service	5%	Lodging establishments must provide patrons the option of not having towels and linen laundered daily.	Y
0, 1, 2, 3, 4, 5, 6	Restaurants may only serve water upon request	5%	Drinking water served upon request only.	Y
Other				
0, 1, 2, 3, 4, 5, 6	Prohibit use of potable water for washing hard surfaces	5%	The washing of sidewalks, walkways, driveways, parking lots and all other hard surfaced areas by direct hosing, except as may be permitted by current regulations pertaining to urban water runoff pollution prevention as defined by the Marin County Stormwater Pollution Prevention Program and other controlling agencies.	Y

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Customers must repair leaks, breaks, and malfunctions in a timely manner	5%	The escape of water through breaks or leaks within the consumer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of 48 hours after the consumer discovers such a leak or break, or receives notice from the district of such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	Gutter flooding is prohibited.	Y
3, 4, 5, 6	Other	30%	Use of potable water for refilling or make-up water of any decorative water features, is prohibited.	Y
2, 3, 4, 5, 6	Other	20%	Implement drought rates consistent with District-wide targeted water savings.	N
5, 6	Other landscape restriction or prohibition	50%	Refilling a completely drained swimming pool and initial filling of any swimming pool for which application for a building permit was made after District specified date.	Y
0, 1, 2, 3, 4, 5, 6	Require automatic shutoff hoses	5%	Using a garden hose without a shut-off nozzle is prohibited.	N

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Other	5%	Any excess water runoff flowing onto the public right of-way at a rate of one gallon per minute or greater not caused by storm water or naturally occurring groundwater is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	Use of private fire lines or private fire taps for any purposes other than fire suppression and necessary testing is prohibited.	Y
3, 4, 5, 6	Other	30%	Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.	Y
3, 4, 5, 6	Other	30%	Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.	Y
3, 4, 5, 6	Limit use of potable water for construction and dust control	30%	Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.	Y
0, 1, 2	Other	5%	Sewer cleaning/flushing should be done using recycled water when available without hauling by truck and whenever reasonably possible.	Y
3, 4, 5, 6	Other	30%	Limit sewer cleaning/flushing to only recycled water.	Y

Table 8-2 Demand Reduction Actions (DWR Table 8-3)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
4, 5, 6	Other	40%	Request that local fire departments limit training exercises that use potable water and cease hydrant testing.	Y
6	Other	50%	Request that local fire departments cease training exercises that use potable water and cease hydrant testing.	Y
NOTES: (a) The reductions shown are the combined reductions for all the actions associated with the particular shortage level.				

Table 8-3 Supply Augmentation and Other Actions (DWR Table 8-2)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
1	Increase supplemental water imports and closely monitor storage levels and weather conditions	Up to 5,000 AF	Range dependent on hydraulic capabilities
1	Enact dry year stream release flow reductions	Up to 100 AF	As defined under Water Right Order 95-17 and agreements with NMWD
2	Minimize system flushing	Unknown	Focus on water quality improvements
3	Increase water waste patrols	Unknown	
3	Restrict line flushing to include only regulatory compliance actions	Unknown	Flush for violations of water quality regulations or required disinfection for new construction and repairs
3	Increase system leak repair to prioritize class 2 leaks	Unknown	
3	Access Stored Emergency Supply	Unknown	Rental of generator for Soulajule Reservoir to transfer water to Nicasio Reservoir
3	Access Stored Emergency Supply	Unknown	Initiate adjustments to pipe configuration to transfer water from Phoenix Lake to Bon Tempe Lake
4	Initiate Study/Application for Temporary Urgency Change Petition	Up to 2,500 AF	Change to environmental releases – possible reduction of migration flow volumes.
4	Increase water waste patrols	Unknown	
4	Increase system leak repair to prioritize class 1-3 leaks	Unknown	
4	Consider Declaration of Water Shortage Emergency	Unknown	
4	Initiate development of Emergency Supplemental Supplies	Unknown	
5	Consider a moratorium on new water service connections, or no net water use requirements for new connections	Unknown	

Table 8-3 Supply Augmentation and Other Actions (DWR Table 8-2)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
5	Implement Water Use Limits and Penalties	Unknown	Long term
6	Decrease Water Use Limits and implement issuance of Penalties to align with health and Safety Water Allotment	Unknown	Conducting feasibility analysis

9 DEMAND MANAGEMENT MEASURES

☑ ***CWC §10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

This section summarizes past and planned demand management measure (DMM) implementation in the District as well as an overview of the expected water savings.

9.1 Regional Water Conservation

As described in Chapter 2, the 13 Sonoma-Marin Saving Water Partnership (SMSWP) water suppliers in Sonoma and Marin Counties include the Cities of Santa Rosa, Rohnert Park, Petaluma, Sonoma, Cotati, Cloverdale, and Healdsburg, North Marin Water District, Valley of the Moon Water District, Town of Windsor, California American Water – Larkfield District, Sonoma Water, and the District (Partners). The SMSWP was formed in 2010 and its Memorandum of Understanding was amended in May 2018, extending the term by another ten years and adding language to streamline the addition of members to the SMSWP.

Sonoma Water coordinates the work of the SMSWP in conjunction with the Water Advisory Committee (WAC), which provides input to Sonoma Water and holds certain powers and responsibilities enumerated in the Restructured Agreement for Water Supply between Sonoma Water and SMSWP. The SMSWP is committed to continued water conservation and is in compliance with the final 2020 gallons per capita targets established by Senate Bill X7-7 as described in Chapter 5.

Funding

Sonoma Water's wholesaler water conservation programs are funded by the Partners annually through a WAC recommended budget that allocates a Water Conservation sub-charge for each acre-foot of water sold. The Partners agreed to expend $15 million dollars on water conservation implementation from July 2018 through June 2028. They have also agreed to maintain membership in good standing with the California Water Efficiency Partnership (CalWEP) and implement or use best efforts to secure the implementation of any water conservation requirements added as terms or conditions of Sonoma Water's

appropriative water rights or other regulation or law. Sonoma Water pursues grant funding on behalf of the SMSWP to offset some of the programmatic costs associated with water use efficiency (WUE) programs and to test new technology.

Annual Report

The Partners are committed to implement water conservation measures that provide regional benefits and/or that may exceed the targets established from time to time by the Partners or the state. The Partners will implement or use best efforts to secure the implementation of any water conservation requirements and will publish an Annual Report to track progress. The Annual Report will track program implementation, highlight program milestones, and reinforce the importance of protecting and preserving water resources for future generations. The 2024/2025 Annual Report for the SMSWP could be found in the SMSWP's website.[12]

Public Outreach Program

The SMSWP develops an annual regional outreach campaign that aligns with the region's current water supply conditions and promotes water use efficiency programs. Sonoma Water, in collaboration with the members of the SMSWP, produces collateral material that aligns with the specific campaign. Sonoma Water coordinates an annual media buy that includes outreach in English and Spanish. Each member of the SMSWP can choose to supplement the campaign with their own media buys. The buys generally include the following:

- Radio (streaming and broadcast),
- Newsprint and online digital media placements in 14 various local publications,
- Sonoma County Fair presence,
- Social Media (Facebook, Twitter, Instagram, YouTube, NextDoor),
- Mall banners, and
- Movie theater trailers.

Regional Programs

Sonoma Water on behalf of the SMSWP implements numerous regional programs. This includes offering staff support for interested Partners as a cost-effective way to offer local programs to customers of smaller agencies. Some of these programs are:

- Qualified Water Efficient Landscaper Training Program – A low-cost professional certification program that educates landscapers about irrigation system auditing, while providing customers with a trusted source for knowledgeable hired help that can save them water.
- Eco-Friendly Garden Tour – An annual self-guided garden tour in Sonoma County and North Marin that promotes sustainable landscaping practices.
- Landscape Design Templates – These free, front yard designs are scalable to fit landscaped areas up to 2,500 square feet, ready-to-permit, and in compliance with local Water Efficient Landscape Ordinances.
- Water Smart Plant Label – A free water smart plant labeling program to local nurseries. The water smart plant label highlights low water use plants to nursery customers and promotes sustainable landscaping practices in Sonoma and Marin counties.

[12] The 2024-2025 Annual Report for the SMSWP: http://www.savingwaterpartnership.org/wp-content/uploads/SMSWP-Annual-Report-2020-FINAL.pdf.

9.2 Agency Water Conservation

☑☑ ***CWC § 10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

The District's programs for demand management through water conservation began in 1971 when water conservation literature from the American Water Works Association was inserted into water bills. By the mid-1970s, the District's programs had expanded to include retrofits of water-using fixtures and have continued to expand over the last 45 years.

When the District was embarking on its Integrated Water Resources Management Program in 1991, a review of water demands found that an estimated 11% reduction in water use had occurred during the period from 1970 to 1987 after taking into account the additional services installed during the period. A similar review in 1999 found that the demand had been reduced by an estimated 25% during the period from 1970 to 1998.

In 2007, the District adopted its 2007 Water Conservation Master Plan, which was then updated in 2024, titled the Water Efficiency Master Plan (included in **Appendix H** for reference). The plan will be used to inform and guide the district's conservation efforts over the planning horizon. Additionally, as part of the 2025 UWMP Demand Analysis and Water Conservation Measures Update performed in 2024 a conservation measures analysis assessed potential future conservation programs and associated savings, which can be used by the District to help inform future program selection and implementation.

In late 2010, the District joined with Sonoma Water and the Water Contractors to form the SMSWP. SMSWP allows the District, Sonoma Water, and the Water Contractors to maximize cost-effective water conservation by identifying projects and programs that can be implemented regionally. SMSWP committed each signatory to remain in good standing with CalWEP, and to budget and spend $15 million over 10 years for implementing water conservation programs.

The following sections describe the District's efforts in implementing each of the DMMs as listed in CWC §10631(f). Additional information regarding DMM implementation is provided in the District's 2025 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (**Appendix B**).

9.3 Demand Management Measures for Retail Suppliers

The District centrally administers its conservation programs. For purposes of this section, these programs have been grouped in accordance with the DMM categories in CWC §10631(e). These categories are:

(i) Water waste prevention ordinances

(ii) Metering

(iii) Conservation pricing

(iv) Public education and outreach

(v) Programs to assess and manage distribution system real loss

(vi) Water conservation program coordination and staffing support, and

(vii) Other demand management measures

The following are descriptions of the conservation programs the District operates within each of these DMM categories.

9.3.1 DMM 1 – Water Waste Prevention Ordinances

Title 13 of the District's Code, Water Service Conditions and Water Conservation Measures, includes a section on water waste prohibitions (Section 13.04.020). This section was updated in 2021 to explicitly state that the wasting of water is to be prohibited. The section prohibits nonessential uses, places restrictions on irrigation watering times, limits days per week of allowed irrigation and reverse-osmosis units, and includes prohibitions on single-pass cooling systems and non-recirculating systems for conveyor carwash applications for new connections. The current Title 13 of the District's Code is included in **Appendix I**.

9.3.2 DMM 2 – Metering

☑☑ ***CWC §526 (a)***

Notwithstanding any other provision of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract … shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992, located within its service area.

(2) On and after March 1, 2013, or according to the terms of the Central Valley Project water contract in operation, charge customers for water based on the actual volume of deliveries, as measured by a water meter.

☑☑ ***CWC §527 (a)***

(a) An urban water supplier that is not subject to Section 526 shall do both of the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

The District is fully metered and requires that all new connections be metered. The District requires separate landscape meters for qualified customers and has policies about the use of installed meters. For instance, Section 13.02.065 of the District's Code states that "…use of any District water not metered is prohibited." Additionally, Section 13.020.070 states that "it is unlawful […] to remove, replace, alter, or damage any water meter or components thereof." If a violator is found, the District may impose penalties as outlined in the ordinance.

The District continues to replace meters as they age. The continued objective of the meter replacement program is to achieve a 20-year life cycle for all meters. Tests performed indicate that meters older than 20 years run, on average, 6% slower than new meters. By replacing the oldest meters in the system on an ongoing basis, the meter change program improves overall meter accuracy and retains revenue that would otherwise be lost by inaccurate meters.

The District has installed advanced metering infrastructure (AMI) meters on approximately ten percent of its connections as of 2025, and anticipates to have installed AMI meters on all connections by 2035.

9.3.3 DMM 3 – Conservation Pricing

Conservation pricing sends a signal to customers about their water use and is always in place. The District's rate structure encourages conservation by including both a fixed service charge and a per-unit charge,

reflecting both fixed costs and costs based on the amount of water used. The per-unit charge includes the cost of water supply, treatment and distribution, and watershed maintenance.

In May 2023, the District Board of Directors approved Ordinance No. 464, which enacts changes to the water rates and rate structure through June 2027. The changes in the rate structure include: (1) adjustment to the District's current tiered rate structure to reflect reduced customer demand trends and better recover the cost of providing water; (2) 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; and (3) 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. (MMWD, 2023).

To determine the per unit charge, the District uses a system of three or four billing tiers, depending on the customer class. The current rates went into effect on 1 July 2025 and are available on the District's website: https://marinwater.org/customer-services/understand-your-bill/.

For residential customers, the District uses four tiers. For non-residential potable water, single-family residential irrigation, recycled, and raw water customers, the District uses three tiers.

Every non-residential and dedicated irrigation water service has a water budget that represents actual water needs for the service and is the District's determination of the actual consumption requirement for that business or irrigable area without waste.

The water budget is used for billing purposes to determine the water service tier charges portion of the water bill. The water budget is divided over the billing periods, either monthly or bi-monthly. These monthly or bi-monthly allocations are referred to as the baselines. The baseline in each billing period determines how much water is charged at each billing tier.

9.3.4 DMM 4 – Public Education and Outreach

The District offers free water audits to residential and non-residential customers. During these water use surveys, a District representative evaluates the existing water-using fixtures, landscape irrigation system, and water use patterns to identify water savings opportunities. After the visit, the customer receives a written report of the existing water use patterns and a list of recommendations to increase efficiency. For large irrigation systems, the District offers a specialized large landscape water use survey. For residential customers, the District has a Do-It-Yourself home water survey that customers can print and work through the activities.

For all schools located within the District's service area, MMWD offers several free programs, including watershed field trips, classroom presentations, and various materials intended to guide curriculum for various ages. All school programs are designed to support education standards while fostering water conservation and environmental stewardship. Between 2007 and 2020, 111,024 students have been reached, and an additional 29,500 students were reached from 2020 to 2025. The District also has a list of resources with links on their website that customers can access.

In addition to water use audits and school education, the District offers a number of rebates and discounts to its customers for water-saving fixtures and systems, which also serve to educate and inform customers of conservation opportunities. **Table 9-1** below shows the current conservation programs offered by the District.

Table 9-1 Current Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
AMI Leak Notification Program	Customers with AMI meters receive notifications of water use patterns indicative of leaks and are able to receive timely information and stop leaks much faster. Water Efficiency staff runs automated reports to monitor water use of AMI customers. AMI meters record water use in 15-minute intervals as compared to every other month as is typical for most residential meter reads.	All AMI enabled customers	2018-Current
Smart Home Monitors (Flume and Moen Flo Direct Distribution)	Residential customers can receive a $136 discount on Smart Home Monitors which provide near real time water use monitoring and leak notifications	SFR	2020-current
SFR Water Use Surveys/Audits Program	A free service for SFR customers that involves a visit to their property to review water use and identify ways to save water indoors and outside.	SFR (Both)	1995 - Current
Water Use Surveys/Audits Program (Excluding SFR Participants)	Consultation activities include review, evaluation and report of indoor plumbing devices and/or a review and report of the landscape irrigation system.	MFR, CII, IRR (Outdoor)	1995 - Current
CII Water Use Evaluation Program	CII customers are provided with on-site water use evaluations, recommendations to improve efficiency, and pre-qualified for applicable rebates.	CII (Both)	1995 - Current
Water Waste Report Program	The general public can report water waste situations to MMWD online or over the phone. These contacts are logged into a database and followed up on by field staff to research and notify properties about water waste situations.	SFR, CII (Both)	1998, 2000 - Current
HET Rebate Program	The District rebates up to $100 per HET and up to $200 per Ultra High-Efficiency Toilet (UHET) when customers change their non-water conserving toilets (Pre 1993).	SFR (Indoor)	2007 - 2024

Table 9-1 Current Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
Residential HECW Rebate Program	Customers can apply for a rebate towards the cost of installing a qualifying residential high-efficiency clothes washer that meets current water and energy efficiency requirements.	SFR (Indoor)	1998-2010 2013 -2024
Hot Water Recirculating System	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a hot water recirculating system to create a looped system to recirculate cold water back to the water heater.	SFR (Indoor)	2014 - Current
Pool Cover Rebate Program	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a pool cover.	SFR (Outdoor)	2014 - Current
Laundry-to-Landscape System	2015: Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a 3-way diverter valve and/or air vent. Products must be installed as part of a residential laundry to landscape system that uses discharge water from a single domestic clothes washer in a one- or two-family dwelling. 2020: Single family or duplex residential customers can receive a $125 value kit including a 3-way diverter valve and other supplies needed for installation of a residential laundry to landscape system that uses discharge water from a single domestic clothes washer in a one- or two-family dwelling.	SFR (Outdoor)	2015-2017 2020 - Current

Table 9-1 Current Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
Rain Barrel Rebate Program	2014-2019: Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a rain barrel to collect rainwater that can be used to supplement landscape irrigation. 2020: Residential and commercial customers with active potable water service can apply for a rebate up to $0.50 per gallon of storage when they install rain barrels and/or cisterns at their sites. Total rebates for rain barrels and cisterns may not exceed $1,000 per site. 2024: Residential and commercial customers with active potable water service can apply for a rebate up to $0.75 per gallon of storage when they install rain barrels and/or cisterns at their sites. Total rebates for rain barrels and cisterns may not exceed $1,000 per site.	SFR (Outdoor)	2014 - Current
WBIC Rebate Program	All customers can apply for a rebate of up to $100 per irrigation controller when they purchase and install a weather-based irrigation controller to replace an existing standard controller.	All (Outdoor)	2013-2015 2020 - Current

Table 9-1 Current Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
SFR Turf Removal Program	2015-2016: MMWD customers participated in the state Save Our Water turf replacement program, which offered $2/sq ft of turf removed. 2020-2021: MMWD customers eligible for $3/sq ft for ceasing irrigation and not replanting until water shortage emergency was withdrawn. Alternatively, customers could participate in the Mulch Madness (drought sheet mulching) program. 2022-Current: Tiered rebate that includes a best practice (higher rebate of $4.68/sq ft) for planting mostly native plant species, an alternative water source to the project and sheet mulching to the site. The Standard Rebate is available for turf conversion where best practices are not implemented for $2.18/sq ft.	SFR (Outdoor)	2015-2016 2020 - Current
Organic Mulch Rebate Program	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of organic mulch.	SFR (Outdoor)	2014-2022
Landscape Plan Review Program	Water conservation requirements for landscape professionals and homeowners when designing and installing landscapes and irrigation systems. Plan review requirements apply to all new construction and rehabilitated (renovations or changes made to sites with an existing irrigation system) landscape projects requiring a building permit, plan check, or design review.	SFR, CII (Outdoor)	1986 - Current

Table 9-1 Current Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
Tier 4 Exemption Program	An incentive program designed to help save water and lower customer's water bill. To qualify, customers must meet the District's current water conservation standards and pass a verification site visit. The customer's property then becomes exempt from Tier Four water rates for a four-year period. This means their water will be billed at no higher than Tier Three rates.	SFR (Both)	2004-Current
Water-wise Community Garden Program ("Garden Grant")	Up to $5,000 is available for the installation of water-wise gardens in public spaces to provide local inspiration of turf conversion sites.	MFR, CII, IRR (Outdoor)	2020 - Current
Custom Rebate	Rebate for installing any equipment or technology that the District does not already have a rebate for that results in a sustained water reduction (materials only, not labor).	CII, MFR, IRR (Both)	2025 - Current

Abbreviations:

Ag = Agriculture
AMI = Advanced Metering Infrastructure
CII = commercial, industrial, institutional
HECW = High Efficiency Clothes Washer
IRR = Irrigation
MFR = Multifamily Residential
MMWD = Marin Municipal Water District
SFR = Single Family Residential
sq ft = square feet
WBIC = Weather-Based Irrigation Controller

During the period of 2021 to 2024, the conservation department:

- completed a total of 5,700 audits/surveys;
- provided program activities for over 29,500 students;
- interacted with over 41,000 customers at public outreach events;
- incentivized installation of 527 high efficiency clothes washers, 135 high efficiency toilets, and 1,100 irrigation-related devices including high efficiency spray nozzles, rain sensors, drip system components, weather-based irrigation controllers, mulch, rain barrels, greywater system components at residential and commercial sites;
- provided rebates for replacement of 546,708 square feet of turf;
- conducted 6,017 water waste investigations; and
- responded to over 26,500 customer phone and email inquiries.

The District's 2025 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update (**Appendix B**) provides additional detail on implementation of these conservation programs.

9.3.5 DMM 5 – Programs to Assess and Manage Distribution System Real Loss

The District performs annual water loss audits in accordance with CWC §10608.34. These audits are prepared using the American Water Works Association (AWWA) Free Water Audit Software version 5.0 and validated by an AWWA California-Nevada Section-Certified California Water Audit validator prior to submission to DWR. The District has an active water loss control program, including primary and secondary response. Primary response is by Utility Systems Specialists on an incident-by-incident basis. Utility Systems Specialists are first responders to all reported leaks, mainline shutdowns for the crews and contractors, consumer calls, and meter turn-on/offs. Secondary to any reported problem, the District has implemented a program to assess and manage system loss through leak survey. Leak survey is handled by Utility System Technicians. Leak survey is accomplished by canvassing the entire water distribution system. Using sonic leak detection equipment, technicians are able to locate leaks that may be hidden from view because they have not yet surfaced. Utility System Technicians also assist in pinpointing water leaks. The process of pinpointing water leaks involves the narrowing of a specific leak location. This process assists staff in completing repairs with a minimal amount of excavation.

The District has a proactive leak detection survey program. In addition, the District has an ongoing program (as part of its Capital Improvement Program) to replace aging distribution pipeline.

9.3.6 DMM 6 – Water Conservation Program Coordination and Staffing Support

The District has full-time staff members within the Water Conservation Department dedicated to implementing and overseeing the conservation program. The primary responsibilities of the Conservation Department include designing, developing, and implementing conservation programs for all MMWD customers. The Conservation Department also provides support to customers, including completing water use surveys and reports, answering any questions about conservation programs, and providing printed materials related to the District's conservation programs. The Conservation Department and its activities are funded by the general fund, which is supported by revenue from water sales.

Contact information for the District's Water Efficiency Manager is listed below:

Name: Carrie Pollard

Phone: (415) 945-1522

Email: capollard@marinwater.org

9.3.7 DMM 7 – Other Demand Management Measures

Landscape Plan Review Services

Water conservation staff provide landscape plan review services for all municipal jurisdictions in MMWD's service area at no cost. Title 13 of the District's Code includes a section on water efficient landscaping that requires projects needing a building or landscape permit, plan check or design review. The plan review process consists of reviewing construction documents to verify compliance with efficiency standards, calculating a maximum applied water allowance (MAWA) and estimated total water use (ETWU), conducting a site inspection, and issuing a final letter of approval. On 9 December 2025, the District's Board of Directors approved changes to the landscape plan review requirements to be consistent with the 2025 State of California's Model Water Efficient Landscape ordinance (MMWD, 2026). From 2021 to 2024, conservation staff have conducted 387 landscape plan reviews.

Other Water Efficiency Codes

Title 13 of the District's Code documents all adopted codes related to water efficiency and conservation, codes. Current versions of these codes can be viewed here: http://www.qcode.us/codes/marin-water/view.php?topic=13.

9.4 Implementation to Achieve Water Use Targets and Urban Water Use Objectives

All the DMMs described above contributed to District's compliance with the Water Conservation Act of 2009 (SB X7-7) 2020 target gallons per capita per day (GPCD).

As described in **Section 4.8**, in July 2024, California enacted MCCWL regulation implementing SB 606 and AB 1668 to support long-term water conservation and drought resilience. Starting in 2023, CWC §10609 requires that urban retail water suppliers develop UWUOs that are based on specific standards for certain water use sectors. The District projects that its combination of active and passive conservation programs, as well as participation in regional conservation efforts, will allow it to meet its UWUOs.

10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

☑ ***CWC §10621 (b)***

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

This section provides information on a public hearing, the adoption process for the UWMP and WSCP, the adopted UWMP and WSCP submittal process, plan implementation, and the process for amending the adopted UWMP or WSCP for the District.

10.1 Inclusion of All 2025 Data

This UWMP includes water use and planning data for the entire calendar year of 2025, per the 2025 UWMP Guidebook.

10.2 Notice of Public Hearing

☑ ***CWC §10642***

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

Prior to adopting the Plan, the District held a virtual public hearing to present information on its UWMP and WSCP on 16 June 2026 at 5:00PM.

The District sent a letter to relevant entities including Marin County and other local agencies informing them that the District was in the process of updating its UWMP and soliciting their input in the update process. These same entities were noticed again with the specific date, time and location of the hearing at least two weeks prior to the public hearing. The notice to the public, as specified in California Government Code (CGC) §6066, and letters to relevant agencies can be found in **Appendix C** and **Appendix D**, respectively.

10.2.1 Notice to Cities and Counties

☑ ***CWC §10631 (a)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

Table 10-1 lists the cities and counties that were notified. Copies of these letters are provided in **Appendix C**.

Table 10-1 Notification to Cities and Counties (DWR Table 10-1)

City Name	60 Day Notice	Notice of Public Hearing
City of Belvedere	X	X
City of Larkspur	X	X
City of Mill Valley	X	X
City of Novato	X	X
City of San Rafael	X	X
City of Sausalito	X	X
Town of Corte Madera	X	X
Town of Fairfax	X	X
Town of Ross	X	X
Town of San Anselmo	X	X
Town of Tiburon	X	X
County Name	**60 Day Notice**	**Notice of Public Hearing**
Marin County	X	X
Other Agency Name	**60 Day Notice**	**Notice of Public Hearing**
North Marin Water District	X	X
Sonoma County Water Agency	X	X

10.2.2 Notice to the Public

Notification to the public and to cities and counties also provided instructions on how to view the UWMP and WSCP prior to the hearing, the revision schedule, and contact information of the UWMP and WSCP preparer. A copy of this notice is included in **Appendix D**.

10.3 Public Hearing and Adoption

☑ ***CWC §10608.26***

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

☑ ***CWC §10621 (b)***

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

The deadline for public comments on the UWMP and WSCP was 16 June 2026, the date of the public hearing. The final Plan was formally adopted by the District's Board of Directors on 16 June 2026, and was submitted to DWR within 30 days of approval. **Appendix J** presents a copy of the signed Resolution of Plan Adoption. **Appendix D** contains the following:

- Letters sent to and received from various agencies regarding this Plan, and
- Correspondence between the District and participating agencies.

10.4 Plan Submittal

☑ ***CWC §10621 (f)***

(1) Each urban water supplier shall update and submit its 2025 plan to the department by July 1, 2026.

☑ ***CWC §10635 (c)***

The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

☑ ***CWC §10644 (a)***

(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

This UWMP and WSCP were submitted to DWR within 30 days of adoption and by the July 1, 2026, deadline. The submittal was done electronically through Water Use Efficiency Data Portal, an online submittal tool. The adopted UWMP and WSCP were also sent to the California State Library and to the cities and counties listed in **Table 10-1** no later than 30 days after adoption.

10.5 Public Availability

☑ ***CWC §10645***

(a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

On or about 16 June 2026, an electronic version of the draft UWMP and WSCP were made available for public review by visiting the District's website.

10.6 Amending an Adopted UWMP or Water Shortage Contingency Plan

☑ ***CWC §10644 (b)***

If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

If the UWMP or WSCP are amended, each of the steps for notification, public hearing, adoption and submittal will also be followed for the amended document.

11 REFERENCES

ABAG, 2021. Plan Bay Area 2050. Association of Bay Area Governments and Metropolitan Transportation Commission, dated October 2021.

ABAG, 2025. Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031, adopted December 2021, updated June 2025.

AWE, 2021. "Water Conservation Tracking Tool - Version 4.0." Alliance for Water Efficiency (AWE), 2021. https://allianceforwaterefficiency.org/resource/water-conservation-tracking-tool/.

Cal-Adapt, 2018. Annual Average Maximum Temperature for Novato, CA. Cal-Adapt website developed by University of California at Berkeley's Geospatial Innovation Facility under contract with the California Energy Commission. Retrieved 15 March 2026, from https://v2.cal-adapt.org/tools/local-climate-change-snapshot/.

California Building Standards Commission. CAL Green Code, effective 2014 with supplements effective 2015: http://www.bsc.ca.gov/Home/CALGreen.aspx

California Department of Water Resources (DWR), 2026. Urban Water Management Plan Guidebook. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans/Final-2025-UWMP-Guidebook/Final-2025-UWMP-Guidebook-Accessible.pdf

EKI, 2025. 2025 Water Demand Analysis and Water Conservation Measure Update, prepared for Marin Municipal Water District on December 2025.

Marin County, 2023. Marin Countywide Plan, adopted 6 November 2007, revised 24 January 2023, reprinted February 2026: https://assets.marincounty.gov/marincounty-prod/public/2026-02/cwplan_2023_updated_2026.pdf.

Marin County, 2023. Marin County Operational Area Multi-Jurisdictional Hazard Mitigation Plan 2023.

MMWD, 2016. Marin Municipal Water District 2015 Urban Water Management Plan, prepared by RMC, dated June 2016.

MMWD, 2023. 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. Board of Directors meeting packet. Meeting Date: 16 May 2023. https://marinwater-ca.municodemeetings.com/sites/marinwater-ca.municodemeetings.com/files/fileattachments/board_of_directors/meeting/packets/3906/boardofdirectors_regularmeeting_agendapacket_05_16_2023.pdf.

MMWD, 2024. Five-Year Water Efficiency Master Plan. https://mccmeetingspublic.blob.core.usgovcloudapi.net/marinwtrca-meet-ea1e8090af2e41e9bab4376962e4c9bb/ITEM-Attachment-001-42ff8cccbaed4f8f9c2a6c1ce8e69e4b.pdf.

NOAA, 2021. Map of Sea level trends, NOAA Tides & Currents, data obtained on 10 February 2021, https://tidesandcurrents.noaa.gov/sltrends/.

Sonoma Water. 2021. Sonoma Water Climate Adaptation Plan.

Sonoma Water, 2021b. Groundwater Sustainability Plan Santa Rosa Plain Groundwater Subbasin. https://santarosaplaingroundwater.org/gsp/.

Sonoma Water, 2024. Sonoma County Water Agency Local Hazard Mitigation Plan, dated 19 September 2024.

Sonoma Water, 2026. Draft 2025 Urban Water Management Plan. Accessed 15 April 2026.

U.S. Census, 2026. U.S. Census Bureau QuickFacts for Novato, CA, accessed on 09 March 2026, https://www.census.gov/quickfacts/.

Appendix A: Completed UWMP Checklist

Marin Municipal Water District
2025 Urban Water Management Plan
Checklist

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	Chapter 1 (pp. 1-1 to 1-3)
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	Executive Summary (pp. ES-1)
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	Section 2.1 (p. 2-1)
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	Section 2.5 / Table 2-1 (p. 2-2)
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	Section 2.5 / Table 2-2 (p. 2-2)
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	Section 2.5 / Table 2-3 (p. 2-3)
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	Section 2.4 / 2.5.2 (p. 2-4)
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	Section 2.4 / 2.5.2 (p. 2-4)
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	Section 2.4.1 / Table 2-4 (p. 2-4)
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Chapter 3 / Section 3.1 (p. 3-1)
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Section 3.2 (p. 3-4)
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	Section 3.3 / Table 3-2
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	Section 3.3.3 / Table 3-4
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area… include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	Section 3.4
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	Sections 4.2–4.3 / Tables 4-1 & 4-2 (pp. 4-2 to 4-4)
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	Section 4.4 / Table 4-2 (p. 4-5)
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	Section 4.4 / Table 4-3 (p. 4-7)
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	Section 4.5.4 / Table 4-7 (p. 4-6)
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	Section 4.5.2 / Table 4-6 (pp. 4-2 to 4-4)
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	Section 4.5.2 / Table 4-6 (p. 4-4)

Marin Municipal Water District
2025 Urban Water Management Plan
Checklist

x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall… Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.	System water use	4-3	Section 4.5.2 / Table 4-6 (p. 4-4)
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	Section 4.5.5 / Table 4-8 (p. 4-7)
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Chapter 5 / Table 5-1 (p. 5-11)
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	Section 6.1 / 6.9 (pp. 6-1, 6-19)
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	Sections 6.1 & 6.9 / Tables 6-9 & 6-11 (pp. 6-19 to 6-21)
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	Section 6.2 / Table 6-1 (p. 6-5)
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	Section 6.2.2 (p. 6-4) – Groundwater Management
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Section 6.2.1 (p. 6-4) – Basin Description and Status
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	Section 6.2.1 (p. 6-4)
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin.	Water supplies and recycled water	n/a	Section 6.2.1 (p. 6-4)
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	Section 6.2.2 (p. 6-4)
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	Section 6.2.3 / Table 6-1 (p. 6-5)
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	Section 6.2 / Table 6-1 (p. 6-5)
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	Section 6.9 / Tables 6-9 & 6-11 (pp. 6-19 to 6-21)

x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	Section 6.7 (p. 6-16)
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	Section 6.5.2 / Table 6-3 (pp. 6-7 to 6-10)
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	Section 6.5.2 / Table 6-4 (pp. 6-10 to 6-11)
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	Section 6.5.3 / Table 6-5 (pp. 6-11 to 6-13)
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	Section 6.5.3 / Table 6-5 (p. 6-13 to 6-14)
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	Section 6.5.3 / Tables 6-5 & 6-6 (pp. 6-13 to 6-14)
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	Section 6.5.4 / Table 6-7 (pp. 6-14 to 6-15)
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	Section 6.5.4 (p. 6-14 to 6-15)
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Section 6.6 (p. 6-15)
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	Section 6.8 / Table 6-8 (pp. 6-16 to 6-18)
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	O-1A, O-1B, O-1C, and O-2	Section 6.11 / Table 6-12b (p. 6-24 to 6-25)
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	Section 7.1.2 (p. 7-4) – Water Quality
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	Section 7.2 / Tables 7-2 through 7-4 (pp. 7-5 to 7-10)
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	Section 7.4 (p. 7-11)
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	Section 7.5 (p. 7-11)
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	Section 7.5.1 (p. 7-12)
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	Section 7.5.2 (p. 7-12)
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	Section 7.5.3 / Table 7-10 (p. 7-12)
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	Section 7.5.1 (p. 7-12)
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Chapter 8 (p. 8-1) / Appendix G

x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Chapter 8 (p. 8-1)
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	Chapter 8 (p. 8-1) / Appendix G
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	Chapter 8 (p. 8-1) / Appendix G
x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	Chapter 8 (p. 8-1) / Appendix G
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	Table 8-1 (p. 8-1) / Appendix G
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	Table 8-3 (pp. 8-8 to 8-10) / Appendix G
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	Table 8-2 (pp. 8-1 to 8-8) / Appendix G
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Table 8-3 (pp. 8-8 to 8-10) / Appendix G
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	Table 8-2 (pp. 8-1 to 8-8) / Appendix G
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	Tables 8-2 & 8-3 (pp. 8-1 to 8-10) / Appendix G
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	Appendix G
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	Appendix G
x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	Appendix G
x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	Appendix G
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	Appendix G
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3, *Water Shortage Emergencies* .	Water shortage contingency planning	n/a	Appendix G
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	Appendix G
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Appendix G
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Appendix G
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, *Excessive Residential Water Use During Drought* .	Water shortage contingency planning	n/a	Appendix G

x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	Appendix G
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	Appendix G
x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	Appendix G
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Appendix G / Section 10.5 (p. 10-4)
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	Chapter 9 / Sections 9.3.1–9.3.7 (pp. 9-3 to 9-12)
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	Section 10.3 (p. 10-3) – Public Hearing and Adoption
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	Section 10.2.1 / Table 10-1 (p. 10-2)
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 202 6.	Plan adoption, submittal, and implementation	n/a	Section 10.4 (p. 10-3) – Plan Submittal
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	Sections 10.2.2, 10.3, 10.5 (pp. 10-3 to 10-4)
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	Section 10.2.2 / Table 10-1 (pp. 10-2 to 10-3)
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	Section 10.3 (p. 10-3)
x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	Section 10.4 (p. 10-3)
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	Section 10.4 (p. 10-3)
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	Section 10.4 (p. 10-3)
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	Section 10.6 (p. 10-4)
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 10.5 (p. 10-4)
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 10.5 (p. 10-4)
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	Section 10.6 (p. 10-4) – Not applicable to MMWD

Appendix B: 2025 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update

2025 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURE UPDATE

Marin Municipal Water District

24 December 2025

EKI C40180.00

2025 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURE UPDATE

24 December 2025

Prepared for:

Marin Municipal Water District

Prepared by:

EKI Environment & Water, Inc.
2001 Junipero Serra Blvd., Suite 300
Daly City, California 94014
(650) 292-9100
www.ekiconsult.com
EKI C40180.00

2025 Water Demand Analysis and Water Conservation Measure Update

Marin Municipal Water District

TABLE OF CONTENTS

1 INTRODUCTION 1-1

2 REGULATORY CONTEXT 2-1

2.1 UWMP Demand Projections Requirements 2-1

2.2 New Requirements for Water Use Efficiency 2-2

2.2.1 Making Conservation a California Way of Life 2-2

2.2.2 Related Regulations with MCCWL Compliance Implications 2-4

3 WATER USE CHARACTERISTICS 3-1

3.1 Historical Total and Per Capita Water Use 3-1

3.2 Water Use Trends by Customer Sector 3-6

3.3 Estimated Indoor and Outdoor Water Use 3-9

4 CONSERVATION PROGRAM PARTICIPATION 4-1

4.1 Conservation Programs 4-1

4.2 Historical Conservation Program Participation 4-5

4.3 Estimated Savings from Past Conservation Programs 4-6

5 WATER DEMAND PROJECTIONS 5-1

5.1 Basis for Account Growth Projections 5-1

5.2 Planned Development Within the Service Area 5-5

5.3 Water Demand Factors 5-5

5.3.1 Potable Water 5-6

5.3.2 Recycled Water 5-7

5.3.3 Non-Revenue Water and Water Loss 5-7

5.4 Passive Water Savings Estimate 5-7

5.5 Projected Water Demand Through 2050 5-7

5.6 Projected Compliance with UWUOs 5-12

6 CONSERVATION MEASURES UPDATE 6-1

6.1 Methodology for Screening of Potential Water Conservation Measures 6-1

6.2 Screening of Conservation Measures for Regional Implementation 6-2

6.2.1 Public Outreach and Education-Based Conservation Programs 6-2

6.2.2 Device and Financial Incentive-Based Conservation Programs 6-2

6.2.3 Regional Program Screening Findings 6-4
6.3 Screening of Conservation Measures for Local Implementation 6-4
6.3.1 Agency Actions and Water Rate Conservation Programs 6-4
6.3.2 Public Outreach and Education Based Conservation Programs 6-4
6.3.3 Device and Financial Incentive Based Conservation Programs 6-5
6.3.4 Policy and Regulation Based Conservation Programs 6-5
6.4 Evaluation of Future Water Conservation Programs 6-6
7 CONCLUSIONS 7-1
7.1 Historical, Current, and Projected Water Demand 7-1
7.2 Conservation Measures Participation, Savings, and Update 7-1
8 REFERENCES 8-1

TABLES (IN REPORT TEXT)

Table 3-1 Total and Per-Capita Water Use 3-2
Table 3-2 Annual Water Use by Customer Sector 3-4
Table 3-3 Average Per Account Water Use by Customer Sector 3-8
Table 4-1 Description of Conservation Programs 4-1
Table 4-2 Summary of Conservation Program Participation 4-8
Table 4-3 Estimated Water Savings Achieved by Conservation Program and Passive Savings 4-12
Table 5-1 Historical and Projected Account Growth Rate by Customer Sector 5-2
Table 5-2 Population and Employment Projections 5-3
Table 5-3 Projected Number of Accounts 5-5
Table 5-4 Selected Water Demand Factors 5-6
Table 5-5 Projected Water Demand by Sector without Passive Conservation 5-8
Table 5-6 Projected Demand and Passive Conservation 5-9
Table 5-7 Projected Water Demand by Sector with Passive Conservation 5-10
Table 5-8 Actual and Projected Water Use vs. Urban Water Use Objectives 5-13
Table 6-1 Prioritization of Conservation Measures and Programs, Regional Rankings 6-3
Table 6-2 Conservation Measure Scenarios 6-9
Table 6-3 Costs and Savings of Potential Conservation Programs 6-10
Table 6-4 Program Scenario Total Conservation Savings and Unit Costs 6-12

FIGURES (IN REPORT TEXT)

Figure 1-1 Participating Sonoma-Marin Saving Water Partnership Members 1-3
Figure 1-2 Marin Municipal Water District Service Area 1-4
Figure 2-1 Components of Urban Water Use Objective 2-2
Figure 2-2 Progression of Objectives Indoor and Outdoor Efficiency Standards Through 2040 2-5
Figure 2-3 General Timeline of MCCWL Regulatory Requirements 2-6
Figure 3-1 Total Water Production and Per-Capita Water Use 3-3
Figure 3-2 Annual Water Use by Sector Group 3-5
Figure 3-3 Proportional Water Use by Sector Group in 2024 3-5
Figure 3-4 Monthly Water Use and 12-Month Moving Average 3-7
Figure 3-5 Average Per Account Water Use by Sector Group 3-9
Figure 3-6 Average Monthly Water Use, 2010-2024 3-10
Figure 3-7 Estimated Indoor and Outdoor Water Use, 2024 3-11
Figure 4-1 Conservation Program Participation by Program Type 4-11
Figure 4-2 Estimated Water Savings Achieved by Conservation Programs 4-14
Figure 5-1 Population and Employment Projections 5-4
Figure 5-2 Projected Water Demand with Passive Conservation 5-11
Figure 5-3 Actual and Projected Water Use vs. Urban Water Use Objectives 5-13
Figure 5-4 Projected Water Use vs. Urban Water Use Objectives by Component 5-14

APPENDICES

Appendix A Methodology for Estimating Indoor and Outdoor Water Use
Appendix B Conservation Program Assumptions
Appendix C Prioritization and Screening of Future Water Conservation Measures

ABBREVIATIONS AND ACRONYMS

Ag	agricultural
AB	Assembly Bill
AFY	acre-feet per year
AMI	advanced metering infrastructure
AWE	Alliance for Water Efficiency
BMPs	Best Management Practices
CII	Commercial, Industrial, and Institutional
CWC	California Water Code
DIM	dedicated irrigation meter
District	Marin Municipal Water District
DMM	demand management measure
DWR	Department of Water Resources
GPCD	gallons per capita per day
HECW	high-efficiency clothes washer
HET	high-efficiency toilet
IRR	irrigation
LEF	landscape efficiency factors
MCCWL	Making Conservation a California Way of Life
MFR	multi-family residential
MUMs	mixed-use meters
Objective	Urban Water Use Objective
QWEL	Qualified Water Efficient Landscaper
Report	Water Demand and Conservation Report
SB	Senate Bill
SFR	single family residential
SMSWP	Sonoma-Marin Saving Water Partnership
State Water Board	State Water Resources Control Board
Sonoma Water	Sonoma County Water Agency
sq ft	square feet
TM	technical memorandum

UWMP	Urban Water Management Plan
Water Contractors	The nine members of the SMWSP participating in this project.
WBIC	weather-based irrigation controller

1 INTRODUCTION

To support the development of the 2025 Urban Water Management Plan (UWMP) updates, nine members of the Sonoma-Marin Saving Water Partnership (SMSWP) coordinated to conduct a joint update of their water demand projections and water conservation planning efforts (i.e., the *2025 Water Demand and Conservation Project*). The participating SMSWP members include the City of Cotati, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Marin Municipal Water District, North Marin Water District, Town of Windsor, and Valley of the Moon Water District. These nine participating SMSWP members (referred to as Water Contractors herein) are shown on **Figure 1-1**.

The goals of the *2025 Water Demand and Conservation Project* are to apply a common methodology to conduct the following analysis for each Water Contractor:

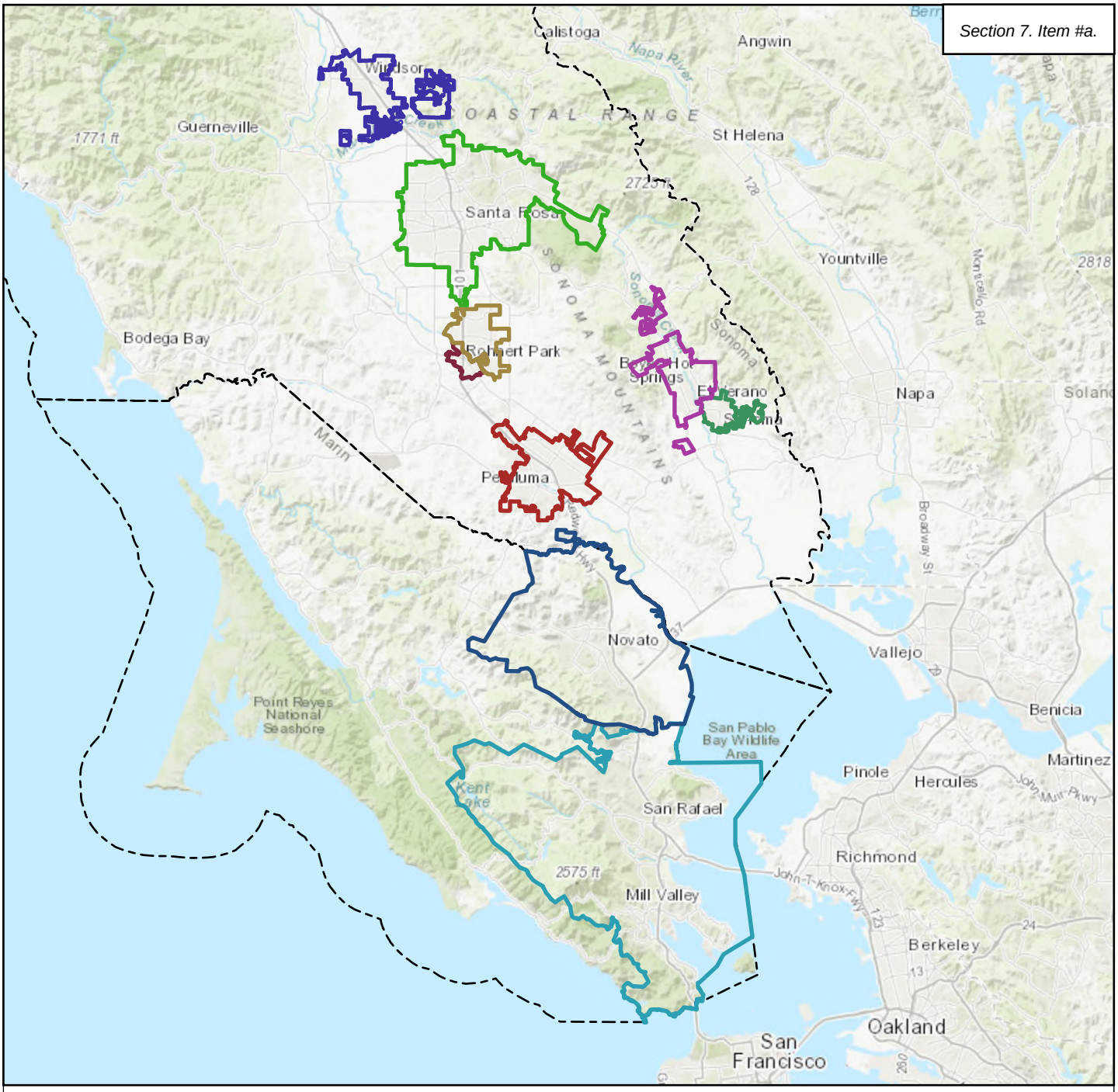
- Evaluate and document recent historical water use characteristics and trends, including population and account growth (in this report, the term "account" indicates "water connection");
- Estimate projected water demands for the years 2030 through 2050 to support both the 2025 UWMP update and coordination and planning efforts with Sonoma Water;
- Update the suite of common regional conservation measures that are being considered for implementation in the future;
- Review and document past participation in water conservation programs; and
- Estimate the potential water savings associated with future water conservation program implementation.

This 2025 Water Demand and Conservation Measure Update presents the results for the Marin Municipal Water District (District) (**Figure 1-2**), located in Marin County, and serving a population of approximately 186,895 people in 2024. The District's water supplies include surface water purchased from Sonoma County Water Agency (Sonoma Water), local surface water from its watershed, and recycled water produced from local wastewater at the Las Gallinas Valley Recycled Water Treatment Facility. Potable water is supplied to urban customers, and recycled water is provided to a variety of uses in the Terra Linda area of San Rafael including for irrigation, cooling towers, car washes and toilet flushing. Conservation has been achieved through the implementation of water conservation programs, including most administered by the District and some administered through the regional SMSWP.

This 2025 Water Demand and Conservation report is organized as follows:

- **Section 1** identifies the goals and objectives of the Report;
- **Section 2** provides the regulatory context for the demand projections as described in the Report as well as new requirements related to *Making Conservation a California Way of Life* (MCCWL; Assembly Bill [AB]-1668/ SB-606) that impact the water demand and conservation planning components of the 2025 UWMPs;
- **Section 3** describes historical water use patterns and characteristics within the District;

- **Section 4** documents past participation in conservation programs and estimated savings associated with program implementation, and presents the results of a detailed analysis of program participation trends for select conservation programs;
- **Section 5** describes the projected water demands through 2050, including the assumptions and methodology used;
- **Section 6** documents the water conservation measure screening process, identifies individual programs and program scenarios for potential future implementation by the District;
- **Section 7** documents the key findings and conclusions from the analyses presented throughout this report; and
- **Section 8** provides key references and sources.



Legend

- City of Cotati Service Area
- City of Petaluma Service Area
- City of Rohnert Park Service Area
- City of Santa Rosa Service Area
- City of Sonoma Service Area
- Marin Municipal Water District Service Area
- North Marin Water District Service Area
- Town of Windsor Service Area
- Valley of the Moon Water District Service Area
- County Boundaries

Notes

1. All locations are approximate.

Sources

1. Service area boundaries provided by respective agencies.
2. Basemap provided by ESRI.

N

0 8 16

(Scale in Miles)

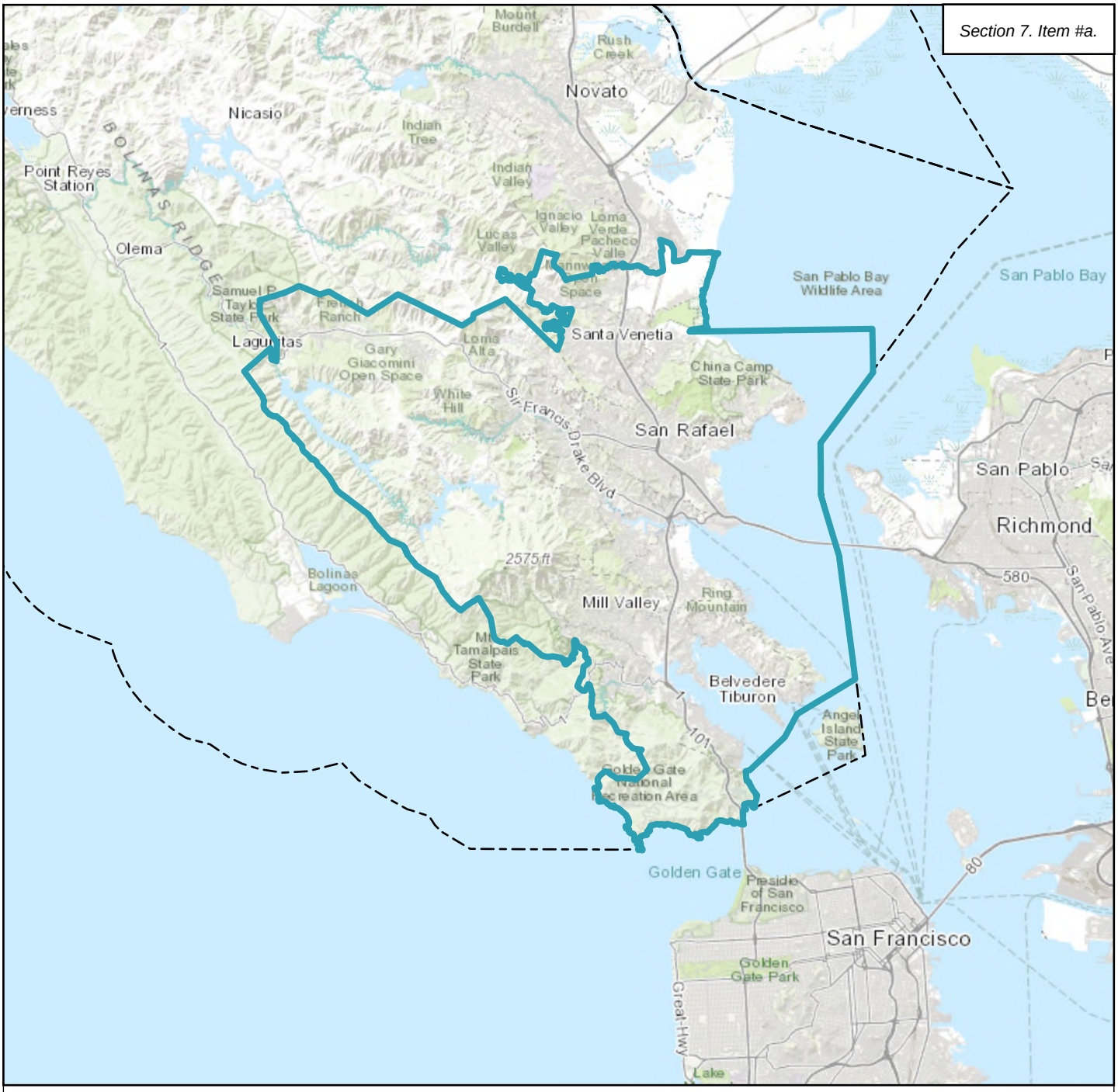
Participating Sonoma-Marin Saving Water Partnership Members

Sonoma Marin Saving Water Partnership
December 2025
C40

eki environment & water

Figur

Path: X:\C40180\Map_00\2025\09\ReportFigures.aprx



Legend

- Marin Municipal Water District Service Area
- County Boundaries

Sources

1. Service area boundary provided by Marin Municipal Water District.
2. Basemap provided by ESRI.

N

0 4 8

(Scale in Miles)

Notes

1. All locations are approximate.

Service Area Boundary – Marin Municipal Water District

Sonoma Marin Saving Water Partnership
September 2025
C40[illegible]

eki environment & water

Figure

Path: X:\C40180\Map_00\2025\09\ReportFigures.aprx

2 REGULATORY CONTEXT

This section provides the regulatory background for the requirements to project future demand in the 2025 UWMP. Although there are no updates to the UWMP regulations since 2020, the MCCWL and other state regulations will impact the 2025 UWMPs, as they will inform the water demand projections and conservation planning components.

2.1 UWMP Demand Projections Requirements

California Water Code (CWC) § 10631, excerpted below, describes the requirements to develop water demand projections that consider water use by customer sector, incorporate distribution system water loss, and account for anticipated water savings. Water demand projections herein were developed for the District using a land-use-based approach that is consistent with these requirements, and can be incorporated into the District's 2025 UWMP.

CWC § 10631

A plan shall be adopted in accordance with this chapter that shall do all the following:

…

(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

…

(d)(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall note that fact.

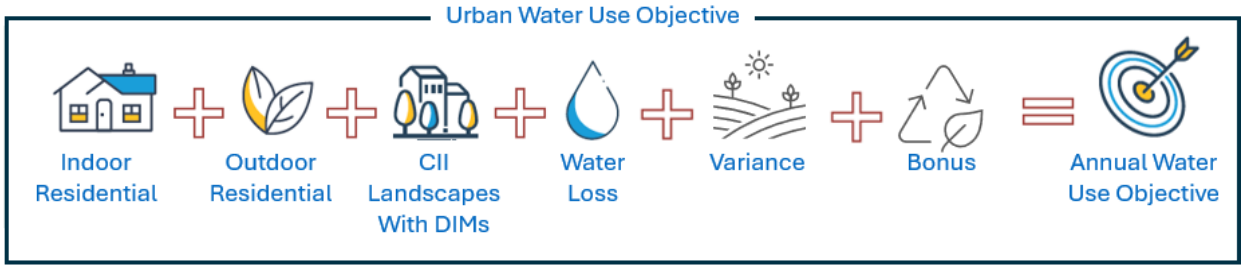
2.2 New Requirements for Water Use Efficiency

2.2.1 Making Conservation a California Way of Life

The State Water Resources Control Board (State Water Board) adopted a new Conservation Framework to implement Senate Bill 606 and Assembly Bill 1668 through the enactment of the MCCWL regulation in July 2024. The Conservation Framework requires each urban water supplier to calculate and comply with an annual Urban Water Use Objective (Objective) and to implement Commercial, Industrial, and Institutional (CII) Performance Measures, both of which must be reported on annually starting January 1, 2024 (although compliance with the Objective is not required until January 1, 2027).

As illustrated in **Figure 2-1** below, the Objective is calculated as the sum of the following components: (1) residential indoor water use standard, (2) residential outdoor water use standard, (3) CII landscape outdoor water use standard (for landscapes with dedicated irrigation meters [DIMs]), (4) water loss standard, (5) allowable variances, and (6) bonus provisions. Per the latest guidelines released by the Department of Water Resources (DWR) and the State Water Board, agencies will need to assess whether they meet their overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective).

Figure 2-1 Components of Urban Water Use Objective



The components of the Objective Water use include the following:

- **Indoor and Outdoor Residential**. Indoor and outdoor residential include supplier-specific water use standards for indoor and outdoor single-family and multi-family residential use. The standard for efficient residential indoor water use is expressed in gallons per capita per day (GPCD) and is currently set at 47 GPCD, which took effect January 1, 2025. This standard will lower to 42 GPCD beginning January 1, 2030 (**Figure 2-2**). The residential indoor water use budget is calculated by multiplying a supplier's residential service area population by the residential indoor standard and by the number of days in the year. The standard for efficient residential outdoor water use is expressed as the landscape efficiency factor (LEF), a unitless number used to indicate the amount of water a supplier may need to deliver a healthy and efficient landscape in the service area, and represents plant factors and irrigation efficiency (**Figure 2-2**). The outdoor budget is then calculated

by multiplying the relevant outdoor LEF by landscape area, net evapotranspiration, and a unit conversion factor of 0.62;

- **CII Landscapes with Dedicated Irrigation Meters**. The budget for CII water use associated with dedicated irrigation meters (DIMs) is calculated by multiplying the outdoor LEF (**Figure 2-2**) for the CII special landscape area, by area of the large landscape, net evapotranspiration, and a unit conversion of 0.62. However, the CII landscapes with DIMs budgets will not become effective until June 30, 2028; until then, the budget is equal to actual water deliveries to CII DIMs. In the future, urban retail suppliers will have the option of installing DIMs at "large landscapes" that are over 0.5 acres and currently served by mixed-use meters (MUMs) (see discussion of CII Performance Measures below);
- **Water Loss.** Water loss represents "real water losses" or physical water losses from the pressurized potable water system (water mains and customer service connections) and the utility's storage tanks, up to the point of customer consumption. These losses do not include apparent losses such as meter inaccuracies or theft. The water loss component is calculated based on the volumetric standards discussed in Section 2.2.2;
- **Variances.** Variances are an additional volume of water that an urban retail water supplier may request to add to its Objective for a unique use that has a substantial impact on a supplier's Objective. Types of variances include the following: (1) emergency response; (2) recycled water with high levels of total dissolved solids; and (3) other variances, which encompasses water use related to seasonal populations, dust control for horse corrals and animal exercise areas, irrigation of residential agricultural landscapes, water use for sustaining wildlife in ponds and lakes when required by regulation, and irrigation of existing trees. Approved variances can be included in a supplier's budget for up to five years and have documentation demonstrating that the variance does not conflict with permit requirements;
- **Bonus Incentives.** Bonus incentives apply to potable reuse projects to help suppliers meet the Objective through alternative water sources. The bonus incentive is calculated by multiplying the urban retail water supplier's potable reuse volume, in gallons, depending on where the potable reuse water is obtained (i.e., groundwater basin, reservoir, direct potable reuse project) by the portion of total potable water production delivered to residential and landscape irrigation connections for the reporting year. Suppliers must report and update the bonus incentive calculation annually. Required documentation includes data on potable reuse volumes, loss factors for groundwater recharge and recovery, and verification from relevant regulatory authorities.

The progression of the residential indoor water use standard, residential outdoor LEF, and CII landscape with DIMs outdoor LEF are summarized on **Figure 2-2** below.

In addition, the Conservation Framework includes a number of requirements for CII Performance Measures, which include the following:

- **Implementing a classification system for CII water users**. Requires classification of CII accounts based on customer end use, and suppliers shall annually maintain at least a 95% classification rate of CII end users. CII accounts are to be classified based on customer end use, in accordance with the 18 Energy Star Portfolio Manager's broad categories (e.g.,

banking services, education, office, retail, utility, etc.), including four additional CII categories of laundry, landscapes with DIMs, water recreation, and car washes.

- **Converting MUMs to DIMs for CII customers with large landscapes, or employing in-lieu technologies combined with rolling out Best Management Practices (BMPs)**. Suppliers must install DIMs for CII customers with large landscapes (which include those over half an acre) or employ in-lieu technology (e.g., advanced metering infrastructure [AMI]) and offer BMPs to CII customers.
- **Providing BMP programs for CII customers**. Suppliers must identify CII water users that exceed a recommended size, volume of water use, or another threshold. Options include identifying the top water users, identifying the top water users within CII classification categories, or identifying inefficient CII water users with the use of key business activity indicators. For CII customers identified, suppliers must design and implement conservation plans from a list of approved BMP themes.

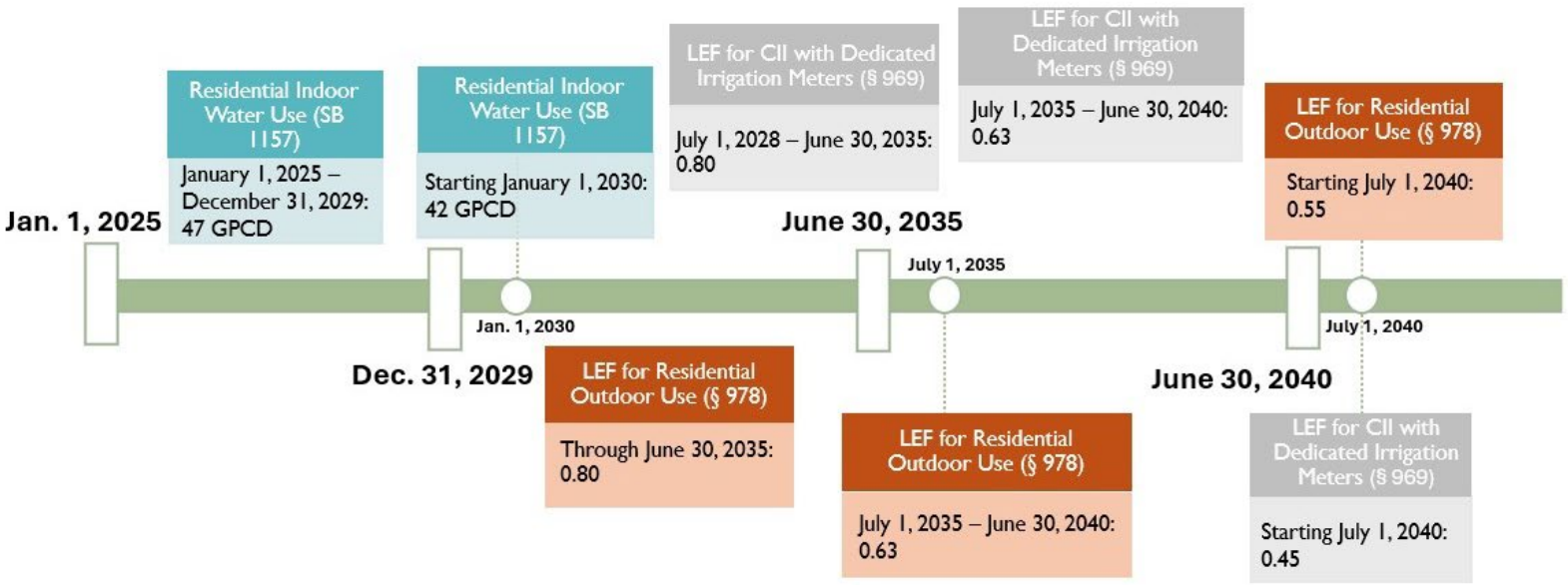
The implementation timeline of the MCCWL regulatory requirements is illustrated on **Figure 2-3**.

2.2.2 Related Regulations with MCCWL Compliance Implications

The following two regulations are separate from those embedded in the compliance requirements of MCCWL and are required to be reported on within annual Objective reporting:

- **Water Loss Control**. Urban water retailers are required to comply with State-assigned volumetric standards for real water loss. Suppliers must calculate system-specific water loss budgets by multiplying their State Board-assigned water loss standard by the number of days in the year and, depending on the units associated with the standard, by either the number of total service connections or the length of the distribution system. Suppliers with multiple systems must calculate an aggregate water loss budget by summing the estimated losses for each system.
- **Nonfunctional Turf Irrigation Ban (AB 1572)**. The nonfunctional turf irrigation ban applies to turf (mowed grass maintained for aesthetic purposes) that does not provide recreational or community benefits, including CII properties, and common areas of homeowner associations. Water suppliers need to identify what landscapes fall under the ban and implement a plan to comply with the required schedule between 2027 and 2031, depending on the property type.

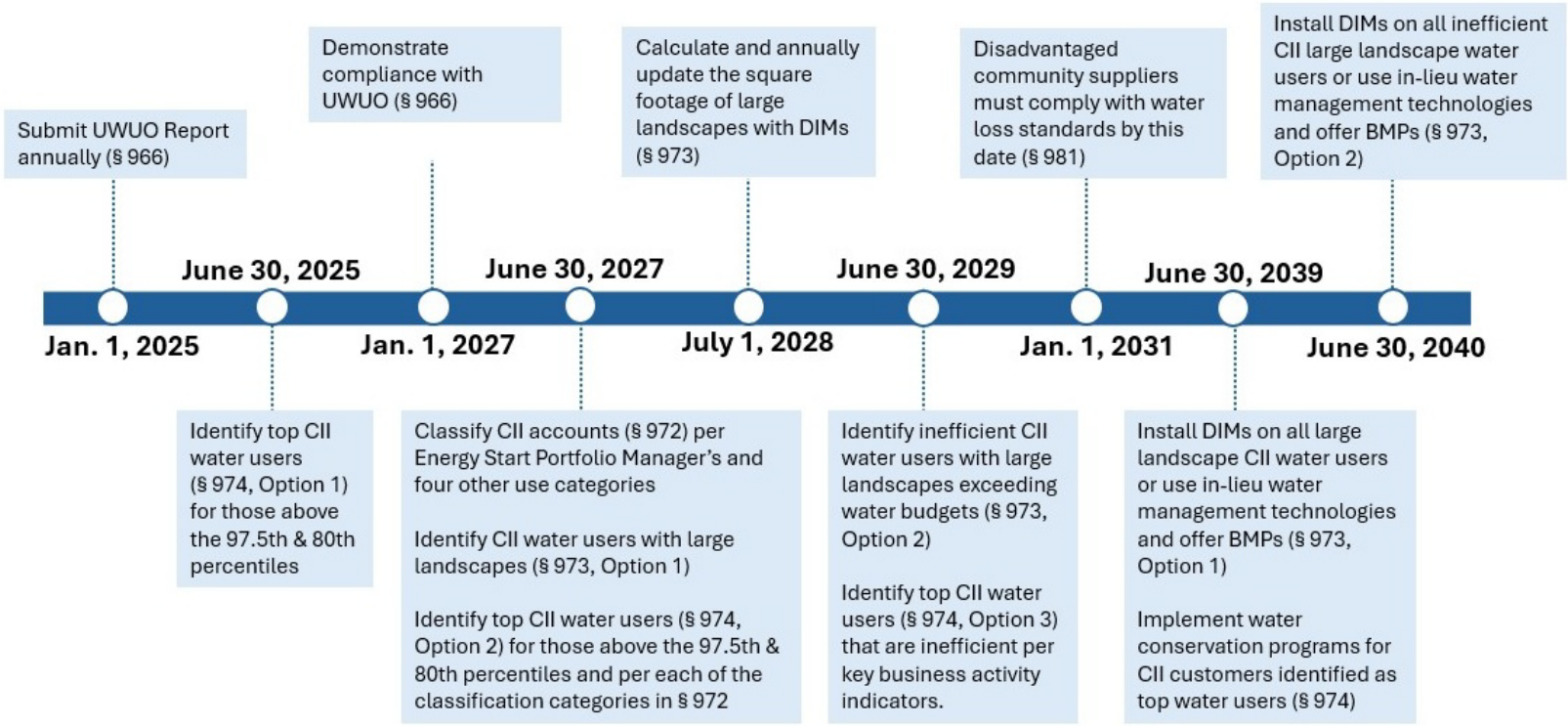
Figure 2-2 Progression of Objectives Indoor and Outdoor Efficiency Standards Through 2040



Abbreviations:

CII = commercial, industrial, and institutional
LEF = landscape efficiency factors
SB = Senate Bill

Figure 2-3 General Timeline of MCCWL Regulatory Requirements



Abbreviations:

BMPs = best management practices
CII = commercial, industrial, and institutional
DIMs = dedicated irrigation meters
UWUO = Urban Water Use Objective

3 WATER USE CHARACTERISTICS

This section describes historical water use by customers within the District including changes in observed water use, changes in average water use per account over time, and estimates of indoor and outdoor water use. This information is used to provide context and background to support the projection of future water demands and estimates of potential conservation program benefits. The terms "water use," "water consumption," and "water demand" are used interchangeably in this document.

3.1 Historical Total and Per Capita Water Use

Table 3-1 and **Figure 3-1** show the potable and recycled water use, total water use inclusive of potable, raw and recycled water, total per capita water use[1], and residential per capita water use for the past 15 years, 2010 through 2024.

As shown in **Table 3-1** and on **Figure 3-1**, total water use (including potable, raw and recycled water) was the highest in 2013 at 29,409 acre-feet per year (AFY) before declining significantly in response to the 2014-2017 drought and the State's water use reduction mandates. Water use rebounded through 2020 at the beginning of the pandemic and then declined again coinciding with the 2021-23 historic drought. While there was a modest increase following the drought in 2024 to 22,784 AFY, total water use remains below historical levels observed in the 2010s.

Total per capita water use (including potable, raw and recycled water use) has declined over the period, from a high of 139 gallons per capita per day (GPCD) in 2013 to lows of 103 and 105 GPCD in 2021 and 2022, respectively. A similar trend was observed in residential per capita water use. These trends reflect the impact of water efficiency improvements, as well as demand hardening as structural and behavioral changes during droughts result in lasting water use reductions.

Historical water consumption per customer sector is provided in **Table 3-2** and shown by sector group on **Figure 3-2**[2]. **Figure 3-3** shows the proportional water use by sector group. The single-family residential (SFR) sector comprises the largest proportion of the District's total water consumption (57.1%). By comparison, the proportional water use consumption for the other sectors includes the multi-family residential (MFR) sector at 14.4%; the combined commercial, industrial, and institutional (CII) sector at 18.4%; dedicated irrigation accounts at 6%; with recycled comprised of 3.2% of total water consumption. Separately, non-revenue water was estimated to be 9.2% of the District's total water demand (**Table 3-2**).

[1] Per capita water use for purposes of comparing water use to SB X7-7 water conservation targets may be different, due to the prescriptive method by DWR for determining an agencies compliance population and total water use. SB X7-7 compliance will need to be separately addressed by the District's UWMP.
[2] Customer sectors are grouped into categories of SFR, MFR, CII total (mixed-use meters), irrigation (dedicated irrigation meters), and recycled water.

Table 3-1 Total and Per-Capita Water Use

Year	Potable Water Use (AFY) (a)	Raw Water Use (AFY) (a)	Recycled Water Use (AFY) (a) (b)	Total Water Use (AFY) (c)	Total Per Capita Water Use (GPCD) (d)	Residential Per Capita Water Use (R-GPCD) (e)
2010	25,469	258	514	26,241	128	82
2011	25,256	220	432	25,908	125	80
2012	26,592	301	507	27,400	131	86
2013	28,374	351	684	29,409	139	89
2014	24,523	323	579	25,425	119	79
2015	22,903	304	520	23,727	111	71
2016	22,709	301	491	23,501	109	71
2017	24,658	310	512	25,480	118	75
2018	25,168	309	522	25,999	121	78
2019	25,524	164	-	25,688	119	77
2020	27,281	180	-	27,461	127	86
2021	21,463	111	552	22,126	103	71
2022	21,276	184	697	22,157	105	69
2023	21,422	156	713	22,291	106	68
2024	21,872	174	738	22,784	109	71

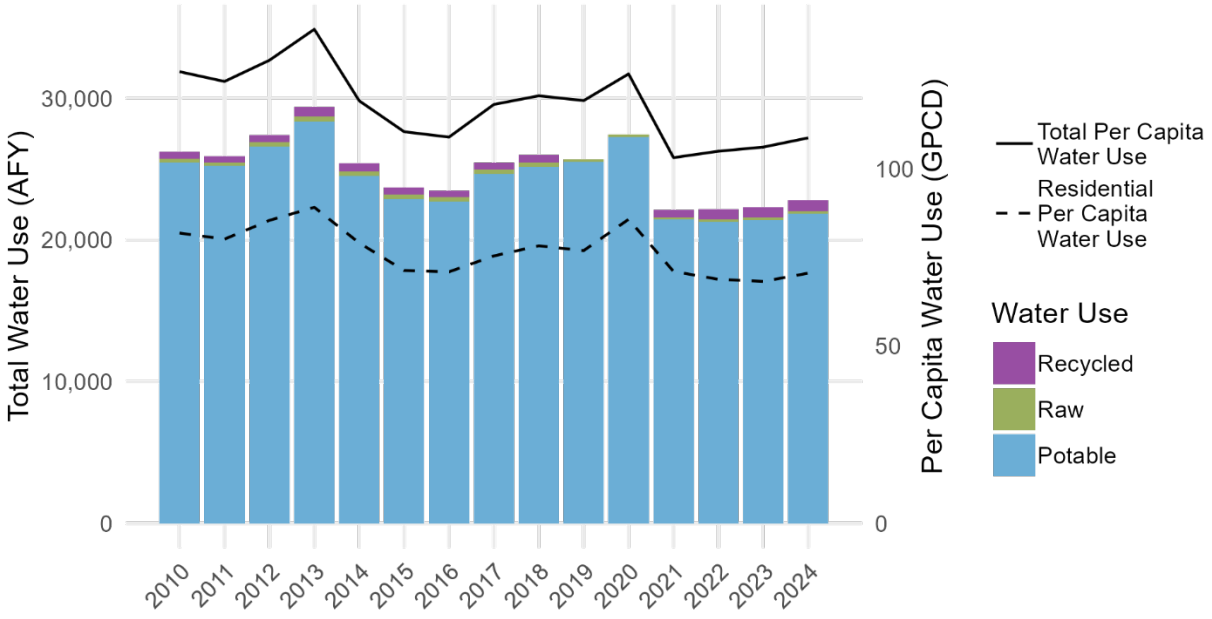
Abbreviations:

AFY = acre-feet per year
GPCD = gallons per capita per day
R-GPCD = residential gallons per capita per day

Notes:

(a) Water use data are based on water production data provided by District staff.
(b) The recycled water system is supplemented with potable water to meet demands, as necessary. This table reflects the recycled water deliveries to the recycled water system. In 2019 and 2020, all recycled water demands were met by potable water while the treatment plant was under construction.
(c) Totals may not sum due to rounding.
(d) Total per capita water use is calculated by dividing the Total Water Use by service area population (see Section 4) and the number of days in a year.
(e) Residential per capita water use is calculated by dividing the annual residential water use by the service area population and the number of days in a year.

Figure 3-1 Total Water Production and Per-Capita Water Use



Abbreviations:

AFY = acre-feet per year
GPCD = gallons per capita per day

Table 3-2 Annual Water Use by Customer Sector

Water Use Sector	Water Use (AFY) (a)														
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Single Family	12,556	12,470	13,476	14,599	12,875	11,983	11,429	12,200	12,893	12,487	15,265	12,242	11,629	11,419	11,804
Multi-family	3,179	3,239	3,320	3,364	3,121	2,976	2,943	2,995	3,057	3,057	3,312	2,999	2,899	2,914	2,982
Commercial	2,712	2,640	2,776	2,861	2,646	2,570	2,579	2,620	2,665	2,626	2,261	2,118	2,212	2,224	2,315
Institutional	1,639	1,571	1,465	1,523	1,406	1,310	1,292	1,372	1,365	1,384	1,322	1,211	1,243	1,413	1,484
Single Family Irrigation	22	19	23	23	19	18	16	18	20	19	24	19	20	17	17
Irrigation	1,184	1,178	1,389	1,611	1,329	1,229	1,247	1,367	1,414	1,348	1,547	980	1,063	1,112	1,216
Other	39	32	43	44	35	34	28	32	38	50	62	41	27	20	28
Raw	258	220	301	351	323	304	301	310	309	164	180	111	184	156	174
Recycled (b)	607	588	653	753	647	605	577	645	656	661	747	611	648	596	662
Total Water Consumption (c)	**23,303**	**22,892**	**24,554**	**25,955**	**23,259**	**21,369**	**21,328**	**22,612**	**23,322**	**22,805**	**24,721**	**20,330**	**19,926**	**19,871**	**20,681**
Non-Revenue Water (d)	2,938	3,016	2,846	3,454	2,166	2,358	2,173	2,868	2,677	2,883	2,740	1,795	2,231	2,420	2,103
	11.2%	11.6%	10.4%	11.7%	8.5%	9.9%	9.2%	11.3%	10.3%	11.2%	10.0%	8.1%	10.1%	10.9%	9.2%
Total Water Demand (c)	**26,241**	**25,908**	**27,400**	**29,409**	**25,425**	**23,727**	**23,501**	**25,480**	**25,999**	**25,688**	**27,461**	**22,126**	**22,157**	**22,291**	**22,784**

Abbreviations:
AFY = acre-feet per year

Notes:
(a) Water use data are provided by District staff.
(b) The recycled water system is supplemented with potable water to meet demands, as necessary. This table reflects the total recycled and potable water consumed by the recycled water system.
(c) Totals may not sum due to rounding.
(d) Non-revenue water is calculated as the difference between total production and total consumption.

Figure 3-2 Annual Water Use by Sector Group

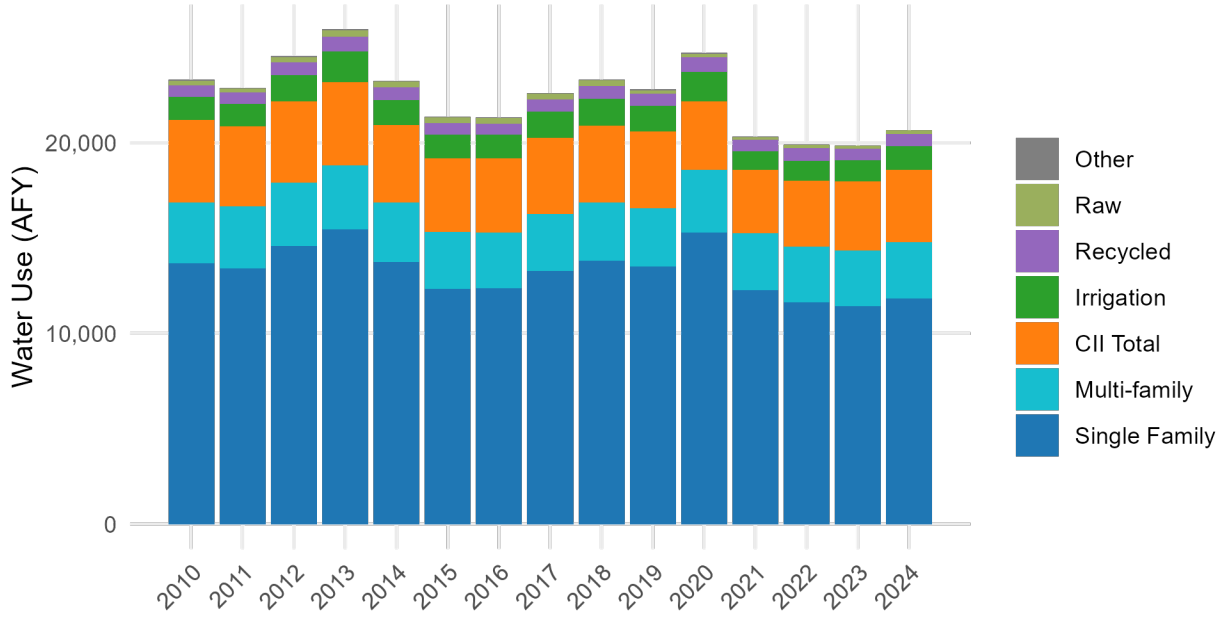
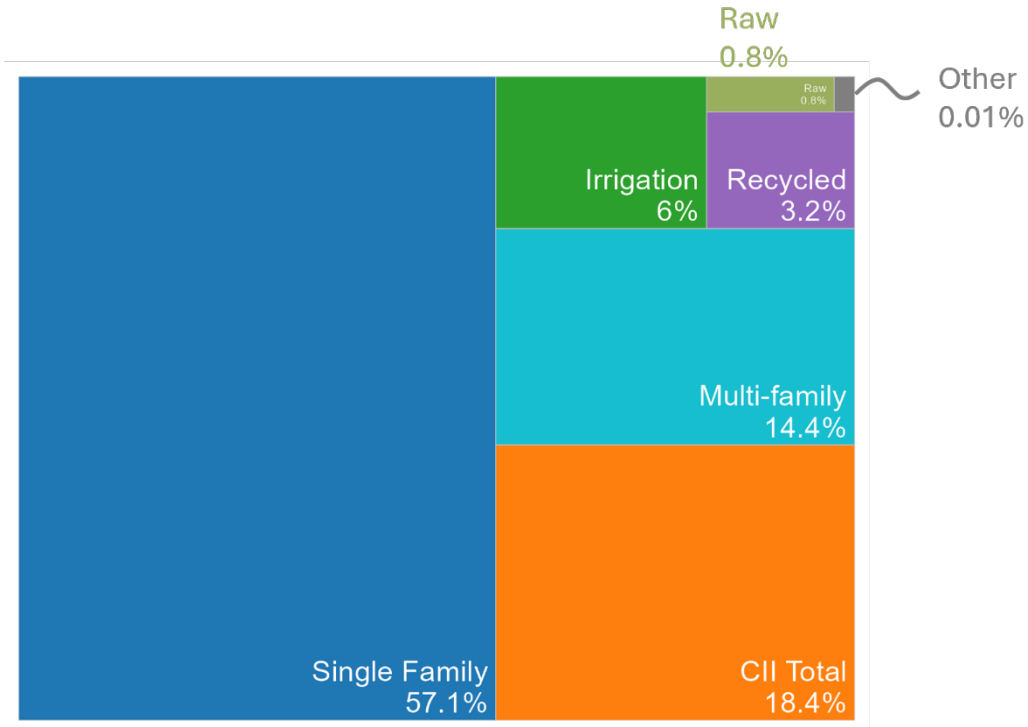


Figure 3-3 Proportional Water Use by Sector Group in 2024



Abbreviations:

AFY = acre-feet per year. CII = commercial, industrial, and institutional

Notes:

The CII Total sector group represents water use across all sectors with mixed-use meters. The irrigation sector group represents water use across all CII dedicated irrigation meters.

3.2 Water Use Trends by Customer Sector

This section discusses long-term trends in both total water use and per-account water use across the SFR, MFR, CII, irrigation, and recycled water sector groups between 2010 and 2024. **Figure** 3-4 shows monthly water use with 12-month moving averages. **Figure 3-5** summarizes the average annual water use per account. **Table 3-3** provides water use per customer sector. In total, these results provide insight into how each sector has responded to drought conditions, economic changes, and shifts in demographics.

- **SFR and MFR**: In both sectors, total water use has declined between 2010 and 2024, and there are notable reductions during drought periods and partial rebounds after the droughts. In addition, water use reductions during the drought periods are accompanied by diminished seasonality **(Figure 3-4)** that reflects likely reductions in outdoor irrigation in response to water use restrictions.

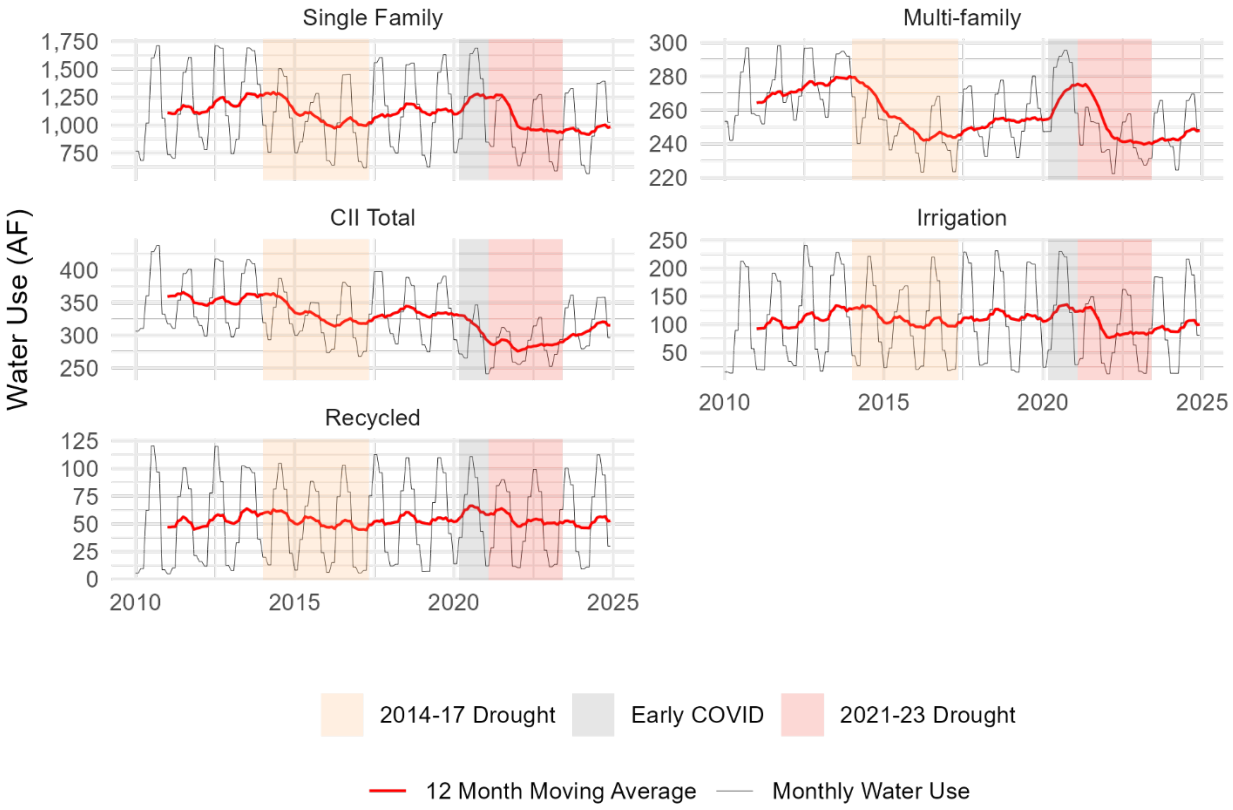
  Average per-account water use was highest in 2013 in both sectors and rose again in 2020; likely due to stay-at-home measures during the beginning of the pandemic (**Figure 3-5**). Per account use has begun to rebound in 2023-2024 and current levels are below historical.

- **CII Total**: Both total and per-account use in the CII sectors declined significantly following the pandemic in 2020. These shifts may be tied to changes in business activity and employment in the District, with post-pandemic rebound observed 2023-2024. Current (2024) per account water use is slightly below 2017-2019 levels.

- **Irrigation**: The irrigation sector showed reductions during drought years with a steeper decline during 2020-2022. Per account use has begun to rebound in 2023-2024, however, current levels are below historical.

- **Recycled water**: Recycled water use has remained relatively steady in total volume over time, although average per account water use has declined. Per-account water use showed response to the historic droughts and current levels are below historical.

Figure 3-4 Monthly Water Use and 12-Month Moving Average



Abbreviations:

AF = acre-feet

CII = commercial, industrial, institutional

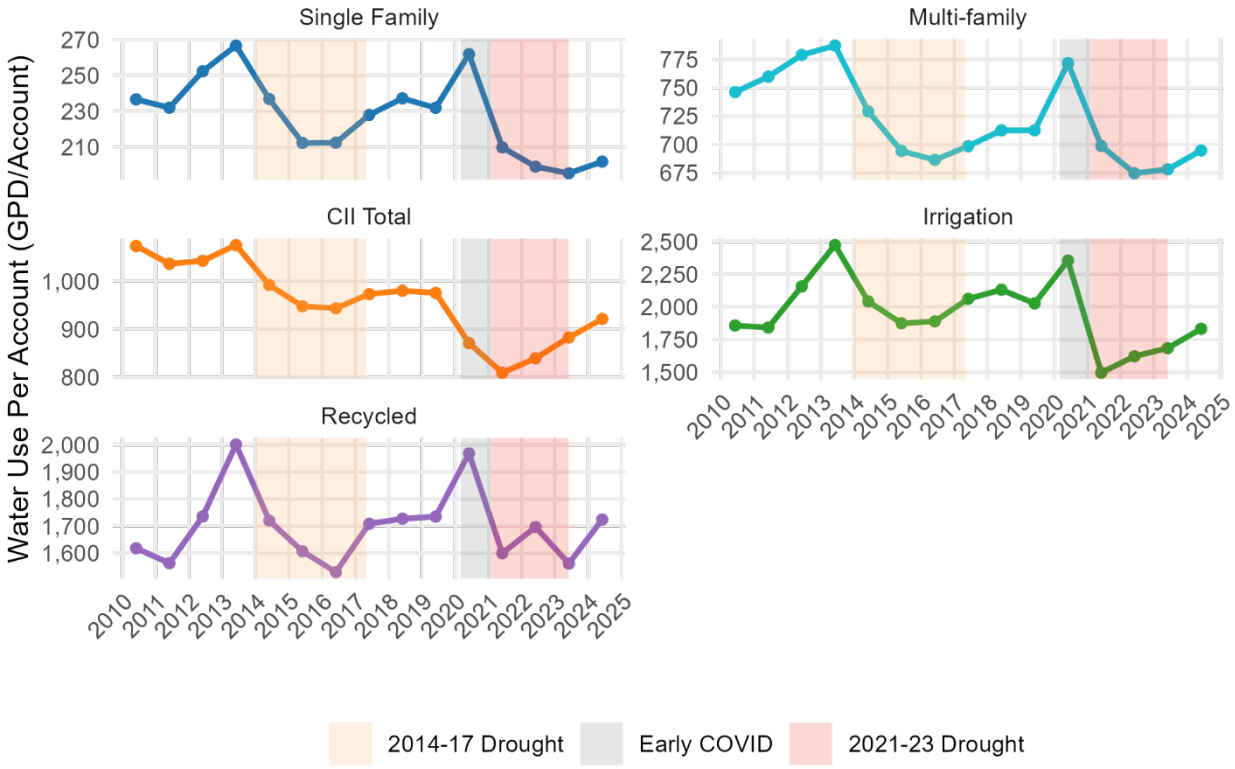
Table 3-3 Average Per Account Water Use by Customer Sector

Water Use Sector	Water Use per Account (GPD/Account)														
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Single-Family Residential	237	232	252	267	237	213	213	228	237	232	262	210	199	196	202
Multi-Family Residential (a)	746	760	779	787	729	694	686	699	712	712	772	699	675	678	695
CII (b)	1,073	1,036	1,042	1,075	992	948	943	973	980	975	871	809	839	883	921
Irrigation (c)	1,857	1,842	2,157	2,473	2,042	1,874	1,889	2,062	2,131	2,027	2,355	1,496	1,622	1,684	1,832
Recycled Water	1,618	1,563	1,736	2,001	1,720	1,606	1,529	1,708	1,727	1,735	1,968	1,599	1,696	1,561	1,724

Abbreviations:
CII = commercial, industrial, and institutional
GPD = gallons per day

Notes:
(a) The water use per account for multi-family residential customers measures water use at the master meter level, which can serve multiple units or the entire complex. This does not reflect water use per dwelling unit, as many properties are not individually submetered.
(b) Based on the total water use and number of accounts across all CII sectors with mixed-use meters.
(c) Based on the total water use and number of accounts across all sectors with dedicated irrigation accounts.

Figure 3-5 Average Per Account Water Use by Sector Group



Abbreviations:

CII = commercial, industrial, and institutional
GPD = gallons per day

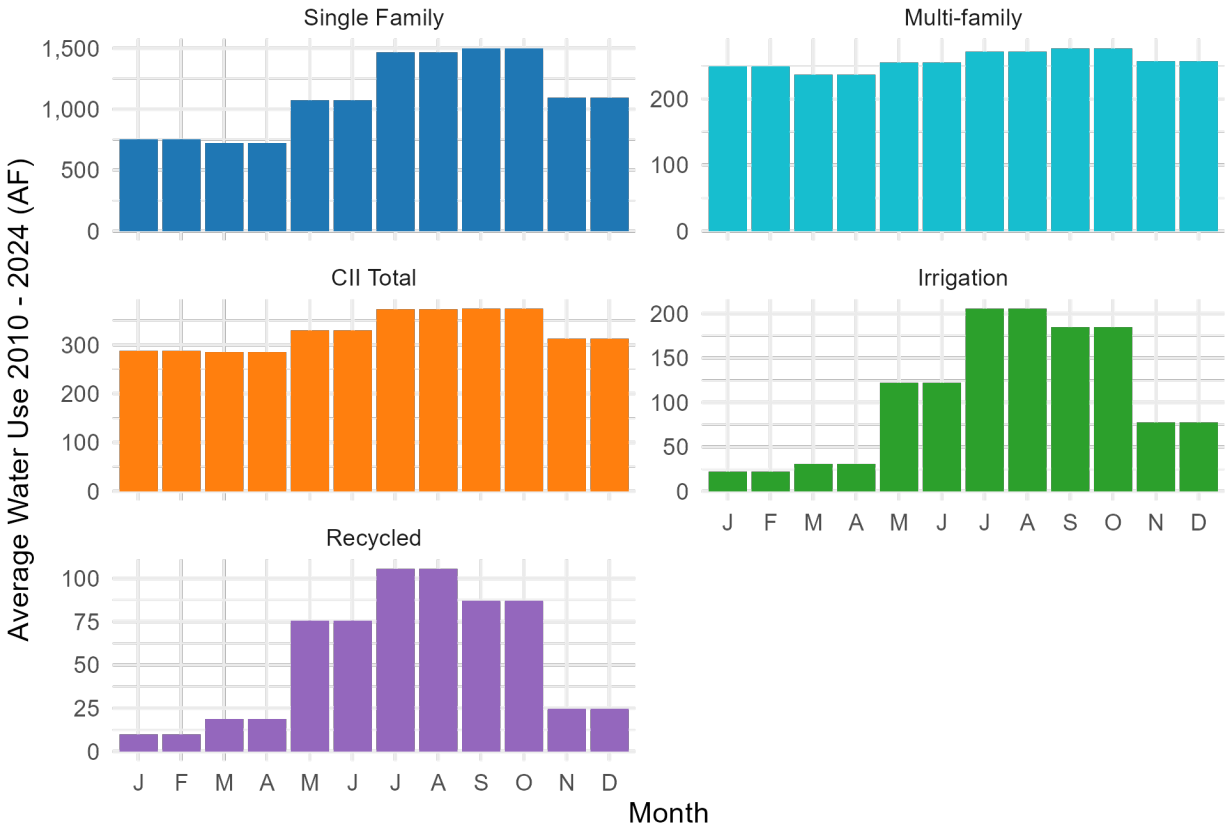
3.3 Estimated Indoor and Outdoor Water Use

Water use within the District varies seasonally (**Figure 3-6**), primarily driven by increased irrigation needs in the summer compared to the more limited irrigation water use during the wetter and cooler winter months. The most pronounced seasonal fluctuations occur in the irrigation and recycled water sectors, where water use is limited to outdoor irrigation and water use is minimal during the winter.

In contrast, SFR, MFR and the CII sector include water use from mixed-use meters and records both indoor and outdoor water use. In the SFR sector, summer water use is approximately double that of winter water use. The MFR and CII sectors show less seasonality, with summer water use about 17% and 31% higher than winter water use, respectively.

It is important to note that many MFR and CII customers have dedicated irrigation meters that are included in the irrigation sector, not within the MFR and CII mixed-use sectors. As a result, the outdoor water use estimated for MFR and CII sectors herein reflects only the portion of irrigation that remains on the domestic or mixed-use accounts. Some CII industries, such as restaurants, manufacturing, or facilities with cooling needs, may also experience seasonal variation in indoor water use, contributing to the modest increase in CII summer demands.

Figure 3-6 Average Monthly Water Use, 2010-2024



Abbreviations:

AF = acre-feet

CII = commercial, industrial, and institutional

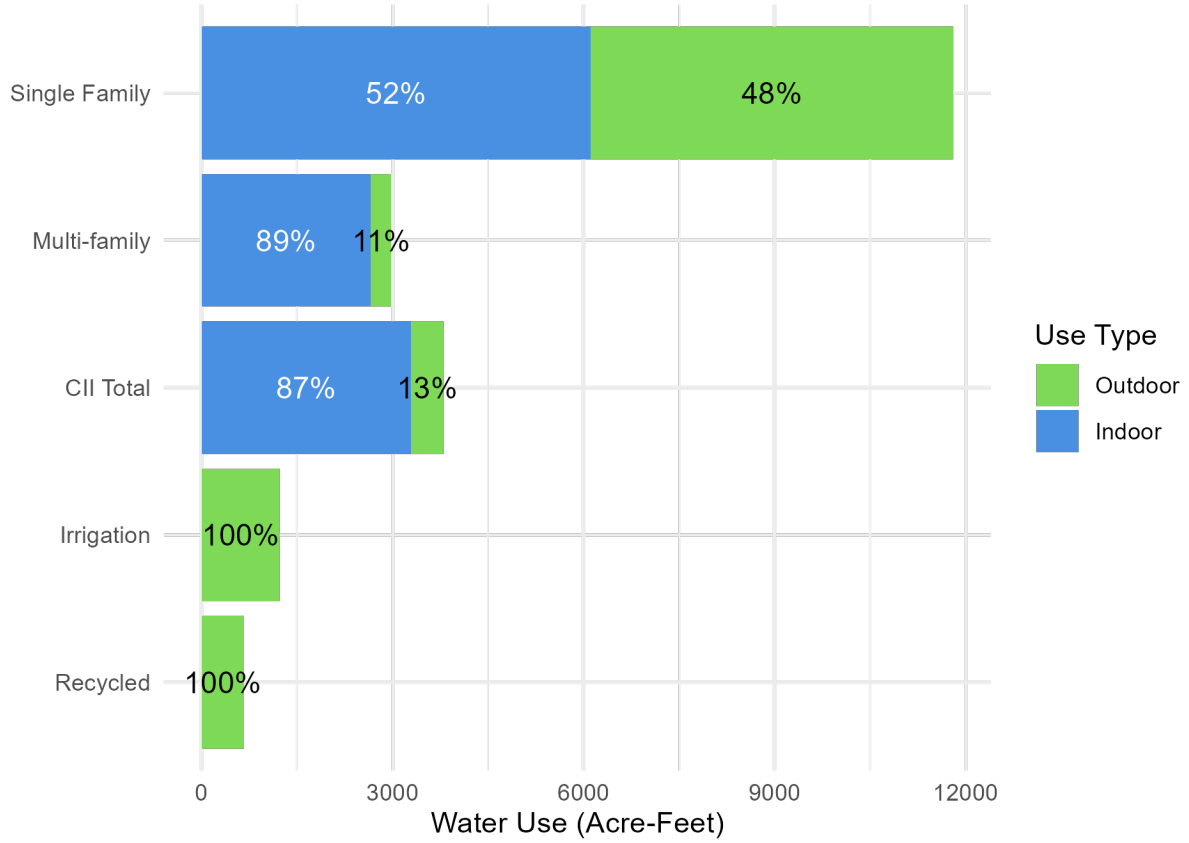
Note:

Monthly values are based on billing data collected on a 60-day billing period. As a result, billed consumption lags actual consumption. For example, December values shown above reflects October-November use.

A Seasonal Adjustment Method was used to estimate the relative proportions of water use that are used indoors versus outdoors in non-irrigation sectors. The methodology is further described in Appendix A. The results of this estimate are shown on **Figure 3-7**.

Aside from the dedicated irrigation and recycled water sectors (100% outdoor water use), SFR water use is estimated to have the highest proportion of outdoor water use at 48%. The MFR and CII sectors of mixed-use accounts have an estimated 11% and 13 % outdoor water use, respectively, corresponding to the lesser seasonality observed in these sectors. These values should be interpreted with the understanding that a substantial portion of MFR and CII landscape irrigation is already captured in the irrigation sector through dedicated irrigation meters. Given their landscape-only demands, MFR and CII dedicated irrigation accounts represent meaningful opportunities for outdoor conservation programs.

Figure 3-7 Estimated Indoor and Outdoor Water Use, 2024



Abbreviations:

CII = commercial, industrial, and institutional

4 CONSERVATION PROGRAM PARTICIPATION

This section evaluates past participation in water conservation programs by District customers, including presenting historic program participation and estimated water savings associated with program participation. The purpose of this section is to document program participation and savings in order to inform future program selection and implementation, and to support the demand management measure (DMM) reporting required in the UWMP under CWC § 10631(e).[3]

4.1 Conservation Programs

The description of water conservation programs, eligible customer classes, and program run dates provided by the District to their customers is summarized in **Table 4-1** below. The District currently implements 18 conservation programs offered directly to customers.

Table 4-1 Description of Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
AMI Leak Notification Program	Customers with AMI meters receive notifications of water use patterns indicative of leaks and are able to receive timely information and stop leaks much faster. Water Efficiency staff runs automated reports to monitor water use of AMI customers. AMI meters record water use in 15-minute intervals as compared to every other month as is typical for most residential meter reads.	All AMI enabled customers	2018-Current
Smart Home Monitors (Flume and Moen Flo Direct Distribution)	Residential customers can receive a $136 discount on Smart Home Monitors which provide near real time water use monitoring and leak notifications	SFR	2020-current
SFR Water Use Surveys/Audits Program	A free service for SFR customers that involves a visit to their property to review water use and identify ways to save water indoors and outside.	SFR (Both)	1995 - Current
Water Use Surveys/Audits Program (Excluding SFR Participants)	Consultation activities include review, evaluation and report of indoor plumbing devices and/or a review and report of the landscape irrigation system.	MFR, CII, IRR (Outdoor)	1995 - Current

[3] The information presented herein supports a portion of the required DMM analysis, focusing on device and education-focused programs. Additional details regarding customer billing rates and structure, conservation staffing levels, customer metering, etc. are required under CWC § 10631(e) but not addressed herein.

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
CII Water Use Evaluation Program	CII customers are provided with on-site water use evaluations, recommendations to improve efficiency, and pre-qualified for applicable rebates.	CII (Both)	1995 - Current
Water Waste Report Program	The general public can report water waste situations to MMWD online or over the phone. These contacts are logged into a database and followed up on by field staff to research and notify properties about water waste situations.	SFR, CII (Both)	1998, 2000 - Current
HET Rebate Program	The District rebates up to $100 per HET and up to $200 per Ultra High-Efficiency Toilet (UHET) when customers change their non-water conserving toilets (Pre 1993).	SFR (Indoor)	2007 - 2024
Residential HECW Rebate Program	Customers can apply for a rebate towards the cost of installing a qualifying residential high-efficiency clothes washer that meets current water and energy efficiency requirements.	SFR (Indoor)	1998-2010 2013 -2024
Hot Water Recirculating System	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a hot water recirculating system to create a looped system to recirculate cold water back to the water heater.	SFR (Indoor)	2014 - Current
Pool Cover Rebate Program	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a pool cover.	SFR (Outdoor)	2014 - Current

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
Laundry-to-Landscape System	2015: Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a 3-way diverter valve and/or air vent. Products must be installed as part of a residential laundry to landscape system that uses discharge water from a single domestic clothes washer in a one- or two-family dwelling. 2020: Single family or duplex residential customers can receive a $125 value kit including a 3-way diverter valve and other supplies needed for installation of a residential laundry to landscape system that uses discharge water from a single domestic clothes washer in a one- or two-family dwelling.	SFR (Outdoor)	2015-2017 2020 - Current
Rain Barrel Rebate Program	2014-2019: Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of a rain barrel to collect rainwater that can be used to supplement landscape irrigation. 2020: Residential and commercial customers with active potable water service can apply for a rebate up to $0.50 per gallon of storage when they install rain barrels and/or cisterns at their sites. Total rebates for rain barrels and cisterns may not exceed $1,000 per site. 2024: Residential and commercial customers with active potable water service can apply for a rebate up to $0.75 per gallon of storage when they install rain barrels and/or cisterns at their sites. Total rebates for rain barrels and cisterns may not exceed $1,000 per site.	SFR (Outdoor)	2014 - Current

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
WBIC Rebate Program	All customers can apply for a rebate of up to $100 per irrigation controller when they purchase and install a weather-based irrigation controller to replace an existing standard controller.	All (Outdoor)	2013-2015 2020 - Current
SFR Turf Removal Program	2015-2016: MMWD customers participated in the state Save Our Water turf replacement program, which offered $2/sq ft of turf removed. 2020-2021: MMWD customers eligible for $3/sq ft for ceasing irrigation and not replanting until water shortage emergency was withdrawn. Alternatively, customers could participate in the Mulch Madness (drought sheet mulching) program. 2022-Current: Tiered rebate that includes a best practice (higher rebate of $4.68/sq ft) for planting mostly native plant species, an alternative water source to the project and sheet mulching to the site. The Standard Rebate is available for turf conversion where best practices are not implemented for $2.18/sq ft.	SFR (Outdoor)	2015-2016 2020 - Current
Organic Mulch Rebate Program	Single family or duplex residential customers can apply for a rebate up to $50 towards the cost of organic mulch.	SFR (Outdoor)	2014-2022
Landscape Plan Review Program	Water conservation requirements for landscape professionals and homeowners when designing and installing landscapes and irrigation systems. Plan review requirements apply to all new construction and rehabilitated (renovations or changes made to sites with an existing irrigation system) landscape projects requiring a building permit, plan check, or design review.	SFR, CII (Outdoor)	1986 - Current

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
Tier 4 Exemption Program	An incentive program designed to help save water and lower customer's water bill. To qualify, customers must meet the District's current water conservation standards and pass a verification site visit. The customer's property then becomes exempt from Tier Four water rates for a four-year period. This means their water will be billed at no higher than Tier Three rates.	SFR (Both)	2004-Current
Water-wise Community Garden Program ("Garden Grant")	Up to $5,000 is available for the installation of water-wise gardens in public spaces to provide local inspiration of turf conversion sites.	MFR, CII, IRR (Outdoor)	2020 - Current
Custom Rebate	Rebate for installing any equipment or technology that the District does not already have a rebate for that results in a sustained water reduction (materials only, not labor).	CII, MFR, IRR (Both)	2025 - Current

Abbreviations:

Ag = Agriculture
AMI = Advanced Metering Infrastructure
CII = commercial, industrial, institutional
HECW = High Efficiency Clothes Washer
IRR = Irrigation
MFR = Multifamily Residential
MMWD = Marin Municipal Water District
SFR = Single Family Residential
sq ft = square feet
WBIC = Weather-Based Irrigation Controller

In addition to programs offered by the District, several regional programs are offered through the SMSWP, including: (2) public outreach (3) Qualified Water Efficient Landscaper (QWEL) Training, and (4) garden tours. The full Report will additionally present participation in these SMWSP programs after school year 2024-25 data are available.

4.2 Historical Conservation Program Participation

Table 4-2 summarizes participation in the District's conservation programs from 1986 through 2024. Darker shading indicates higher participation values. The table shows the total number of participants in each program, the number of participants within the life of each program, and the percentage of such participants compared to the total number of accounts of the predominant sector. This percentage serves as a measurement of program saturation, (i.e., how extensively the program has been adopted within the target customer base) and whether there remains

future potential from the program. The lifetime of each program represents the estimated period before a customer either re-enters the pool of potential participants for audit programs or requires a new replacement of fixtures.

Figure 4-1 further illustrates the data included in **Table 4-2**, showing the participation by end use, sector group, or program categories, and turf replacement square footage over time.

Among the programs offered by the District, the programs that reached the largest number of customers and their respective sector participation rates included:

- HET Rebate Program, 9.4% in the SFR sector[4];
- Residential HECW Rebate, 5.7% in the SFR sector;
- Flume Smart Home Monitors, 6.6% in the SFR sector; and
- SFR Water Use Surveys/Audits Program, 4.5% in the SFR sector.

As shown on **Figure 4-1,** graph A, participation in outdoor programs has remained stable over time, whereas participation in indoor programs has started strong but decreased over time. Participation in programs that target all end uses began trending upward in recent years. Participation from the residential sector (graph B) has slightly declined over time, while recent increases are observed with new programs that target multiple sectors. Through the SFR Turf Removal Program, over 600,000 square feet of turf have been removed. Per graph C, peak activity was observed during the 2021 and 2022 water shortage emergency.

Looking at all programs per program category (graph D), most programs have a low adoption rate over the recent five years, however, participation in Audits & Reports programs saw a substantial increase in 2021 due to the higher number of water waste reports during the 2021-2023 drought.

4.3 Estimated Savings from Past Conservation Programs

The Alliance for Water Efficiency (AWE) model[5] was used to estimate water savings associated with the implementation of all device or turf replacement and audit programs identified in **Table 4-2** for the period of 2010 to 2024. Water savings estimates were based on AWE model default values and other literature values as needed. The specific assumptions used in this assessment are presented in Appendix B**.** The results of this analysis are presented in **Table 4-3** and illustrated on **Figure 4-2**. It is estimated that conservation programs included in this assessment resulted in active savings of 4,855 AF between 2010 and 2024.

As shown on **Figure 4-2,** the most successful program types in terms of estimate savings include the following, listed in order of savings:

- Leaks & Water Losses (AMI Leaks Notification);
- Audits & Reports (Water Use Surveys/Audits Programs);

[4] The ULFT Rebate Program reached a larger number of customers but is not highlighted here given that there is currently a more stringent plumbing code requirement.
[5] Alliance for Water Efficiency, Water Conservation Tracking Tool Version 4.3.

- Clothes Washers (Residential HECW Rebate Program),
- Irrigation Systems & Devices (Irrigation Improvement Equipment and WBIC Rebate Programs);
- HET (rebate, retrofit, and direct install programs); and
- Turf Replacement (SFR Turf Removal Program).

In addition, over this period, it is estimated that 2,339 AF was saved through passive savings.[6] Thus, total active and passive savings are estimated to be 7,194 AF.

[6] Passive water savings are water savings associated with the natural replacement of water using fixtures and devices with higher efficiency ones, due to plumbing code and market changes. Passive savings are estimated for the whole service area.

Table 4-2 Summary of Conservation Program Participation
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Program Name	End Use		Program Category	Number of Program Participants (b)																																
	Sector (a)	Indoor/ Outdoor		1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AMI Leak Notifications Program	All	Indoor	Leaks and Water Losses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flume Direct Distribution	SFR	Both	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SFR Water Use Surveys/Audits Program	SFR	Both	Audits & Reports	-	-	-	-	-	-	-	-	-	127	234	380	246	281	470	634	465	319	46	329	83	264	755	892	699	1,102	862	849	1,033	838
Water Use Surveys/Audits Program	MFR, CII, IRR	Outdoor	Audits & Reports	-	-	-	-	-	-	-	-	-	49	10	37	26	9	1	6	2	4	2	3	228	362	558	317	463	311	504	504	364	415
CII Water Use Evaluation Program	CII	Both	Audits & Reports	-	-	-	-	-	-	-	-	-	25	42	23	40	56	47	17	4	20	42	16	15	33	53	140	65	89	66	47	41	32
Water Waste Report Program	SFR, CII	Both	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	6	0	46	16	127	99	41	18	33	80	52	42	33	67	52	68	584	541
HET Rebate Program	SFR	Indoor	Toilets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	612	839	1,624	51	-	-	214	1,169	1,226
HET Direct Install Program	MFR, CII	Indoor	Toilets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	124	68
Time of Sale (Toilet Retrofit) Program	SFR	Indoor	Toilets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	419	630	391	53	-	-	-	-	-	-	-	-	-
ULFT Rebate Program	SFR	Indoor	Toilets	-	-	-	-	-	-	-	4	3,552	3,425	3,877	5,112	2,779	2,629	2,078	942	2,580	15	56	174	45	1	-	-	-	-	-	-	-	-	-
Residential HECW Rebate Program	SFR	Indoor	Clothes Washers	-	-	-	-	-	-	-	-	-	-	-	-	720	967	826	942	1,472	1,366	1,344	1,248	1,688	1,537	1,620	1,654	252	-	-	133	675	615
Hot Water Recirculating System	SFR	Indoor	Cooling & Heating Systems	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	141
Pool Cover Rebate Program	SFR	Outdoor	Pools & Fountains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	142
Laundry-to-Landscape System	SFR	Outdoor	Greywater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Rain Barrel Rebate Program	SFR	Outdoor	Rainwater Harvesting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	100
SFR WBIC Rebate Program	SFR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	66	42
Large Landscape WBIC Rebate Program	IRR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6
Organic Mulch Rebate Program	SFR	Outdoor	Turf Replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	782
Irrigation Improvement Equipment Program	IRR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Landscape Plan Review Program	SFR, CII	Outdoor	Other	3	6	29	24	28	39	30	21	32	31	36	38	66	29	27	47	46	40	56	50	74	50	42	45	30	50	76	89	72	88
Tier 4 Exemption Program	SFR	Both	Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	6	7	4	3	3	0	1	2	0	2	2
Water-wise Community Garden Program	MFR, CII, IRR	Outdoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Turf Removed (square feet)																																				
SFR Turf Removal Program	SFR	Outdoor	Turf Replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,364
WBIC Stations Rebated																																				
SFR WBIC Rebate Program	SFR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	719	394
Large Landscape WBIC Rebate Program	IRR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	191	123

Table 4-2 Summary of Conservation Program Participation
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Program Name	End Use		Program Category	Number of Program Participants (b)									Life of Program (c)	Pct. of Accounts Within Life of Program (c)
	Sector (a)	Indoor/ Outdoor		2016	2017	2018	2019	2020	2021	2022	2023	2024		
AMI Leak Notifications Program	All	Indoor	Leaks and Water Losses	-	-	690	1,187	1,539	1,329	1,211	1,300	1,286	1	(d)
Flume Direct Distribution	SFR	Both	Audits & Reports	-	-	-	-	-	2,018	461	384	603	-	**6.6%**
SFR Water Use Surveys/Audits Program	SFR	Both	Audits & Reports	498	712	466	253	116	746	442	399	666	5	**4.5%**
Water Use Surveys/Audits Program	MFR, CII, IRR	Outdoor	Audits & Reports	128	125	71	22	7	8	3	6	7	5	**0.3%**
CII Water Use Evaluation Program	CII	Both	Audits & Reports	35	35	11	4	1	12	4	3	2	5	**0.5%**
Water Waste Report Program	SFR, CII	Both	Audits & Reports	190	142	162	151	98	4,932	638	226	221	5	**10.7%**
HET Rebate Program	SFR	Indoor	Toilets	772	591	427	308	69	30	69	21	15	15	**9.4%**
HET Direct Install Program	MFR, CII	Indoor	Toilets	-	-	-	-	-	-	-	-	-	15	**2.9%**
Time of Sale (Toilet Retrofit) Program	SFR	Indoor	Toilets	-	-	-	-	-	-	-	-	-	15	**0%**
ULFT Rebate Program	SFR	Indoor	Toilets	-	-	-	-	-	-	-	-	-	15	**0%**
Residential HECW Rebate Program	SFR	Indoor	Clothes Washers	439	187	57	65	66	261	105	112	49	15	**5.7%**
Hot Water Recirculating System	SFR	Indoor	Cooling & Heating Systems	31	26	13	15	3	102	66	17	8	10	**0.8%**
Pool Cover Rebate Program	SFR	Outdoor	Pools & Fountains	43	10	13	14	1	371	68	29	35	5	**1.0%**
Laundry-to-Landscape System	SFR	Outdoor	Greywater	1	5	-	-	1	45	10	3	0	10	**0.1%**
Rain Barrel Rebate Program	SFR	Outdoor	Rainwater Harvesting	20	11	6	6	9	48	49	12	13	5	**0.2%**
SFR WBIC Rebate Program	SFR	Outdoor	Irrigation Systems & Devices	-	-	-	-	48	412	133	192	241	10	**2.0%**
Large Landscape WBIC Rebate Program	IRR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	10	**0.4%**
Organic Mulch Rebate Program	SFR	Outdoor	Turf Replacement	203	107	98	80	6	-	-	-	-	23	**2.6%**
Irrigation Improvement Equipment Program	IRR	Outdoor	Irrigation Systems & Devices	12	22	-	-	-	-	-	-	-	10	**4.4%**
Landscape Plan Review Program	SFR, CII	Outdoor	Other	91	104	114	120	94	88	92	110	97	23	**3.0%**
Tier 4 Exemption Program	SFR	Both	Other	-	-	-	-	1	-	-	-	-	-	**0.1%**
Water-wise Community Garden Program	MFR, CII, IRR	Outdoor	Audits & Reports	-	22	-	-	-	-	-	-	-	5	**0.0%**
				Total Turf Removed (square feet)										
SFR Turf Removal Program	SFR	Outdoor	Turf Replacement	45,348	-	-	-	2,800	225,607	184,625	69,004	67,472	-	**-**
				WBIC Stations Rebated										
SFR WBIC Rebate Program	SFR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	**-**
Large Landscape WBIC Rebate Program	IRR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	-	**-**

Table 4-2 Summary of Conservation Program Participation

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Abbreviations

CII = Commercial, Industrial, Institutional
HECW = High Efficiency Clothes Washer
HET = High Efficiency Toilet
IRR = Irrigation
MFR = Multi-Familiy Residential
SFR = Single-family residential
ULFT = Ultra Low Flush Toilet
WBIC = Weather Based Irrigation Controller

Notes

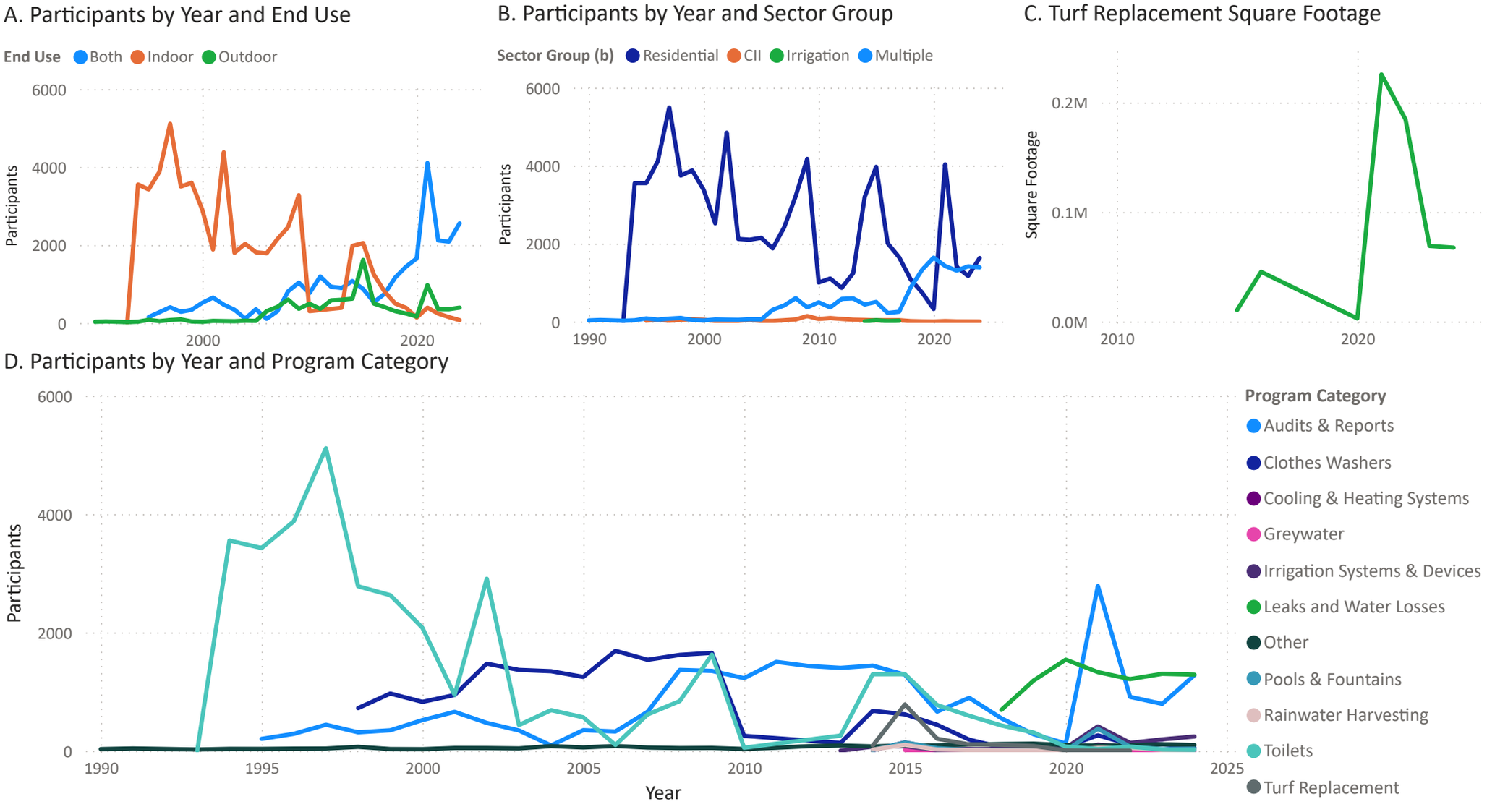
(a) Predominant sector for program participants.

(b) Colored shading is added for visualization purposes. Green shading represents higher participation values.

(c) As an estimate of program saturation, participation is calculated over the lifetime of each program as a percentage of the total accounts within the predominant sector served. Program lifetimes are consistent with the assumptions used to estimate savings, as shown in Appendix B, for programs that are not tied to fixtures already covered by existing plumbing codes.

(d) Participation data for the AMI Leak Notifications Program reflects the number of leak notices sent within a given year. The District installed AMI meters on approximately 10% of its connections as of 2025 and anticipates to be fully installed by 2028.

Figure 4-1
Conservation Program Participation
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:
CII = commercial, industrial, institutional

Notes:
(a) See Table 4-2 for program end use, sector, category information and detailed program participation data.
(b) Programs are summarized by Residential, CII, Irrigation, or Multiple sector groups based on their targeted sectors. Programs that cannot be exclusively assigned to the Residential, CII, Irrigation sector groups are assigned to the Multiple sector group.
(c) Turf replacement includes both turf replacement and mulch rebate programs.
(d) Participation in outreach events and water waste reports are excluded.

Table 4-3 Estimated Water Savings Achieved by Conservation Programs and Passive Savings
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Water Savings Type	End Use		Program Category	Estimated Annual Water Savings (AFY) (b)															Cumulative Water Savings (AF)
	Sector (a)	Indoor/ Outdoor		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
AMI Leak Notifications Program	All	Both	Leaks and Water Losses	0	0	0	0	0	0	0	0	59	161	234	246	218	216	222	1,358
Flume Direct Distribution	SFR	Indoor	Audits & Reports	0	0	0	0	0	0	0	0	0	0	0	58	72	83	100	313
SFR Water Use Surveys/Audits Program	SFR	Both	Audits & Reports	13	32	42	50	60	60	50	49	42	32	23	29	28	27	33	571
Water Use Surveys/Audits Program	MFR, CII, IRR	Outdoor	Audits & Reports	6	8	13	17	18	17	14	11	8	5	2	1	1	0	0	121
CII Water Use Evaluation Program	CII	Both	Audits & Reports	19	40	51	55	55	47	40	36	27	19	12	10	6	5	4	426
HET Rebate Program (d)	SFR	Indoor	Toilets	0	0	0	2	11	21	26	30	32	34	33	32	31	30	29	313
HET Direct Install Program	MFR, CII	Indoor	Toilets	0	0	0	2	10	17	17	16	15	15	14	14	13	13	12	158
Residential HECW Rebate Program	SFR	Indoor	Clothes Washers	5	5	5	8	23	36	46	50	51	52	54	59	62	64	65	587
Hot Water Recirculating System	SFR	Indoor	Cooling & Heating Systems	0	0	0	0	0	1	1	1	1	1	1	2	2	3	3	17
Pool Cover Rebate Program	SFR	Outdoor	Pools & Fountains	0	0	0	0	0	7	9	9	10	10	4	19	22	22	23	136
Laundry-to-Landscape System	SFR	Outdoor	Greywater	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	5
Rain Barrel Rebate Program	SFR	Outdoor	Rainwater Harvesting	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	9
SFR WBIC Rebate Program	SFR	Outdoor	Irrigation Systems & Devices	0	0	0	0	1	2	2	2	2	2	3	10	13	16	19	72
Large Landscape WBIC Rebate Program	IRR	Outdoor	Irrigation Systems & Devices	0	0	0	0	0	4	9	9	9	9	9	9	9	9	9	85
SFR Turf Removal Program (e)	SFR	Outdoor	Turf Replacement	0	0	0	0	0	1	5	5	5	5	6	27	45	51	58	208
Irrigation Improvement Equipment Program	IRR	Outdoor	Irrigation Systems & Devices	0	0	0	0	0	24	34	52	52	52	52	52	52	52	52	476
Conservation Program Water Savings (Active Savings)				*44*	*87*	*112*	*134*	*179*	*240*	*255*	*271*	*316*	*400*	*448*	*571*	*574*	*592*	*631*	*4,855*
Passive Water Savings (f)				*122*	*135*	*145*	*151*	*188*	*184*	*167*	*164*	*212*	*198*	*184*	*141*	*128*	*116*	*105*	*2,339*
Total Water Savings				**166**	**221**	**258**	**285**	**367**	**424**	**421**	**436**	**529**	**597**	**632**	**712**	**703**	**708**	**736**	**7,194**

Abbreviations

CII = Commercial, Industrial, Institutional
HET = High Efficiency Toilet
HECW = High Efficiency Clothes Washer
IRR= Irrigation
MFR = Multi-family residential
SFR = Single-family residential

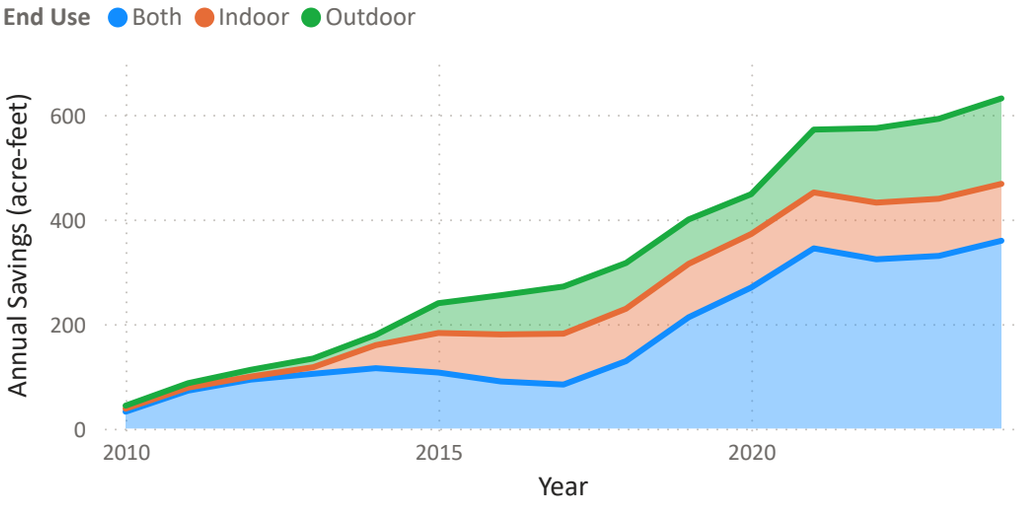
Table 4-3 Estimated Water Savings Achieved by Conservation Programs and Passive Savings
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Notes

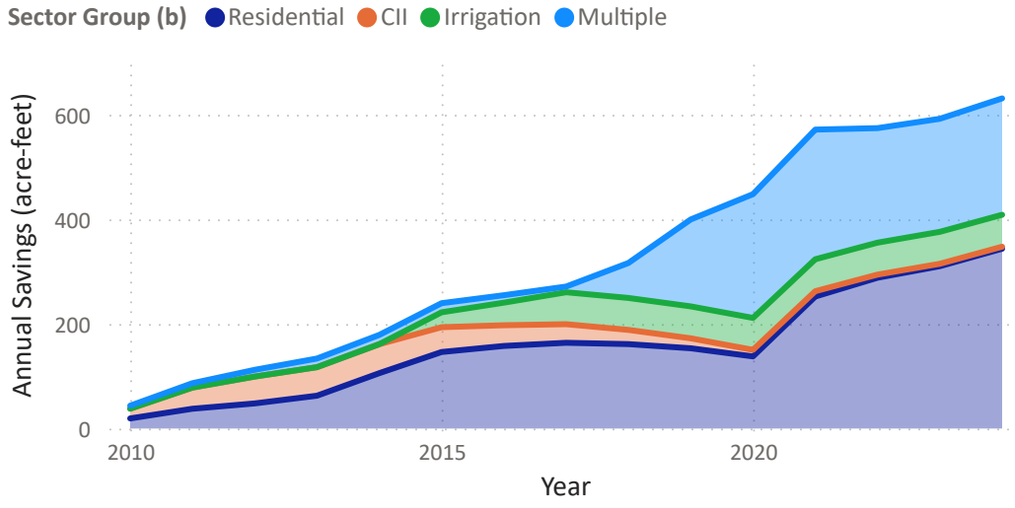
(a) Predominant sector for program participants.
(b) Water savings are estimated per the AWE model based on program participation data. Program water saving assumptions are included in Appendix B.
(c) The water savings associated with the landscape plan review program and the tier 4 exemption program are estimated as a part of passive savings. Additional programs with participation prior to 2010 are not included herein.
(d) The water savings associated with the time of sale (toilet retrofit program) and ULFT rebate program are estimated as a part of HET rebate program savings.
(e) The water savings associated with the organic mulch rebate program are estimated as a part of SFR turf removal program savings.
(f) Passive water savings are water savings associated with the natural change out of water using fixtures and devices with higher efficiency ones, due to plumbing code and market changes. Passive savings are estimated for the whole service area.

Figure 4-2
Estimated Annual Water Savings Achieved by Conservation Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

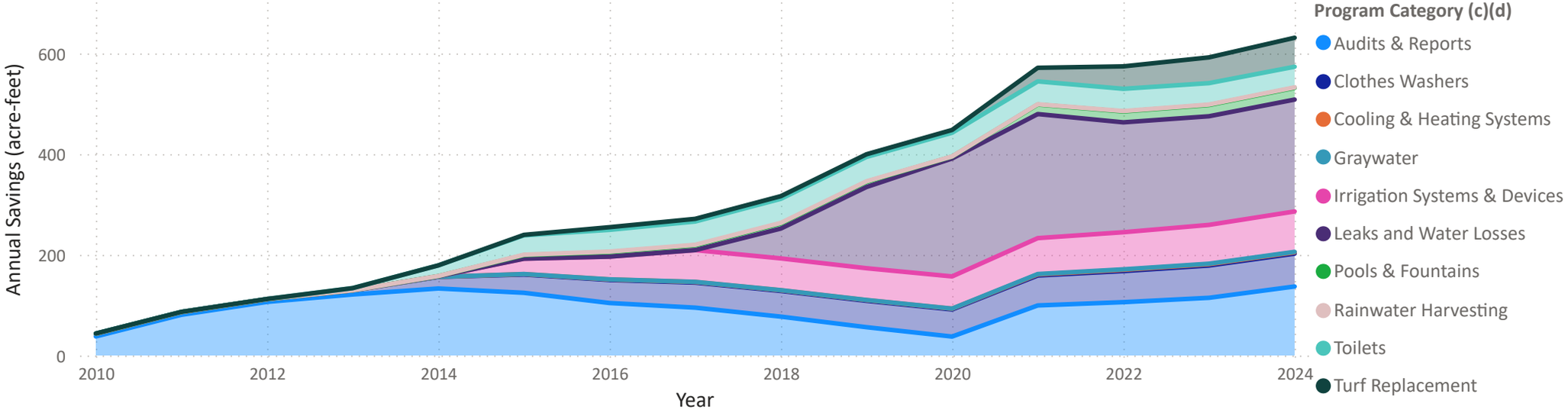
A. Active Conservation Savings by Year and End Use



B. Active Conservation Savings by Year and Sector Group



C. Active Conservation Savings by Year and Program Category



Abbreviations:
CII = commercial, industrial, institutional

Notes:
(a) See Table 4-3 for program end use, sector, category information and detailed savings by program.
(b) Programs are summarized by Residential, CII, Irrigation, or Multiple sector groups based on their targeted sectors. Programs that cannot be exclusively assigned to the Residential, CII, Irrigation sector groups are assigned to the Multiple sector group.
(c) Turf replacement includes both turf replacement and mulch rebate programs.
(d) Program categories with minimal historical savings may not be visible from this figure.

5 WATER DEMAND PROJECTIONS

The purpose of this section is to document the basis, methodology, and resulting projected demands for the District through 2050. As described in more detail below, the future water demands for the District were estimated by:

1. Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,
2. Evaluating and selecting water demand factors for each water use sector based on review of recent average per-account water use representing three scenarios,
3. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and
4. Calculating estimated future water demand that incorporates the anticipated account growth, water demand factors, and estimated future passive water savings.

This methodology is consistent with California Water Code (CWC) § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the District and reflect a land-use based approach consistent with the District's community planning.

5.1 Basis for Account Growth Projections

Baseline water demand is estimated by multiplying the number of accounts by the sector-specific demand factors, before applying other adjustment factors. In order to estimate how accounts will grow within the District, recent historical account growth within the District was considered, as well as projected future growth in population and employment. As described below, it was assumed that depending on the customer sector, the number of accounts will grow at the same rate as the projected population or employment growth.

Table 5-1 identifies the growth projection assumptions applied to each potable water use sector per the District's direction and identifies the average annual growth rate in accounts observed within the District from 2015-2024 to provide context for the growth assumptions. Growth for the residential sectors is based on Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) Plan Bay Area 2050 population projections (ABAG, 2021), which are higher than the historical growth observed in the residential sectors from 2015-2024. Similarly, the projected growth for the commercial, institutional, and other sectors is based on the Plan Bay Area 2050 employment projections (ABAG, 2021). Plan Bay Area 2050 projects a decrease in employment; therefore, the commercial, institutional, and other water sector accounts are projected to decrease. The irrigation account growth is based on the multifamily residential growth rate assumptions. No growth is anticipated in the raw and recycled water sectors.

Table 5-2 presents the District's historical population based on adjusted California Department of Finance estimates provided by the District (MMWD, 2025). The District's historical

employment and historical employment estimates are per the U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (U.S. Census Bureau, 2025). The population and employment growth projections for the District based on Plan Bay Area 2050 (ABAG, 2021).

Table 5-1 Historical and Projected Account Growth Rate by Customer Sector

Water Use Sector	Basis for Account Growth (b)	Average Annual Growth of Accounts (a)	
		Historical (2015-2024)	Projected Growth Through 2050
Single Family (c)	ABAG Population	0.07%	0.86%
Multifamily (c)	ABAG Population	0.01%	1.87%
Commercial	ABAG Employment	0.07%	-0.44%
Institutional	ABAG Employment	0.18%	-0.44%
Irrigation	Relative to MFR Accounts (d)	0.30%	1.87%
Other	ABAG Employment	0.77%	-0.44%
Raw	No Growth	0%	0%
Recycled	No Growth	0.23%	0%

Abbreviations:

ABAG = Association of Bay Area Governments
CII = commercial, industrial, institutional
MFR = multifamily residential
MMWD = Marin Municipal Water District
UWMP = Urban Water Management Plan

Notes:

(a) Growth of the number of accounts is presented on an average annual basis over the indicated period. When applied to account growth, the specific growth rate between each 5-year period was applied.

(b) ABAG projections include population, households, and employment values (ABAG, 2021). The ABAG household projections project a growth of 21,251 households in the 10-year period between 2025 and 2035, which aligns and is inclusive of the 9,658 new households provided by local 2021-2031 Housing Elements over the 8-year period.

(c) To reflect a higher proportion of multi-family development from historical patterns, 50% of new households to be built within MMWD are allocated to single family homes and the remainder 50% are allocated multi-family homes. This is consistent with the housing assumptions used in MMWD's 2023 UWMP Update.

(d) Irrigation growth is based on MFR household growth as no growth is expected in the CII sector.

Table 5-2 Population and Employment Growth Projections
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Category	Growth Projections											Total Growth Rate 2025-2050	Average Annual Growth Rate 2025-2050
	2020	2021	2022	2023	2024	2025	2030	2035	2040	2045	2050		
Population													
Historical Population Estimates (a)	193,206	191,315	188,279	187,329	186,895	--	--	--	--	--	--	--	--
ABAG Population Projections (b)	--	--	--	--	--	190,875	210,778	230,680	236,345	242,009	247,674	30%	1.19%
Single Family Population (c)	--	--	--	--	--	128,329	137,683	147,156	150,074	152,988	155,899	21%	0.86%
Multifamily Population (c)	--	--	--	--	--	62,546	73,095	83,524	86,271	89,021	91,775	47%	1.87%
Employment													
Historical Employment Estimates (d)	78,199	77,058	81,547	--	--	--	--	--	--	--	--	--	--
ABAG Employment Projections	--	--	--	--	--	78,680	73,520	68,360	68,941	69,523	70,104	-11%	-0.44%

Abbreviations:

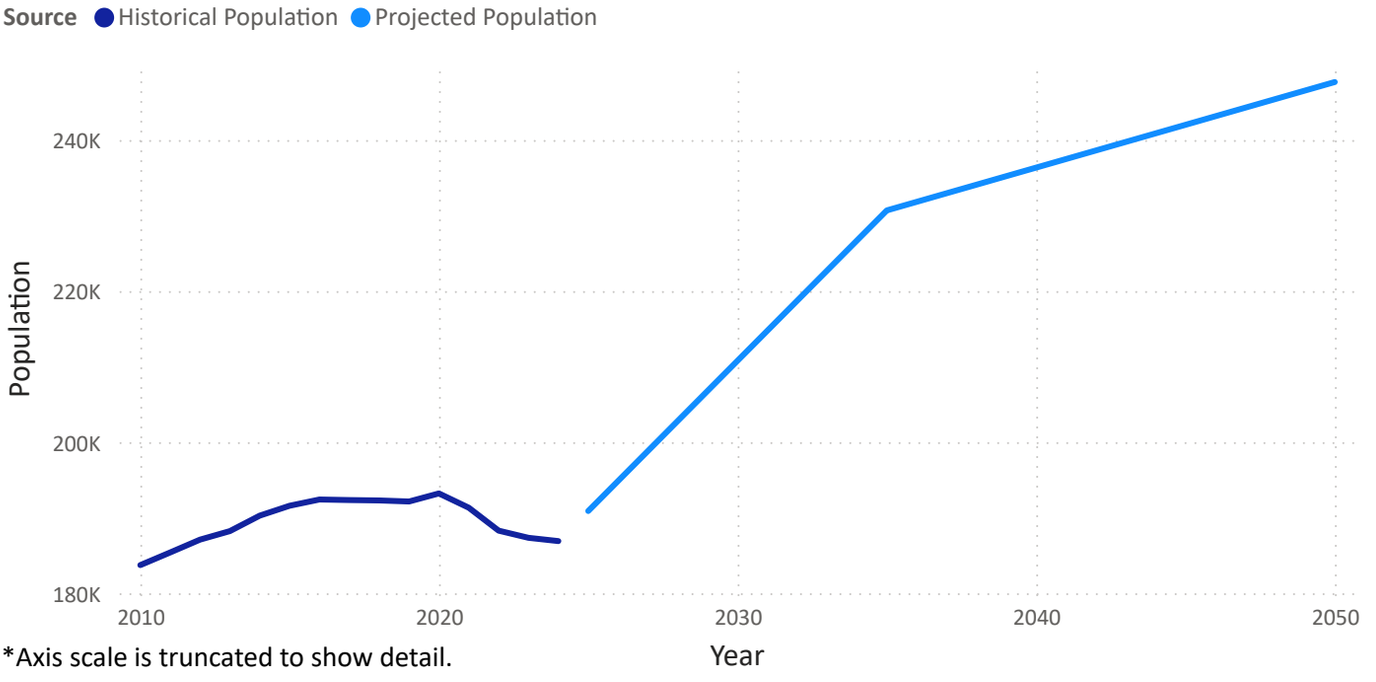
-- = not available
ABAG = Association of Bay Area Governments
DOF = California Department of Finance
MMWD = Marin Municipal Water District
UWMP = Urban Water Management Plan

Notes:

(a) Historical population estimates provided by MMWD staff (MMWD, 2025) and are based on adjusted DOF estimates for MMWD's service area.
(b) Population and employment projections are based on ABAG, 2021. The ABAG household projections projects a growth of 21,251 households in the 10-year period between 2025 and 2035, which aligns and is inclusive of the 9,658 new households provided by local 2021-2031 Housing Elements over the 8 year period.
(c) Projected single family and multifamily population is estimated based on the assumption that 50% of new households to be built within MMWD will be single family homes and the remaining 50% will be multifamily homes to reflect a higher proportion of multifamily development from historical patterns. This is consistent with the housing assumptions used in MMWD's 2023 UWMP Update.
(d) Historical employment estimates per U.S. Census Bureau, 2025.

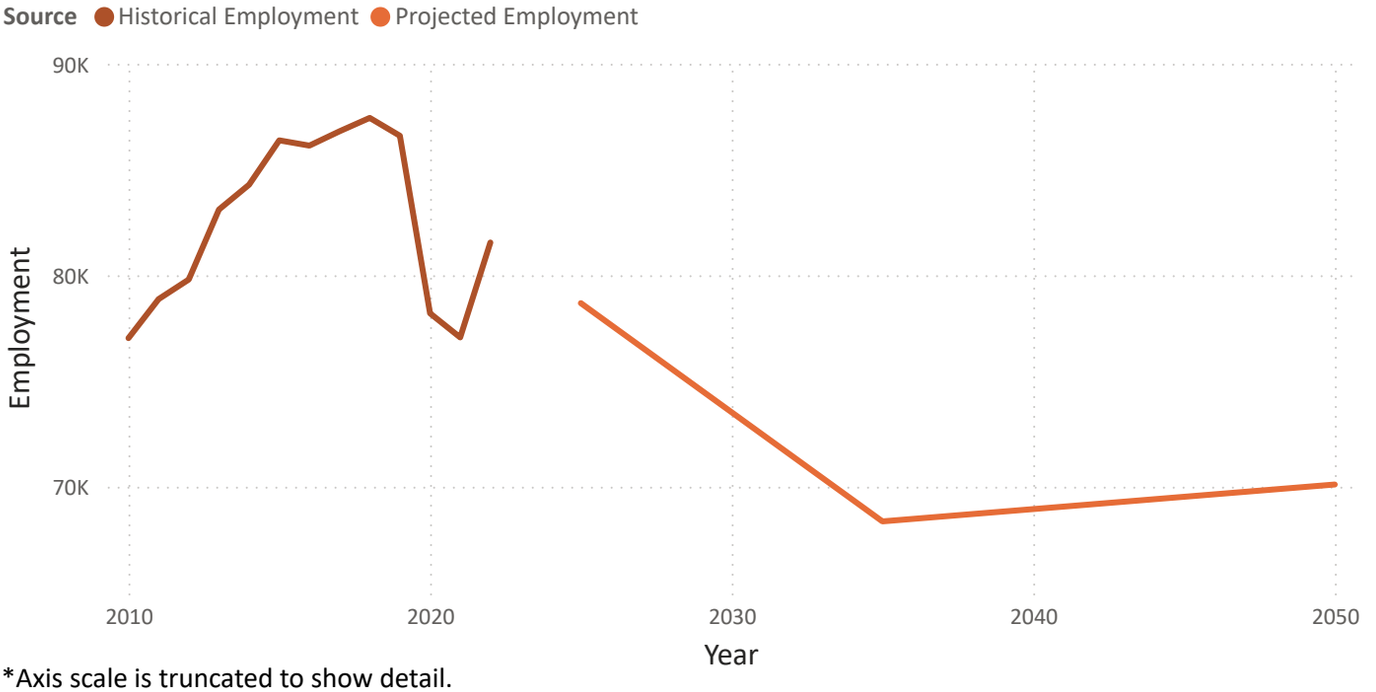
Figure 5-1 Population and Employment Projections
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Population



*Axis scale is truncated to show detail.

Employment



*Axis scale is truncated to show detail.

Table 5-3 Projected Number of Accounts

Water Use Sector	Projected Number of Accounts (a)					
	2025	2030	2035	2040	2045	2050
Single Family Residential	52,867	56,720	60,623	61,825	63,025	64,225
Multifamily Residential	3,974	4,644	5,307	5,481	5,656	5,831
Commercial	3,384	3,162	2,940	2,965	2,990	3,015
Institutional	251	234	218	220	222	223
Other	1,455	1,359	1,264	1,275	1,286	1,296
Irrigation	1,243	1,453	1,663	1,718	1,773	1,828
Raw Water	2	2	2	2	2	2
Recycled Water	343	343	343	343	343	343

Notes:
(a) Projected number of accounts calculated based on the District's existing number of accounts and the projected rates of growth shown in **Table 5-1**.

5.2 Planned Development Within the Service Area

There are no developments projects additional to the growth assumptions identified by District staff.

5.3 Water Demand Factors

Water use rates are influenced by a variety of factors, including weather, economic recession, and state and local regulations, among other drivers. Given this, selecting a "representative" baseline is important to developing the land-use based water demand factors to estimate baseline water use by existing customers, which can then be extrapolated and applied to future growth within the District. **Table 5-4** shows the water demand factors used to estimate baseline water demand.

Table 5-4 Selected Water Demand Factors

Water Use Sector Group	Water Demand Factor	Units	Basis for Demand Factor
Water Consumption			
Single Family	228	GPD/account	Minimum of 2017-2019
Multi-family	699	GPD/account	Minimum of 2017-2019
CII Total (a)	973	GPD/account	Minimum of 2017-2019
Irrigation	1,014	GPD/account	Minimum of 2017-2019
Other	19	GPD/account	Partial Rebound from 2024
Raw	85,362	GPD/account	Partial Rebound from 2024
Recycled	1,708	GPD/account	Minimum of 2017-2019
Non-Revenue Water			
Apparent Losses	9.6	GPD/connection	CY 2023 Water Loss Audit
Real Losses	22	GPD/connection	
Unbilled Authorized	1.8	GPD/connection	

Abbreviations:
CII = commercial, industrial, institutional
CY = calendar year
GPD = gallons per day

Note:
(a) Represents the combined demands of all CII sectors with mixed-use meters. The CII sectors are evaluated as a single group as the same growth rate is applied uniformly across all CII sectors; therefore, it is mathematically equivalent to projecting each sector individually and summing the results. Final projected demands are then allocated back to each CII sector based on their relative proportions within the CII Total group.

5.3.1 Potable Water

Water demand factors based on historical use within the District were used as the basis of future demand projections for potable water accounts. As discussed in Section 3.2, the District's per account water use declined significantly over the past 15 years due to improvements in water use efficiency and showed significant response to key events such as the 2014-2017 drought, the 2021-2023 drought, and the COVID-19 pandemic. Current (2024) water use is below historical levels. Potable water demand factors were developed using the following approach:

- **Single family, Multi-family, CII, irrigation, and recycled water sectors**: 2024 per-account water use for these sectors remains within 75% of their 2017-2019 levels. Therefore, the water demand factors are based on the minimum per-account annual water use observed from 2017-19, which reflects the lower levels of recent water use, but allowing rebound to pre-2020 conditions.
- **Raw water sector and other accounts**: 2024 per-account water use for these sectors has fallen below 75% of 2017-2019 levels. As such, water demand factors are developed based on a partial rebound from 2024 per-account annual water use, recognizing that some increase is likely, but a full return to pre-drought and pre-pandemic conditions is not anticipated.

5.3.2 Recycled Water

As discussed in Section 3.2, the District's per account historical water use for recycled water followed similar trends to the District's potable account water use (i.e., 2024 water use is below historical levels). Therefore, the recycled water demand factor is similarly developed based on the minimum per account annual water use by sector for 2017 through 2019.

5.3.3 Non-Revenue Water and Water Loss

Non-revenue water is water that has been produced but not billed and thus does not generate revenue for the supplier. To more fully capture total water use within the District, non-revenue water is estimated based on a sum of (1) unbilled authorized uses (such as water for fighting fires and flushing mains), (2) apparent water loss due to metering inaccuracies, and (3) real water loss due to distribution system leaks. Rates of non-revenue water in gpd per service connection are based on the District's Calendar Year (CY) 2023 water loss report.

5.4 Passive Water Savings Estimate

Passive water savings are the water savings associated with the natural replacement of older toilets, showerheads, clothes washers, and other water using appliances with newer high efficiency devices that are available due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements. The AWE model was used to estimate future passive savings within the District (AWE, 2021). These future water savings are a result of plumbing/energy codes interacting with the natural replacement of toilets, showerheads, and other water using appliances whose current or future efficiency is dictated by national, state, or local code requirements. The AWE model calculates efficient plumbing fixture saturation rates and takes into account historical and projected replacement of plumbing fixtures by utility programs as well as natural replacement. The AWE model also considers estimates of historical population, residential building stock, number of accounts, and projected population and account growth to estimate future passive savings.

An adjustment factor of 76% is applied to the AWE model estimates to conservatively cap passive savings at the levels estimated in the 2020 Water Demand and Conservation Measure Report (EKI, 2020). Water demand estimated based on the water demand factors and the projected number of accounts, before applying passive saving estimates, are represented in **Table 5-5**. The estimated passive savings are presented in **Table 5-6** and are subtracted from the water demand shown in **Table 5-5**. Passive savings are only applied to potable water use.

5.5 Projected Water Demand Through 2050

Future potable water demand was projected for each sector based on their respective demand factors, non-revenue water estimated as a proportion of total potable water production, and estimated passive savings, and is shown in **Table 5-7**. Potable water demand is projected to increase to 26,674 AFY in 2050, which is a 22% increase over 2024 potable water demand. Raw water demand and recycled water demand are projected to be 191 AFY and 656 AFY over the planning horizon, respectively, since no growth is anticipated within those sectors.

Table 5-5 Projected Water Demand by Sector without Passive Conservation

Water Use Sector	Projected Demand without Passive Conservation (AFY) (a)					
	2025	2030	2035	2040	2045	2050
Potable Water						
Single Family Residential	13,502	14,486	15,483	15,790	16,096	16,403
Multifamily Residential	3,112	3,636	4,155	4,292	4,429	4,566
Commercial	2,414	2,256	2,098	2,115	2,133	2,151
Institutional	1,547	1,445	1,344	1,355	1,367	1,378
Other	31	29	27	27	27	28
Irrigation	1,412	1,651	1,889	1,951	2,014	2,076
Non-Revenue Water	2,326	2,488	2,651	2,705	2,760	2,814
Total Potable Demand (b)	**24,343**	**25,991**	**27,647**	**28,236**	**28,825**	**29,414**
Raw Water						
Raw Water Demand	191	191	191	191	191	191
Total Raw Water Demand	**191**	**191**	**191**	**191**	**191**	**191**
Recycled Water						
Recycled Water Demand	656	656	656	656	656	656
Total Recycled Water Demand	**656**	**656**	**656**	**656**	**656**	**656**

Abbreviation:
AFY = acre-feet per year

Notes:
(a) Water demand projections are estimated based on growth in accounts shown in **Table 5-1** and the water demand factors identified in **Table 5-4**. Non-revenue water projections are estimated by water loss factors shown in **Table 5-4** and the total growth in number of services from all sectors.
(b) Totals may not sum due to rounding.

Table 5-6 Projected Demand and Passive Conservation

	Projected Demand (AFY) (a)					
	2025	2030	2035	2040	2045	2050
Potable Water						
Baseline Potable Water Demand	24,343	25,991	27,647	28,236	28,825	29,414
Passive Water Conservation (b)	(198)	(1,117)	(1,917)	(2,238)	(2,505)	(2,740)
Total Potable Water Demand (c)	**24,146**	**24,874**	**25,729**	**25,999**	**26,321**	**26,674**
Raw Water						
Raw Water Demand	191	191	191	191	191	191
Total Raw Water Demand	**191**	**191**	**191**	**191**	**191**	**191**
Recycled Water						
Recycled Water Demand	656	656	656	656	656	656
Total Recycled Water Demand	**656**	**656**	**656**	**656**	**656**	**656**
Total Water Demand (c)	**24,993**	**25,722**	**26,577**	**26,846**	**27,168**	**27,521**

Abbreviations:
AFY = acre-feet per year
AWE = Alliance for Water Efficiency

Notes:
(a) Water demand projections are estimated based on growth in accounts shown in **Table 5-1** and the water demand factors identified in **Table 5-4**. Non-revenue water projections are estimated by water loss factors shown in **Table 5-4** and the total growth in number of services from all sectors.
(b) Passive water savings calculated from the AWE Conservation Tracking Tool; however, the savings were conservatively capped at the 2020 Water Demand and Conservation Measure Report estimate.
(c) Totals may not sum due to rounding.

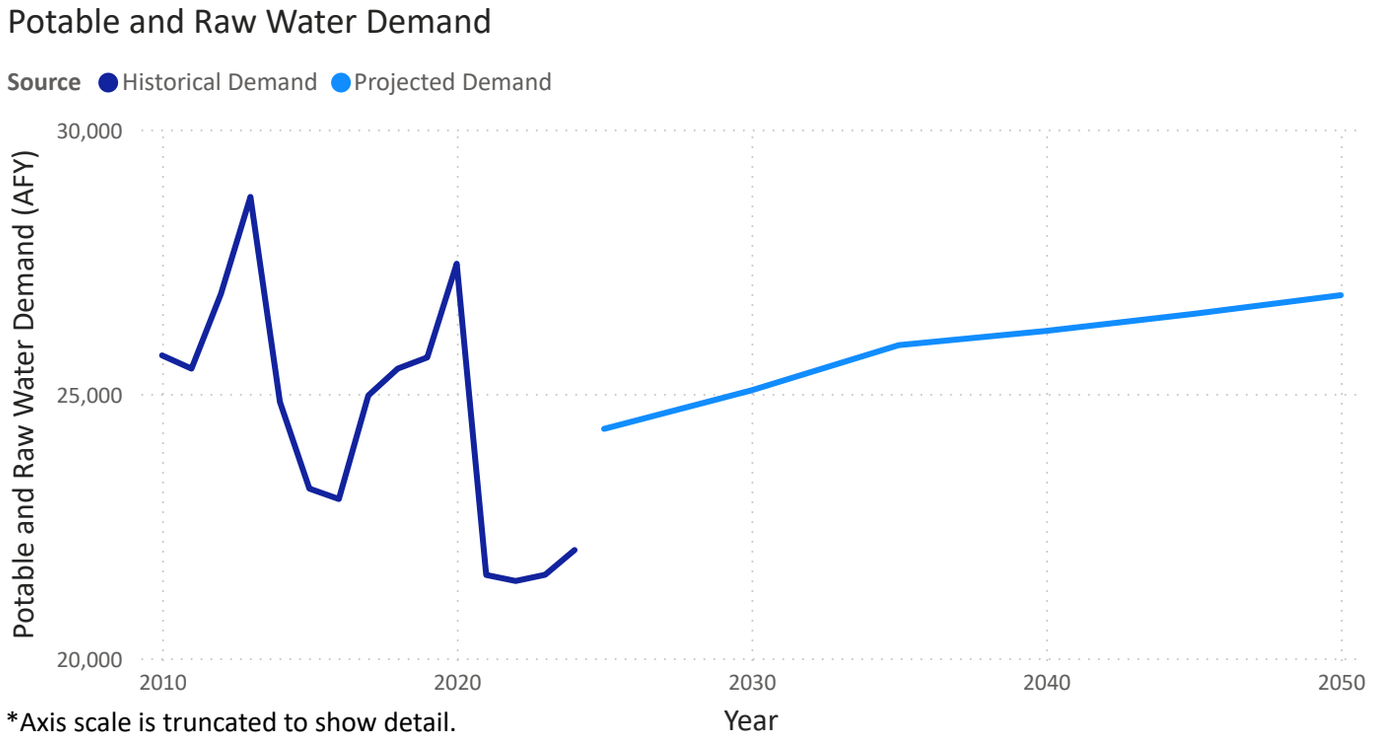
Table 5-7 Projected Water Demand by Sector with Passive Conservation

Water Use Sector	Projected Demand with Passive Conservation (AFY) (a)					
	2025	2030	2035	2040	2045	2050
Potable Water						
Single Family Residential	13,401	13,906	14,501	14,638	14,810	15,001
Multifamily Residential	3,040	3,238	3,462	3,500	3,549	3,606
Commercial	2,399	2,171	1,949	1,936	1,927	1,920
Institutional	1,537	1,391	1,249	1,241	1,234	1,230
Other	31	29	27	27	27	28
Irrigation	1,412	1,651	1,889	1,951	2,014	2,076
Non-Revenue Water	2,326	2,488	2,651	2,705	2,760	2,814
Total Potable Demand (b)	**24,146**	**24,874**	**25,729**	**25,999**	**26,321**	**26,674**
Raw Water						
Raw Water Demand	191	191	191	191	191	191
Total Raw Water Demand	**191**	**191**	**191**	**191**	**191**	**191**
Recycled Water						
Recycled Water Demand	656	656	656	656	656	656
Total Recycled Water Demand	**656**	**656**	**656**	**656**	**656**	**656**

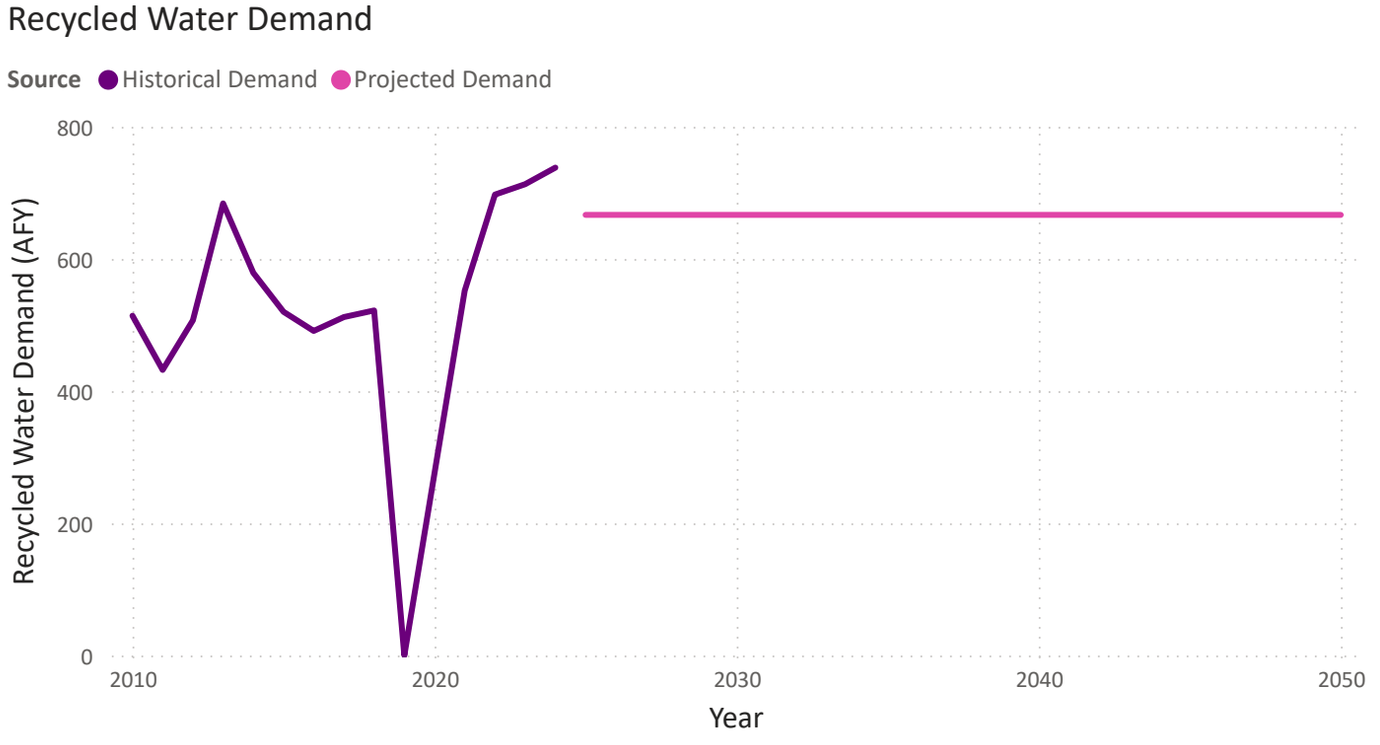
Abbreviation:
AFY = acre-feet per year

Notes:
(a) Water demand projections are estimated based on growth in accounts shown in **Table 5-1**, the water demand factors identified in **Table 5-4**, and incorporates the passive savings shown in **Table 5-6**. Non-revenue water projections are estimated by water loss factors shown in **Table 5-4** and the total growth in number of services from all sectors.
(b) Passive savings for each sector calculated from the AWE Conservation Tracking Tool and adjusted to cap savings conservatively at levels estimated in the 2020 Water Demand and Conservation Measure Report.
(a) Totals may not sum due to rounding.

Figure 5-2 Projected Water Demand with Passive Conservation
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership



*Axis scale is truncated to show detail.



Abbreviations:
AFY = acre-feet per year

5.6 Projected Compliance with UWUOs

To forecast the District's Objective compliance, a analysis was conducted comparing the District's projected water use to its Objectives for 2025, 2030, 2035, and 2040. The projected water demands subjective to the Objectives and the corresponding Objectives are calculated using the following data sources and assumptions:

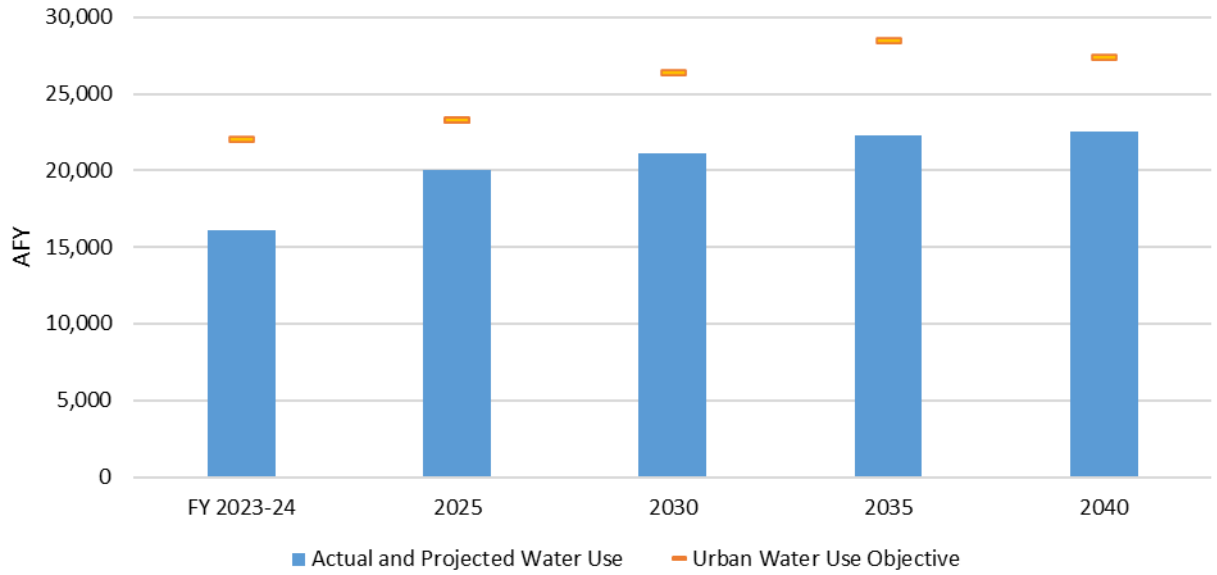
- Projected population, water use components subjective to the objectives (e.g., residential water use and dedicated irrigation water use), and real water loss described in Sections 5.1 and 5.5;
- Decreasing Objective water use standards through 2040 as described in Section 2.2.1;
- Residential landscape area based on values reported in the District's Fiscal Year (FY) 2023-24 UWUO Annual Report and increasing proportional to population projections;
- Existing (2025) CII landscape area on DIMs irrigated with potable water estimated from projected 2025 water use assuming a LEF of 0.80;
- Future CII landscape area on DIMs irrigated with potable water increasing proportionally with District's irrigation accounts; and
- CII landscape area on DIMs irrigated with recycled water (i.e., Special Landscape Area) estimated from a water use of 656 AFY assuming a LEF of 1.0.

The results of this analysis show that the District is anticipated to comply with its Objectives through 2040, as shown below in **Table 5-8** and **Figure 5-3. Figure 5-4** compares projected values of each Objective component from 2025 through 2040 to examine relative contributions to Objectives compliance. However, agencies are only assessed against the overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective.

Table 5-8 Actual and Projected Water Use vs. Urban Water Use Objectives

Year (a)	Actual and Projected Water Use Subject to the Objectives (b) (AFY)	UWUO (AFY)
FY 2023-24	16,060	22,005
2025	20,041	23,220
2030	21,090	26,397
2035	22,254	28,450
2040	22,526	27,420

Figure 5-3 Actual and Projected Water Use vs. Urban Water Use Objectives



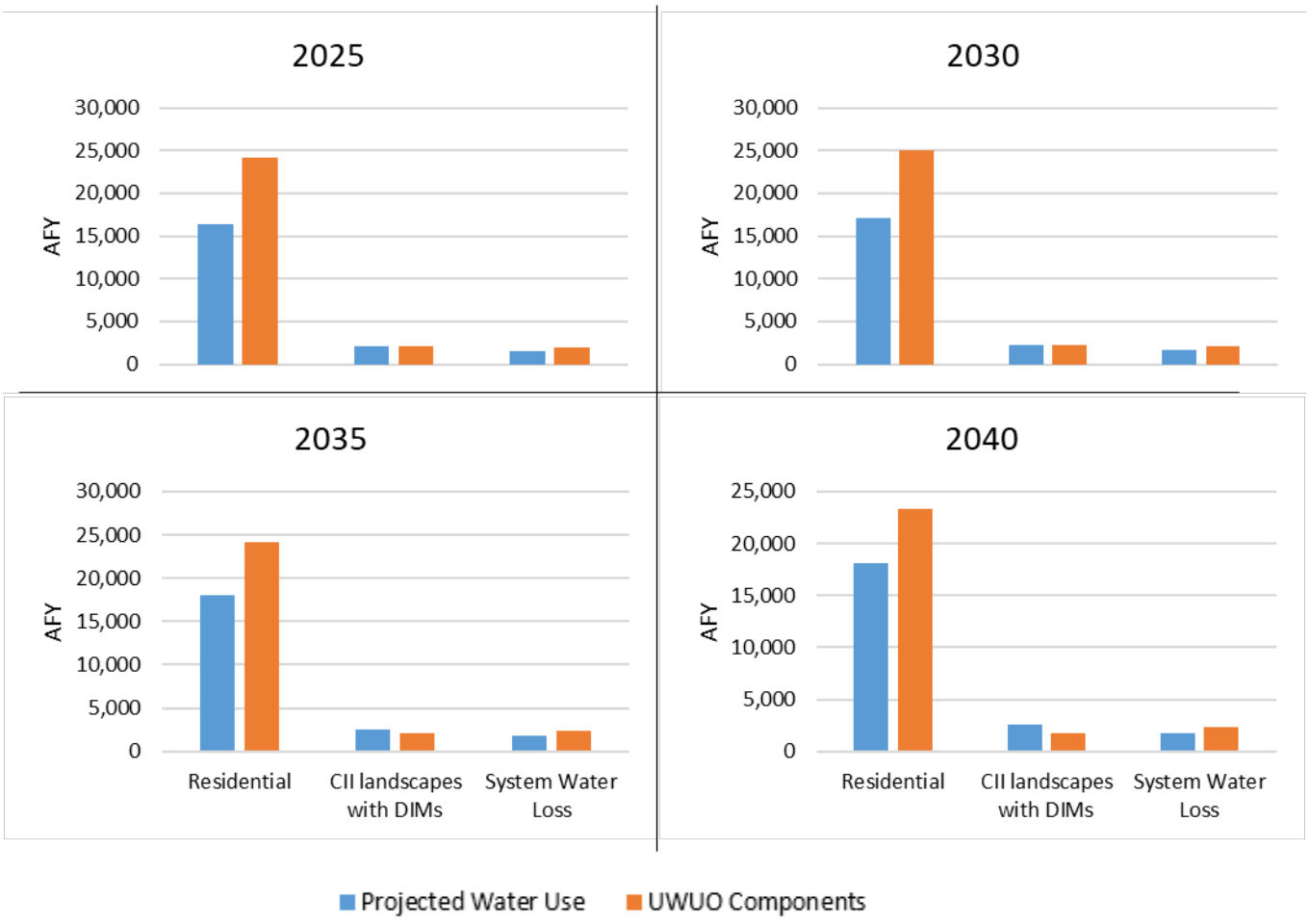
Abbreviations:

AFY = acre-feet
CY = calendar year
FY = fiscal year
UWUO = Urban Water Use Objective

Notes:

(a) Calendar years unless otherwise noted.
(b) Only includes the water use components that are subject to the Objective.

Figure 5-4 Projected Water Use vs. Urban Water Use Objectives by Component



Abbreviations:

AFY = acre-feet per year
CII = commercial, industrial, and institutional
DIM = dedicated irrigation meter
UWUO = Urban Water Use Objective

Notes:

This figure provides a comparison for each component to examine their relative contributions to Objectives compliance. However, agencies are only assessed against the overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective.

6 CONSERVATION MEASURES UPDATE

The following section evaluates current and potential conservation programs and measures for both the District and the SMSWP. The purpose of this section is to compile programs and measures that are prioritized by both the District and by all Water Contractors in the SMSWP collectively and calculate the potential water savings and economic feasibility of the programs. Section 6.1 discusses the methodology used to prioritize conservation programs and measures. Section 6.2 describes the programs and measures given high priority for regional implementation by the nine Water Contractors collectively, and Section 6.3 describes programs and measures given high priority by the District. Next steps will include analyzing the potential water savings and cost-benefit for those programs selected by the District as both individual programs and in select program portfolios. By assessing the feasibility of these programs, the District can make more informed decisions regarding program selection and implementation.

6.1 Methodology for Screening of Potential Water Conservation Measures

A comprehensive ranking list of over 100 conservation programs and measures was developed (Appendix C) to help agencies prioritize future conservation efforts and update the suite of common measures for modeling and future implementation, as required for the 2025 UWMPs. The Water Contractors ranked their priority projects and measures, which will contribute to the broader goals of forecasting demand through 2050, evaluating demand management strategies, and meeting regulatory goals.

The list includes the measures from the prior (2015 and 2020) screenings, minus those that are now obsolete, and new measures and technologies. New measures came from the library of the AWE Conservation Tracking Tool, version 4.0, and other identified measures per literature or implemented by other suppliers, including those that are available to the industry since 2020. The list also included measures currently implemented by the Water Contractors, and the priority rankings selected in 2020.

Each of the nine Water Contractors was first asked to review and identify any additional programs to add to the ranking list. Following receipt of feedback from the Water Contractors, each Water Contractor was asked to rank the list and identify:

- Priority (on a scale of one to five, with five being the highest priority) as a program to be implemented regionally through the SMSWP;
- Priority (on a scale of one to five, with five being the highest priority) as a program to be implemented locally through their agency;
- The current implementation status with options of (1) currently administered by their agency, (2) previously administered by their agency, or (3) current regional program through SMSWP.

The list of water conservation measures is organized into four categories, specifically: (1) agency actions and water rates, (2) public outreach and education, (3) device-based and financial incentive programs, and (4) policies and regulations.

6.2 Screening of Conservation Measures for Regional Implementation

The regional results of the water conservation measures prioritization screening are summarized for all Water Contractors combined, representing overall regional priorities and preferences (**Table 6-1**), which shows (1) the average prioritization ranking for all Water Contractors for each program for regional implementation, (2) the percentage of Water Contractors that prefer each program to be implemented at the regional level, and (3) indication of each measure as a current SMSWP program or not.

Of the 116 measures and programs ranked, the Water Contractors screened these down to 11 high-priority measures that received an average score of three or more and were comprised of two of the four categories, including Public Outreach and Education Based Conservation Programs and Device-Based and Financial Incentive Programs.

6.2.1 Public Outreach and Education-Based Conservation Programs

Of the 14 public outreach and education-based water conservation programs included in the screening, the Water Contractors identified the following eight programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP:

1) Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation
2) School Education Programs
3) Promote QWEL Training
4) Public Outreach through Print & Electronic Media - Focused on Indoor Conservation
5) Educational Workshops
6) Garden Tour
7) Do-It-Yourself Home Energy and Water Savings Toolkit
8) Garden Sense Consultation

These eight programs are already currently implemented by SMWSP.

6.2.2 Device and Financial Incentive-Based Conservation Programs

Of the 60 device- and financial incentive-based water conservation programs included in the screening list, the Water Contractors identified the following three programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP, through pass-through grant funding:

1) Landscape Conversion or Turf Removal – SFR
2) Landscape Conversion or Turf Removal – MFR and CII
3) High Efficiency Clothes Washer Rebate – Residential

Table 6-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Preference (b)	Sector	Indoor	Outdoor	Primary End Use	Current SMSWP Program
PUBLIC OUTREACH AND EDUCATION							
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.4	100%	All		X	Irrigation	✓
School Education Programs	4.0	100%	SFR, MFR	X	X	All	✓
Promote QWEL Training (Qualified Water efficient Landscaper)	3.9	89%	All		X	All Outdoor	✓
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.7	89%	All	X		All Indoor	✓
Educational Workshops	3.3	78%	All		X	All Outdoor	✓
Garden Tour	3.2	78%	SFR		X	All Outdoor	✓
Garden Sense Consultation	3.1	78%	SFR		X	All Outdoor	✓
Do-It-Yourself Home Energy and Water Savings Toolkit	3.2	78%	SFR	X	X	All	✓
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS							
Landscape Conversion or Turf Removal - SFR	3.3	67%	SFR		X	Irrigation	✗
Landscape Conversion or Turf Removal - MFR and CII	3.2	67%	MFR, CII		X	Irrigation	✗
High Efficiency Clothes Washer Rebate - Residential	3.1	67%	SFR, MFR	X		Clothes Washer	✗

Abbreviations:

AMI = advanced metering infrastructure
CalWEP = California Water Efficiency Partnership
CII = commercial, industrial, institutional
COM = commercial
HEU = High-Efficiency Urinals
IRR = irrigation
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:

(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a regionally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority. Results are presented as an average of the responses of all nine Water Contractors.

(b) Presents the percentage of Water Contractors who indicated a priority of greater or equal to 3 for regional implementation.

6.2.3 Regional Program Screening Findings

During the May 2025 project workshop, the Water Contractors indicated that the three device- and financial incentive- based programs identified under Section 6.2.2 are already being implemented at the local level and expressed a preference for them to continue to be implemented at a local level. The takeaway from this exercise is that the existing SMWSP public and education-based programs should remain regional programs and that there is currently no preference for new regional programs.

6.3 Screening of Conservation Measures for Local Implementation

The local results of water conservation program prioritization screening were summarized for all Water Contractors individually, representing their local priorities and preferences. Appendix C presents the results for the District and shows (1) the average prioritization ranking for each program for local implementation, (2) the targeted sector, (3) whether the program targets indoor or outdoor savings; (4) the primary end use; and (5) the implementation status as a local program.

6.3.1 Agency Actions and Water Rate Conservation Programs

Eight agency action and water rate-based conservation programs were identified for the District as high priority (score of three or more) for potential future implementation. Of these programs, one has been implemented at the local level, either currently or in the past. The program currently implemented by the District targets all end use by residential customers or CII customers. The remaining seven potential new programs identified as high priority are as follows, in general order of priority, with five programs (**bolded**) on the list receiving a score of five:

1) **Install AMI for Existing Accounts**
2) **Install AMI for High Water Users and Large Landscape Accounts**
3) **Install AMI in New Development**
4) **End Point Leak Detection and Flow Monitoring**
5) **Behavior Based Customer Messaging Platforms**
6) Water Budgeting/Monitoring for Large Landscape Accounts
7) Implementation or Modification of Tiered Water Rates (Conservation Pricing)

6.3.2 Public Outreach and Education Based Conservation Programs

Nine public outreach and education-based programs were identified as high priority (average score of three or higher) for potential future implementation. Of these programs, two would target outdoor water use, one would target indoor use, and six would target indoor and outdoor water use. Six of these programs are currently implemented at the local level. The remaining three potential new programs identified as high priority are as follows, in general order of priority, with one program (**bolded**) on the list receiving a score of five:

1) **Promote QWEL Training (Qualified Water Efficient Landscaper)**
2) Garden Tour

3) SFR Home Water Report

6.3.3 Device and Financial Incentive Based Conservation Programs

Forty-seven (47) device- and financial incentive- based water conservation programs were identified as high priority (average score of three or higher) for potential future implementation, including 29 that would target indoor water use, 15 that would target outdoor water use, one that would target both, and two that would target cooling tower use. The District implements 32 of these programs at the local level, either currently or in the past, primarily targeting irrigation equipment rebates, bathroom fixture replacements or turf conversion. The remaining 15 potential new programs identified are as follows, in general order of priority, with two programs (**bolded**) on the list receiving a score of five:

1) **Incentivize Irrigation Equipment Upgrades - SFR**
2) **Commercial Landscape Irrigation Improvement Program (CLIIP) Rebates**
3) Do-It-Yourself Home Energy and Water Savings Toolkit
4) Pilot Spring Irrigation Repairs Rebate
5) Toilet Flapper Giveaway - Residential and CII
6) Urinal Direct Installation – CII
7) Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates
8) Nozzle Replacement Irrigation CII - Large Landscape
9) In-Stem Flow Regulators
10) Incentivize Submetering for Existing Customers - MFR, CII
11) Incentivize Submetering of Cooling Towers for Existing Customers
12) Flow Sensor Rebate Irrigation System
13) SFR Wireless Flow Monitor
14) Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs
15) Pool Removal Rebates

6.3.4 Policy and Regulation Based Conservation Programs

The District identified 22 policy and regulation-based programs as high priority (average score of three or higher), including eight that would target indoor water use, ten that would target outdoor water use, one that would target both, one that would target CII equipment use, and two that would target cooling tower use. The District currently implements 11 of these programs. The remaining 11 potential new programs identified are as follows, in general order of priority:

1) Demand Offset/Water Neutral Policy for Large New Developments
2) Require Hot Water on Demand / Structured Plumbing in New Residential Development
3) Require Irrigation Designers / Installers be Certified (QWEL)
4) Require Submetering by Unit for Existing Commercial Customers

5) Require Submetering by Unit for New Commercial Developments
6) Require Submetering for New MFR Developments
7) Require Submetering for New Mobile Home Park Developments
8) Require Submetering of Existing MFR (and Mobile Home Park) Customers
9) Require Submetering of Cooling Towers for Existing Customers
10) Require Submetering of Cooling Towers for New Development
11) Require Water Efficiency Plan Reviews for New CII Development

6.4 Evaluation of Future Water Conservation Programs

Based on the conservation screening process described above, a suite of conservation programs to be considered for future implementation were evaluated. These programs were evaluated both individually and as components in four water conservation program scenarios, as shown in **Table 6-2**. The program scenarios each represent a potential approach or strategy for the District's future conservation programs, specifically:

- **Scenario A** represents the District's existing programs as a baseline,
- **Scenario B** represents programs ranked most highly for local implementation by the District,
- **Scenario C** focuses on programs that target outdoor water savings under Scenario B, and
- **Scenario D** focuses on programs that target water savings in CII customers under Scenario B.

Table 6-2 also identifies the customer sectors each program would target as well as whether the program focuses on indoor or outdoor water use, or both.

The benefits and costs associated with implementation of these programs were evaluated using the AWE model, using a series of assumptions documented in Appendix B. Key assumptions and considerations related to the methodology used by the AWE model and in this analysis are provided below:

- Water savings assumptions were based on a combination of (1) District's 20XX Water Efficiency Master Plan modeling (MMWD, 2024), (2) AWE model default assumptions, (3) water savings factors developed based on other published literature sources, and (4) water savings estimates developed for other Water Contractors.
- Costs to the utility were based on (1) rebate amounts of existing programs, (2) District's 20XX Water Efficiency Master Plan modeling (MMWD, 2024), or (3) AWE model default assumptions.
- Utility benefit (i.e., avoided cost of water) is assumed to be $1,278/AF, consistent with the FY 2024-2025 cost of purchasing wholesale water from Sonoma Water.
- Financial assumptions related to customer water rates were provided by the District.

- Financial assumptions related to energy costs to the customer were assumed based on typical PG&E rates (PG&E, 2024).
- Assumed rate of program implementation was based on historical participation levels by District customers in similar programs.
- For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030; water savings beyond this period reflect cumulative savings achieved over time from implementation during this five-year period.
- Lost revenue due to reduced water sales is not included as a cost.
- Additional program-specific considerations are provided as notes in the attached tables.

Table 6-3 presents a combination of individual water conservation measures, and identifies the following information for each program:

- **Net present value of costs and benefits** – represents the present value over the 25-year period discounted to current 2025 dollars.
- **Benefit to cost ratio** – calculated as present value of costs divided by the present value of benefits.
- **Water utility costs** – costs that the District as a water utility will incur to operate the program including administrative costs.
- **Customer costs** – costs customers will incur to implement a program in the District's service area.
- **Utility benefits** – the avoided cost to the District to produce the volume of water saved.
- **Customer benefits** – the savings from reduced water/sewer utility bills and energy savings resulting from reduced use of hot water.
- **Total water utility costs** – includes costs to the District for program implementation from 2026-2030.
- **Water savings in 2030** – one-year estimate water savings in 2030.
- **Water utility cost of water saved for individual programs** – cost of water saved dividing by the lifetime water savings of that program.
- **Water utility cost of water saved for program scenarios** – weighted average of water utility cost of water saved for individual programs by the cumulative savings through 2050.

The analysis estimates active program savings based on the AWE model and does not include additional savings anticipated from passive savings (i.e., water savings associated with the natural replacement of less efficient water using fixtures and appliances due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements). Based on this analysis, and the assumptions presented in Appendix B, the benefit-cost ratios for the District range from 0.2 to 21.5. A benefit-cost ratio value greater than one indicates that the cost of implementing the program would be cheaper than purchasing supplies from Sonoma Water.

Table 6-4 presents the results of the analysis of the four conservation program scenarios identified in **Table 6-3**, and includes a summary of costs and benefits to the District and customers, estimated cumulative water savings through 2050 (based on assumed program implementation from 2026-2030), and the estimated cost of water saved to the District. Based on this, the District's preferred water conservation measures for local implementation (i.e., Scenario B) and its existing programs (i.e., Scenario A) have similar benefit-to-cost ratios at 1.0 and 0.9, respectively. In comparison, the benefit to cost ratio of outdoor programs (i.e., Scenario C) is 0.7 and CII programs (i.e., Scenario D) is 0.8. The projected cumulative water savings associated with implementation of locally preferred measures (i.e., Scenario B) is 5,003 AF by 2030 and 6,426 by 2050, at a cost of approximately $1190/AF. The figure in **Table 6-4** shows active savings in 2030 associated with each scenario as well as anticipated passive savings.

Table 6-2 Conservation Program Scenarios

Marin Municipal Water District, Sonoma-Marin Water Saving Partnership

Program	Sector	Indoor/ Outdoor	Program Scenario (a)			
			(A) Baseline	(B) Highly-Ranked Local Programs	(C) Highly-Ranked Outdoor Programs	(D) Highly-Ranked CII Programs
AMI Leak Notifications Program	All	Both	X	X		
Flume Direct Distribution	SFR	Both	X	X		
SFR Water Use Surveys/Audits Program	SFR	Both	X	X		
Water Use Surveys/Audits Program	MFR, CII, IRR	Outdoor	X	X	X	X
CII Water Use Evaluation Program	CII	Both	X	X		X
HET Rebate Program	SFR	Indoor	X	X		
HET Direct Install Program	MFR, CII	Indoor	X	X		
Residential HECW Rebate Program	SFR	Indoor	X			
Hot Water Recirculating System	SFR	Indoor	X	X		
Pool Cover Rebate Program	SFR	Outdoor	X	X	X	
Laundry-to-Landscape System	SFR	Outdoor	X	X	X	
Rain Barrel Rebate Program	SFR	Outdoor	X	X	X	
SFR WBIC Rebate Program	SFR	Outdoor	X	X	X	
Large Landscape WBIC Rebate Program	IRR	Outdoor	X	X	X	X
SFR Turf Removal Program	SFR	Outdoor	X	X	X	
Custom Rebate	CII, MFR, IRR	Both	X	X		X
Behavior Based Customer Messaging Platforms	SFR, MFR	Both		X		
High Efficiency Clothes Washer Rebate Program - CII	CII	Indoor		X		X
MFR CII Turf Removal Program	MFR, CII	Outdoor		X	X	X
Incentivize Irrigation Equipment Upgrades - SFR (b)						
SFR Irrigation Nozzle Replacement	SFR	Outdoor		X	X	
SFR Irrigation System Flow Sensor Rebate	SFR	Outdoor		X	X	
Irrigation Improvement Equipment Program (b)						
Large Landscape Irrigation Nozzle Replacement	IRR	Outdoor		X	X	X
Large Landscape Irrigation System Flow Sensor Rebate	IRR	Outdoor		X	X	X
Water Budgeting/Monitoring for Large Landscape Accounts	IRR	Outdoor		X	X	X

Abbreviations

AMI = Advanced Metering Infrastructure
CII = Commercial, Industrial, and Institutional
HET = high-efficiency toilet
SFR = single-family residential
WBIC = weather-based irrigation controller
WEMP = Water Efficiency Master Plan

Notes

(a) The program scenarios represent four potential approaches to program selection. Scenario 1 represents existing programs as a baseline, Scenario 2 represents programs prioritized for local implementation, Scenario 3 focuses on outdoor water savings, and Scenario 4 focuses on CII programs.

(b) Irrigation System Equipment programs are modeled as a combination of irrigation nozzle and flow sensor replacements.

Table 6-3 Costs and Savings of Potential Conservation Programs
Marin Municipal Water District, Sonoma-Marin Water Saving Partnership

Program (a)	Sector	Indoor/ Outdoor	Net Present Value of Benefits		Net Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2026-2030 (b)	Water Savings in 2030 (AFY)	Water Utility Cost of Water Saved ($/AF)
			Water Utility	Customers	Water Utility	Customers	Water Utility	Customers			
AMI Leak Notifications Program	All	Both	$628,672	$3,231,510	$372,101	$1,144,927	1.7	2.8	$406,250	107.4	$756
Flume Direct Distribution	SFR	Both	$743,790	$5,732,678	$313,746	$522,911	2.4	11.0	$375,000	72.3	$519
SFR Water Use Surveys/Audits Program	SFR	Both	$144,786	$1,121,639	$763,019	$0	0.2	-	$860,000	25.9	$6,645
Water Use Surveys/Audits Program	MFR, CII, IRR	Outdoor	$404,692	$4,717,445	$665,424	$831,780	0.6	5.7	$750,000	72.4	$2,073
CII Water Use Evaluation Program	CII	Both	$134,909	$1,572,616	$221,808	$277,260	0.6	5.7	$250,000	24.1	$2,073
HET Rebate Program	SFR	Indoor	$22,839	$117,398	$20,918	$21,454	1.1	5.5	$39,780	1.5	$1,582
HET Direct Install Program	MFR, CII	Indoor	$56,705	$291,476	$93,311	$0	0.6	-	$177,450	3.8	$2,842
Residential HECW Rebate Program	SFR	Indoor	$184,526	$1,677,289	$92,214	$354,671	2.0	4.7	$115,635	12.8	$601
Hot Water Recirculating System	SFR	Indoor	$12,165	$302,758	$10,659	$122,989	1.1	2.5	$12,740	1.2	$1,077
Pool Cover Rebate Program	SFR	Outdoor	$114,765	$589,918	$51,435	$79,131	2.2	7.5	$58,500	20.8	$563
Laundry-to-Landscape System	SFR	Outdoor	$27,858	$143,195	$27,108	$334,663	1.0	0.4	$32,400	2.7	$1,196
Rain Barrel Rebate Program	SFR	Outdoor	$14,477	$74,415	$99,737	$299,211	0.1	0.2	$131,000	0.8	$8,116
SFR WBIC Rebate Program	SFR	Outdoor	$91,243	$469,010	$53,839	$103,536	1.7	4.5	$64,350	8.9	$725
Large Landscape WBIC Rebate Program	IRR	Outdoor	$41,877	$215,259	$5,949	$2,380	7.0	90.4	$7,110	4.1	$175
SFR Turf Removal Program	SFR	Outdoor	$882,014	$4,533,738	$1,351,479	$4,158,396	0.7	1.1	$1,856,693	45.3	$1,830
Custom Rebate	CII, MFR, IRR	Both	$449,008	$2,307,998	$20,851	$77,843	21.5	29.6	$30,300	22.6	$58
Behavior Based Customer Messaging Platforms	SFR, MFR	Both	$307,070	$2,378,839	$145,776	$0	2.1	-	$159,155	52.5	$607
High Efficiency Clothes Washer Rebate Program - CII	CII	Indoor	$997,946	$9,071,040	$271,466	$208,641	3.7	43.5	$318,150	117.9	$337
MFR CII Turf Removal Program	MFR, CII	Outdoor	$51,459	$264,509	$67,918	$208,979	0.8	1.3	$93,308	2.6	$1,576

Table 6-3 Costs and Savings of Potential Conservation Programs
Marin Municipal Water District, Sonoma-Marin Water Saving Partnership

Program (a)	Sector	Indoor/ Outdoor	Net Present Value of Benefits		Net Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2026-2030 (b)	Water Savings in 2030 (AFY)	Water Utility Cost of Water Saved ($/AF)
			Water Utility	Customers	Water Utility	Customers	Water Utility	Customers			
Incentivize Irrigation Equipment Upgrades - SFR											
SFR Irrigation Nozzle Replacement	SFR	Outdoor	$252,505	$1,297,930	$57,305	$57,305	4.4	22.6	$68,493	24.6	$279
SFR Irrigation System Flow Sensor Rebate	SFR	Outdoor	$170,441	$876,103	$261,310	$452,479	0.7	1.9	$312,327	16.6	$1,885
Irrigation Improvement Equipment Program											
Large Landscape Irrigation System Flow Sensor Rebate	IRR	Outdoor	$12,579	$64,659	$6,429	$11,132	2.0	5.8	$7,684	1.2	$628
Large Landscape Irrigation Nozzle Replacement	IRR	Outdoor	$12,424	$63,861	$2,820	$2,820	4.4	22.6	$3,370	1.2	$279
Water Budgeting/Monitoring for Large Landscape Accounts	IRR	Outdoor	$1,103,401	$5,671,715	$1,497,931	$0	0.7	-	$1,635,400	188.5	$1,735

Abbreviations

AFY = acre-feet per year
AMI = Advanced Metering Infrastructure
CII = Commercial, Industrial, and Institutional
HECW = High-Efficiency Clothes Washer
HET = High-Efficiency Toilet
IRR = Irrigation
MFR = multi-family residential
SFR = Single-family residential
sq ft = square feet
WBIC – Weather-Based Irrigation Controller
$/AF = dollars per acre-foot

Notes

(a) Estimated water savings, benefits, and costs are calculated using the AWE model. Program savings, cost, and implementation rate assumptions used are presented in Appendix B. Utility benefit (i.e., avoided cost of water) is assumed to be the cost of purchasing wholesale water from Sonoma Water. Customer benefit is assumed to be the variable cost of purchasing water from the utility (i.e., variable customer water rates).

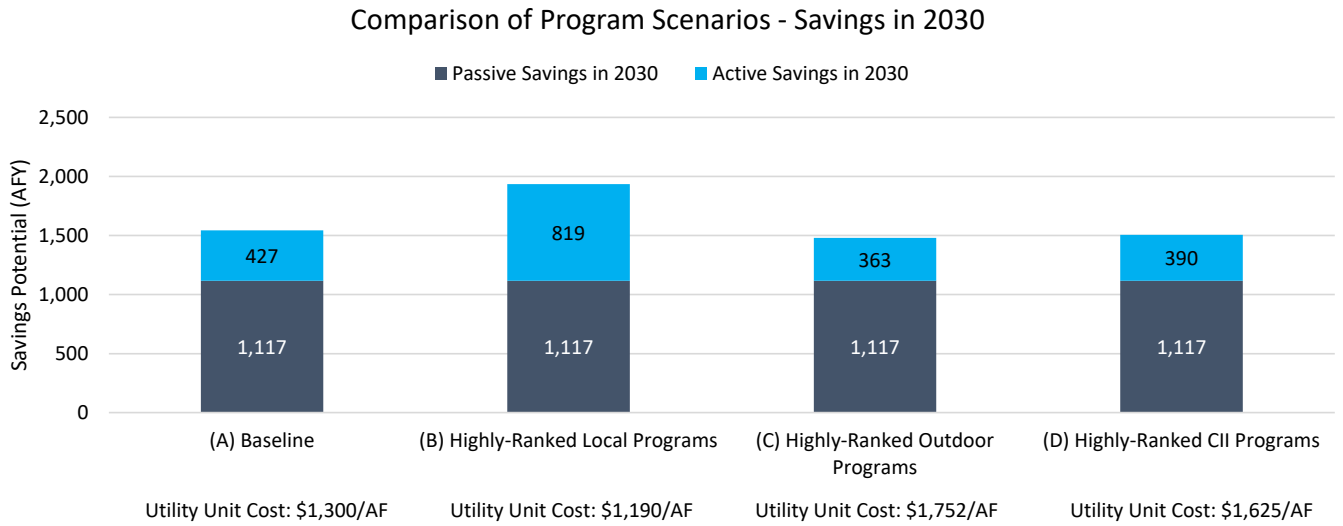
(b) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030.

Table 6-4 Comparison of Program Scenarios – Costs and Savings
Marin Municipal Water District, Sonoma-Marin Water Saving Partnership

Scenario (a)	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Water Savings in 2030 (AFY)	Cumulative Active Water Savings (AF)					Water Utility Cost of Water Saved ($/AF) (b)
	Water Utility	Customers	Water Utility	Customers	Water Utility	Customers		2025	2030	2035	2040	2045	
(A) Baseline	$ 3,954,326	$ 27,098,342	$ 4,163,597	$ 8,331,151	0.9	3.3	427	1,548	2,658	3,178	3,648	3,975	$1,300
(B) Highly-Ranked Local Programs	$ 6,677,625	$ 45,109,711	$ 6,382,337	$ 8,917,836	1.0	5.1	819	3,207	5,003	5,640	6,087	6,426	$1,190
(C) Highly-Ranked Outdoor Programs	$ 2,902,227	$ 17,555,308	$ 4,082,129	$ 6,470,556	0.7	2.7	363	1,497	2,056	2,315	2,608	2,820	$1,752
(D) Highly-Ranked CII Programs	$ 3,179,735	$ 18,981,758	$ 4,148,682	$ 6,541,812	0.8	2.9	390	1,577	2,272	2,585	2,878	3,090	$1,625

Abbreviations
AF = acre-feet $/AF = dollars per acre-foot

Notes
(a) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030. Cumulative water savings achieved beyond 2030 reflect the ongoing benefit of program implementation.
(b) The water utility cost is based on the cumulative savings achieved through 2050 cumulative water savings.



7 CONCLUSIONS

Although there have been no updates to the UWMP regulations since 2020, the MCCWL framework and related regulations will influence the 2025 UWMPs, as they will inform the water demand and conservation planning components. This project forecasted water demand through 2050 in accordance with CWC requirements and evaluated both historical and anticipated implementation of conservation programs.

7.1 Historical, Current, and Projected Water Demand

Water demand projections are developed consistent with CWC § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the District and reflect a land-use based approach consistent with ABAG and MTC's Plan Bay Are 2050. It should be noted that all demand and conservation projections have limitations and should be considered estimates that require revisiting as factors that affect demands arise, such as economic or population shifts, extreme hydrological conditions, etc.

The methodology used to develop demand projections herein is also consistent with the CWC §10635(b)(4), requirement to consider climate change on projected demands.[7] The District's per account water use declined significantly over the past 15 years as a result of the District's conservation efforts and showed significant response to key events such as the 2014-2017 drought, the 2021-2023 drought, and the COVID-19 pandemic. The demand factors evaluated herein are based on water use during the 2017-2019 period, which assume a rebound in demand following the recent drought and represent a higher level of demand compared to current levels. Thus, the periods used to develop the demand projections reflect conditions representative of the hotter, drier weather expected as a result of climate change.

Although MCCWL Objective water use standards are expected to become more stringent over time, the District is projected to remain in compliance with its Objectives through 2040 based on forecasted population and baseline water use, prior to accounting for active conservation savings.

7.2 Conservation Measures Participation, Savings, and Update

Participation data indicate that several of the District's conservation programs, particularly the AMI Leak Notification, Water Use Surveys/Audits, Residential HECW Rebate, WBIC Rebate, toilet, and turf replacement programs have been widely adopted and/or successful in achieving water savings between 2010 and 2024. Most programs have a lower adoption rate over the recent five years compared to historical rates, with higher popularity observed during drought periods.

[7] CWC §10635(b)(4) requires that suppliers consider plausible changes on projected supplies and demands under climate change conditions specific to their five-year drought risk assessments. Section 4.5 of the draft 2020 UWMP Guidebook more generally recommends that consideration of climate change be incorporated into all demand projections.

A benefit-cost analysis of future program scenarios shows that all options yield a benefit-to-cost ratio at or greater than one, meaning program implementation is more cost-effective than purchasing additional water supplies from Sonoma Water. Because the District already implements an extensive set of mature and cost-effective programs, new measures generally target remaining, harder-to-reach savings at a higher incremental cost. The preferred program portfolio achieves an estimated benefit-to-cost ratio of 1.0, while its existing programs are at 0.9.

8 REFERENCES

AWE, 2021. "Water Conservation Tracking Tool - Version 4.0." Alliance for Water Efficiency (AWE), 2021. https://www.allianceforwaterefficiency.org/resources/tools/water-conservation-tracking-tool.

ABAG, 2021. *Plan Bay Area 2050*. Association of Bay Area Governments and Metropolitan Transportation Commission, dated October 2021.

EKI, 2020. 2020 Water Demand Analysis and Water Conservation Measure Update, Prepared for Marin Municipal Water District. EKI Environment & Water, Inc., December 2020.

EKI, 2024. *Updated 2020 Urban Water Management Plan for Marin Municipal Water District.* EKI Environment & Water, Inc., dated January 2024.

MMWD, 2024. 2024 5-Year Water Efficiency Master Plan. Marin Municipal Water District, dated July 2024.

MMWD, 2025. Information on the historical population estimates for the Marin Municipal Water District's (MMWD's) service area, provided by MMWD staff on 25 February 2025.

PG&E, 2024. Pacific Gas and Electric (PG&E) Electric Rate Advisory, effective 1 March 2024. Pacific Gas and Electric, 2024.

U.S. Census Bureau, 2025. Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics, 2010-2022. United States Census Bureau, accessed 10 April 2025.

APPENDIX A

Methodology for Estimating Indoor and Outdoor Water Use

Methodology for Estimating Indoor and Outdoor Water Use

This appendix documents the methodology used in Section 3.3 of the *2025 Water Demand and Conservation Measure Update* for the nine participating members of the Sonoma-Marin Saving Water Partnership (Water Contractors) prepared by EKI Environment & Water (EKI).

For customer accounts without dedicated irrigation meters, the amount of water used indoors versus outdoors is not directly measured and must be estimated. Traditionally, indoor and outdoor water use has been estimated using the "minimum winter month" method, which assumes that water use during the lowest-demand winter month is entirely attributable to indoor consumption. However, winter irrigation is common in California and this assumption tends to overestimate indoor water use.

EKI has developed the method below to estimate water use for meters with mixed indoor and outdoor water use (i.e. mixed-use meters, or MUMs) using an annual irrigation scaling factor developed based on data collected from dedicated irrigation meters. This method is consistent with the "Seasonal Adjustment Method" utilized in the Department of Water Resources' residential indoor water use study to inform water use efficiency standards as part of the *Making Conservation a California Way of Life* Legislation (DWR, 2021).

1 DATA SOURCES

The analysis is based on potable water consumption data covering calendar year 2024. While multi-year water consumption data are available, indoor and outdoor use estimates were derived from the most recent complete calendar year (2024) to reflect current usage and seasonal patterns.

The dataset was parsed for the analysis herein and includes the following fields:

- **Year and Month** – Derived from service period or billing date.
- **Sector Group** – Consolidated customer sectors, including Single Family, Multi-family, Commercial/Industrial/Institutional (CII Total), and Irrigation.
- **Consumption** – Monthly water use converted to acre-feet.
- **Water Type** – Only potable water use was included in the analysis.

Potable irrigation accounts were used to infer the seasonal profile of outdoor water use. Estimates of indoor and outdoor use were produced for sector groups where both types of use are present (e.g., Single Family, Multi-family, CII Total).

2 METHODOLOGY

This section describes the method used to estimate the indoor and outdoor components of total annual water use for each sector group.

2.1 Step 1: Identify Analysis Year

The most recent year with complete monthly data (2024) was selected to represent current conditions and ensure seasonal variation is captured accurately.

2.2 Step 2: Calculate Seasonal Scaling Factor

Potable dedicated irrigation meters (DIMs) were assumed to represent purely outdoor water use. Monthly water use in the most recent year (2024) was aggregated for all irrigation accounts (i.e. accounts on DIMs), and a seasonal scaling factor (SF) was calculated as:

$$Scaling\ Factor\ (SF) = \frac{Max\ (monthly\ use)}{Min\ (monthly\ use)}$$

This metric reflects the ratio between peak summer irrigation and baseline winter irrigation, which is assumed to persist year-round at a reduced level. The metric also reflects the local conditions and climatic conditions during 2024. As shown on Figure 2-1, the variations in monthly water use from DIMs generally follow a consistent pattern: highest water use in the summer months and early fall (July through September), lowest water use in the winter month and early spring (January through March).

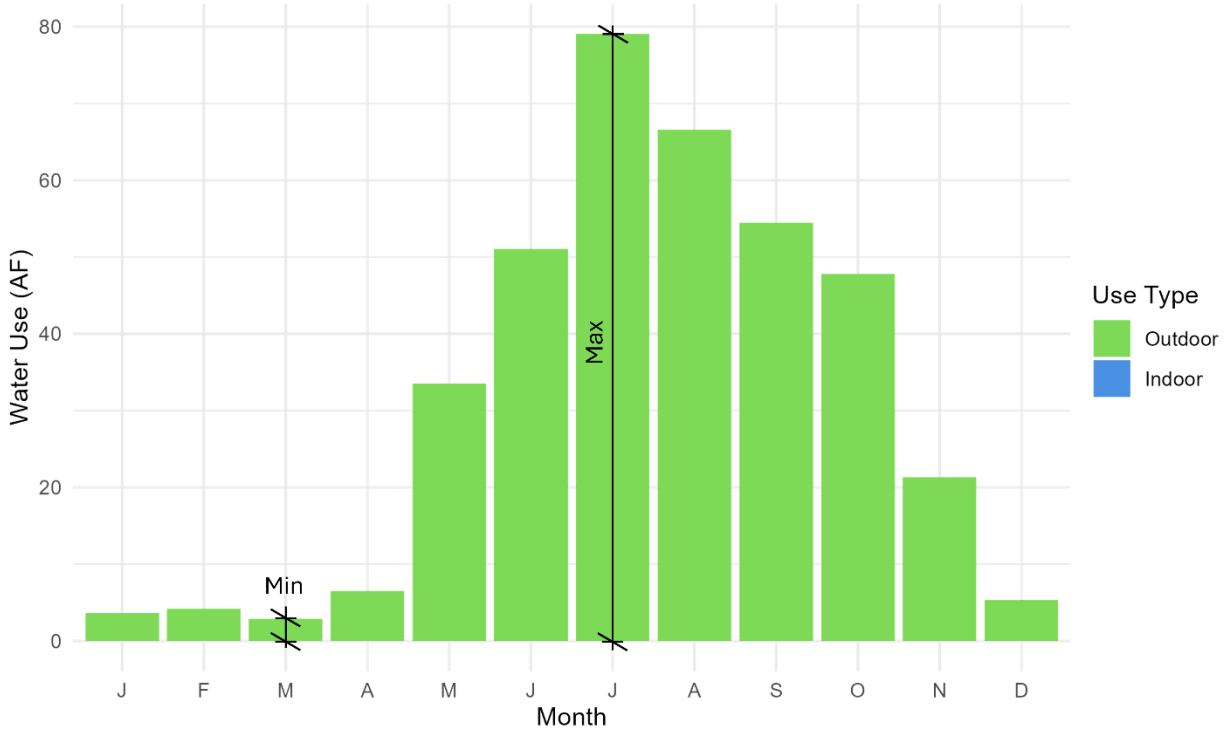


Figure 2-1 Example Irrigation Outdoor Use by DIMs Used to Calculate Scaling Factor

2.3 Step 3: Filter Target Sector Groups

The analysis focuses on three sector groups on MUMs expected to include both indoor and outdoor use:

- Single Family
- Multi-family
- CII Total

Only potable water demand from MUMs is considered.

2.4 Step 4: Extract Seasonal and Annual Demand

Monthly potable water demand by MUMs was aggregated by sector group. The representative low-irrigation month (winter) is selected by finding the minimum water use across the months of January, February, and March. Similarly, the high-irrigation month (summer) is selected by finding the maximum

water use from the months of July, August, and September. Total annual demand was also computed for each sector group.

2.5 Step 5: Estimate Indoor and Outdoor Use

The SF calculated under Step 2 are used to estimate the proportion of water used for irrigation purposes by MUMs. This method assumes that indoor water use is generally consistent over the course of the year and that customers within the Water Contractor's service area experience similar irrigation patterns. This assumption tends to hold more strongly for residential customers. However, for CII customers, although some use water through MUMs for outdoor irrigation, they may also have seasonally variable indoor demands, such as cooling towers. As a result, this method may underestimate indoor use and overestimate outdoor use in service areas with significant CII cooling demands.

Figure 2-2 illustrates the annual water use pattern and the components of the equations below used to derive estimated indoor and outdoor water use for sectors with MUMs.

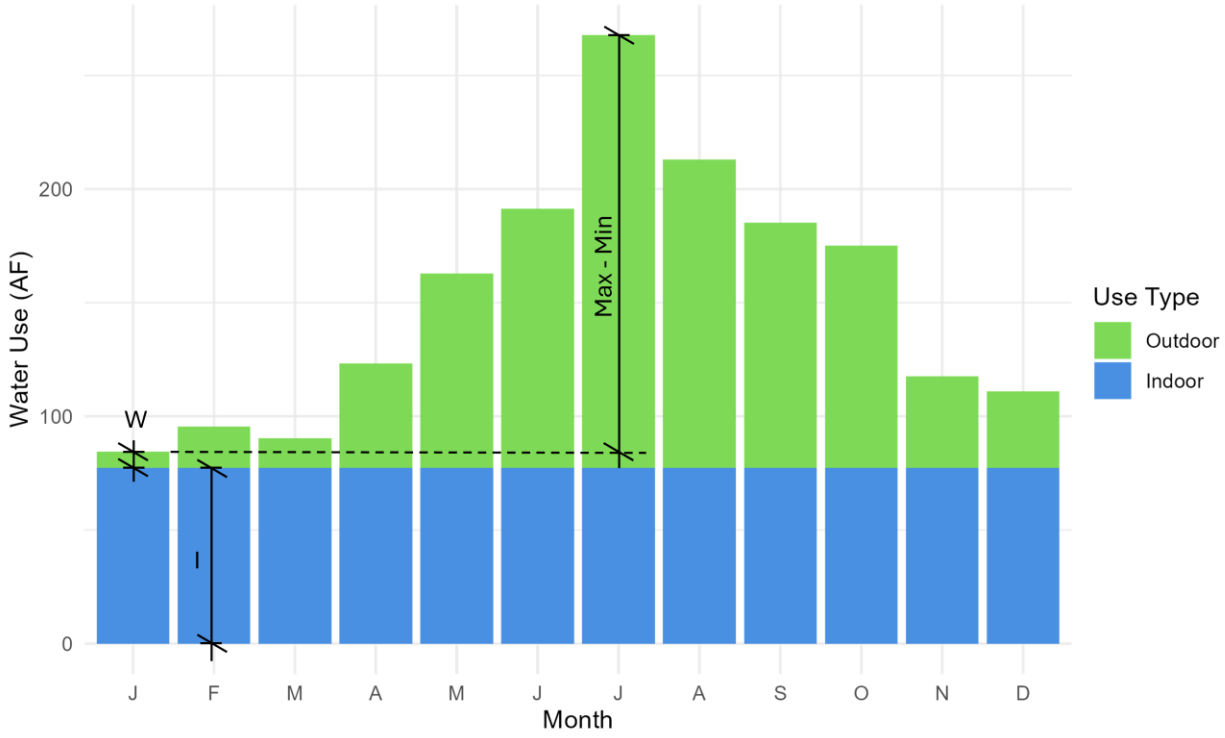


Figure 2-2 Indoor and Outdoor Separation Methodology for Water Use on MUMs

Indoor use was estimated as the month with the least water use in January, February, or March, adjusted to remove residual winter irrigation using the SF.

Winter irrigation is estimated as:

$$SF = \frac{W + (Max - Min)}{W}$$
$$= 1 + \frac{Max - Min}{W}$$
$$\Rightarrow W = \frac{Max - Min}{SF - 1}$$

Where:

- W = Outdoor winter irrigation during the lowest water use month
- Max = Max monthly use in one of July, August, or September
- Min = Min monthly use in January, February, or March
- SF = Scaling factor

Indoor monthly use is then:

$$I = Min - W$$

Indoor annual use is computed as:

$$I \times 12$$

Outdoor annual use is then the residual between total annual use and indoor annual use:

$$Outdoor\ Annual\ Use = Total\ Annual\ Use - Indoor\ Annual\ Use$$

3 ASSUMPTIONS AND LIMITATIONS

- DIMs reflect purely outdoor use, with consistent year-round patterns across groups.
- Low point of outdoor irrigation happens in one of January, February, or March; similarly peak summer irrigation happens in one of July, August, or September.
- Indoor water use is assumed to be consistent throughout the year.
- Customers within each sector group are assumed to exhibit similar usage patterns.
- The scaling factor derived from DIMs is representative of outdoor demand across all MUMs, which is a stronger assumption for residential customers but less so for CII customers due to seasonal cooling demands.

4 REFERENCES

DWR, 2021. *Recommendations for urban water use efficiency standards, variances, performance measures, and annual water use reporting* (Report No. WUES-DWR-2021-01A). California Department of Water Resources. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/Performance-Measures/UWUE_STD_VAR_PM_REPORT_WUES-DWR-2021-01A_COMPLETE.pdf

APPENDIX B

Conservation Program Assumptions

Table B-1 Conservation Program Savings Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Savings Assumption (gpd/unit)	Life of Savings (Years)	Decay Rate (%/Yr)	Free Riders (% activity)	Source(s)
AMI Leak Notifications Program	Notification	76.7	1	0%	0%	Consistent with WEMP assumptions. Program lifetime updated by District staff.
Flume Direct Distribution	Household	25.8	10	0%	0%	Consistent with WEMP assumptions.
SFR Water Use Surveys/Audits Program	Household	17.2	5	20%	0%	Per detailed conservation savings analysis performed for 2020 Demand/Cons Report and consistent with WEMP assumptions.
Water Use Surveys/Audits Program (Excluding SFR Participants)	Site	256	5	20%	0%	Consistent with WEMP assumptions.
CII Water Use Evaluation Program	Site	256	5	20%	0%	Consistent with WEMP assumptions.
HET Rebate Program	Toilet	9.4	15	0%	23%	(a)
HET Direct Install Program	Toilet	9.4	15	0%	0%	(a)
Residential HECW Rebate Program	Washer	19.3	15	0%	0%	AWE Tool Conservation Program Library.
Hot Water Recirculating System	Household	5.4	10	0%	0%	Calculated based on the hot water recirculation system savings and system useful life in References 1 and 2.
Pool Cover Rebate Program	Site	41.2	5	0%	0%	Consistent with WEMP assumptions.
Laundry-to-Landscape System	Household	12.1	10	0%	0%	Consistent with WEMP assumptions.
Rain Barrel Rebate Program	Household	5.5	20	0%	0%	Consistent with WEMP per gallon assumptions and an average of 1,000 gallons per household.
SFR WBIC Rebate Program	Controller	16.0	10	0%	0%	Per detailed conservation savings analysis performed for 2020 Demand/Cons Report and consistent with WEMP assumptions.
Large Landscape WBIC Rebate Program	Controller	727	10	0%	0%	AWE Tool Conservation Program Library.
SFR Turf Removal Program	Square Feet	0.1	23	0%	0%	Consistent with WEMP assumptions.
Custom Rebate	GPD Reduced	1	25	0%	0%	Inputs based on per gpd reduced
Behavior Based Customer Messaging Platforms	Household	10.3	1	0%	0%	AWE Tool Conservation Program Library for Home Water Report.
High Efficiency Clothes Washer Rebate Program - CII	Washer	115.8	8	0%	0%	AWE Tool Conservation Program Library for AWE MFR Shared and CII Washer Rebate (WF <=4).
MFR CII Turf Removal Program	Square Feet	0.1	23	0%	0%	Consistent with WEMP assumptions.
Incentivize Irrigation Equipment Upgrades - SFR (c)						
SFR Irrigation Nozzle Replacement	Sprinkler Head	1.6	10	0%	0%	AWE Tool Conservation Program Library for SFR Irrigation Nozzle Replacement
SFR Irrigation System Flow Sensor Rebate	Controller	9.0	10	0%	0%	AWE Tool Conservation Program Library for SFR Irrigation System Flow Sensor Rebate

Table B-1 Conservation Program Savings Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Savings Assumption (gpd/unit)	Life of Savings (Years)	Decay Rate (%/Yr)	Free Riders (% activity)	Source(s)
Irrigation Improvement Equipment Program (c)						
Large Landscape Irrigation Nozzle Replacement	Sprinkler Head	1.6	10	0%	0%	AWE Tool Conservation Program Library for Large Landscape Irrigation Nozzle Replacement
Large Landscape Irrigation System Flow Sensor Rebate	Controller	27.0	10	0%	0%	AWE Tool Conservation Program Library for Large Landscape Irrigation System Flow Sensor Rebate.
Water Budgeting/Monitoring for Large Landscape Accounts	Site	990	1	0%	0%	Consistent with WEMP assumptions.

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservati
CII = commercial, industrial, and institutional
gpd = gallons per day
gpf = gallons per flush
HET = high-efficiency toilet
HECW = high-efficiency clothes washer
SFR = single-family residential
WBIC = weather-based irrigation controller
WEMP = Water Efficiency Master Plan

Notes

(a) Calculated based on replacing 1.6 gallon per flush (gpf) toilets with 1.28 to 0.8 gpf toilets, which is lower compared to the default in the AWE Tool Conservation Program Library and reflects the typical pre-retrofit fixture stock within the Marin Municipal Water District service area.
(b) Irrigation System Equipment programs are modeled as a combination of irrigation nozzle and flow sensor replacements.

References

1. ORNL, 2002. A case study of five homes in Palo Alto, California: Potential for savings using on-demand hot-water recirculation systems (ORNL/TM-2002/245). Oak Ridge National Library, 2002.
2. USDOE, 2001. Pump lifecycle costs: A Guide to LLC Analysis for Pumping Systems. U.S. Department of Energy, January 2001.
3. AWE, 2021. Water Conservation Tracking Tool. Version 4.0. Alliance for Water Efficiency, 2021.
4. EKI, 2020. 2020 Water Demand Analysis and Water Conservation Measure Update Marin Municipal Water District. EKI Environment & Water, Inc., December 2020.
5. Marin Municipal, 2024. 2024 5 Year Water Efficiency Master Plan. Marin Municipal Water District, July 2024.

Table B-2 Conservation Program Cost Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Utility Cost per Unit (a)	Customer Cost per Unit	Source(s)
AMI Leak Notifications Program	Notification	$65	$200	Consistent with WEMP assumptions.
Flume Direct Distribution	Household	$150	$250	Consistent with WEMP assumptions.
SFR Water Use Surveys/Audits Program	Household	$430	$0	Consistent with WEMP assumptions.
Water Use Surveys/Audits Program (Excluding SFR Participants)	Site	$2,000	$2,500	Consistent with WEMP assumptions.
CII Water Use Evaluation Program	Site	$2,000	$2,500	Consistent with WEMP assumptions.
HET Rebate Program	Toilet	$195	$200	Utility cost from AWE Tool Conservation Program Library. Assumes no customer cost.
HET Direct Install Program	Toilet	$455	$0	Utility cost from AWE Tool Conservation Program Library. Assumes no customer cost.
Residential HECW Rebate Program	Washer	$195	$750	Utility cost based on Marin Municipal's rebate amount. Customer cost based on cost of a low-end ENERGY STAR residential washer model.
Hot Water Recirculating System	Household	$65	$750	Utility cost based on Marin Municipal's rebate amount. Assumes a total cost of $800 for installation.
Pool Cover Rebate Program	Household	$130	$200	Consistent with WEMP assumptions.
Laundry-to-Landscape System	Household	$162	$2,000	Consistent with WEMP assumptions.
Rain Barrel Rebate Program	Household	$1,000	$3,000	Consistent with WEMP per gallon assumptions and an average of 1,000 gallons per household.
SFR WBIC Rebate Program	Controller	$130	$250	Consistent with WEMP assumptions.
Large Landscape WBIC Rebate Program	Controller	$1,422	$569	Consistent with WEMP assumptions.
SFR Turf Removal Program	Square Feet	$3.9	$12	Consistent with WEMP assumptions.
Custom Rebate	GPD Reduced	$1.5	$5.6	(b)
Behavior Based Customer Messaging Platforms	Household	$7	$0	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Assumes no cost to customers.
High Efficiency Clothes Washer Rebate Program - CII	Washer	$350	$269	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Customer cost rebate based on the mean of rebate values listed for eight agencies in the Sonoma–Marin Water Saving Partnership.
MFR CII Turf Removal Program	Square Feet	$3.9	$12	Consistent with WEMP assumptions.
Incentivize Irrigation Equipment Upgrades - SFR (c)				

Table B-2 Conservation Program Cost Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Utility Cost per Unit (a)	Customer Cost per Unit	Source(s)
SFR Irrigation Nozzle Replacement	Sprinkler Head	$5	$5	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Assumes a total cost of $10 per nozzle.
SFR Irrigation System Flow Sensor Rebate	Controller	$190	$330	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Customer cost based on cost of a mid-range FLOMEC QS100 ultrasonic irrigation flow sensor.
Irrigation Improvement Equipment Program (c)				
Large Landscape Irrigation Nozzle Replacement	Sprinkler Head	$5	$5	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Assumes a total cost of $10 per nozzle.
Large Landscape Irrigation System Flow Sensor Rebate	Controller	$190	$330	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Customer cost based on cost of a mid-range FLOMEC QS100 ultrasonic irrigation flow sensor.
Water Budgeting/Monitoring for Large Landscape Accounts	Site	$1,924	$0	Consistent with WEMP assumptions.

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservation Tracking Tool
CII = commercial, industrial, and institutional
gpd = gallons per day
gpf = gallons per flush
HET = high-efficiency toilet
HECW = high-efficiency clothes washer
SFR = single-family residential
WBIC = weather-based irrigation controller
WEMP = Water Efficiency Master Plan

Notes

(a) Utility cost for rebate programs includes a 30% administrative cost in addition to the District's rebate amount.
(b) Utility cost for each gpd reduced calculated from one gpd multiplied by the City's rebate amount at $3 per 748 gallons reduced per year and 365 days per year. Customer cost assumed to be five times utility costs.
(c) Irrigation System Equipment programs are modeled as a combination of irrigation nozzle and flow sensor replacements.

References

1. AWE, 2021. Water Conservation Tracking Tool. Version 4.0. Alliance for Water Efficiency, 2021.
2. Marin Municipal, 2024. 2024 5 Year Water Efficiency Master Plan. Marin Municipal Water District, July 2024.

Table B-3 Conservation Program Implementation Rate Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Implementation Rate	Unit	Source(s)
AMI Leak Notifications Program	Notification	1,250	Notification / Year	Consistent with WEMP assumptions.
Flume Direct Distribution	Household	500	Household / Year	Consistent with WEMP assumptions.
SFR Water Use Surveys/Audits Program	Household	400	Household / Year	Consistent with WEMP assumptions.
Water Use Surveys/Audits Program (Excluding SFR Participants)	Site	75	Site / Year	Consistent with WEMP assumptions.
CII Water Use Evaluation Program	Site	25	Site / Year	Consistent with WEMP assumptions.
HET Rebate Program	Toilet	41	Toilet / Year	Based on past program participation rates from 2020–2024.
HET Direct Install Program	Toilet	78	Toilet / Year	Based on past program participation rates from 2013-2015 as no participation was reported for 2020-2024.
Residential HECW Rebate Program	Washer	119	Washer / Year	Based on past program participation rates from 2020–2024.
Hot Water Recirculating System	Household	39	Household / Year	Based on past program participation rates from 2020–2024.
Pool Cover Rebate Program	Household	90	Household / Year	Consistent with WEMP assumptions.
Laundry-to-Landscape System	Household	40	Household / Year	Consistent with WEMP assumptions.
Rain Barrel Rebate Program	Household	26	Household / Year	Based on past program participation rates from 2020–2024.

Table B-3 Conservation Program Implementation Rate Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Implementation Rate	Unit	Source(s)
SFR WBIC Rebate Program	Controller	99	Controller / Year	Consistent with WEMP assumptions.
Large Landscape WBIC Rebate Program	Controller	1	Controller / Year	Consistent with WEMP assumptions.
SFR Turf Removal Program	Square Feet	95,215	Square Feet / Year	Consistent with WEMP assumptions.
Custom Rebate	GPD Reduced	4,040	GPD Reduced / Year	Based on 2010-2024 program participation from the City of Santa Rosa.
Behavior Based Customer Messaging Platforms	Household	4,547	Household / Year	Assume 8% of residential customers will participate.
High Efficiency Clothes Washer Rebate Program - CII	Washer	182	Washer / Year	Assume 1% of MFR customers will participate.
MFR CII Turf Removal Program	Square Feet	4,785	Square Feet / Year	Consistent with WEMP assumptions.
Incentivize Irrigation Equipment Upgrades - SFR				
SFR Irrigation Nozzle Replacement	Sprinkler Head	2,740	Sprinkler Head / Year	Assume 1% of SFR customers will participate. Assume 5 sprinklers per account.
SFR Irrigation System Flow Sensor Rebate	Controller	329	Controller / Year	Assume 0.6% of SFR customers will participate.
Irrigation Improvement Equipment Program				
Large Landscape Irrigation Nozzle Replacement	Sprinkler Head	135	Sprinkler Head / Year	Assume 1% of large landscape customers will participate and 10 sprinklers per account.
Large Landscape Irrigation System Flow Sensor Rebate	Controller	8	Controller / Year	Assume 0.6% of large landscape customers will participate.

Table B-3 Conservation Program Implementation Rate Assumptions

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Implementation Rate	Unit	Source(s)
Water Budgeting/Monitoring for Large Landscape Accounts	Site	170	Site / Year	Consistent with WEMP assumptions.

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservation Tracking Tool
CII = commercial, industrial, and institutional
HET = high-efficiency toilet
HECW = high-efficiency clothes washer
SFR = single-family residential
WBIC = weather-based irrigation controller
WEMP = Water Efficiency Master Plan

APPENDIX C

Prioritization and Screening of Future Water Conservation Measures

Table C-1 Regional Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
AGENCY ACTIONS AND WATER RATES					
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	1.5	1.6	25%	25%	✗
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	1.7	2.4	33%	56%	✗
Increase Enforcement of State Water Waste Regulations	2.0	2.6	38%	63%	✗
Rate Structure Evaluation	2.0	2.0	25%	50%	✗
Regional UHET and/or Urinal Bulk Purchase Program	1.3	1.	11%	0%	✗
Water Budgeting/Monitoring for Large Landscape Accounts	1.8	2.9	33%	67%	✗
Establish Separate Pricing Structure for Irrigation Accounts	1.4	2.7	13%	50%	✗
Implementation or Modification of Tiered Water Rates (Conservation Pricing)	2.4	3.3	38%	75%	✗
Water Budget Based Billing for All Customers	1.3	1.9	11%	33%	✗
Water Budget Based Billing for Only Irrigation Customers	1.7	2.9	22%	56%	✗
Install AMI for Existing Accounts	2.6	4.3	25%	88%	✗
Install AMI for High Water Users and Large Landscape Accounts	2.8	4.4	50%	88%	✗
Install AMI in New Development	2.4	4.3	38%	88%	✗
End Point Leak Detection and Flow Monitoring	2.1	3.0	25%	50%	✗
CalWEP District Distribution Program	1.8	2.3	33%	33%	✗
Behavior Based Customer Messaging Platforms	1.9	2.9	25%	63%	✗
Average by Program Type	1.9	2.8			
PUBLIC OUTREACH AND EDUCATION					
Water Use Surveys/Audits - CII	2.3	2.9	44%	56%	✓
Water Use Surveys/Audits - MFR	2.7	3.1	67%	67%	✓
Water Use Surveys/Audits - SFR	2.6	3.0	67%	67%	✗
Garden Sense Consultation	3.1	2.3	78%	56%	✓
Educational Workshops	3.3	2.7	78%	56%	✓

Table C-1 Regional Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Garden Tour	3.2	1.6	78%	11%	✓
SFR Home Water Report	2.0	2.8	44%	67%	✗
Promote Green Building and Certification	2.4	1.3	56%	11%	✗
Provide Support with Smart Irrigation Controller Setup	2.7	2.6	67%	56%	✗
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.7	3.4	89%	89%	✓
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.4	4.1	100%	89%	✓
Promote QWEL Training (Qualified Water efficient Landscaper)	3.9	2.6	89%	33%	✓
School Education Programs	4.0	2.6	100%	67%	✓
Do-It-Yourself Home Energy and Water Savings Toolkit	3.2	2.2	78%	44%	✓
Average by Program Type	3.1	2.7			
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS					
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	2.4	3.1	44%	56%	✗
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	2.7	4.0	56%	89%	✗
Toilet Flapper Giveaway - Residential and CII	2.2	3.0	44%	67%	✗
UHET Direct Installation - Residential and CII	1.7	2.2	33%	33%	✗
Urinal Direct Installation - CII	1.7	2.0	44%	33%	✗
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	1.7	1.8	33%	33%	✗
HET (<1.28 gal/flush) Replacement Rebates	2.3	2.6	44%	44%	✗
High Efficiency Urinal (<0.25 gal/flush) Replacement Rebates - CII	2.1	2.6	44%	44%	✗
Plumber Initiated UHET and / or HEU Retrofit Program	1.7	2.0	22%	22%	✗
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	1.9	2.4	33%	44%	✗
Direct Install of Efficient Indoor Fixtures - Government Buildings	2.1	2.4	44%	44%	✗
Direct Install of Efficient Indoor Fixtures - Low Income Residential	2.3	2.9	44%	56%	✗
Direct Install of Efficient Indoor Fixtures - Residential	2.3	2.7	44%	44%	✗

Table C-1 Regional Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
High Efficiency Clothes Washer Install - Low Income Residential Customers	1.6	1.1	22%	11%	✗
High Efficiency Clothes Washer Rebate - Residential	3.1	3.1	67%	67%	✗
High Efficiency Clothes Washer Rebate Program - CII	2.0	2.8	44%	78%	✗
Efficient Dishwasher Rebates	1.9	1.9	44%	44%	✗
Indoor Fixture Program For Hotels & Motels	2.0	2.8	44%	67%	✗
Indoor Fixture Program For Schools	2.1	2.0	44%	33%	✗
Water Savings Incentive Program for CII	1.8	2.9	33%	78%	✗
Nonresidential Incentive for Self-closing or Metering Faucets	1.9	2.6	22%	44%	✗
Laminar Flow Restrictor Rebate for Health Care Related Facilities	1.9	2.8	22%	67%	✗
Autoclave (Steam-Sterilizer) Retrofit Rebates	1.3	1.4	11%	22%	✗
Air Cooled Ice Machine Rebates	1.7	1.9	22%	44%	✗
Connectionless Food Steamer Rebates	2.0	1.9	33%	44%	✗
Commercial Kitchen High Efficiency Dishwasher Rebate	1.3	1.8	11%	33%	✗
Dipper Well Rebates	2.2	2.3	44%	67%	✗
Hot Water on Demand Pump System Rebate/ Hot Water Recircling System	1.7	2.2	33%	56%	✗
Dry Vacuum Pumps	1.3	1.9	11%	44%	✗
Ozone Laundry Washer Rebate - CII	1.6	2.1	22%	56%	✗
Plumbing Flow Control Valve - CII (Faucets and Showerheads)	1.9	2.7	22%	56%	✗
Incentivize Cooling Tower Upgrades	1.3	2.1	11%	56%	✗
Rebates for Conductivity Controllers on Cooling Towers	1.6	2.1	22%	56%	✗
Sustained Reduction, or rebates for any CII project which demonstrates water savings	1.6	2.0	22%	33%	✗
Landscape Conversion or Turf Removal - MFR and CII	3.2	4.7	67%	100%	✗
Landscape Conversion or Turf Removal - SFR	3.3	4.8	67%	100%	✗
Mulch Rebate	2.4	3.4	44%	67%	✗

Table C-1 Regional Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Incentivize Irrigation Equipment Upgrades - SFR	2.0	3.4	33%	67%	✗
Commerical Landscape Irrigation Improvement Program (CLIIP) Rebates	2.4	3.5	50%	75%	✗
Rotating Sprinkler Nozzle Giveaway	2.4	2.8	56%	56%	✗
Nozzle Replacement Irrigation - Residential	1.9	2.9	33%	44%	✗
Nozzle Replacement Irrigation CII - Large Landscape	1.9	3.0	33%	56%	✗
In-Stem Flow Regulators	1.9	2.1	33%	33%	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	1.9	2.3	44%	44%	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	1.9	2.7	44%	44%	✗
Soil Moisture Sensor Giveaway	2.0	2.1	44%	22%	✗
Soil Moisture Sensor Rebate	1.9	2.0	44%	22%	✗
Pilot Spring Irrigation Repairs Rebate	2.0	2.2	44%	33%	✗
Rain Barrel Rebate	2.2	3.1	44%	67%	✗
Rain Barrel Rebate - MFR & Large Landscapes	2.0	2.9	33%	56%	✗
Incentivize Gray Water Retrofit for Existing SFR Customers	1.9	2.7	22%	56%	✗
Incentivize Gray Water Systems for New CII Development	1.8	1.9	22%	33%	✗
Incentivize Submetering for Existing Customers - MFR, CII	1.7	2.4	33%	56%	✗
Incentivize Submetering of Cooling Towers for Existing Customers	1.1	1.9	0%	33%	✗
Flow Sensor Rebate Irrigation System	1.7	2.3	33%	44%	✗
SFR Wireless Flow Monitor	1.7	2.0	33%	33%	✗
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	1.4	1.7	11%	22%	✗
Pool Removal Rebates	1.8	2.6	22%	44%	✗
Swimming Pool and Hot Tub Cover Rebates	1.6	2.7	33%	56%	✗
Tiered Water Rate Exemption Assitance Program	1.0	1.4	0%	11%	✗
Average by Program Type	1.9	2.5			

Table C-1 Regional Prioritization of Conservation Measures and Programs
Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
POLICIES AND REGULATIONS					
Demand Offset/Water Neutral Policy for Large New Developments	2.7	3.7	44%	78%	✗
Prohibit Once through Cooling Systems	2.7	3.9	44%	78%	✗
Require <0.25 gal/flush Urinals in New Development	1.6	1.9	22%	33%	✗
Require <1.0 gal/flush Toilets in New Development	2.1	3.1	33%	56%	✗
Require Cooling Tower Retrofits	2.2	2.6	44%	56%	✗
Require High Efficiency Clothes Washers in New Development	1.7	2.6	22%	44%	✗
Require Hot Water on Demand / Structured Plumbing in New Residential Development	2.0	2.4	44%	56%	✗
Require Irrigation Designers / Installers be Certified (QWEL)	1.6	1.9	22%	33%	✗
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1.8	1.9	33%	33%	✗
Require Plumbing for Gray Water in New SFR Development	2.2	1.9	33%	33%	✗
Require Plumbing for Recycled Water in New CII Development	1.6	3.0	11%	56%	✗
Require Plumbing for Recycled Water in New MFR Development	1.8	2.3	33%	33%	✗
Require Rain Barrels in New Development	1.8	2.0	33%	44%	✗
Require Submetering by Unit for Existing Commercial Customers	1.8	2.1	33%	44%	✗
Require Submetering by Unit for New Commercial Developments	1.6	2.8	22%	67%	✗
Require Submetering for New MFR Developments	2.1	2.4	44%	44%	✗
Require Submetering for New Mobile Home Park Developments	2.2	2.1	33%	44%	✗
Require Submetering of Cooling Towers for Existing Customers	1.8	2.3	22%	33%	✗
Require Submetering of Cooling Towers for New Development	1.1	2.1	0%	33%	✗
Require Submetering of Existing MFR (and Mobile Home Park) Customers	1.3	1.7	11%	22%	✗
Require Submetering of Landscaping for Existing MFR and Commercial Customers	1.3	2.0	11%	33%	✗
Require Submetering of Landscaping for New MFR and Commercial Developments	1.8	2.8	11%	44%	✗
Require Swimming Pool and Hot Tub Covers	1.6	2.4	11%	33%	✗

Table C-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Require Water Efficiency Plan Reviews for New CII Development	1.8	2.8	22%	56%	✗
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	1.8	3.1	22%	56%	✗
Restrict Landscape Irrigation to Designated Days/Times	1.3	2.1	11%	33%	✗
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	2.2	3.6	33%	67%	✗
Water Waste Ordinance	2.7	4.2	33%	78%	✗
Average by Program Type	1.9	2.6			

Abbreviations:

AMI = advanced metering infrastructure
CalWEP = California Water Efficiency Partnership
CII = commercial, industrial, institutional
COM = commercial
HEU = High-Efficiency Urinals
IRR = irrigation
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:

(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a regionally-administered program, and as a locally administered program, where 5 indicated highest priority and 1 indicated the lowest priority. Results are presented as an average of the responses of all nine Water Contractors.

(b) Presents the percentage of Water Contractors who indicated a priority of greater or equal to 3 for regional or local implementation.

Table C-2 Prioritization of Conservation Measures and Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
AGENCY ACTIONS AND WATER RATES						
Implementation or Modification of Tiered Water Rates (Conservation Pricing)	3	All	X	X	All	No
Install AMI for Existing Accounts	5	All	X	X	All	No
Install AMI for High Water Users and Large Landscape Accounts	5	All		X	Water loss; Irrigation	No
Install AMI in New Development	5	All	X	X	Water loss; Irrigation	No
End Point Leak Detection and Flow Monitoring	5	SFR, MFR, COM	X	X	All	No
Regional UHET and/or Urinal Bulk Purchase Program	1	All	X		Toilet / Urinal	No
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement		All	X	X	Water loss; Irrigation	Yes, previously
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	1	All	X	X	Toilet, Urinal, Faucet, Showerhead	Yes, currently
Increase Enforcement of State Water Waste Regulations	1	All	X		Irrigation	No
Rate Structure Evaluation		All	X	X	All	No
Water Budgeting/Monitoring for Large Landscape Accounts	3	IRR	X	X	Irrigation	No
Establish Separate Pricing Structure for Irrigation Accounts		IRR		X	Irrigation	Yes, currently
Water Budget Based Billing for All Customers		All	X	X	All	No
Water Budget Based Billing for Only Irrigation Customers		CII, IRR		X	Irrigation	No
CalWEP District Distribution Program	5	All	X	X	All	Yes, currently
Behavior Based Customer Messaging Platforms	5	SFR, MFR	X	X	All	No
PUBLIC OUTREACH AND EDUCATION						
SFR Home Water Report	4	SFR	X	X	All	No
Promote QWEL Training (Qualified Water Efficient Landscaper)	5	All		X	All Outdoor	No
Water Use Surveys/Audits - CII	5	CII	X	X	All	Yes, currently
Water Use Surveys/Audits - MFR	5	MFR	X		All	Yes, currently

Table C-2 Prioritization of Conservation Measures and Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Water Use Surveys/Audits - SFR	5	SFR	X	X	All	Yes, currently
Garden Tour	4	SFR		X	All Outdoor	No
Garden Sense Consultation	1	SFR		X	All Outdoor	No
Promote Green Building and Certification	2	CII	X	X	All	No
Provide Support with Smart Irrigation Controller Setup	1	All		X	Irrigation	No
Educational Workshops	1	All		X	All Outdoor	No
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	5	All	X		All Indoor	Yes, currently
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	5	All		X	Irrigation	Yes, currently
School Education Programs	4	SFR, MFR	X	X	All	Yes, currently
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS						
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	2	SFR, MFR	X		Faucet, Showerhead	Yes, currently
Toilet Flapper Giveaway - Residential and CII	3	All	X		Toilet	No
Landscape Conversion or Turf Removal - MFR and CII	5	MFR, CII		X	Irrigation	Yes, currently
UHET Direct Installation - Residential and CII	3	CII	X		Toilet	Yes, previously
Urinal Direct Installation - CII	3	CII	X		Urinal	No
Landscape Conversion or Turf Removal - SFR	5	SFR		X	Irrigation	Yes, currently
Pilot Spring Irrigation Repairs Rebate	4	MFR, COM, IRR		X	Irrigation	No
Incentivize Submetering for Existing Customers - MFR, CII	3	MFR, COM, IRR		X	All Indoor	No
Plumber Initiated UHET and / or HEU Retrofit Program	1	All	X		Toilet / Urinal	Yes, previously
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	3	CII	X		Toilet, Urinal, Faucet, Showerhead	Yes, previously
Direct Install of Efficient Indoor Fixtures - Government Buildings	3	CII	X		Toilet, Urinal, Faucet, Showerhead	Yes, previously

Table C-2 Prioritization of Conservation Measures and Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Flow Sensor Rebate Irrigation System	3	SFR, MFR		X	Irrigation	No
SFR Wireless Flow Monitor	3	SFR	X	X	Water Loss	No
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	2	CII	X		Faucet, Showerhead	Yes, currently
High Efficiency Clothes Washer Install - Low Income Residential Customers	3	SFR, MFR	X		Clothes Washer	Yes, previously
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	3	SFR, MFR, CII	X		Shower	No
HET (<1.28 gal/flush) Replacement Rebates	1	SFR, MFR	X		Toliet	Yes, previously
Efficient Dishwasher Rebates	1	SFR	X		Dishwashers	No
High Efficiency Urinal (<0.25 gal/flush) Replacement Rebates - CII	1	CII	X		Urinal	Yes, previously
Direct Install of Efficient Indoor Fixtures - Low Income Residential	3	SFR, MFR	X		Toilet, Faucet, Showerhead	Yes, previously
Direct Install of Efficient Indoor Fixtures - Residential	1	SFR, MFR	X		Toilet, Faucet, Showerhead	Yes, previously
Nonresidential Incentive for Self-closing or Metering Faucets	3	CII	X		Faucet	Yes, currently
Do-It-Yourself Home Energy and Water Savings Toolkit	4	SFR	X	X	All	No
Autoclave (Steam-Sterilizer) Retrofit Rebates	3	CII	X		CII Equipment	Yes, currently
High Efficiency Clothes Washer Rebate - Residential	1	SFR, MFR	X		Clothes Washer	Yes, previously
Connectionless Food Steamer Rebates	3	CII	X		CII Equipment	Yes, currently
High Efficiency Clothes Washer Rebate Program - CII	3	CII	X		Clothes Washer	Yes, currently
Indoor Fixture Program For Hotels & Motels	4	CII	X		All Indoor	Yes, currently
Indoor Fixture Program For Schools	4	CII	X		All Indoor	Yes, currently
Dry Vacuum Pumps	3	CII	X		CII Equipment	Yes, currently
Water Savings Incentive Program for CII	4	CII	X		All Indoor	Yes, currently
Plumbing Flow Control Valve - CII (Faucets and Showerheads)	3	Commercial	X		Faucet	Yes, currently
Incentivize Cooling Tower Upgrades	3	CII	X		Cooling Towers	Yes, currently

Table C-2 Prioritization of Conservation Measures and Programs

Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Rebates for Conductivity Controllers on Cooling Towers	3	CII	X		Cooling Towers	Yes, currently
Sustained Reduction, or rebates for any CII project which demonstrates water savings	5	CII	X	X	All	Yes, currently
Laminar Flow Restrictor Rebate for Health Care Related Facilities	3	Institutional	X		Faucet	Yes, currently
Air Cooled Ice Machine Rebates	3	CII	X		CII Equipment	Yes, currently
Commercial Kitchen High Efficiency Dishwasher Rebate	3	Commercial	X		Dishwashers	Yes, currently
Incentivize Irrigation Equipment Upgrades - SFR	5	SFR		X	Irrigation	No
Dipper Well Rebates	3	CII	X		CII Equipment	Yes, currently
Hot Water on Demand Pump System Rebate/ Hot Water Recircling System	3	SFR, MFR	X		Hot Water	Yes, currently
Nozzle Replacement Irrigation - Residential	2	SFR, MFR		X	Irrigation	No
Nozzle Replacement Irrigation CII - Large Landscape	3	CII		X	Irrigation	No
Ozone Laundry Washer Rebate - CII	3	CII	X		Clothes Washer	Yes, currently
Mulch Rebate	5	SFR		X	Irrigation	Yes, previously
Commerical Landscape Irrigation Improvement Program (CLIIP) Rebates	5	Commercial		X	Irrigation	No
Rotating Sprinkler Nozzle Giveaway	2	All		X	Irrigation	No
In-Stem Flow Regulators	3	Commercial		X	Irrigation	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	3	MFR, CII		X	Irrigation	Yes, currently
Rain Barrel Rebate	3	SFR		X	Irrigation	Yes, currently
Rain Barrel Rebate - MFR & Large Landscapes	3	MFR, CII		X	Irrigation	Yes, currently
Incentivize Gray Water Retrofit for Existing SFR Customers	3	SFR		X	Irrigation / Gray Water	Yes, currently
Incentivize Gray Water Systems for New CII Development	1	CII		X	Irrigation / Gray Water	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	5	SFR		X	Irrigation	Yes, currently
Incentivize Submetering of Cooling Towers for Existing Customers	3	CII	X		Cooling Towers	No

Table C-2 Prioritization of Conservation Measures and Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Soil Moisture Sensor Giveaway	2	All		X	Irrigation	No
Soil Moisture Sensor Rebate	2	All		X	Irrigation	No
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	3	All	X	X	Water loss; Irrigation	No
Pool Removal Rebates	3	SFR, MFR		X	Pool/Hot Tub	No
Swimming Pool and Hot Tub Cover Rebates	4	SFR, MFR		X	Pool/Hot Tub	Yes, currently
Tiered Water Rate Exemption Assitance Program	1	SFR	X	X	Toilet, Faucet, Showerhead, Clothes Washer, Irrigation	Yes, currently
POLICIES AND REGULATIONS						
Demand Offset/Water Neutral Policy for Large New Developments	4	All	X	X	All	No
Prohibit Once through Cooling Systems	5	CII	X	X	CII Equipment	Yes, currently
Water Waste Ordinance	5	All		X	All Outdoor	Yes, currently
Require <1.0 gal/flush Toilets in New Development	2	All	X		Toilet	No
Require High Efficiency Clothes Washers in New Development	5	SFR, MFR	X		Clothes Washer	Yes, currently
Require <0.25 gal/flush Urinals in New Development	2	CII	X		Urinal	No
Require Cooling Tower Retrofits	2	CII	X		Cooling Towers	No
Require Hot Water on Demand / Structured Plumbing in New Residential Development	4	SFR, MFR	X		Shower/Sink	No
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1	CII		X	Irrigation / Recycled Water	Yes, previously
Require Plumbing for Gray Water in New SFR Development	1	SFR		X	Irrigation / Gray Water	Yes, previously
Require Plumbing for Recycled Water in New CII Development	5	CII		X	Irrigation / Recycled Water	Yes, currently
Require Plumbing for Recycled Water in New MFR Development	5	MFR		X	Irrigation / Recycled Water	Yes, currently
Require Rain Barrels in New Development	1	SFR		X	Irrigation	No
Require Submetering by Unit for Existing Commercial Customers	3	CII	X		All Indoor	No

Table C-2 Prioritization of Conservation Measures and Programs
Marin Municipal Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Require Submetering by Unit for New Commercial Developments	3	CII	X		All Indoor	No
Require Submetering for New MFR Developments	3	MFR	X		All Indoor	No
Require Submetering for New Mobile Home Park Developments	3	MFR	X		All Indoor	No
Require Submetering of Cooling Towers for Existing Customers	3	CII	X		Cooling Towers	No
Require Submetering of Cooling Towers for New Development	3	CII	X		Cooling Towers	No
Require Submetering of Existing MFR (and Mobile Home Park) Customers	3	MFR	X		All Indoor	No
Require Submetering of Landscaping for Existing MFR and Commercial Customers	5	MFR, CII		X	Irrigation	Yes, currently
Require Submetering of Landscaping for New MFR and Commercial Developments	5	CII		X	Irrigation	Yes, currently
Require Swimming Pool and Hot Tub Covers	5	SFR,MFR		X	Pool/Hot Tub	Yes, currently
Require Irrigation Designers / Installers be Certified (QWEL)	3	All		X	Irrigation	No
Require Water Efficiency Plan Reviews for New CII Development	3	CII	X	X	All Indoor	No
Restrict Landscape Irrigation to Designated Days/Times	5	All		X	Irrigation	Yes, currently
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	5	All		X	Irrigation	Yes, currently
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	5	All		X	Irrigation	Yes, currently

Abbreviations

AMI = advanced metering infrastructure
CalWEP = California Water Efficiency Partnership
CII = commercial, industrial, institutional
COM = commercial
HEU = High-Efficiency Urinals
IRR = irrigation
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes

(a) Each Water Contractor was asked to rank conservation programs and measures in terms of priority as a locally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority.

Appendix C: UWMP Preparation Notices

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

City of Belvedere
Mr. Robert Zadnik
City Manager
450 San Rafael Avenue
Belvedere, CA 94920

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Town of Corte Madera
Mr. Adam Wolff
Town Manager
300 Tamalpais Drive
Corte Madera, CA 94925-0159

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Town of Fairfax
Ms. Heather Abrams
Town Manager
142 Bolinas Road
Fairfax, CA 94930

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

City of Larkspur
Mr. Dan Schwarz
City Manager
400 Magnolia Avenue
Larkspur, CA 94939

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Marin County Administrator
Mr. Derek Johnson
County Executive
3501 Civic Center Drive, Suite 325
San Rafael, CA 94903

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

City of Mill Valley
Mr. Todd Cusimano
City Manager
26 Corte Madera Avenue
Mill Valley, CA 94941

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

North Marin Water District
Mr. Tony Williams
General Manager
999 Rush Creek Place
Novato, CA 94945

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

City of Novato
Ms. Amy Cunningham
City Manager
922 Machin Avenue
Novato, CA 94945

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Town of Ross
Ms. Christa Johnson
Town Manager
P.O. Box 320
Ross, CA 94957

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Town of San Anselmo
Mr. David Donery
Town Administrator
525 San Anselmo Avenue
San Anselmo, CA 94960

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

February 6, 2026

VIA ELECTRONIC MAIL TO

City of San Rafael
Ms. Cristine Alilovich
City Manager
1400 Fifth Avenue
San Rafael, CA 94915-1560

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

City of Sausalito
Mr. Chris Zapata
City Manager
420 Litho Street
Sausalito, CA 94965

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Sonoma County Water Agency
Mr. Grant Davis
General Manager
404 Aviation Blvd
Santa Rosa, CA 95403

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

MARIN WATER

February 6, 2026

VIA ELECTRONIC MAIL TO

Town of Tiburon
Mr. Greg Chanis
Town Manager
1505 Tiburon Boulevard
Tiburon, CA 94920

Re: **Notice of Preparation of Urban Water Management Plan - 2025 Update**

The Urban Water Management Planning Act (California Water Code §10608–10656) requires the Marin Municipal Water District ("Marin Water") to update its Urban Water Management Plan ("UWMP") every 5 years. Marin Water is currently reviewing its existing 2020 UWMP, which was updated in 2024, and considering revisions to the document. The updated 2025 UWMP is due by July 1, 2026. We invite your agency's participation in this revision process.

A draft of the 2025 UWMP will be made available for public review and a public hearing will be scheduled for spring of 2026. In the meantime, if you would like more information regarding the District's 2020 UWMP and the schedule for preparing the 2025 UWMP, or if you would like to participate in the preparation of the 2025 UWMP, please contact Nicholas Busse at:

Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Phone: (415) 945-1166
nbusse@marinwater.org

Sincerely,

Nicholas Busse, P.E.
Associate Water Resources Specialist

Appendix D: Public Meeting Notice

PLACEHOLDER

Appendix E: Sonoma County Water Agency Contract

DRAFT

Amended and Restated Water Supply Agreement

by and between

The Marin Municipal Water District

and

The Sonoma County Water Agency

Amended and Restated Water Supply Agreement

by and between

The Marin Municipal Water District

and

The Sonoma County Water Agency

This Amended and Restated Water Supply Agreement ("Agreement") is made by and between the Marin Municipal Water District ("MMWD") and the Sonoma County Water Agency ("Sonoma Water") (each referred to individually as "Party" and collectively as "Parties") and is effective as of _____, 2025

Section 1: Recitals.

A) Sonoma Water was formed and operates pursuant to Appendix 53 of the California Water Code, which authorizes Sonoma Water to enter into contracts to provide a firm supply of water within or outside of Sonoma Water's jurisdictional boundaries to any municipal corporation or agency (Water Code Appendix 53-9).

B) MMWD was formed and operates pursuant to the Municipal Water District Act of 1911, which authorizes MMWD to acquire and distribute water for the beneficial use of its residents (Cal. Water Code § 71610).

C) Sonoma Water entered into contracts with the United States Government to secure the construction of Coyote Valley Dam on the east fork of the Russian River and Warm Springs Dam on Dry Creek (hereafter "Russian River Project").

D) The Coyote Valley Project was authorized by the Flood Control Act of 1950 (Pub. L. No. 81-516) and was completed by the U. S. Army Corps of Engineers in 1958. This component of the Russian River Project includes the impoundment of Lake Mendocino, which has a capacity of 122,500 acre feet of which between 64,800 acre feet and 111,000 acre feet, depending on the time of year, is allocated to storage for water supply.

E) In 1955, Sonoma Water (then called the "Sonoma County Flood Control

and Water Conservation District") sold general obligation bonds to raise $5,650,000, which it paid to the United States for the reimbursable costs of the water-storage element of the Coyote Valley Project. Parts of the property taxes paid since 1955 by taxpayers within Sonoma County have been used to make payments on these bond obligations and to fulfill other obligations to the United States Government for the Russian River Project.

F) The Warm Springs Dam Project was authorized by the Flood Control Act of 1962 (Pub. L. No. 87-874) and was completed by the U.S. Army Corps of Engineers in 1984. This component of the Russian River Project includes the impoundment of Lake Sonoma, which has a capacity of 381,000 acre feet, of which 245,000 acre feet is allocated to storage for water supply.

G) Sonoma Water contracted with the United States to make annual payments to the U.S. for portions of the construction, operation, maintenance, major-replacement and major-rehabilitation costs of the Warm Springs Dam Project. Parts of the property taxes paid since 1971, including future taxes to be paid, by taxpayers within Sonoma County have been paid into a sinking fund that was established to fund Sonoma Water's payment obligations, and to fulfill other obligations, to the United States Government for the Russian River Project.

H) In October 1974, Sonoma Water entered into a contract with the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District, the Valley of the Moon Water District, and the North Marin Water District entitled "Agreement for Water Supply and Construction of Russian River-Cotati Intertie Project", which was last amended June 23, 2006 (hereafter the "Restructured Agreement for Water Supply").

I) The Restructured Agreement for Water Supply authorizes the use of certain water transmission facilities (hereinafter "Transmission System") for the purpose of Sonoma Water delivering water to MMWD, under prescribed terms and conditions, water which is available in the Russian River and the Santa Rosa Plain groundwater wells.

J) On July 3, 1975, Sonoma Water and MMWD entered into an agreement entitled "Offpeak Water Supply Agreement", which provides for Sonoma

Water to deliver up to 4,300 acre feet of water per fiscal year, subject to specified terms and conditions, which Offpeak Water Supply Agreement was amended on August 28, 1984, on May 3, 1988, and on January 25, 1995. On October 22, 1991, Sonoma Water and MMWD entered into an agreement entitled the "Agreement for Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District" for the delivery of up to 10,000 acre feet of water per fiscal year from Sonoma Water to MMWD, under prescribed terms and conditions. On January 25, 1996, Sonoma Water and MMWD entered into a "Supplemental Water Supply Agreement", which amended and incorporated the "Third Offpeak Water Supply Agreement" as Exhibit A thereto and the "Amended Agreement for Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District" as Exhibit B thereto, which Supplemental Water Supply Agreement was renewed and extended pursuant to the "Renewal of the Third Amended Offpeak Water Supply Agreement and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District" effective July 1, 2015 through June 30, 2025 (hereinafter the "2015 Renewal Agreement").

K) Pursuant to the Restructured Agreement for Water Supply and the Off Peak Water Supply Agreement, the North Marin Water District and MMWD, respectively, have paid Sonoma Water a Russian River Conservation Charge, the proceeds of which have been paid into the sinking fund established to fund Sonoma Water's obligations to the United States for the Russian River Project, as described in Recitals E and G above.

L) Sonoma Water currently utilizes the Transmission System to supply water to the Water Contractors under the Restructured Agreement for Water Supply, as well as Other Agency Customers under other agreements. Payments by the Water Contractors under the Restructured Agreement for Water Supply were and are being used to fund payments on the bonds sold to finance the construction of, and upgrades to, the Transmission System and to directly fund the construction of parts of the Transmission System. Other customers of Sonoma Water divert water directly from the Russian River.

M) In June 1980, Sonoma Water certified its final environmental impact report

on Proposed Amendments of Permits on Applications 12919A, 15736, 15737 and 19351. In July 1984, Sonoma Water certified its supplemental environmental impact report covering Proposed Coordinated Use of the Water Supply of Lake Mendocino and Lake Sonoma, Russian River Project. On November 14, 1990, MMWD certified its Water Supply Plan Program Final Environmental Impact Report. On September 24, 1991, MMWD certified its Water Supply Project Final Environmental Impact Report. These reports together satisfy the requirements of the California Environmental Quality Act (Pub. Res. Code § 21000, et seq.) for ongoing water sales pursuant to this Agreement.

N) Sonoma Water holds Water Right Permits 12947A, 12949, 12950 and 16596, which were issued by the State Water Resources Control Board and its predecessors pursuant to Applications 12919A, 12920A, 15736, 15737 and 19351, which Permits authorize Sonoma Water to divert Russian River water and to redivert water previously stored in Lake Mendocino and Lake Sonoma, subject to specific terms and conditions.

O) Recital E. in the Supplemental Agreement recognized that one of the reasons for that agreement was "to accommodate the Agency's [Sonoma Water] efforts to attempt to ensure a continuation of Pacific Gas and Electric Company's historic diversions of Eel River water to the Russian River and to increase the reliability of the water supply deliverable to [MMWD]." The need to ensure the continuation of such flows for the benefit of all of Sonoma Water's Water Contractors was heightened by the amendments made by the Federal Energy Regulatory Commission in 2004 to Pacific Gas & Electric Company's (PG&E) license for the Potter Valley Project, which reduced such flows and subsequently by PG&E's decision to pursue surrender of its license to operate the Potter Valley Project and propose its decommissioning. By entering into this Agreement, the parties recognize the ongoing importance of the continuation of flows from the Eel River to the Russian River for the benefit of all of Sonoma Water's customers.

P) MMWD and Sonoma Water recognize the need for a regional approach to water supply, water conservation, fishery and water reuse issues.

Q) In May 1984, June 1996 and June 2005, MMWD made payments to

Sonoma Water of $168,348, $2,837,344 and $6,326,257, respectively, and MMWD made the latter two payments pursuant to Section 8 of the Water Sale Agreement for the purpose of securing firm water, which lump sum payments represent a share of the Warm Springs Dam sinking fund and principal payments made to the United States Government by Sonoma Water for Lake Sonoma water storage space corresponding to a potential additional 10,000 acre feet per annum of the 75,000 acre feet per annum net firm yield of the Warm Springs Dam Project, which increased MMWD's total potential net yield of the Warm Springs Dam Project to 14,300 acre feet per fiscal year.

R) Due to changes in circumstances since the Offpeak Agreement and the Water Sale Agreement were agreed upon, some provisions are no longer relevant and impose obligations and procedures on MMWD and Sonoma Water that are no longer necessary and provide undue burden to the Parties. The Parties wish to update the agreements and consolidate them into one document for ease of use. As of the effective date of this Agreement, this Agreement will replace all prior water sales agreements between Sonoma Water and MMWD including the 2015 Renewal Agreement.

Now, therefore, in consideration of the foregoing recitals, which are incorporated herein and made part of this Agreement, and of the prior agreements between the parties, and of the promises made herein, MMWD and Sonoma Water agree as follows:

Section 2: Definitions.

When used in this Agreement, unless otherwise distinctly expressed or manifestly incompatible with the intent of this Agreement, capitalized terms shall have the meanings set forth below or, if not defined below, the meanings set forth in the Restructured Agreement for Water Supply:

(a) "Sonoma Water" means the Sonoma County Water Agency or any successor thereto.

(b) "Sonoma Water's Water Rights Permits" means water rights permits 12947A, 12949, 12950 and 16596, which the State Water Resources Control Board and its predecessors issued to Sonoma Water

pursuant to Applications 12919A and 12920A, 15736, 15737 and 19351, as such permits now exist or in the future may exist (including any licenses that may be issued to replace these permits).

(c) "Agreement" means this Amended and Restated Water Supply Agreement.

(d) "Fiscal Year" means the financial accounting year beginning on July 1 and ending on June 30.

(e) "MMWD" means the Marin Municipal Water District or any successor thereto.

(f) "Potter Valley Project" means the hydroelectric project owned and operated by the Pacific Gas and Electric Company and licensed by the Federal Energy Regulatory Commission as Project No. P-77.

(g) "Other Agency Customers" means Sonoma Water, the County of Sonoma, California American Water Company (with respect to the Larkfield Water District), Forestville Water District, Lawndale Mutual Water Company Kenwood Village Water Company, Penngrove Water Company, the City of Sebastopol, the State of California, and Santa Rosa Junior College.

(h) "Regular Customers" means any of the Water Contractors or Other Customers.

(i) "Restructured Agreement for Water Supply" means the Restructured Agreement for Water Supply between Sonoma Water and the Cities of Cotati, Petaluma, Santa Rosa, Rohnert Park, and Sonoma, the Town of Windsor, and Forestville, Valley of the Moon, and North Marin Water Districts, executed on June 23, 2006, and any amendments or successor agreements thereto.

(j) "Russian River Conservation Charge" means the charge described in Section 5(b) of this Agreement.

DRAFT

(k) "Russian River Projects Charge" means the charge described in Section 5(c) of this Agreement.

(l) "Transmission System" means the water-supply facilities financed and constructed pursuant to the Restructured Agreement for Water Supply and its predecessor agreements.

(m) "Water Contractor" means a party signatory to the Restructured Agreement for Water Supply executed on June 23, 2006, and any amendments or successor agreements thereto.

Section 3: Sonoma Water Delivery of Water to MMWD.

(a) Subject to all of the terms and conditions of this Agreement, and subject to the provisions of the Restructured Agreement for Water Supply (as now existing or as may be amended in the future), MMWD may purchase water from Sonoma Water pursuant to this Agreement in any Fiscal Year in an amount not less than 5,300 acre feet but not to exceed 14,300 acre-feet.

(b) Sonoma Water shall deliver water at the requested rate to MMWD only to the extent that water supply is available and the Transmission System has capacity in excess of that required by Sonoma Water to supply the Water Contractors, but not less than 5,300 acre feet per fiscal year.

(c) In September each year, Sonoma Water and MMWD will meet to determine MMWD's likely water demand for the coming fiscal year and whether MMWD's potential water supply needs can likely be supported by anticipated Sonoma Water's water supply availability and Transmission System capacity. Notwithstanding the foregoing, the maximum delivery rate to MMWD shall be limited to 25 million gallons per day (MGD) during the calendar months of January, February, March, April, November and December, and shall be limited to 12.8 mgd between the months of May through October. In the event that, in any given year, MMWD has a desire for a greater maximum mgd deliveries, MMWD may request the same from Sonoma Water and provided that there is sufficient Transmission System capacity and available water, Sonoma Water will not unreasonably withhold such additional deliveries to MMWD. MMWD agrees to provide written notice to all members of the Technical Advisory Committee, as that term is defined in the Restructured Agreement, of any such request by MMWD as well as the correspondent determination made by Sonoma

Water.

(d) All water furnished by Sonoma Water to MMWD hereunder shall be delivered at a separately metered turnout or through the North Marin Water District's metered turnout(s) at MMWD's option.

(e) Water received by MMWD pursuant to this Agreement shall only be used within the sphere of influence (as such term is defined in section 56076 of the Government Code) of the MMWD.

Section 4: Shortage and Impairment.

Except as otherwise provided herein, Sonoma Water shall release water from storage in Lake Mendocino or Lake Sonoma when necessary to make available in the Russian River sufficient water to make the deliveries provided for herein. If by reason of drought, environmental laws or regulations, other causes beyond the control of Sonoma Water, a deficiency does occur, then Sonoma Water shall not be liable to MMWD for any damage resulting therefrom. In the event of an impairment of or limitation on the use or capacity of the Transmission System, or other facility that affects Sonoma Water's ability to deliver water to MMWD pursuant to this Agreement, by reason of natural disaster, sabotage, legal impediment or other cause beyond the control of Sonoma Water, Sonoma Water shall not be liable to MMWD for any damage arising therefrom, provided however, that in such event MMWD shall have the right to roll any remaining undelivered allotment below the minimum 5,300 acre feet minimum fiscal year requirement into the following Fiscal Year such that the minimum take for that year is the 5,300 AF minimum and the undelivered water from the prior fiscal year so long as MMWD pays for the full 5,300 acre feet at the end of the fiscal year in which it was to be delivered at the then current rates if Sonoma Water reasonably determines that it has water available.

In the event of shortage of water in the Russian River or the Russian River Project that requires Sonoma Water to apportion available supply of water, Sonoma Water shall apportion the available water supply in accordance with the shortage and apportionment provisions in the Restructured Agreement section 3.5, so that it may make deliveries as follows:

(a) First, Sonoma Water shall deliver to each of its Regular Customers, not in excess of the respective entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Restructured Agreement for Water Supply or any amendments or

successor agreements thereto, authorize Sonoma Water's Russian River customers to divert or redivert not in excess of the amounts for which those customers have contracted to purchase from Sonoma Water, and deliver water to MMWD not in excess of the amounts set forth in Section 3 of this Agreement, the quantities of water required by each for human consumption, sanitation and fire protection, as determined by Sonoma Water after taking into consideration all other sources of potable water then available to said customer;

(b) Second, to the extent additional water is available to Sonoma Water, Sonoma Water shall deliver such water to Sonoma Water's Regular Customers, authorize Sonoma Water's Russian River customers, to divert or redivert such water and deliver such water to MMWD in proportion to the respective entitlements set forth in Section 3.1, 3.2 and 3.3 of the Restructured Agreement for Water Supply, or any amendment or successor agreements thereto, the agreements between Sonoma Water and its Russian River customers, and section 3 of this Agreement, provided, however, that no customer shall receive under subdivisions (a) and (b) hereof a total quantity of water in excess of its reasonable requirements or its said entitlement or contracted amount, whichever is less.

Section 5: Charges and Payment.

For all water delivered under this Agreement, MMWD shall pay Sonoma Water each of the following charges:

(a) A per-acre-foot charge equal to the highest rate per acre-foot then charged by Sonoma Water to any party to the Restructured Agreement for Water Supply for water taken from either the Petaluma Aqueduct or the Santa Rosa Aqueduct, multiplied by 1.11; provided, however, that the 20% surcharge imposed on the Town of Windsor under Section 4.17(a) of the Restructured Agreement for Water Supply shall not be included in determining the highest rate per acre-foot for water taken from the Santa Rosa Aqueduct or Petaluma Aqueduct. Seven and four hundred thirty-two one-thousandths percent (7.432%) of this per-acre-foot charge shall be placed in the Russian River Projects Fund; two and four hundred seventy-seven thousandths percent (2.477%) of this per-acre-foot charge shall be used, at the discretion of Sonoma Water, to pay for the costs of Common Facilities, to pay the Capital Costs of Aqueduct Facilities relating to the Santa Rosa or Petaluma Aqueducts, or to pay operations and maintenance

costs; and the remainder shall be applied pursuant to the Restructured Agreement for Water Supply, with the water delivered to MMWD considered to be delivered from the Petaluma Aqueduct.

(b) A per-acre-foot Russian River Conservation Charge in lieu of the property taxes levied by Sonoma Water on property in Sonoma County, to pay the capital, operation and maintenance costs associated with the Warm Springs Dam Project and the Russian River Project. The charge shall be determined annually on or before April 30 preceding each September 30. The Russian River Conservation Charge shall be determined by multiplying the tax rate levied by Sonoma Water in the then current Fiscal Year to pay the costs associated with the Warm Springs Dam Project times the total assessed value of secured and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Valley of the Moon Water District, and the Town of Windsor, and dividing the product by the total number of acre feet of water delivered to said public agencies pursuant to Section 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the twelve month period ending on March 31.

(c) A per-acre-foot Russian River Projects Charge in lieu of the property taxes levied on property in Sonoma County and other Sonoma Water general fund monies which are transferred by Sonoma Water to Sonoma Water's Russian River Projects Fund and expended to pay for or partially pay for: (1) carrying out Sonoma Water's Coyote Valley Dam Project and Warm Springs Dam Project channel-stabilization works obligations to the United States Government and the State of California under Sonoma Water Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No DR68485 adopted December 23, 1980; (2) securing and defending appropriative water rights which are necessary for the realization of the full benefits of the Coyote Valley Dam and Warm Springs Dam Projects; (3) Sonoma Water's share of the United States Government's investment, operation and maintenance costs associated with the Coyote Valley Dam and Warm Springs Dam Projects; (4) the acquisition of all or part of the Potter Valley Project, contributions made to the Potter Valley Project owner, or its successor, to insure the continued operation of all or part of the Potter Valley Project or its successor; and (5) fishery mitigation and enhancement projects undertaken by Sonoma

Water in the Russian River and Eel River and their tributaries. The Russian River Projects Charge shall be determined by dividing the total amount of Sonoma Water monies expended from Sonoma Water's Russian River Projects Fund in the preceding ten Fiscal Years, exclusive of the funds contributed to the Fund by MMWD and the North Marin Water Districts and interest earnings attributable to funds contributed by MMWD and the North Marin Water District, by the sum of the total acre-feet of water delivered by Sonoma Water to the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa, and Sonoma, the Valley of the Moon Water District, and the Town of Windsor (plus amounts diverted by the Town of Windsor via its own facilities under Sonoma Water's water rights) pursuant to Sections 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the preceding ten Fiscal Years and multiplying the quotient by the ratio that the assessed value of secured and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Valley of the Moon Water District, and the Town of Windsor bears to the assessed value of all secured and unsecured property within Sonoma County, provided however, in no event shall the Russian River Projects Charge exceed $20.00 per acre-foot. Sonoma Water shall keep proper books, records and accounts in which complete and accurate entries shall be made of all Sonoma Water general fund monies transferred to Sonoma Water's Russian River Projects Fund and all expenditures made from the fund for the purposes described in this paragraph. Sonoma Water shall maintain a separate account within the Russian River Projects Fund for monies contributed by MMWD and the North Marin Water District. Monies expended from the Russian River Projects Fund shall be deemed to have been expended from the MMWD and North Marin Water District account in the proportion that the balance of the account bears to the total Russian River Projects Fund balance at the end of the Fiscal Year quarter preceding the expenditure.

(d) A lump sum payment which shall be determined by multiplying the Russian River Conservation Charge times the difference between 14,300 acre-feet and the sum of the total acre-feet of water delivered under this agreement during the prior Fiscal Year plus the total acre-feet of water for which payments have been made in lieu of delivery pursuant to Section 5(f) of this Agreement during the prior Fiscal Year.

(e) A lump sum payment which shall be determined by multiplying the Russian River Projects Charge times the difference between 14,300 acre-feet and the sum of the total acre-feet of water delivered under this Agreement during the prior Fiscal Year plus the total acre-feet of water for which payments have been made in lieu of delivery pursuant to Section 5(f) of this Agreement during the prior Fiscal Year.

(f) A lump sum payment, calculated as follows: If the total amount of water delivered to MMWD pursuant to this Agreement is less than 5,300 acre-feet in any Fiscal Year, then Sonoma Water shall include in the bill for the month of August the difference between the actual amount of water delivered during the previous Fiscal Year and 5,300 acre-feet, and MMWD shall pay for such amount at the same rate as though such water had been delivered, if and to the extent that such water was available to MMWD. Water shall be deemed to have been available to MMWD during the previous Fiscal Year if MMWD could have taken delivery of such water at any time during such Fiscal Year at delivery rates not exceeding available Transmission System capacity. Sonoma Water shall keep and make available for review by MMWD operating records indicating the availability of water to MMWD.

(g) MMWD Payment to Support Regional Water Resiliency. Within sixty (60) days following full execution of this Agreement, MMWD will pay to Sonoma Water an amount equal to Twelve Million Five Hundred Thousand Dollars ($12,500,000), a portion of which funds, specifically Nine Million Dollars ($9,000,000) will be used by Sonoma Water for projects to enhance water resiliency within the Russian River System. The remaining portion, Three Million Five Hundred Thousand Dollars ($3,500,000) will be used by Sonoma Water for projects to enhance Sonoma Water's ability to deliver winter water. Sonoma Water shall be responsible for conducting any environmental review that may be required under the California Environmental Quality Act for all such projects.

(h) Notwithstanding any dispute between Sonoma Water and MMWD, MMWD shall pay all bills made by Sonoma Water pursuant to this Agreement when due and shall not withhold all or any part of any amount billed pending the final resolution of such dispute. In the event of a dispute, MMWD may pay its bills under protest, and if necessary under the ultimate resolution of the dispute, Sonoma Water shall make an

appropriate refund to MMWD, including interest on the overpaid amount at the rate obtained by Sonoma Water as a result of investment of the disputed amount. If MMWD does not pay any bill by the due date for such bill, then, in addition to the principal amount due, MMWD also shall pay Sonoma Water interest on this principal amount due, calculated from the due date until the payment date at the legal rate per annum established pursuant to section 685.010 of the Code of Civil Procedure.

Section 6: Construction of New Aqueduct.

Sonoma Water acknowledges that MMWD is evaluating the feasibility and efficacy of constructing, at MMWD's sole cost and expense, a new aqueduct from the existing North Marin Aqueduct to MMWD's Nicasio and/or Soulajule Reservoirs to enhance water resiliency and reliability consistent with long term planning for the Russian River Project. MMWD will continue to actively communicate with Sonoma Water regarding project design and development and Sonoma Water and if requested by MMWD, will provide available information and data necessary to project planning and assessment of project benefits and impacts. In connection with the foregoing, MMWD will be solely responsible for the completion of any analysis required pursuant to the California Environmental Quality Act.

Section 7: Sonoma Water Petitions and Applications with State Water Resources Control Board.

MMWD acknowledges that the existing 75,000 acre foot per year limit on diversions and rediversions in Sonoma Water's Water Right Permits does not allow Sonoma Water to utilize the entire yield of the Russian River Project, and that Sonoma Water may from time to time file petitions or applications with the State Water Resources Control Board ("State Board") to increase this or future limits or otherwise provide water to Sonoma Water customers. MMWD also acknowledges that Sonoma Water has filed petitions with the State Board requesting changes in minimum instream flow requirements and other changes in its water rights permits to respond to hydrologic conditions or any environmental release requirements, or both. MMWD recognizes and agrees that it will be in the public interest for the State Board to grant such petitions and applications.

Section 8: Waiver and Indemnity.

(a) MMWD waives, releases and forever discharges Sonoma Water, its officers, agents and employees from any and all liabilities, claims, demands, losses and costs relating to any of the following: (1) any property damage or personal injury arising from any non-delivery of water requested by MMWD pursuant to this Agreement, or for any property damage or personal injury arising from the quality of water delivered pursuant to this Agreement, if such property damage or personal injury is caused by lack of available capacity in the Transmission System, drought, earthquake or other Act of God, strike or other labor dispute, partial or total dam, gate or tunnel loss, dam, gate or tunnel repairs, water pollution, or any factor beyond the control of Sonoma Water (whether or not such factor is listed in this sentence); and (2) any property damage or personal injury arising from any decision of Sonoma Water regarding: (a) determinations of the availability of water for sale by Sonoma Water to MMWD pursuant to this Agreement; (b) allocation of transmission system capacity; (c) proposed expansions of the Transmission System; or (d) repair (or non-repair) of the Potter Valley Project, Coyote Valley Dam or Warm Springs Dam. MMWD's waiver, release and discharge described in this paragraph shall apply to any of the property damages or personal injuries described in this paragraph, whether or not such property damages or personal injuries were caused by Sonoma Water's negligence, unless such property damages or personal injuries resulted from Sonoma Water's negligence, willful misconduct or violation of law.

(b) MMWD shall indemnify, hold harmless, protect and defend Sonoma Water, its officers, agents and employees from and against any and all liabilities, claims, demands, damages, losses, disabilities or expenses (including attorney fees and litigation costs) of every nature arising out of, or in connection with: (1) the lack of quantity of water that has been delivered by Sonoma Water to MMWD pursuant to this Agreement; or (2) the control, conveyance and disposition of water that has been delivered by Sonoma Water to MMWD pursuant to this Agreement. For the purposes of this section, the point of delivery shall be as specified in Section 3 of this Agreement. MMWD shall provide such indemnification, holding harmless, protection and defense whether or not such liabilities, claims, demands, damages, losses, disabilities or expenses are based on Sonoma Water's negligence, unless such liabilities, claims, demands, damages, losses,

disabilities or expenses are based on Sonoma Water's sole negligence, willful misconduct or violation of law.

(c) This section shall not apply to any construction activities, or construction contracts, relating to the construction described in Section 6of this Agreement. The provisions in this section regarding attorney fees shall not apply to any other section of this Agreement.

Section 9: Water Conservation; Coordination on Urban Water Management Planning.

(a) MMWD and Sonoma Water will comply with all applicable state laws related to water conservation planning and implementation, including the Urban Water Management Planning Act, Water Code sections 10610-10655 (as such act now exists or in the future may exist). MMWD shall implement or use its best efforts to secure the implementation of any water conservation requirements that may be added as terms or conditions of Sonoma Water's appropriative water rights permits or licenses, or with which the Agency must comply under compulsion of regulation or law.

(b) MMWD and Sonoma Water shall coordinate the preparation of their respective Urban Water Management Plans required by the Urban Water Management Planning Act. MMWD shall provide Sonoma Water MMWD's projections of projected future water demands, conservation, recycled water use, and other non-Sonoma Water water supplies, and the methodology and assumptions used by MMWD to produce those projections. Sonoma Water shall review the projections and may provide comments on the projections, and shall provide MMWD with projections of the amount of water to be provided by Sonoma Water to MMWD to be used in MMWD's and the Sonoma Water's Urban Water Management Plans, provided, however, that nothing in this Section 9, including any lack of compliance, shall impact the other provisions of this Agreement nor any obligation hereunder.

Section 10: Water Quality.

Water delivered by Sonoma Water to MMWD pursuant to this Agreement shall be of the same general quality as water delivered by Sonoma Water from the transmission system to the Water Contractors in compliance with California

drinking water standards. Except as expressly stated in the preceding sentence, Sonoma Water does not make any express or implied warranty regarding the quality of the water delivered pursuant to this Agreement. The payment obligations of MMWD set forth in Section 5 shall not be affected in any manner by the quality of the water delivered by Sonoma Water hereunder.

Section 11: CEQA for Future Projects.

Pursuant to section 15051(d) of the State CEQA Guidelines, MMWD is designated as the lead agency under the California Environmental Quality Act for the construction of any new aqueduct to be constructed by MMWD pursuant to Section 6 of this Agreement. Sonoma Water is designated as the lead agency for any other projects north of Kastania Reservoir that Sonoma Water may construct to implement this Agreement.

Section 12: CEQA for this Agreement.

Pursuant to section 15061 of the California Environmental Quality Act (CEQA) Guidelines, the parties have evaluated this Agreement and have concluded that their approval of this Agreement is exempt from the provisions of CEQA under Section 15301 of the CEQA Guidelines because MMWD fully exercised its right to delivery of water under the 2015 Renewal Agreement, the not to exceed amount of water to which MMWD is entitled under this Agreement is unchanged from the amounts included under the 2015 Renewal Agreement and future levels of diversions and use of water by MMWD under this Agreement will not be significantly different from present levels of diversion and use. Accordingly, the parties will file, pursuant to CEQA Guidelines section 15062, notices of exemption with the Marin and Sonoma County Clerks and the State Clearinghouse of the Office of Planning and Research.

Section 13: Term.

This Agreement supersedes the 2015 Renewal Agreement. This Agreement shall be effective on July 1, 2025 and shall remain in effect until June 30, 2040. Upon the request of MMWD, Sonoma Water agrees to enter into renewal agreements for periods not to exceed the then-existing term of the Restructured Agreement for Water Supply or any renewals or amendments to the Restructured Agreement for Water Supply upon the same terms and conditions contained herein, except that Sonoma Water may make reasonable adjustments to the charges under Section 5 of this Agreement, and any such reasonable adjustments then shall be

included in any renewal agreement. Sonoma Water acknowledges that the expiration date of the Restructured Agreement for Water Supply is June 30, 2040. Based upon MMWD's longstanding and ongoing participation and support of Sonoma Water's Russian River Project, including lump sum capital payments and other payments made by MMWD in parity with Sonoma Water's Water Contractors, Sonoma Water agrees to advocate to include MMWD in any discussions related to any renewal or extension of the Restructured Agreement for Water Supply. If at the expiration date of this Agreement and the Restructured Agreement for Water Supply has been terminated or has expired without either being renewed or replaced by another agreement pertaining to water supply, then upon the request of MMWD, Sonoma Water shall enter into renewal agreements for periods not to exceed forty (40) years upon the same terms and conditions contained herein, except that Sonoma Water may make reasonable adjustments to the charges under Section 5 of the Agreement and any such reasonable adjustment then shall be included in any renewal agreement.

Section 14: Modifications:

This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and conditions and as a complete and exclusive statement of the terms of the agreement. Pursuant to Code of Civil Procedure section 1856, no modification of the Agreement shall be effective unless and until such modification is evidenced by a writing signed by all parties.

Section 15: Equitable Remedies.

Because water is a scarce and precious resource, MMWD will not have an adequate remedy at law, and thus may request a court of competent jurisdiction to order equitable remedies, to compel Sonoma Water to deliver the water that MMWD is entitled to receive pursuant to this Agreement. Such equitable remedies shall be MMWD's sole and exclusive remedies in actions brought by MMWD relating to the amounts of water that Sonoma Water must deliver to MMWD pursuant to this Agreement.

Section 16: Notices.

All notices shall be in writing and notices and payments may be given by personal delivery or by mail. Notices and payments sent by mail shall be addressed as follows:

To Sonoma Water:
General Manager,
Sonoma County Water Agency,
404 Aviation Boulevard, Santa Rosa, CA 95403;

To MMWD:
General Manager,
Marin Municipal Water District,
220 Nellen Avenue, Corte Madera, CA 94925

When so addressed, a notice shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices and payments shall be deemed given at the time of actual delivery. Changes may be made to the names and addresses of the person to whom notices and payments are to be given by giving notice pursuant to this section.

Section 17: Demand for Assurances. When reasonable grounds for insecurity arise with respect to the performance of either party, the other party may, in writing, demand adequate assurance of due performance and, until it receives such assurance, may, if commercially reasonable, suspend any performance for which the agreed return performance has not been received. "Commercially reasonable" includes not only the conduct of either party with respect to performance under this Agreement, but also conduct with respect to other agreements with the other party to this Agreement or others. After receipt of a justified demand, the failure to provide within a reasonable time, but not exceeding 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this Agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

Section 18: No Third-Party Beneficiaries.

No third-party beneficiaries are intended or established by this Agreement.

Section 19: Representation by Counsel.

Sonoma Water and MMWD each was represented by independent counsel in the negotiation and execution of this Agreement. For the purposes of interpretation of this Agreement, neither party shall be deemed to have been the drafter of this Agreement.

Section 20: Merger.

This Agreement is intended both as a final expression of the agreement between the parties hereto with respect to the included terms and conditions and as a complete and exclusive statement of the terms of the Agreement.

ATTEST:

_____
Board Secretary

MARIN MUNICIPAL WATER DISTRICT

By: _____
Matt Samson, President
Board of Directors

Reviewed As To Form:

_____
Molly MacLean, General Counsel

ATTEST:

_____
Deputy Clerk of the
Board of Directors

SONOMA COUNTY WATER AGENCY

By: _____
Chair, Board of Directors

DATE: _____

Reviewed As To Substance By
Sonoma County Water Agency:

_____
Grant Davis, General Manager

Reviewed As To Form:

_____
Deputy County Counsel

DRAFT

Attachment 2

Renewal of the Third Amended Offpeak Water Supply Agreement and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District

This Renewal of the Third Amended Offpeak Water Supply Agreement and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District ("Renewal Agreement") is made by and between the Marin Municipal Water District ("MMWD") and the Sonoma County Water Agency ("Agency") and is effective as of July 1, 2015.

Recitals

A. Agency and MMWD are parties to a Supplemental Water Supply Agreement dated January 25, 1996, which incorporates two agreements between the Agency and MMWD that are attached as exhibits to the Supplemental Water Supply Agreement, the Third Amended Offpeak Water Supply Agreement (Exhibit A, referred to herein as the "Offpeak Agreement") and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District (Exhibit B, referred to herein as the "Water Sale Agreement").

B. The Offpeak Agreement and the Water Sale Agreement by their terms remain in effect until June 30, 2015 as provided in the Amendment To and Temporary Extension of the Supplemental Water Supply Agreement between MMWD and the Agency dated June 27, 2014.

C. MMWD has requested that the Offpeak Agreement and the Water Sale Agreement be renewed pursuant to Section 7 of the Offpeak Agreement and Section 18 of the Water Supply Agreement.

D. In September 2008, the National Marine Fisheries Service issued its *Russian River Biological Opinion*, which requires the Agency to implement certain activities and projects in the Russian River watershed to improve habitat for listed salmonid species as a condition to receiving "incidental take" authorization in connection with its operation of the Russian River Project and the Water transmission system. MMWD also has listed salmonid species present in streams within its water service area. The protection and recovery of listed salmonid species is a high priority for the Agency and for MMWD.

E. The Supplemental Water Supply Agreement recognized that one of the reasons for that agreement was "to accommodate the Agency's efforts to attempt to ensure a continuation of Pacific Gas and Electric Company's historic diversions of Eel

River water to the Russian River and to increase the reliability of the water supply deliverable to [MMWD]." The need to ensure the continuation of such flows was heightened by the amendments made by the Federal Energy Regulatory Commission in 2004 to Pacific Gas & Electric Company's license for the Potter Valley Project, which reduced such flows. By entering into this Renewal Agreement, the parties recognize the ongoing importance of the continuation of such flows.

Agreement

Wherefore, in consideration of the foregoing and the mutual promises set forth herein, Agency and MMWD agree as follows:

1. This Renewal Agreement shall be effective on July 1, 2015. On the effective date of this Renewal Agreement, the Offpeak Agreement shall be amended as indicated in the attached Exhibit A and the Water Sale Agreement shall be amended as indicated in the attached Exhibit B.

2. Pursuant to section 15051(d) of the CEQA Guidelines, MMWD is designated as the lead agency under the California Environmental Quality Act for the execution of this Renewal Agreement, and for any projects south of Kastania Reservoir that MMWD may construct to implement this Renewal Agreement. Agency is designated as the lead agency for any projects north of Kastania Reservoir that Agency may construct to implement this Renewal Agreement.

3. MMWD shall indemnify Agency and its officers, agents and employees for any and all liabilities, claims, demands, damages, losses, disabilities and expenses (including attorney fees and litigation costs) of every nature arising out of, or in connection with, any legal proceeding that is commenced against the Agency and that alleges that Agency's execution of this Renewal Agreement violates the California Environmental Quality Act or the CEQA Guidelines. MMWD shall provide such indemnification whether or not such liabilities, claims, demands, damages, losses, disabilities or expenses are based on Agency's negligence, unless such liabilities, claims, demands, damages, losses, disabilities or expenses are based on Agency's sole negligence, willful misconduct or violation of law. The provisions in this section regarding attorney fees shall not apply to any other section of this Renewal Agreement.

4. This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and conditions and as a complete and exclusive statement of the terms of the Renewal Agreement. Pursuant to Code of Civil Procedure section 1856, no modification of the Renewal Agreement shall be effective unless and until such modification is evidenced by a writing signed by all parties.

5. No third party beneficiaries are intended or established by this Renewal Agreement.

6. Agency and District each was represented by independent counsel in the negotiation and execution of this Renewal Agreement. For the purposes of interpretation of this Renewal Agreement, neither party shall be deemed to have been the drafter of this Renewal Agreement.

ATTEST:

Board Secretary

MARIN MUNICIPAL WATER DISTRICT

By: John C. Gibson, President
Board of Directors

Reviewed As To Substance By
Marin Municipal Water District

Krishna Kumar
General Manager

Reviewed As To Form:

Mary R. Casey
General Counsel

ATTEST:

Deputy Clerk of the
Board of Directors

SONOMA COUNTY WATER AGENCY

By: Chair, Board of Directors

DATE: 6/16/15

Reviewed As To Substance By
Sonoma County Water Agency:

Grant Davis, General Manager

Reviewed As To Form:

Steven S. Shupe
Deputy County Counsel

Exhibit A

Amendments To Third Amended Offpeak Water Supply Agreement

FOURTH AMENDED
OFFPEAK WATER SUPPLY AGREEMENT

This Fourth Amended Offpeak Water Supply Agreement ("Offpeak Agreement") is made and entered into effective this July 1, 2015, by and between the Marin Municipal Water District, a public body, hereinafter called "Marin" and the Sonoma County Water Agency, a public body, hereinafter called "Agency".

WITNESSETH:

WHEREAS, Agency entered into contracts with the United States Government to secure the construction of Coyote Valley Dam on the East Fork Russian River and Warm Springs Dam on Dry Creek (hereinafter "Russian River Project"); and

WHEREAS, Agency entered into a contract with the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa, and Sonoma, the Forestville County Water District, the Valley of the Moon Water District, and the North Marin Water District (hereinafter "North Marin") entitled, Agreement for Water Supply and Construction of Russian River-Cotati Intertie Project, dated October 25, 1974, and last amended June 23, 2006 (hereinafter "Restructured Agreement for Water Supply").

WHEREAS, said Restructured Agreement for Water Supply authorizes the use of certain water transmission facilities (hereinafter

"Transmission System") for the purpose of delivering to Marin, under prescribed terms and conditions, water which is available in the Russian River; and

WHEREAS, Agency entered into a contract with Marin entitled Second Amended Offpeak Water Supply Agreement, dated May 3, 1988, which provides for the delivery to Marin by Agency, under prescribed terms and conditions, of not to exceed 4,300 acre feet of Russian River water per fiscal year; and

WHEREAS, parts of the property taxes paid since 1971 by the taxpayers of Sonoma County have been paid into a sinking fund that was established to fund Agency's payment obligations to the United States Government for the Warm Springs Dam Project and parts of the property taxes that will be paid in the future by the taxpayers of Sonoma County will likewise be paid into this sinking fund; and WHEREAS pursuant to the Second Amended Offpeak Water Supply Agreement Marin has paid Agency a Russian River Conservation Charge, the proceeds of which were in the past paid into the sinking fund described in the previous recital; and

WHEREAS Agency entered into a contract with Marin dated October 22, 1991 and entitled Agreement for the Sale of Water between the Sonoma County Water Agency and the Marin Municipal Water District (now referred to as the "Water Sale Agreement"), which provides for the delivery to Marin by Agency, under prescribed terms and conditions, of up to 10,000 acre-feet of water per fiscal year; and

WHEREAS, Agency and Marin entered into a Supplemental Water Supply Agreement dated January 25, 1996, which amended and

incorporated two agreements between the Agency and Marin that are attached as exhibits to the Supplemental Water Supply Agreement, those agreements being known as the Third Amended Offpeak Water Supply Agreement and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District, to accommodate the Agency's efforts to attempt to ensure a continuation of the Pacific Gas and Electric Company's historic diversions of Eel River water to the Russian River and to increase the reliability of the water supply deliverable to Marin; and

WHEREAS, the Third Amended Offpeak Water Supply Agreement by its terms remain in effect until June 30, 2015 as provided in the Amendment To and Temporary Extension of the Supplemental Water Supply Agreement between Marin and the Agency dated June 27, 2014; and

WHEREAS, Marin has requested that the Third Amended Offpeak Water Supply Agreement be renewed.

NOW, THEREFORE, the parties hereto agree as follows:

1. Subject to all the terms and conditions of this Offpeak Agreement and the relevant provisions of the Restructured Agreement for Water Supply, Agency shall deliver water to Marin either through separately metered turnout at Agency's Kastania Reservoir or through North Marin's meter(s) at Marin's option. Should Marin desire a separate metered turnout, it shall pay to Agency the actual cost of installation of such metered turnout. Such water shall be made available to Marin in an amount not to exceed 4,300 acre feet per fiscal year and at delivery rates as requested by Marin but not to exceed 760 acre feet per calendar month. During the five

month period May 1 through September 30 the delivery rate shall not exceed 360 acre feet per calendar month without the prior written consent of the Agency and the total quantity of water delivered shall not exceed 1,800 acre feet. "Fiscal year" means the year beginning on July 1 and ending on the following June 30.

2. Marin shall pay for water delivered pursuant to this Offpeak Agreement at a rate equal to the highest rate per acre-foot then charged by the Agency to any party to the Restructured Agreement for Water Supply (or pursuant to any amendment or successor agreement to the Restructured Agreement for Water Supply) for water taken from either the Petaluma Aqueduct or the Santa Rosa Aqueduct, multiplied by 1.11; provided, however, that the 20% surcharge imposed on the Town of Windsor under Section 4.17(a) of the Restructured Agreement shall not be included in determining the highest rate per acre-foot for water taken from the Santa Rosa Aqueduct or Petaluma Aqueduct. Seven and four hundred thirty-two one-thousandths percent (7.432%) of this per-acre-foot charge shall be placed in the Russian River Projects Fund; two and four hundred seventy-seven thousandths percent (2.477%) of this per-acre-foot charge shall be used, at the discretion of the Agency, to pay for the costs of Common Facilities, to pay the Capital Costs of Aqueduct Facilities relating to the Santa Rosa or Petaluma Aqueducts, or to pay operations and maintenance costs; and the remainder shall be applied pursuant to the Restructured Agreement for Water Supply (or pursuant to any amendment or successor agreement to the Restructured Agreement for Water Supply), with the water delivered to Marin considered to be delivered from the Petaluma Aqueduct. Agency shall bill Marin monthly for the quantity of water

measured from Marin's metered turnout or from the accounting provided by North Marin and Marin shall pay the amount of such billing within 30 days after receipt of the bill. Notwithstanding any dispute between Agency and Marin, Marin shall pay all its bills when due and shall not withhold all or any part of any payment pending the final resolution of such dispute. In the event of a dispute, Marin may pay its bills under protest and if the resolution of the dispute results in a refund to Marin, Agency shall make refund plus any interest earned by investment of the disputed funds.

3. If the total amount of water delivered to Marin pursuant to this Offpeak Agreement is less than 4,300 acre-feet in any fiscal year, then Agency shall include in the bill for the month of July the difference between the actual amount of water delivered during the previous fiscal year and 4,300 acre-feet, and Marin shall pay for such amount at the same rate as though such water had been delivered, if and to the extent that such water was available to Marin. Water shall be deemed to have been available to Marin during the previous fiscal year if Marin could have taken delivery of such water at any time during such fiscal year at delivery rates not exceeding the rates specified in Section 1 of this Offpeak Agreement. Agency shall keep and make available for review by Marin operating records indicating the availability of water to Marin.

4. Except as otherwise provided herein, Agency shall release water from storage in Lake Mendocino or Lake Sonoma when necessary to make available in the Russian River sufficient water to make the deliveries provided for herein. If by reason of drought or other physical cause or legal impediment beyond the control of the Agency, a shortage in the water

available from the Russian River or the Russian River Project occurs, then Agency shall not be liable to Marin for any damage resulting therefrom.
In the event of shortage of water in the Russian River or the Russian River Project that requires the Agency to apportion available water, Agency shall apportion the available water so that it may make deliveries as follows:

First, Agency shall deliver to each of its regular customers, not in excess of the respective entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Restructured Agreement for Water Supply or any amendments or successor agreements thereto, authorize Agency's Russian River customers to divert or redivert not in excess of the amounts for which those customers have contracted to purchase from the Agency, and deliver to Marin not in excess of the amounts set forth in Section 1 of this Offpeak Agreement and paragraph (f) of Section 8 of the Water Sale Agreement, the quantities of water required by each for human consumption, sanitation and fire protection, as determined by the Agency after taking into consideration all other sources of potable water then available to said customer;

Second, to the extent additional water is available to the Agency, Agency shall deliver such water to Agency's regular customers, authorize Agency's Russian River customers, to divert or redivert such water and deliver such water to Marin in proportion to the respective entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements, thereto, the agreements between the Agency and its Russian River customers, and Section 1 of this Offpeak Agreement and paragraph (f) of Section 8 of the Water Sale Agreement, provided, however, that no customer shall receive under subdivisions "First" and "Second" hereof a total quantity of water in

excess of its reasonable requirements or its said entitlement or contracted amount, whichever is less.

Agency shall make all reasonable efforts to deliver water to Marin at Kastania Reservoir or at North Marin's meter, as specified in Section 1 of this Offpeak Agreement, using all facilities available to Agency. However, Marin acknowledges that priorities of use of delivery capacity in Agency's facilities have been allocated to others who are not parties to this Offpeak Agreement, and that capacity to make deliveries of water to Marin at the rates in Section 1 of this Offpeak Agreement may not always be available to Agency. Agency shall keep, and make available to Marin on an annual basis in July of each year, records indicating the availability of capacity to deliver water to Marin, up to the limits set forth in Section 1 of this Offpeak Agreement and in Section 2 of the Water Sale Agreement, for each month of the previous fiscal year. During July of each year, Agency also shall provide Marin with an estimate of the capacity that will be available to deliver water to Marin pursuant to this Offpeak Agreement and the Water Sale Agreement during each remaining month of the then present fiscal year. If these reports indicate that delivery capacity is insufficient, or soon will be insufficient, to provide deliveries at the rates specified in Section 1 of this Offpeak Agreement, then Agency shall use its best efforts to secure an alternative means, solely at Marin's expense, to accomplish the purposes of this Offpeak Agreement.

In the event of an impairment of or limitation on the use or capacity of the Transmission System, or other facility that affects the Agency's ability to deliver water to Marin pursuant to this Offpeak Agreement, by reason of natural disaster, sabotage, legal impediment or other cause beyond the control of the Agency, the Agency shall not be liable to Marin for any damage

arising therefrom. In such event, the Agency shall use the available Transmission System capacity to make deliveries as follows:

First, deliver to each of its regular customers the quantity of water, not in excess of its respective entitlement set forth in Sections 3.1 and 3.2 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, required by it for human consumption, sanitation and fire protection as determined by the Agency after taking into consideration all other sources of potable water then available to said customer;

Second, to the extent additional Transmission System capacity is available to the Agency, deliver a quantity of water to the regular customers in proportion to their respective entitlements set forth in Section 3.1 and 3.2 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, provided, however, that no regular customer shall receive under the paragraphs "first" and "second" a total quantity of water in excess of its reasonable requirements or its said entitlement, whichever is less;

Third, to the extent additional Transmission System capacity is available, deliver water to regular customers in excess of their entitlements, pursuant to section 3.3 of the Restructured Agreement for Water Supply;

Fourth, to the extent additional Transmission System capacity is available, deliver water to Marin Municipal Water District, not in excess of the delivery limitations in Section 1 of this Offpeak Agreement;

Fifth, to the extent additional Transmission System capacity is available, deliver surplus water to the water contractors;

Sixth, to the extent additional Transmission System capacity is available, delivery surplus water to other Agency customers;

The terms "regular customers", "Russian River customers" and "water contractors" in this Offpeak Agreement shall have the same meanings that they have in the Restructured Agreement for Water Supply.

5. In addition to the rates and charges required to be paid by Marin pursuant to Section 2 hereof, Marin shall pay the following additional charges on or before each September 30 during the term of this Offpeak Agreement.

a. Marin shall pay a Russian River Conservation Charge in lieu of the property taxes levied by the Agency on property in Sonoma County, to pay the capital, operation and maintenance costs associated with the Warm Springs Dam Project. The Russian River Conservation Charge shall be a charge per acre foot which shall be applied to Marin's total 4,300 acre feet per annum entitlement under this Offpeak Agreement. The charge shall be determined annually on or before April 30 preceding each September 30. The Russian River Conservation Charge shall be determined by multiplying the tax rate levied by the Agency in the then current fiscal year to pay the costs associated with the Warm Springs Dam Project times the total assessed value of secured and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District, and the Valley of the Moon Water District, and dividing the product by the total number of acre feet of water delivered to said public agencies pursuant to Section 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the twelve month period ending on March 31.

b. Marin shall pay a Russian River Projects Charge in lieu of the property taxes levied on property in Sonoma County and other Agency

general fund monies which are transferred by the Agency to the Agency's Russian River Projects Fund and expended to pay for or partially pay for: (1) carrying out the Agency's Coyote Valley Dam Project and Warm Springs Dam Project channel-stabilization works obligations to the United States Government and the State of California under Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution No DR68485 adopted December 23, 1980; (2) securing and defending appropriative water rights which are necessary for the realization of the full benefits of the Coyote Valley Dam and Warm Springs Dam Projects; (3) the Agency's share of the United States Government's investment, operation and maintenance costs associated with the Coyote Valley Dam and Warm Springs Dam Projects; (4) the acquisition of all or part of the Potter Valley Project, or contributions made to the Project owner to insure the continued operation of all or part of the Project; and (5) fishery mitigation and enhancement projects undertaken by the Agency in the Russian River and Eel River and their tributaries. The Russian River Projects Charge shall be determined by dividing the total amount of Agency monies expended from the Agency's Russian River Projects Fund in the preceding ten fiscal years, exclusive of the funds contributed to the Fund by Marin and North Marin Water Districts and interest earnings attributable to funds contributed by Marin and North Marin Water District, by the sum of the total acre-feet of water delivered by the Agency to the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa, and Sonoma, the Forestville County Water District, and the Valley of the Moon Water District pursuant to Section 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the preceding ten

fiscal years and multiplying the quotient by the ratio that the assessed value of secured and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District, and the Valley of the Moon Water District bears to the assessed value of all secured and unsecured property within Sonoma County, provided, however, in no event shall the Russian River Projects Charge exceed $20.00 per acre-foot. Agency shall keep proper books, records and accounts in which complete and accurate entries shall be made of all Agency general fund monies transferred to the Agency's Russian River Projects Fund and all expenditures made from the fund for the purposes described in this paragraph. The Agency shall maintain a separate account within the Russian River Projects Fund for monies contributed by Marin and North Marin Water District. Monies expended from the Russian River Projects Fund shall be deemed to have been expended from the Marin and North Marin Water District account in the proportion that the balance of the account bears to the total Russian River Projects Fund balance at the end of the fiscal year quarter preceding the expenditure.

c. All money received by the Agency from the Russian River Conservation Charge and the Russian River Projects Charge on water sold to Marin shall be credited to the Agency's Russian River Projects Fund and shall be used only for the purposes set forth in Paragraph (b) of this section.

6. The annual quantity of water provided to Marin by Agency pursuant to this Offpeak Agreement shall be in addition to the annual quantity of water provided to Marin by Agency pursuant to the Sale of Water Agreement.

7. This Offpeak Agreement supersedes the Third Amended Offpeak Water Supply Agreement between Marin and Agency. This Offpeak Agreement shall be effective on July 1, 2015 and shall remain in effect until June 30, 2025. Upon the request of Marin, Agency agrees to enter into renewal agreements for periods not to exceed the then-existing term of the Restructured Agreement for Water Supply or any renewals, amendments or replacement agreements to the Restructured Agreement for Water Supply upon the same terms and conditions contained in this Offpeak Agreement, except that the Agency may make reasonable adjustments to the charges under Section 5 of this Offpeak Agreement, and any such reasonable adjustments then shall be included in any renewal agreement. If the Restructured Agreement for Water Supply has been terminated or has expired without being renewed, amended or replaced by another agreement pertaining to water supply, then upon the request of Marin, the Agency shall enter into renewal agreements for periods not to exceed forty (40) years upon the same terms and conditions contained in this Offpeak Agreement, except that the Agency may make reasonable adjustments to the charges under Section 5 of this Offpeak Agreement and any such reasonable adjustment then shall be included in any renewal agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date hereinabove first written.

ATTEST:

Board Secretary

MARIN MUNICIPAL WATER DISTRICT

By:

John C. Gibson, President
Board of Directors

Reviewed As To Substance By
Marin Municipal Water District

Krishna Kumar
General Manager

Reviewed As To Form:

Mary R. Casey
General Counsel

ATTEST:

Deputy Clerk of the
Board of Directors

SONOMA COUNTY WATER AGENCY

By: _____
Chair, Board of Directors

DATE: 6/16/15

Reviewed As To Substance By
Sonoma County Water Agency:

Grant Davis, General Manager

Reviewed As To Form:

Steven S. Shupe
Deputy County Counsel

Exhibit B

Amendments to Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District

SECOND AMENDED AGREEMENT FOR THE SALE OF WATER BETWEEN THE SONOMA COUNTY WATER AGENCY AND THE MARIN MUNICIPAL WATER DISTRICT

This agreement is made this 22nd day of October, 1991, and is amended and effective this July 1, 2015, by and between the Sonoma County Water Agency, hereinafter called "Agency," and the Marin Municipal Water District, hereinafter called "District" hereinafter ("Water Sale Agreement.")

RECITALS

A. District operates a municipal water system to supply water to customers within its boundaries. District's water system is supplied by water from reservoirs owned and operated by District, and by water purchased from Agency pursuant to Fourth Amended Offpeak Water Supply Agreement ("Offpeak Agreement") and this Water Sale Agreement.

B. District and Agency now wish to revise this Water Sale Agreement to accommodate the Agency's effort to attempt to ensure a continuation of the Pacific Gas and Electric Company's historic diversions of Eel River water to the Russian River and to increase the reliability of the water supply deliverable to District.

C. The Coyote Valley Project was authorized by the Flood Control Act of 1950 (Pub. L. No. 81-516), and was completed by the U. S. Army Corps of Engineers in 1958. This project includes Lake Mendocino, which has a capacity of 122,500 acre-feet, of which 70,000 acre-feet is allocated to storage for water supply.

D. In 1955, Agency (then called the "Sonoma County Flood Control and Water Conservation District") sold general obligation bonds to raise $5,650,000, which it then paid to the United States for the reimbursable costs of the water-storage element of the Coyote Valley Project. Parts of the property taxes paid since 1955 by the taxpayers of Sonoma County have been used to make payments on these bonds.

E. The Warm Springs Dam Project was authorized by the Flood Control Act of 1962 (Pub. L. No. 87-874), and was completed by the United States Army Corps of Engineers in 1984. This project includes Lake Sonoma, which has a capacity of 381,000 acre-feet, of which 212,000 acre-feet is allocated to storage for water supply.

F. Agency contracted with the United States to make annual payments to the United States for portions of the construction, operation, maintenance, major-replacement and major-rehabilitation costs of the Warm Springs Dam Project. Parts of the property taxes paid since 1971 by the taxpayers of Sonoma County have been paid into a sinking fund that was established to fund Agency's payment obligations to the United States for this project. Parts of the property taxes that will be paid in the future by the taxpayers of Sonoma County will likewise be paid into this sinking fund.

G. Pursuant to the Restructured Agreement for Water Supply, the North Marin Water District has paid Agency a Russian River Conservation Charge. Pursuant to the Offpeak Water Supply Agreement and its two amendments, District also has paid Agency a Russian River Conservation Charge. The proceeds of these payments were in the past paid into the sinking fund described in the preceding paragraph.

H. Agency currently utilizes the Transmission System to supply water to the Water Contractors and some of Agency's Other Customers and Contractors pursuant to the Restructured Agreement for Water Supply and other agreements. Payments made by the Water Contractors pursuant to the Restructured Agreement for Water Supply were and are being used to fund payments on the bonds sold to finance the construction of parts of the Transmission System and to fund directly the construction of other parts of the Transmission System.

I. Some of Agency's Other Customers and Contractors divert water purchased from Agency directly from the Russian River.

J. Agency holds Permits 12947A, 12949, 12950 and 16596, which were issued by the State Water Resources Control Board and its predecessors pursuant to Applications 12919A, 12920A, 15736, 15737 and 19351. These permits authorize Agency to divert Russian River water, and to redivert water previously stored in Lake Mendocino and Lake Sonoma, subject to specified terms and conditions.

K. On July 3, 1975, Agency and District entered into an agreement entitled, "Offpeak Water Supply Agreement." Agency and

District amended that agreement on August 28, 1984, May 3, 1988, January 25, 1995, and June 27, 2014. That agreement, now entitled "Fourth - Amended Offpeak Water Supply Agreement" and referred to herein as the "Offpeak Agreement" provides for Agency to deliver up to 4,300 acre-feet of water per year pursuant to Permits 12947A, 12949, 12950 and 16596, subject to specified terms and conditions.

L. In June 1980, Agency certified its final environmental impact report on Proposed Amendments of Permits on Applications 12919A, 15736, 15737 and 19351. In July 1984, Agency certified its supplemental environmental impact report covering Proposed Coordinated Use of the Water Supply of Lake Mendocino and Lake Sonoma, Russian River Project. On November 14, 1990, District certified its Water Supply Plan Program Final Environmental Impact Report. On September 24, 1991, District certified its Water Supply Project Final Environmental Impact Report. These reports together satisfy the environmental-impact-report requirements of the California Environmental Quality Act for this Water Sale Agreement.

M. Agency's January 1991 "Urban Water Management Plan" concluded that Agency's direct-diversion rights and its share of the Coyote Valley and Warm Springs Dam Projects together will have yield sufficient to supply District with additional water according to the terms of this Water Sale Agreement.

N. Agency has the capacity to produce water from groundwater wells and intends, if authorized by an amendment to the Restructured Agreement for Water Supply, to develop additional emergency groundwater wells, aquifer storage and recovery wells or other offstream

water-production facilities, to improve the reliability of the delivery capacity of the Transmission System.

O. At the present time and under normal circumstances, the Transmission System has excess capacity that may be used by Agency to supply District with water pursuant to this Water Sale Agreement. In order for the Transmission System in the future to continue to have such excess capacity under normal circumstances, Agency will need to construct elements of a new aqueduct from the Russian River to the Ely Pumping Plant, roughly paralleling portions of the existing Cotati Intertie and Petaluma Aqueduct, at an earlier date than would be necessary absent this Water Sale Agreement, and Agency will need to construct a new aqueduct from the Ely Pumping Plant to Kastania Reservoir, roughly paralleling portions of the existing Petaluma Aqueduct, which would not be necessary absent this Water Sale Agreement.

P. Agency and District entered into a Supplemental Water Supply Agreement dated January 25, 1996, which amended and incorporated two agreements between the Agency and MMWD that are attached as exhibits to the Supplemental Water Supply Agreement, the Third Amended Offpeak Water Supply Agreement and the Amended Agreement for the Sale of Water between the Sonoma County Water Agency and Marin Municipal Water District. The Amended Agreement for the Sale of Water by its terms remain in effect until June 30, 2015 as provided in the Amendment To and Temporary Extension of the Supplemental Water Supply Agreement between MMWD and the Agency dated June 27, 2014.

Q. District has requested that the Third Amended Offpeak Water Supply Agreement be renewed. Agency is willing to sell water to District,

and District is willing to purchase such water from Agency, pursuant to the terms and conditions of this Water Sale Agreement.

NOW, THEREFORE, in consideration of these recitals and the mutual promises made herein, Agency and District agree as follows:

Section 1. Definitions.

When used in this Water Sale Agreement, unless otherwise distinctly expressed or manifestly incompatible with the intent of this Water Sale Agreement, the following terms shall have the following meanings:

a. "Restructured Agreement for Water Supply" means the agreement between Agency and the Water Contractors entitled Restructured Agreement for Water Supply, executed on June 25, 2006.

b. "Fiscal Year" means each year that begins on July 1 and ends on the following June 30.

c. "Maximum Delivery Limit" means the maximum amount of water that Agency is required to deliver and that District may take pursuant to this Water Sale Agreement in any Fiscal Year, and which is described in Section 4 of this Water Sale Agreement.

d. "Other Customers and Contractors" means the North Marin Water District and all present and future Agency customers within Sonoma County, including all entities within Sonoma County that receive or will receive water from the Transmission System or other water conveyance facilities, and all entities within Sonoma County that divert or will divert water purchased from Agency directly from the Russian River or Dry Creek.

e. "Permits 12947A, 12949, 12950 and 16596" mean water rights permits 12947A, 12949, 12950 and 16596, which the State Water Resources Control Board and its predecessors issued to Agency pursuant

to Applications 12919A and 12920A, 15736, 15737 and 19351, as such permits now exist or in the future may exist (including any licenses that may be issued to replace these permits).

f. "Prudent Storage Reserve" means a quantity of water in storage in Lake Sonoma, Lake Mendocino and Lake Pillsbury sufficient to assure both that the level of Lake Sonoma would not drop below 292 feet and the level of Lake Mendocino would not drop below 685 feet, with reference to the National Geodetic Vertical Datum of 1929, during the fall of the calendar year following the calendar year in which the determination of availability is made under Section 7 of this Water Sale Agreement, if the most severe hydrologic period of record were to recur.

g. "Russian River Conservation Charge" means the charge that District pays and will pay Agency in lieu of the property taxes levied by the Agency on property in Sonoma County to pay the capital, operation and maintenance costs associated with the Warm Springs Dam Project, and which is described In Section 10 of this Water Sale Agreement.

h. "Russian River Projects Charge" means the charge which is described in Section 10 of this Water Sale Agreement that the District will pay Agency in lieu of the property taxes levied on property in Sonoma County and other Agency general fund monies which are transferred by the Agency to the Agency's Russian River Projects Fund and expended to pay for or partially pay for: (1) carrying out the Agency's Coyote Valley Dam Project and Warm Springs Dam Project channel-stabilization works obligations to the United States Government and the State of California under Agency Board of Directors Resolutions No. 6847 adopted May 24, 1955, No. 7798 adopted September 27, 1955, No. DR00793-1 adopted September 25, 1961 and Resolution

No. DR68485 adopted December 23, 1980; (2) securing and defending appropriative water rights which are necessary for the realization of the full benefits of the Coyote Valley Dam and Warm Springs Dam Projects; (3) the Agency's share of the United States Government's investment, operation and maintenance costs associated with the Coyote Valley Dam and Warm Springs Dam Projects; (4) the acquisition of all or part of the Potter Valley Project, or contributions made to the Project owner to insure the continued operation of all or part of the Project; and (5) fishery mitigation and enhancement projects undertaken by the Agency in the Russian River and Eel River and their tributaries.

i. "Offpeak Agreement" means the July 1, 2015 agreement between Agency and District that is described in recital K of this Water Sale Agreement.

j. "Transmission System" means the water-supply facilities financed and constructed pursuant to the Restructured Agreement for Water Supply and its predecessor agreements, including the remaining features of the Russian River-Cotati Intertie authorized by the Restructured Agreement for Water Supply but not yet constructed.

k. "Water Contractors" means the Cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Town of Windsor, the Valley of the Moon Water District, and the North Marin Water District.

Section 2. Agency Deliveries of Water to District.

Subject to all of the terms and conditions of this Water Sale Agreement, and subject to all relevant present and future provisions of the Restructured Agreement for Water Supply, District may purchase water from Agency pursuant to this Water Sale Agreement in any Fiscal Year in an

amount not to exceed either 10,000 acre-feet or the District's Maximum Delivery Limit for that Fiscal Year. Upon request by District and subject to all of the terms of this Water Sale Agreement, Agency shall make such water available to District at Agency's Kastania Reservoir at delivery rates specified by District, but not to exceed rates calculated by dividing the District's Maximum Delivery Limit by 10,000 acre feet and multiplying this quotient by the following amounts: (a) 9 million gallons per day between May 1 and October 31 of each year; (b) 12 million gallons per day during the months of April and November of each year; and (c) 15 million gallons per day during all other times.

To the extent permissible under the Offpeak Agreement, the first 360 acre-feet of water received by District from Agency in any month shall be accounted for as being received pursuant to that agreement.

District may not receive any water pursuant to this Water Sale Agreement in any month unless or until one of the following two events has occurred: (1) District already has received in that month at least 360 acre-feet pursuant to the Offpeak Agreement; or (2) District already has received in that Fiscal Year the maximum amount of water that it may receive pursuant to that Offpeak Agreement.

Section 3. Meter, Connections and Delivery.

Agency will install a turnout, a meter, and appropriate appurtenances at its Kastania Reservoir so that the water delivered to District pursuant to this Water Sale Agreement may be accurately measured and delivered to District's water system. District shall take delivery of water purchased from Agency pursuant to this Water Sale Agreement immediately after the water has passed through this meter.

After installation of this turnout, meter and appurtenances, Agency shall bill District for their cost. District shall pay Agency the amount of this bill within 30 days after receipt of the bill.

Agency shall keep accurate records of the amounts of water delivered to District at this meter, and shall allow District to inspect these records during regular business hours.

Section 4. Maximum Delivery Limit.

a. In the Fiscal Year commencing July 1, 1995, District's Maximum Delivery Limit shall be 5,000 acre-feet. If District takes delivery of, or makes payments in lieu of delivery pursuant to Section 5 of this Water Sale Agreement for, at least 90 percent of the Maximum Delivery Limit in any Fiscal Year, then its Maximum Delivery Limit for the following Fiscal Year shall be increased by 1,000 acre-feet, but never to exceed 10,000 acre-feet.

b. Beginning with the Fiscal Year immediately following District's completion of transmission facilities sufficient to take delivery of at least 5,000 acre-feet of water pursuant to this Water Sale Agreement, or with the July 1, 1996 to June 30, 1997 Fiscal Year, whichever occurs first, if District does not take delivery pursuant to this Water Sale Agreement of, or make payments in lieu of delivery for, at least 90 percent of its Maximum Delivery Limit in any Fiscal Year, then District's Maximum Delivery Limit for the following Fiscal Year shall be decreased by 1,000 acre-feet, except:

The Maximum Delivery Limit shall not decrease for the Fiscal Year following any Fiscal Year in which District requests delivery of at least 90 percent of the Maximum Delivery Limit and either (1) Agency determines,

pursuant to Section 7 of this Water Sale Agreement, that less than 90 percent of the Maximum Delivery Limit is available; or (2) Agency determines pursuant to Section 9 of this Water Sale Agreement that Transmission System capacity will not be available to deliver District pursuant to this Water Sale Agreement at least 90 percent of the Maximum Delivery Limit.

Section 5. Payments In Lieu of Delivery.

District may elect to make payments to Agency in lieu of delivery to prevent any reduction of District's Maximum Delivery Limit for the following Fiscal Year.

Within 10 days after the end of any month in which District makes such an election, it shall notify Agency in writing of the number of acre-feet for which District elects to make payments in lieu of delivery. The total of this number of acre-feet plus the number of acre-feet of water actually delivered during the month pursuant to this Water Sale Agreement shall not exceed the volume equal to the number of days in the month times the applicable maximum daily delivery limit specified in Section 2 of this Water Sale Agreement. If at the end of May of any fiscal year District has not taken delivery pursuant to this Water Sale Agreement of at least 172 acre-feet of water during the fiscal year, District shall be deemed to have elected to make a payment in lieu of delivery during the month of May for the difference between 172 acre-feet and the amount of water for which delivery already has been taken, or for which payments in lieu of delivery already have been made, pursuant to this Water Sale Agreement. If at the end of June of any fiscal year District has not taken delivery pursuant to this Water Sale Agreement of at least 1000 acre-feet of water during the fiscal year, District

shall be deemed to have elected to make a payment in lieu of delivery during the month of June for the difference between 1000 acre-feet and the amount of water for which delivery already has been taken or payments in lieu of delivery already have been made, pursuant to this Water Sale Agreement.

After receipt of such notice from District, and in instances when District shall be deemed to have elected to make payments in lieu of deliveries, Agency shall bill District for the appropriate number of acre-feet at the rate determined pursuant to Section 10 of this Water Sale Agreement, less Agency's estimated average, system wide per-acre-foot costs (as calculated by Agency) for the energy and chemicals necessary to operate the Transmission system during the preceding month. When the actual average, system wide per-acre-foot costs (as calculated by Agency) for the energy and chemicals necessary to operate the Transmission System during any month in which District has elected to make payments in lieu of delivery are known, Agency shall make an appropriate adjustment to the amount previously billed to District pursuant to this section, and credit or debit the District for the adjustment.

District shall pay the amount of each bill made pursuant to this section within 30 days after receipt of the bill. No such billing or payment shall affect District's obligations to make payments to Agency pursuant to any other section of this Water Sale Agreement.

In calculating District's Maximum Delivery Limit for the following Fiscal Year, Agency shall add to the amount of water that District received pursuant to this Water Sale Agreement during the current Fiscal Year the number of acre-feet for which District made such payments in lieu of delivery during the current Fiscal Year.

Section 6. Annual Request by District.

On or before May 1 of each year, District shall submit a written request to Agency, stating the amount of water that District requests to purchase pursuant to this Water Sale Agreement and the Offpeak Agreement during the following Fiscal Year.

Section 7. Availability.

Except as otherwise provided in Section 8 of this Water Sale Agreement, water shall be deemed to be available for sale by Agency to District pursuant to this Water Sale Agreement if Agency has water in excess of the amounts that it needs to supply all of its Other Customers and Contractors, to meet its obligations under the Offpeak Agreement, to meet its obligations under any contract between Agency and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in existence on October 22, 1991, to meet its obligations to appropriative water rights owners, to meet instream flow requirements, and to maintain a Prudent Storage Reserve, considering hydrologic conditions, Agency's offstream water production capacity, the probable effects of water conservation efforts on water demand and other relevant factors.

On or before March 1 of each year, Agency shall estimate the amount of water that will be available during the next Fiscal Year for sale to District pursuant to this Water Sale Agreement, and advise the District of this estimate. On or before June 1 of each year, Agency shall, to the extent that it can, make a final determination of the amount of water that will be available the next Fiscal Year for sale to District pursuant to this Water Sale Agreement, and advise the District of this amount.

If Agency notifies District pursuant to this section on March 1 of any year that the amount of water that will be available for delivery by Agency to District pursuant to this Water Sale Agreement during the following Fiscal Year will be less than District's Maximum Delivery Limit for that following Fiscal Year, then District may elect in writing to defer until July, August, September or October of the following Fiscal Year delivery of up to one-half of the undelivered water that District otherwise would be entitled to receive pursuant to this Water Sale Agreement during the current Fiscal Year. If District makes such an election, then none of the maximum daily delivery limits specified in Section 2 of this Water Sale Agreement shall be exceeded by the total of all water delivered by Agency to District pursuant to this Water Sale Agreement. If District makes such an election and receives the deferred-delivery water during the following Fiscal Year, then for the purposes of Section 4 of this Water Sale Agreement such water shall be treated as if District had taken delivery of it during the current Fiscal Year.

Section 8. Firm Water Supply.

a. No later than July 31, 1996, District shall pay to the Agency a lump sum representing a share of the Warm Springs Dam sinking fund and principal payments made to the United States Government by Agency for Lake Sonoma water storage space corresponding to 5,000 acre-feet per annum of the 75,000 acre-feet per annum net firm yield of the Warm Springs Dam Project.

b. At any time that is after District has made the payment described in paragraph (a) of this section and prior to July 1, 2005 District shall have the option to pay to the Agency a lump sum representing a share of the Warm Springs Dam sinking fund and principal payments made to the United

States Government by Agency for Lake Sonoma water storage space corresponding to an additional 5,000 acre-feet per annum of the 75,000 acre-feet per annum net firm yield of the Warm Springs Dam Project.

c. The amount of the lump sum payments referred to in paragraphs (a) and (b) of this section shall be determined by the following formula:

$$C = (A + B) \times O / (75{,}000 \text{ acre-feet} - O)$$

In this formula *C* is the lump sum payment representing a share of the Warm Springs sinking fund corresponding to an additional 5,000 acre-feet per annum of the 75,000 acre-feet per annum net firm yield of the Warm Springs Dam Project; *A* is the balance of cash and market value of investments held by the Agency's Warm Springs Dam Sinking fund on the last day of the fiscal year quarter immediately preceding the date of the payment provided for in paragraph (a) or (b) of this section; *B* is the total amount of the principal payments which have been made by the Agency to the United States Government for water storage space in Lake Sonoma as of the date of the payment provided for in paragraph (a) or (b) of this section; and *O* is the 5,000 acre-feet of annual firm water to be made available to MMWD pursuant to paragraphs (a) or (b) of this section.

d. In lieu of the determination of availability provided for in Section 7 of this Water Sale Agreement, Agency shall release water from storage in Lake Mendocino or Lake Sonoma when necessary to make available in the Russian River sufficient water to make deliveries of the first 5,000 acre-feet per annum of water provided for by this Water Sale Agreement, but subject to the provisions of paragraph (f) of this section.

e. If District makes the payment pursuant to paragraph (b) of this section, then in lieu of the determination of availability provided for in Section 7 of this Water Sale Agreement, Agency shall release water from storage in

Lake Mendocino or Lake Sonoma when necessary to make available in the Russian River sufficient water to make the deliveries of all the water provided for by this Water Sale Agreement, but subject to the provisions of paragraph (f) of this section.

f. With respect to the releases provided for in paragraphs (d) and (e) of this section, if by reason of drought or other physical cause or legal impediment beyond the control of the Agency, a shortage in the water available from the Russian River or the Russian River Project occurs, then Agency shall not be liable to District for any damage resulting therefrom. In the event of a shortage of water in the Russian River or the Russian River Project that requires the Agency to apportion available water, Agency shall apportion the available water so that it may make deliveries as follows:

First, Agency shall deliver to each of its regular customers, not in excess of the respective entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, authorize Agency's Russian River customers to divert or redivert not in excess of the amounts for which those customers have contracted to purchase from the Agency, and deliver to District not in excess of the amounts set forth in Section 1 of the Offpeak Agreement, paragraph (d) of this section, and (if District makes the payment pursuant to paragraph (b) of this section) paragraph (e) of this section, the quantities of water required by each for human consumption, sanitation and fire protection, as determined by the Agency after taking into consideration all other sources of potable water then available to said customer;

Second, to the extent additional water is available to the Agency, Agency shall deliver such water to Agency's regular customers, authorize

Agency's Russian River customers to divert or redivert such water, and deliver such water to the District, in proportion to the respective entitlements set forth in Sections 3.1, 3.2 and 3.3 of the Restructured Agreement For Water Supply, or any amendments or successor agreements thereto, the agreements between the Agency and its Russian River customers, Section 1 of the Offpeak Agreement, paragraph (d) of this section and (if District makes the payment pursuant to paragraph (b) of this section) paragraph (e) of this section, provided, however, that no customer shall receive under subdivisions "First" and "Second" hereof a total quantity of water in excess of its reasonable requirements or it's said entitlement or contracted amount, whichever is less.

The terms "regular customers", "Russian River customers" and "water contractors" in this Water Sale Agreement shall have the same meanings that they have in the Restructured Agreement for Water Supply.

Section 9. Delivery Schedule.

Notwithstanding a determination of availability of water pursuant to Section 7 or Section 8 of this Water Sale Agreement, Agency shall be obligated to release water from storage or deliver water to District pursuant to this Water Sale Agreement only to the extent that the Transmission System has capacity in excess of that required by Agency to supply all of its Other Customers and Contractors, and District under the Offpeak Agreement. However, Agency shall not curtail deliveries pursuant to this section because of inadequate capacity in any new Ely-to-Kastania Aqueduct constructed pursuant to Section 13 of this Water Sale Agreement.

On or before June 1 of each year, Agency shall submit a written estimate to District of the capacity of the Transmission System that is

expected to be available to deliver water pursuant to this Water Sale Agreement for each month of the following Fiscal Year. Fifteen days before the first day of each month, District shall notify the Agency of its planned rate of delivery for that month pursuant to this Water Sale Agreement and the Offpeak Agreement. Such notice may be by telephone unless written notice is requested by Agency.

Section 10. Water Charges.

On or before April 30 of each year, Agency shall establish a per-acre-foot water rate applicable to all water delivered pursuant to this Water Sale Agreement for the following Fiscal Year. This rate shall be the sum of the following three per-acre-foot charges:

a. A per acre foot charge equal to the highest rate per acre-foot then charged by the Agency to any party to the Restructured Agreement for Water Supply (or pursuant to any amendment or successor agreement to the Restructured Agreement for Water Supply) for water taken from either the Petaluma Aqueduct or the Santa Rosa Aqueduct, multiplied by 1.11; provided, however, that the 20% surcharge imposed on the Town of Windsor under Section 4.17(a) of the Restructured Agreement shall not be included in determining the highest rate per acre-foot for water taken from the Santa Rosa Aqueduct or Petaluma Aqueduct. Seven and four hundred thirty-two one-thousandths percent (7.432%) of this per-acre-foot charge shall be placed in the Russian River Projects Fund; two and four hundred seventy-seven thousandths percent (2.477%) of this per-acre-foot charge shall be used, at the discretion of the Agency, to pay for the costs of Common Facilities, to pay the Capital Costs of Aqueduct Facilities relating to the Santa Rosa or Petaluma Aqueducts, or to pay

operations and maintenance costs; and the remainder shall be applied pursuant to the Restructured Agreement for Water Supply (or pursuant to any amendment or successor agreement to the Restructured Agreement for Water Supply), with the water delivered to Marin considered to be delivered from the Petaluma Aqueduct.

b. A Russian River Conservation charge which shall be paid in lieu of the property taxes levied by the Agency on property in Sonoma County, to pay the capital, operation and maintenance costs associated with the Warm Springs Dam Project. The Russian River Conservation Charge shall be determined by multiplying the tax rate levied by the Agency in the then current fiscal year to pay the costs associated with the Warm Springs Dam Project times the assessed value of secured and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District, and the Valley of the Moon Water District, and dividing the product by the total number of acre-feet of water delivered to said public agencies pursuant to Section 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the twelve month period ending on March 31.

c. A Russian River Projects Charge which shall be paid in lieu of the property taxes levied on property in Sonoma County and other Agency general fund monies which are transferred to the Agency's Russian River Projects Fund and expended for the purposes enumerated in subsection (h) of Section 1. The Russian River Projects Charge shall be determined by dividing the total amount of Agency monies expended from the Agency's Russian River Projects Fund in the preceding ten fiscal years, exclusive of the funds contributed to the Fund by District and North Marin Water District,

and interest earnings attributable to funds contributed by District and North Marin Water District, by the sum of the total acre-feet of water delivered by the Agency to the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District, and the Valley of the Moon Water District pursuant to Sections 3.1 and 3.3 of the Restructured Agreement for Water Supply, or any amendments or successor agreements thereto, during the preceding ten fiscal years and multiplying the quotient by the ratio that the assessed value of the secure and unsecured property situated within the cities of Cotati, Petaluma, Rohnert Park, Santa Rosa and Sonoma, the Forestville County Water District and the Valley of the Moon Water District bears to the assessed value of all secured and unsecured property within Sonoma County, provided, however, in no event shall the Russian River Projects Charge exceed $20.00 per acre-foot. Agency shall keep proper books, records and accounts in which complete and accurate entries shall be made of all Agency general fund monies transferred to the Agency's Russian River Projects Fund and all expenditures made from the fund for the purposes described in this paragraph. The Agency shall maintain separate account within the Russian River Projects Fund for monies contributed by District and North Marin Water District. Monies expended from the Russian River Projects Fund shall be deemed to have been expended from the District and North Marin Water District account in the proportion that the balance of that account bears to the total Russian River Projects Fund balance at the end of the fiscal year quarter preceding the expenditure.

Agency shall bill District each month for all of these charges, based on the quantity of water delivered to District pursuant to this Water Sale

Agreement during the preceding month. District shall pay the amount of each such billing within 30 days after receipt of the bill.

If in any fiscal year the sum of the total amount of water delivered under this Water Sale Agreement plus the total amount of water for which payments are made in lieu of delivery pursuant to Section 5 of this Water Sale Agreement is less than the total amount of water for which District has made firm water supply payments pursuant to subsections (a) and (b) of Section 8 of this Water Sale Agreement, District shall pay the following additional payments:

d. An additional lump sum payment which shall be determined by multiplying the Russian River Conservation Charge times the difference between the total acre-feet of water for which District has made firm water supply payments pursuant to subsections (a) and (b) Section 8 of this Water Sale Agreement and the sum of the total acre-feet of water delivered under this Water Sale Agreement during the prior fiscal year plus the total acre-feet of water for which payments have been made in lieu of delivery pursuant to Section 5 of this Water Sale Agreement during the prior fiscal year.

e. An additional lump sum payment which shall be determined by multiplying the Russian River Projects Charge times the difference between the total acre-feet of water for which District has made firm water supply payments pursuant subsection (a) and (b) of Section 8 of this Water Sale Agreement and the sum of the total acre-feet of water delivered under this Water Sale Agreement during the prior fiscal year plus the total acre-feet of water for which payments have been made in lieu of delivery pursuant to Section 5 of this Water Sale Agreement during the prior fiscal year.

Agency shall bill District for these additional lump sum payments within 30 days after the end of each fiscal year. District shall pay the amount of each such billing within 30 days after receipt of the bill.

Section 11. Payment.

Notwithstanding any dispute between Agency and District, District shall pay all bills made by Agency pursuant to this Water Sale Agreement when due and shall not withhold all or any part of any amount billed pending the final resolution of such dispute. In the event of a dispute, District may pay its bills under protest, and if necessary under the ultimate resolution of the dispute, Agency shall make an appropriate refund to District, including interest on the overpaid amount at the rate obtained by Agency as a result of investment of the disputed amount. If District does not pay any bill by the due date for such bill, then, in addition to the principal amount due, District also shall pay Agency interest on this principal amount due, calculated from the due date until the payment date at the legal rate per annum established pursuant to Section 685.010 of the Code of Civil Procedure.

Section 12. Acceleration of Construction of New Aqueduct Elements.

If the financing and construction by Agency of a new aqueduct from the Russian River to the Ely Pumping Plant, roughly paralleling portions of the existing Cotati Intertie and Petaluma Aqueduct, is authorized by an amendment to the Restructured Agreement for Water Supply or successor agreement, then Agency shall annually provide District with a copy of its long-range capital improvement program. District may from time to time make written requests to Agency, requesting Agency to construct one or more elements of this new aqueduct at dates earlier than the dates planned

by Agency. If Agency, after considering the availability of funds and other relevant matters, agrees to accelerate the construction of any element or elements of this new aqueduct, then District shall commit in writing to reimburse Agency for the interest revenue foregone, or interest paid by Agency, as the result of such accelerated construction. Upon receipt of such written commitment acceptable to Agency in form and substance, Agency shall construct such element or elements. Agency shall bill District annually at least 30 days in advance of each bill's due date pursuant to such commitment and District shall pay each bill by its due date.

Construction of the new aqueduct elements shall be financed by Agency. Title to all elements of this new aqueduct shall vest with Agency, which shall operate and maintain this new aqueduct as part of the Transmission System. Construction of this new aqueduct shall not change any of the delivery limits, availability provisions or other terms of this Water Sale Agreement.

Section 13. Construction of New Ely-To-Kastania Aqueduct.

If Agency initiates construction of a new aqueduct roughly paralleling the portion of the existing Petaluma Aqueduct that extends from the junction of that aqueduct and the Cotati Intertie to the Ely Pumping Plant, then District may make a written request to Agency, requesting Agency to construct at District's expense an aqueduct roughly paralleling the portion of the existing Petaluma Aqueduct that extends from the Ely Pumping Plant to Kastania Reservoir, with sufficient capacity to meet the maximum delivery limits specified in Section 2 of this Water Sale Agreement and the maximum delivery limit specified in the Offpeak Agreement, taking into account surplus capacity in that portion of the existing Petaluma Aqueduct.

Construction of this new Ely-To-Kastania aqueduct shall be financed by cash deposits and payments from District. Title to this new aqueduct shall vest with Agency, which shall operate and maintain this new aqueduct as part of the Transmission system. Construction of this new aqueduct shall not change any of the delivery limits, availability provisions or other terms of this Water Sale Agreement.

Upon receipt of such a written request from District, Agency shall prepare and deliver to District design plans and a schedule for the construction of this new aqueduct, and a schedule for payment by District to Agency of appropriate deposits and payments for such plans and construction. If District commits in writing to pay such deposits and payments to Agency according to this payment schedule, then Agency shall construct this new aqueduct, and shall bill District for such deposits and payments according to this payment schedule. Agency shall bill District at least 30 days in advance of each bill's due date and District shall pay each bill by its due date.

Section 14. Place of Use.

Water received by District pursuant to this Water Sale Agreement and the Offpeak Agreement shall only be used within the sphere of influence (as such term is defined in Section 56076 of the Government Code) of the District on [insert effective date].

Section 15. Water Conservation.

District and Agency will comply with all applicable state laws related to water conservation planning and implementation, including the Urban Water Management Planning Act, Water Code Sections 10610-10655 (as such act now exists or in the future may exist). Whenever District files any urban water management plan, or any amendment or change to such a plan, with the Department of Water Resources or any other state agency, District shall, upon request from Agency, at the same time submit a copy of the plan amendment or change to Agency. Whenever Agency files any urban water management plan, or any amendment or change to such a plan, with the Department of Water Resources or any other state agency, Agency shall, upon request from District, at the same time submit a copy of the plan, amendment or change to District.

Section 16. California Environmental Quality Act.

Pursuant to Section 15051(d) of the State CEQA Guidelines, District is designated as the lead agency under the California Environmental Quality Act for the execution of this Water Sale Agreement, and for any projects south of Kastania Reservoir that District may construct to implement this Water Sale Agreement. Agency is designated as the lead agency for any projects north of Kastania Reservoir that Agency may construct to implement this Water Sale Agreement.

Section 17. Future Agency Application to Increase Limit on Diversions and Rediversions in Permit 16596.

District acknowledges that the 75,000 acre foot per year limit on diversions and rediversions in term 5 of Permit 16596 does not allow

Agency to utilize the entire yield of the Warm Springs Dam Project, and that Agency intends to file in the future an application with the State Water Resources Control Board to increase this limit. District recognizes and agrees that it will be in the public interest for the State Board to grant any such application.

Section 18. Effective Date, Term and Termination.

This Water Sale Agreement shall be effective July 1, 2015 and shall remain in effect until June 30, 2025. Upon the request of District, Agency shall enter into renewal agreements for periods not to exceed the then-existing term of the Restructured Agreement for Water Supply or any renewals, amendments or replacement agreements to the Restructured Agreement for Water Supply upon the same terms and conditions contained in this Water Sale Agreement, except that the Agency may make reasonable adjustments to the charges under Section 10 of this Water Sale Agreement, and any such reasonable adjustments then shall be included in any renewal agreement. If the Restructured Agreement for Water Supply has been terminated or has expired without being renewed, amended or replaced by another agreement pertaining to water supply, then upon the request of District, the Agency shall enter into renewal agreements for periods not to exceed forty (40) years upon the same terms and conditions contained in this Water Sale Agreement, except that the Agency may make reasonable adjustments to the charges under Section 10 of this Water Sale Agreement and any such reasonable adjustment then shall be included in any renewal agreement.

Section 19. Merger.

This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and conditions and as a complete and exclusive statement of the terms of the Water Sale Agreement. Pursuant to Code of Civil Procedure Section 1856, no modification of the Water Sale Agreement shall be effective unless and until such modification is evidenced by a writing signed by all parties.

Section 20. Equitable Remedies.

Because water is a scarce and precious resource, District will not have an adequate remedy at law, and thus may request a court of competent jurisdiction to order equitable remedies, to compel Agency to deliver the water that District is entitled to receive pursuant to this Water Sale Agreement. Such equitable remedies shall be District's sole and exclusive remedies in actions brought by District relating to the amounts of water that Agency must deliver to District pursuant to this Water Sale Agreement.

Section 21. Waiver and Indemnification.

District waives, releases and forever discharges Agency, its officers, agents and employees from any and all liabilities, claims, demands, losses and costs relating to any of the following: (1) any property damage or personal injury arising from any non-delivery of water requested by District pursuant to this Water Sale Agreement, or for any property damage or personal injury arising from the quality of water delivered pursuant to this Water Sale Agreement, if such property damage or personal injury is caused by lack of available capacity in the Transmission System, drought, earthquake or other Act of God, strike or other labor dispute, partial or total

dam, gate or tunnel loss, dam, gate or tunnel repairs, water pollution, or any factor beyond the control of Agency (whether or not such factor is listed in this sentence); and (2) any property damage or personal injury arising from any decision of Agency or the Water Contractors regarding:
(a) determinations of the availability of water for sale by Agency to District pursuant to this Water Sale Agreement; (b) allocation of Transmission System capacity; (c) proposed expansions of the Transmission System; or (d) repair (or non-repair) of the Potter Valley Project, Coyote Valley Dam or Warm Springs Dam. District's waiver, release and discharge described in this paragraph shall apply to any of the property damages or personal injuries described in this paragraph, whether or not such property damages or personal injuries were caused by Agency's negligence, unless such property damages or personal injuries resulted from Agency's sole negligence, willful misconduct or violation of law.

District shall indemnify, hold harmless, protect and defend Agency, its officers, agents and employees from and against any and all liabilities, claims, demands, damages, losses, disabilities or expenses (including attorney fees and litigation costs) of every nature arising out of, or in connection with: (1) the lack of quantity of water that has been delivered by Agency to District pursuant to this Water Sale Agreement; or (2) the control, conveyance and disposition of water that has been delivered by Agency to District pursuant to this Water Sale Agreement. For the purposes of this section, the point of delivery shall be as specified in Section 3 of this Water Sale Agreement. District shall provide such indemnification, holding harmless, protection and defense whether or not such liabilities, claims, demands, damages, losses, disabilities or expenses are based on Agency's negligence, unless such liabilities, claims,

demands, damages, losses, disabilities or expenses are based on Agency's sole negligence, willful misconduct or violation of law.

This section shall not apply to any construction activities, or construction contracts, relating to the construction described in Section 13 of this Water Sale Agreement. The provisions in this section regarding attorney fees shall not apply to any other section of this Water Sale Agreement.

Section 22. Water Quality.

Water delivered by Agency to District pursuant to this Water Sale Agreement shall be of the same general quality as water delivered by Agency from the Transmission System to the Water Contractors. Except as expressly stated in the preceding sentence, Agency does not make any express or implied warranty regarding the quality of the water delivered pursuant to this Water Sale Agreement.

Section 23. No Effect on Offpeak Agreement.

Except as stated in Section 14 of this Water Sale Agreement, nothing in this Water Sale Agreement shall be construed as affecting or amending the Offpeak Agreement.

Section 24. Method and Place of Giving Notice and Making Payments.

All notices shall be in writing and notices and payments may be given by personal delivery or by mail. Notices and payments sent by mail shall be addressed as follows;

Agency: General Manager
Sonoma County Water Agency
404 Aviation Boulevard
Santa Rosa, CA 95403

District: General Manager
Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925

When so addressed, a notice shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to who notices and payments are to be given by giving notice pursuant to this section.

Section 25. Demand for Assurance.

When reasonable grounds for insecurity arise with respect to the performance of either party, the other party may, in writing, demand adequate assurance of due performance and, until it receives such assurance, may, if commercially reasonable, suspend any performance for which the agreed return performance has not been received. "Commercially reasonable" includes not only the conduct of either party with respect to performance under this Water Sale Agreement, but also conduct with respect to other agreements with the other party to this Water Sale Agreement or others. After receipt of a justified demand, the failure to provide within a reasonable time, but not exceeding 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this Water Sale Agreement. Acceptance of any improper delivery, service, or payment does not

prejudice the aggrieved party's right to demand adequate assurance of future performance.

Section 26. Third Party Beneficiaries.

No third party beneficiaries are intended or established by this Water Sale Agreement.

Section 27. Representation by Counsel.

Agency and District each was represented by independent counsel in the negotiation and execution of this Water Sale Agreement. For the purposes of interpretation of this Water Sale Agreement, neither party shall be deemed to have been the drafter of this Water Sale Agreement.

ATTEST:

Board Secretary

MARIN MUNICIPAL WATER DISTRICT

By: John C. Gibson

John C. Gibson, President
Board of Directors

Reviewed as to Substance
Marin Municipal Water District

Krishna Kumar
General Manager

Reviewed As To Form:

Mary R. Casey
General Counsel

ATTEST:

Deputy Clerk of the
Board of Directors

SONOMA COUNTY WATER AGENCY

By: _____
Chair, Board of Directors

DATE: 6/16/15

Reviewed As To Substance By
Sonoma County Water Agency:

Grant Davis, General Manager

Reviewed As To Form:

Steven S. Shupe
Deputy County Counsel

Appendix F: District Board Policy No. 2

MARIN MUNICIPAL WATER DISTRICT

BOARD POLICY

No.: 2

DATE: Original 4/26/78
Revised 10/31/90
Revised 2/23/94
Revised 5/21/97
Revised 10/01/13

SUBJECT: RECYCLED WATER

The Marin Municipal Water District's recycled water program annually delivers 600 acre-feet of water to over 320 sites. The Recycled Water Program began in 1981 with construction of the District's 1 million gallon per day (mgd) Las Gallinas Valley Recycled Water Facility (Facility). The District increased the Facility's capacity in 1989 to 2 mgd. The Facility is owned and operated by the District and produces tertiary recycled water that meets the most stringent requirements of California Title 22. The District's recycled water customers primarily use recycled water for irrigation, however, the District also has customers that use recycled water for cooling towers, a commercial laundry, washing cars and toilet flushing.

The Marin Municipal Water District wishes to encourage the maximum use of recycled for all beneficial uses. The development and operation of recycled water facilities is consistent with the goals of the Marin Countywide Plan, and is determined to be compatible with the development of other water sources and the operation of a potable water system.

The following are offered to show the extent to which the District supports the continued development of recycled water:

1. The Marin Municipal Water District recognizes recycled water as an additional water source and an integral part of its water supply.

2. The District will from time to time determine the points, quantities, and rates of flow at which it will deliver recycled water for use by its customers. These determinations shall be made solely by the District on the basis of availability of dependable supply of recycled water, the feasibility of the distribution thereof to the point of delivery, and the water requirements of the customer.

3. At the District's discretion, certain areas in and around a water recycling facility may be designated as "recycled water use areas" which may require, as a condition of water service, the use of recycled water for irrigation, indoor water use, and other types of non-potable use.

4. The District shall continue to review, develop and pursue opportunities for expanding its recycled water program, and to support efforts to safely broaden the use of recycled water.

Appendix G: Water Shortage Contingency Plan

Water Shortage Contingency Plan
Marin Municipal Water District

January 2024

TABLE OF CONTENTS

1 INTRODUCTION 3
2 WATER SUPPLY RELIABILITY ANALYSIS 3
3 PRIOR DROUGHT ACTIONS 4
4 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES 5
5 WATER SHORTAGE LEVELS 8
6 SHORTAGE RESPONSE ACTIONS 10
6.1 Prohibitions on End Users 10
6.2 Variances to Dry Period Regulations 16
6.3 District Actions 17
6.4 Penalties, Charges, and Other Enforcement of Prohibitions 20
6.5 Defining Water Features 21
6.6 Supply Augmentation 21
6.7 Shortage Response Action Effectiveness 22
7 CATASTROPHIC SUPPLY INTERRUPTION 22
7.1 Seismic Risk Assessment 23
8 COMMUNICATION PROTOCOLS 24
9 COMPLIANCE AND ENFORCEMENT 26
10 LEGAL AUTHORITIES 26
11 FINANCIAL CONSEQUENCES OF WSCP 27
12 MONITORING AND REPORTING 27
13 WSCP REFINEMENT PROCEDURES 28
14 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY 28

TABLES

Table 4-1 Annual Supply-Demand Assessment Procedures Decision-Making Timeline

Table 5-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Table 6-2 Supply Augmentation and Other Actions (DWR Table 8-3)

ATTACHMENTS

Attachment 1. Sonoma County Water Agency Annual Water Supply and Demand Assessment Procedures
Attachment 2. Water Shortage Contingency Plan Resolution
Attachment 3. Water Shortage Response Actions: Prohibitions on End Users and District Actions
Attachment 4. Water Waste Prohibitions in Effect at All Times

1 INTRODUCTION

Marin Municipal Water District's (MMWD's or District's) Water Shortage Contingency Plan (WSCP) has been developed to serve as a flexible framework of planned response measures to mitigate future water supply shortages. This WSCP builds upon and supersedes the WSCP that was presented in the 2020 Urban Water Management Plan (UWMP). The WSCP includes the stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that the District has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The WSCP also includes procedures to conduct an annual assessment of water supply and demand in order to determine whether water shortage conditions are likely to exist in the forthcoming year, and to proactively begin the process of implementing WSCP stages of action, as appropriate.
This WSCP has been prepared in accordance with California Water Code (CWC) § 10640 and CWC § 10632 of the UWMP Act. The information presented in the respective WSCP sections and the associated text and tables are collectively intended to fulfill the requirements of that sub-section of the UWMP Act.

2 WATER SUPPLY RELIABILITY ANALYSIS

Assessment of water supply reliability is dependent upon a number of factors, such as: the sources of water, regulatory and legal constraints, hydrological and environmental conditions, projected climate change impacts, and expected growth, among others. Based on historical data, water supply modeling, projections of future water uses, imported water, and recycled water availability, an assessment was conducted for determining the reliability of future water supply. Based on the service reliability analysis completed as part of the 2020 UWMP, the District is expected to have adequate water supplies during normal years, single dry years, and multiple dry years to meet projected demands through 2045.

A Drought Risk Assessment was also conducted during the 2020 UWMP water supply reliability assessment, which evaluates the effects on available water supply sources of an assumed five-year drought commencing the year after the assessment is completed (i.e., from 2021 through 2025). Based on the Drought Risk Assessment, the District is expected to have sufficient water supply from 2021 to 2025 in this multi-year drought scenario, although, as described in this WSCP, there are a number of actions that the District will implement to reduce demands and further ensure supply reliability at various levels of water shortage.

However, contrary to the foregoing assessments of water supply, the District recently experienced two very dry years (2020 and 2021) that resulted in historically low reservoir storage levels to the point the where District was projected to runout of water in less than a year. Reservoir levels were replenished by a 100 year rain event in October 2021 and an atmospheric river in December 2021. Since that time the District has revised the analysis to include more severe drought conditions and concluded that additional water supply is needed to assure adequate water supply during extreme drought conditions.

3 PRIOR DROUGHT ACTIONS

The District has historically developed different strategies for reducing water demand during water shortages. The District's actions in response to the drought that occurred in California between 2014 and 2017 and the recent severe drought of 2021 are discussed below.

On 1 April 2015, Governor Brown issued the fourth in a series of Executive Orders regarding actions necessary to address California's severe drought conditions. Executive Order B-29-15 directed the State Water Resources Control Board (SWRCB) to impose the first ever mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage through February 2016. The Executive Order also required commercial, industrial, and institutional (CII) users to implement water efficiency measures, prohibited irrigation with potable water of ornamental turf in public street medians, and prohibited irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray systems, along with numerous other directives.

On 5 May 2015, the SWRCB adopted Resolution 2015-0032 that mandated minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation savings goal to each water supplier based on a measurement of their residential water use in gallons per capita per day (R-GPCD). The Office of Administrative Law approved the regulations and modified the CWC on 18 May 2015. On 2 February 2016, the SWRCB voted to extend the emergency regulations until October 2016 with some modifications. On 9 May 2016, the Governor issued Executive Order B-37-16, which directed the SWRCB to extend the emergency regulations through the end of January 2017 as well as make certain water use restrictions permanent. On 18 May 2016, the SWRCB adopted Resolution 2016-0029 that adjusted the water conservation savings goal and replaced the February 2016 emergency regulation. The SWRCB may take separate action to make some of the requirements of the regulations permanent in response to the Executive Order.

The mandatory conservation standards included in CWC § 865(c) ranged from 8% for suppliers with an R-GPCD below 65 R-GPCD, up to 36% for suppliers with an R-GPCD of greater than 215 GPCD. As with previous emergency drought regulations adopted by the SWRCB in 2014, the new water conservation regulation was primarily intended to reduce outdoor urban water use. Based on their R-GPCD, the District was required to reduce water use by 20% relative to its 2013 water use.

Through enactment of its WSCP, the District surpassed these reduction targets. During the June 2015 through May 2016 compliance period, the District surpassed its water use reduction target with a cumulative savings of 21% relative to its 2013 use. In June 2016, the District adopted its 2015 UWMP and associated WSCP update. In April 2017, Governor Brown ended the drought State of Emergency.

More recently in April of 2021, the District declared a water shortage emergency pursuant to California Water Code sections 350 and 71640, and the County of Marin declared a drought emergency in May 2021. Also in May 2021 Governor Newsom declared a drought emergency in certain areas of the state, and later that year extended the drought emergency to the entire state of California. The state is currently seeking 15% reductions in water use across the state.

4 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Each year the District will conduct an Annual Water Supply and Demand Assessment (AWSDA) to identify whether there is likely to be a water shortage condition in the following year. Because a substantial portion of the District's potable water supply is from SCWA, the evaluation of SCWA supplies for a particular year will be based on information provided by SCWA.
For purposes of this assessment, a water shortage condition is defined as an anticipated shortfall of 20%, corresponding to Water Shortage Level 2. Each element of the AWSDA is described below, along with the key data inputs and methodologies for determining these elements, and expected timing of the decision process.

1. Evaluation Criteria

   The evaluation criteria that will be used to identify whether the District is likely to experience a water shortage in the coming year include:

   - **SCWA Available Supply –** SCWA will develop and present the draft annual assessment to the Technical Advisory Committee (TAC) at the April meeting. The final annual assessment will be presented in the June TAC meeting. The District is a member of the TAC and the Water Advisory Committee (WAC) that represents the major cities and water districts that receive water delivered by the Sonoma Water aqueduct system. The District will conduct the Annual Assessment regarding the SCWA available supply as part of a coordinated effort led by SCWA.

     Further details about the evaluation criteria and procedure used by SCWA in conducting an Annual Assessment could be found in **Attachment 4** of this WSCP. As discussed in **Attachment 4**, evaluation criteria used by SCWA include:

     - Unconstrained customer demand for each of SCWA's wholesale customers, considering weather, growth, and other influencing factors;
     - Russian River operations, including current reservoir releases from Lake Sonoma and Mendocino and anticipated releases to meet in-stream flow requirements and water demand;
     - Hydrology and watershed conditions, including Lake Sonoma and Lake Mendocino cumulative inflows and storage levels, soil moisture, and snowpack; and
     - Potter Valley Project inflows, including Lake Pillsbury storage levels and observed and projected project transfers.

   - **Local Surface Water Available Supply -** The District keeps real time data on all local reservoir water levels with periodic evaluations of reservoir capacity through bathymetric studies. The last bathymetric study was completed in April 2016.

   - **Rainfall Data -** Rainfall data is maintained by the District through calibrated rain gauges located on District's watershed lands. There are two principal rain gauge locations: one

located at Lake Lagunitas for which the District has 142 years of rainfall data, and the other located at the Kent Lake stream release that is used for determination of dry or normal year conditions for stream releases to Lagunitas Creek. The gauges are manually read by District staff. Unofficially, the District currently has the ability to record these rain gauge information via an installed SCADA system. After a couple years of comparing the manual reads to the SCADA data, if the two results are close enough then the District will solely collect the rain data via SCADA.

- **Reservoir Storage -** The District's primary water supply is surface water, fed from local rainfall, into the seven local reservoirs: Lagunitas, Phoenix, Bon Tempe, Alpine, Kent, Nicasio and Soulajule. In 2022, the total reservoir storage operated by the District is 25.9 billion gallons (79,566 AF). From these reservoirs, the water is conveyed to either the Bon Tempe Treatment Plant (BTTP) near Ross or the San Geronimo Treatment Plant (SGTP) in Woodacre.

- **Local Regulatory Conditions -** The District and North Marin Water District entered into the 2022 Amended and Restated Interconnection Agreement in January 2022. The purpose of the agreement is to provide the basis for and mechanism whereby Marin Municipal and North Marin can each, as a first priority, continue to meet the needs of their respective customers, and simultaneously, to the extent feasible, utilize their respective water systems and surplus system capacity in a coordinated manner for the benefit of the customers of both Districts. Section 3 C of the agreement governs the release by Marin Municipal for the benefit of North Marin as follows: "*On North Marin's request, when flow in Lagunitas Creek is determined by North Marin to be low or when the dry year condition described in State Water Resources Control Board Order 95-17 occurs, Marin Municipal shall release to Nicasio Creek or Lagunitas Creek for North Marin's benefit up to 250 acre-feet per year. Said water shall be used by North Marin within its Inverness Point Reyes Annexation Territory*." Since the agreement was signed North Marin has not requested release volumes of any significance.

- **State Regulatory Conditions -** Evaluation of any state-mandated drought or water use restrictions known during preparation of the AWSDA. Water Rights Order 95-17 defines dry year conditions which impact the regulated volume of stream releases from Kent Lake.

These criteria will be assessed by District staff with detailed knowledge of District operations. The data used to support these assessments may include, but are not limited to, SCWA's Annual Water Supply and Demand Assessment, reservoir storage levels and system demand.

2. Water Supply

On the basis of the evaluation criteria above and available supporting information, the District will quantify the projected available supply over the forthcoming year. This quantification will likely be a range, and subject to revision as new data are available and as conditions evolve.

3. Unconstrained Customer Demand

Unconstrained customer demands (i.e., the expected water use in the absence of shortage-caused reductions in water use) will be evaluated and estimated for the forthcoming year based on:

- A comparison of monthly customer demands relative to prior years (e.g., last 3 years),
- Evaluation of current and anticipated weather conditions,
- New demands anticipated during the coming year (e.g., new accounts coming online), and
- Any other potentially pertinent factors identified by the District (e.g., pandemic-related stay-at-home orders).

4. Planned Water Use for Current Year Considering Dry Subsequent Year

   The District will compare the estimated unconstrained demands to the anticipated supplies for the current year, assuming that the following year will be dry (i.e., a 20% supply shortfall), using the Evaluation Criteria identified above.

5. Infrastructure Considerations

   The District will evaluate how infrastructure capabilities and constraints may affect its ability to deliver supplies to meet expected customer water demands in the coming year. The constraints and capabilities are expected to include, among other things:

   - Anticipated capital projects and upgrades, and

     Anticipated maintenance and repairs.

6. Team Members

   The District's Water Resources Director will lead a team to conduct the assessment, the Team will include:

   - District's Water Resources Director,
   - District's Operations Director,
   - District's Conservation Manager,
   - District's Engineering Planning Department,
   - District's Public Outreach Department,

7. Timeline

Once per month, at a regularly scheduled Board meeting, the Water Resources Director provides the District Board of Directors a briefing on water supply. The Monthly Water Supply Update typically includes at a minimum rainfall, reservoir storage levels and a storage level forecast to the end of the water year. The District's water storage levels, demand and hydrologic conditions are continuously monitored throughout the year. The District will utilize the procedures outlined in Table 4-1 to complete the AWSDA. Consistent with California Water Code (CWC) § 10632.1, the District will perform and submit an AWSDA to DWR by July 1st of each year beginning in 2022.

Table 4-1 Annual Supply-Demand Assessment Procedures Decision-Making Timeline

Decision-Making Process	Responsible Parties	Start Date	End Date
Track reservoir storage levels to determine if a shortage is projected	Water Resources Department	1 Jan	1 April
Determine water supplies by source for the current year	Water Resources Department	1 April	30 April
Obtain Draft Assessment from SCWA	SCWA	April	April
Provide Comments on SCWA Draft Assessment	MMWD	April	April
Calculate the water supply reliability using spreadsheet, computer model, or other method	Water Resources Department	1 April	--
Determine shortages and response actions	Water Resources Department	30 April	--
Prepare and present preliminary report to District Board	Water Resources Department	30 April	--
Obtain Final Annual Assessment from SCWA	SCWA	May/June	May/June
Update water supply reliability and on SCWA Final Assessment	Water Resources Department	May/June	30 June
Send final annual water shortage assessment report to the State	Water Resources Department	1 June	No later than July 1st of each year beginning in 2022

5 WATER SHORTAGE LEVELS

This WSCP includes six triggers, as required by the State that provide the District more flexibility in addressing dry periods earlier in the water year. The triggers allow the District to successfully manage supplies through severe drought and are designed to reduce the likelihood of a water shortage that will negatively affect customers. **Table 5-1** shows the six stages of water shortage currently used by the District. Each stage of the WSCP will be enacted and retracted by resolution of the District Board of

Directors based on identified triggers and staff recommendation, or upon the determination that SCWA or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use due to a water supply shortage or emergency. Each stage of action is described in further detail in Sections 6.1 through 7 below.

Table 5-1 Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
0	0%	• Includes water waste prohibitions effective at all times.
1	Up to 10%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 70,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).
2	Up to 20%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 65,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).
3	Up to 30%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 55,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).
4	Up to 40%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 45,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).
5	Up to 50%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 35,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).
6	>50%	• Total reservoir storage is at or is projected to be, or is, in the vicinity of 25,000 acre-feet on April 1st. • Includes implementation of mandatory restrictions on end uses (see **Table 6-1**) as well as agency actions (see **Table** 6-2).

6 SHORTAGE RESPONSE ACTIONS

This section describes the response actions the District will take to deal with the shortages associated with each of the six stages enumerated in Section 0. The Prohibitions on End Users, District Actions and Supply Augmentation are collated in Attachment 3 for ease of implementation.

6.1 Prohibitions on End Users

The District has a number of restrictions and prohibitions that it implements during periods of rationing (i.e., water shortage stages). Additionally, the District implements on-going prohibitions to reduce baseline water waste (Attachment 4). **Table 6-1** below identifies these prohibitions, the water shortage stage(s) at which they are implemented, and whether a penalty, charge, or other enforcement mechanism is applied for violations of these prohibitions. The water shortage stages of action are discussed further in Section 0 and the penalties, charges, and enforcement are discussed in Section 6.4. These prohibitions and enforcement actions have been adopted and are codified in the District's Code.

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
Landscape Irrigation				
0, 1, 2, 3, 4, 5, 6	Other landscape restriction or prohibition	5%	The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Restrict or prohibit runoff from landscape irrigation	5%	Irrigation shall not be conducted in a manner or to an extent that allows water to run off or overspray the areas being watered. Every customer is required to have his or her water distribution lines and facilities under control at all times to avoid water waste.	Y

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Limit landscape irrigation to specific times	5%	Any landscape irrigation between the hours of 9:00 a.m. and 7:00 p.m. is prohibited. Necessary testing and repair of irrigation systems for the purpose of eliminating water waste is permitted during the hours of 9:00 a.m. and 7:00 p.m. Customers shall maintain appropriate documentation of any necessary testing and repairs for these purposes. For example, this documentation may include, but not be limited to, any applicable reports, invoices, photos, videos, and/or receipts for materials and labor related to the testing and repairs.	Y
0, 1, 2, 3, 4, 5, 6	Limit landscape irrigation to specific days	5%	Increase restrictions on irrigation. For example, operating outdoor irrigation systems using potable water for the purpose of irrigating with overhead spray more than two days, as assigned by the District, within any calendar week may be prohibited. For the purposes of this section, “calendar week” shall mean a period running from Monday-Sunday.	Y
0, 1, 2, 3, 4, 5, 6	Other landscape restriction or prohibition	5%	Irrigating ornamental turf on public street medians is prohibited.	Y

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
3	Prohibit certain types of landscape irrigation	30%	Golf course irrigation, with potable or raw water, shall be irrigated up to 70% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code Appendix A.	Y
4	Limit landscape irrigation to specific days	40%	Limit irrigation to 1 day per week, assigned by the District.	Y
4	Prohibit certain types of landscape irrigation	40%	Golf course irrigation, with potable or raw water, shall be irrigated up to 60% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code Appendix A.	Y
5	Other landscape restriction or prohibition	50%	Irrigation restricted to maintain tree health for all potable and raw water customers, including golf courses.	Y
5	Other	50%	Establish, or implement, Water Use Limits and associated penalties.	Y
Restrictions on Consumer Products				
0, 1, 2, 3, 4, 5, 6	Other	5%	The installation of reverse osmosis water purifying systems not equipped with an automatic shutoff unit is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Pools and Spas - Require covers for pools and spas	30%	All recreational pools and spas shall have covers.	Y
Restrictions on New Connections and Landscaping				

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Other	5%	Single pass cooling systems for air conditioning or other cooling system applications are prohibited, unless required for health or safety reasons.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	New non-recirculating systems for conveyer car wash applications is prohibited.	Y
4, 5, 6	Other	40%	No installation of new landscapes including no expansion of existing landscapes.	Y
5	Moratorium or Net Zero Demand Increase on New Connections	50%	The Board shall consider a moratorium on new water service connections, or no net water use requirements for new connections.	Y
6	Other	55%	New water service applications will not be granted.	Y
6	Other	55%	The use of potable water for any purpose other than human health and sanitation is prohibited.	Y
Restrictions on Commercial Operations				
0, 1, 2, 3, 4, 5, 6	Lodging establishment must offer opt out of linen service	5%	Lodging establishments must provide patrons the option of not having towels and linen laundered daily.	Y
0, 1, 2, 3, 4, 5, 6	Restaurants may only serve water upon request	5%	Drinking water served upon request only.	Y
Other				

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2, 3, 4, 5, 6	Prohibit use of potable water for washing hard surfaces	5%	The washing of sidewalks, walkways, driveways, parking lots and all other hard surfaced areas by direct hosing, except as may be permitted by current regulations pertaining to urban water runoff pollution prevention as defined by the Marin County Stormwater Pollution Prevention Program and other controlling agencies.	Y
0, 1, 2, 3, 4, 5, 6	Customers must repair leaks, breaks, and malfunctions in a timely manner	5%	The escape of water through breaks or leaks within the consumer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of 48 hours after the consumer discovers such a leak or break, or receives notice from the district of such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	Gutter flooding is prohibited.	Y
3, 4, 5, 6	Other	30%	Use of potable water for refilling or make-up water of any decorative water features, is prohibited.	Y
2, 3, 4, 5, 6	Other	20%	Implement drought rates consistent with District-wide targeted water savings.	N

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
5, 6	Other landscape restriction or prohibition	50%	Refilling a completely drained swimming pool and initial filling of any swimming pool for which application for a building permit was made after District specified date.	Y
0, 1, 2, 3, 4, 5, 6	Require automatic shutoff hoses	5%	Using a garden hose without a shut-off nozzle is prohibited.	N
0, 1, 2, 3, 4, 5, 6	Other	5%	Any excess water runoff flowing onto the public right of-way at a rate of one gallon per minute or greater not caused by storm water or naturally occurring groundwater is prohibited.	Y
0, 1, 2, 3, 4, 5, 6	Other	5%	Use of private fire lines or private fire taps for any purposes other than fire suppression and necessary testing is prohibited.	Y
3, 4, 5, 6	Other	30%	Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.	Y
3, 4, 5, 6	Other	30%	Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.	Y
3, 4, 5, 6	Limit use of potable water for construction and dust control	30%	Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.	Y

Table 6-1 Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (a)	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
0, 1, 2	Other	5%	Sewer cleaning/flushing should be done using recycled water when available without hauling by truck and whenever reasonably possible.	Y
3, 4, 5, 6	Other	30%	Limit sewer cleaning/flushing to only recycled water.	Y
4, 5, 6	Other	40%	Request that local fire departments limit training exercises that use potable water and cease hydrant testing.	Y
6	Other	50%	Request that local fire departments cease training exercises that use potable water and cease hydrant testing.	Y
Notes: (a) The reductions shown are the combined reductions for all the actions associated with the particular shortage level.				

6.2 Variances to Dry Period Regulations

The District does allow for certain variances to the water shortage stage prohibitions discussed in Section 6.1. All variance requests must be submitted in writing to the District and include the account name, service number, and service address. Per the District's Water Conservation Ordinance (Title 13) variances may be granted to District customers as follows:

The District may grant variances for use of water otherwise prohibited under mandatory water use prohibitions if it is found and determined that:

(1) Failure to do so would cause an unnecessary and undue hardship on applicant or the public, including but not limited to, adverse economic impacts;

(2) Failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or the public; or

(3) Customer is able and agrees to provide an alternative means of providing comparable water conservation.

Any request for a variance shall be submitted to the District in a writing providing sufficient detail regarding the request and the reasons therefore. After consideration of the variance request, a written decision shall be provided to the customer rejecting, partially approving or approving the variance request. If the customer disagrees with the initial determination, the customer may avail themselves of the appeal process set below.

(1) Customers may appeal a decision regarding a variance or an enforcement action by following the procedures set forth below:

(A) Within thirty (30) calendar days of the variance denial or partial denial or a notice of violation, customer shall mail a written appeal containing all applicable evidence supporting their position to the Water Efficiency Department at 220 Nellen Avenue, Corte Madera, CA 94925. For purposes of this section an appeal shall be deemed received by the District on the day of post-mark by the U.S. Postal Service.

(B) The District shall respond to the appeal in writing either denying, granting or partially granting the appeal. If customer disputes the initial written determination of his/her appeal, then customer may request a further appeal by submitting a further writing to the District within fifteen (15) calendar days from the date of the initial written response to the appeal.

(C) Upon receipt of a timely further appeal, a hearing on the appeal will be scheduled and the District will mail notice of this date to the customer at least ten (10) calendar days before the hearing.

(D)The General Manager or designee shall conduct a hearing on the appeal considering all applicable facts and issue a written decision containing his or her decision on the appeal. The General Manager's or designee's decision shall be final.

(E) Any action not timely appealed shall be deemed final.

(F) Pending receipt of a written appeal or pending hearing pursuant to an appeal, the District may take appropriate steps to prevent unauthorized use of water as appropriate to prevent waste.

(G) This notice and hearing procedure shall not apply to those water waste situations charged as misdemeanors.

6.3 District Actions

In addition to implementing and enforcing the prohibitions on end users discussed in 6.1, the District has identified a suite of actions and operational changes it will enact at the various stages of water shortage. These actions are meant to reduce water demands on the distribution system itself, facilitate implementation of the identified prohibitions, provide educational resources to customers, and to continue to offer customers opportunities to reduce their water use. The District actions identified for each stage of action are listed below.

Dry Condition Stage: Shortage Level 1: 10% Voluntary

Operations

- Increase Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions

Advisory Stage: Shortage Level 2: 20% Voluntary

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Minimize system flushing
- Initiate water waste patrols

Drought Rates

- Implement drought rates consistent with District-wide targeted water savings.

Alert Stage: Shortage Level 3: 30% Mandatory

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Water waste patrols
- Increase system leak repair rate
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

Severe Stage: Shortage Level 4: 40% Mandatory

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate
- Increase Water waste patrols

- Consider Temporary Urgency Change Petition
- Consider Declaration of Water Shortage Emergency
- Consider limiting or excluding new service connections.

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

Critical Stage: Shortage Level 5: 50% Mandatory

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate
- Increase water waste patrols
- Implement Temporary Urgency Change Petition
- Implement Water Use Limits and Penalties

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

Emergency Stage: Shortage Level 6: > 50% Mandatory

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate
- Increase Water waste patrols
- Implement Temporary Urgency Change Petition
- Decrease Water Use Limits and implement issuance of Penalties to align with Health and Safety Water Allotments

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

6.4 Penalties, Charges, and Other Enforcement of Prohibitions

Table 6-1 in Section 6.1 identified the restrictions on water use by customers to be implemented during various stages of water shortage, as well as which of these items are enforceable by penalty. Any customer violating the restrictions on water use identified in **Table 6-1** shall receive a penalty as described below per the District's Enforcement provisions:

(1) For violations of the provisions set forth in chapter, other than Section 13.02.020(1)(B), the following enforcement procedures shall apply:

(A) First *Notice*—Warning Letter. Any customer violating the regulations and restrictions on water use set forth in this chapter, other than Section 13.02.020(1)(B), shall receive a written warning informing them of the violation for the first such violation and warning that a second such violation will result in a penalty.

(B) *Notice* of Violation. If, after receiving a written warning of violation for the same category of violation within one year, the district shall issue a *notice* of violation imposing a $25.00 fine on the customer's next water bill.

(2) Repeat Violations. For customers found by the district to incur a further violation within the same category for which customer has already received a fine within the past year, customer shall be charged a fine of $250.00 for each successive violation.

(3) Additional Enforcement Procedures.

(A) Failure by the customer to correct the violation and pay the applicable fine, after following the procedures set forth above in this section, may cause the district to install a flow restrictor to be installed in the service. If a flow restrictor is placed, a charge of $150.00 for cost of installation and an additional $150.00 cost for removal shall be paid by the violator.

(B) Any willful violation occurring subsequent to the issuance of the third written *notice* of violation may constitute a misdemeanor and may be referred to the Marin County District Attorney's office for prosecution. An individual convicted shall be punished by imprisonment in the County Jail for not more than 30 days, or by a fine not exceeding $1,000.00 or both.

(C) The district may also disconnect the water service pursuant to Section 11.28.020 of this code. If water service is disconnected, it shall be restored only upon payment of the turn-on charge fixed by the Board of Directors.

6.5 Defining Water Features

As required by CWC §10632, the District distinguishes between "decorative water features" such as ponds, lakes, and fountains that are artificially supplied with water and "recreational water features" such as swimming pools and spas. Prohibitions on water use for decorative water features are listed separately from those for recreational water features (see **Table 6-1**).

6.6 Supply Augmentation

Table 6-2 below includes a list of potential water supply augmentation actions that may be implemented in the event of a water shortage. While shortage levels are indicated in the table below, prior to enacting these actions, the District will evaluate on a case-by-case basis:

(1) the sufficiency of demand reduction actions (**Table 6-1**) to supply shortage conditions,

(2) the feasibility of implementing the action in light of regulatory, operational, and other constraints, and

(3) the costs of implementing the action in context with the severity of the water shortage condition.

Table 6-2 Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
1	Increase supplemental water imports and closely monitor storage levels and weather conditions	Up to 5,000 AF	Range dependent on regional drought conditions and hydraulic capabilities
1	Enact dry year stream release flow reductions	Up to 100 AF	As defined under Water Right Order 95-17 and agreements with NMWD
2	Minimize system flushing	Unknown	Focus on water quality improvements
2	Water waste patrols	Unknown	
3	Restrict line flushing to include only regulatory compliance actions	Unknown	Flush for violations of water quality regulations or required disinfection for new construction and repairs.
3	Increase system leak repair to prioritize class 2 leaks	Unknown	
3	Access Stored Emergency Supply	Unknown	Rental of generator for Soulajule Reservoir to transfer water to Nicasio Reservoir
3	Access Stored Emergency Supply	Unknown	Initiate adjustments to pipe configuration to transfer water from Phoenix Lake to Bon Tempe Lake
4	Consider a Temporary Urgency Change Petition	Up to 2,500 AF	Change to environmental releases – possible reduction of migration flow volumes.
4	Increase water waste patrols	Unknown	

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
4	Increase system leak repair to prioritize class 1-3 leaks	Unknown	
4	Consider Declaration of Water Shortage Emergency	Unknown	
4	Initiate development of Emergency Supplemental Supplies	Unknown	
5	Consider a moratorium on new water service connections, or no net water use requirements for new connections	Unknown	
5	Implement Water Use Limits and Penalties	Unknown	Long term
6	Decrease Water Use Limits and implement issuance of Penalties to align with Health and Safety Water Allotments	Unknown	Conducting feasibility analysis
NOTES:			

6.7 Shortage Response Action Effectiveness

Table 6-1 summarizes the District's water shortage response actions with their estimated water reductions for each stage. For each action identified, the District has estimated the extent to which that action will reduce the gap between supplies and demands. The District has estimated the effectiveness of the shortage response actions based on water use reductions that have occurred historically and on expected reductions associated with implementing the Water Use Limits and Associated Penalties, and Drought Rates in more severe shortages.

7 CATASTROPHIC SUPPLY INTERRUPTION

Catastrophic supply interruptions may be caused by a regional power outage, an earthquake, or other disaster. In accordance with the Emergency Services Act, the District has developed an Emergency Operation Plan (EOP). This EOP guides response to unpredicted catastrophic events that might impact water delivery including regional power outages, earthquakes, or other disasters. The EOP outlines standard operating procedures for all levels of emergency, from minor accidents to major disasters. The District's EOP has been coordinated with the SCWA and neighboring water purveyors.

In addition to the EOP, the District has prepared Emergency Action Plans for each of their dams that have been filed with the Department of Safety of Dams and the Marin County Office of Emergency Services. These Emergency Action Plans include inundation maps as well as notification procedures and contacts with the California Office of Emergency Services to assist first responders in case of an emergency.

7.1 Seismic Risk Assessment

Impacts associated with earthquakes and liquefaction are discussed in the *2022 Marin Municipal Water District Hazard Mitigation Plan* (District LHMP)[1]. The District LHMP assesses the District's vulnerabilities to various hazards, including seismic hazards, and presents mitigation strategies that are planned over the next five years.

The District LHMP includes a discussion of the probability of a seismic event affecting District assets, citing an ABAG projection of a 63% chance of an earthquake of magnitude 6.7 of greater on one of the faults affecting Marin County between now and 2032. The District LHMP notes that much of the District's assets are located within mapped liquefaction areas or areas of high risk soils. The District LHMP includes an assessment of the District's vulnerability in the event of a major seismic event, and estimates that an earthquake on the San Andreas Fault of magnitude 7.8 would result in a total building damage of approximately $185 million.

Some measures to mitigate seismic risk identified in the District LHMP include:

- Harden infrastructure and provide redundancy for critical functions;
- Perform seismic retrofits for vulnerable critical assets;
- Keep reserves for reconstruction; and
- Develop and adopt a continuity of operations plan.

Further discussion of seismic risks specific to the SCWA water system is provided in the *Sonoma County Water Agency Local Hazard Mitigation Plan,* dated 16 October 2018 (SCWA LHMP; SCWA, 2018).[2] The SCWA LHMP specifically assesses SCWA's natural hazard risks and vulnerabilities facing the SCWA infrastructure and provides a plan of action to address these vulnerabilities. The SCWA LHMP identifies a series of mitigation measures to address seismic risk, including seismic retrofits of distribution system components to protect against damage due to liquefaction and lateral spread hazard and installation of automated throttling valves at aqueducts and interties to minimize uncontrolled releases out of SCWA facilities. For more detail regarding planned mitigation measures to address seismic risks, please refer to the SCWA LHMP.

The District also assessed the risks of an earthquake to the District's water supply system and infrastructure in the Marin Municipal Water District Water Resources Plan 2040 (MMWD, 2017).[3] Through use of the Marin WaterSim model, it was determined that, while several treatment plants could become un-operational for up to three months following an earthquake event, District water demands

[1]District's LHMP can be found at the following website: https://www.marinwater.org/sites/default/files/2022-04/2022-03-23_MMWD_Hazard_Mitigation_Plan_Final.pdf

[2] The SCWA LHMP could be found in the following website: https://evogov.s3.amazonaws.com/185/media/186587.pdf

[3] The Marin Municipal Water District Water Resources Plan 2040 could be found in the District website: https://www.marinwater.org/sites/default/files/2020-09/Water%20Resources%20Plan%202040.pdf

could still be met by increasing production from unaffected treatment plants.
More detail regarding the earthquake risk assessment and modelling can be found in District's Water Resources Plan 2040.

8 COMMUNICATION PROTOCOLS

Each stage of the WSCP will be enacted and retracted with a formal declaration by the District Board of Directors based on identified triggers and staff recommendation, or upon the determination that SCWA or another governing authority (e.g., the SWRCB) has required a voluntary or mandatory reduction in water use due to a water supply shortage or emergency. Procedures for water shortage declaration and termination are detailed below in Section 10.

Even before formal declaration of a water shortage, a public information program will be activated to provide customers with as much advance notice as possible. Following declaration of a shortage, District customers would need to be provided notice of water shortage rules and regulations via a variety of media and communications methods. Some of these communication methods will include the following:

Dry Conditions Stage: Shortage Level 1: 10% Voluntary

- Initiate public outreach campaign to communicate about dry conditions
- Education focused on ongoing prohibitions and water waste reporting
- Provide list of simple actions that can be done to save water (e.g., use a broom instead of hosing down a sidewalk)
- Explain drought situation to the public and governmental bodies via "Drought Watch" to provide a snapshot of the water supply picture, restrictions, and water conservation tips
- Promote the Weekly Watering Schedule
- Explain other stages and forecast future actions

Advisory Stage: Shortage Level 2: 20% Voluntary

- Accelerate public information and increase outreach
- Develop internal speakers bureau to provide educations presentations to community groups
- Develop (or use existing) brief and simple educational videos that cover topics normally touched on during water efficiency phone consultations
- Provide outreach toolkit to cities in service area of drought conditions to ensure collaboration
- Encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Alert Stage: Shortage Level 3: 30% Mandatory

- Accelerate public information program, outreach campaign, and communication with news media to help amplify messaging

- Provide updated outreach toolkit to cities to ensure collaboration
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Sever Stage: Shortage Level 4: 40% Mandatory

- Provide information to customers about trees preservation during drought conditions
- Accelerate public information program, outreach campaign, and communication with news media to help amplify messaging
- Provide updated outreach toolkit to cities to ensure collaboration
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Critical Stage: Shortage Level 5: 50% Mandatory

- Accelerate public information program, outreach campaign, and additional communication with news media to help amplify messaging
- Provide updated outreach toolkit to cities to ensure collaboration
- Explain other stages and forecast future actions
- Communicate Water Use Limits and associated penalties
- Provide information to customers about trees preservation during drought conditions
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering

Emergency Stage: Shortage Level 6: > 50% Mandatory

- Accelerate public information program, outreach campaign, and additional communication with news media to help amplify messaging regarding Health and Safety Water Allotments
- Provide updated outreach toolkit to cities to ensure collaboration
- Provide information to customers about trees preservation during drought conditions
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering

Coordination between the District and other public agencies may begin prior to formal declaration of a water shortage and can be accomplished through regular meetings, e-mail group updates, and

presentations. In a regional water shortage scenario, the District would use public outreach resources and materials provided by SCWA, ACWA, Marin County, and other strategic partners, as well as its own resources as described above.

9 COMPLIANCE AND ENFORCEMENT

As discussed in Section 6.4, any customer violating the regulations and restrictions on water use set forth above in **Table 6-1** shall receive a written warning for the first such violation, and then a notice of violation and a $25 fine for a second violation, and additional penalties for repeat violations as noted in Section 6.4. Additional enforcement procedures may include the following:

- Failure to correct the violation and pay the applicable fine may cause the District to install a flow restrictor on the service.
- Any willful violation occurring subsequent to the issuance of the third written notice of violation may constitute a misdemeanor and may be referred to the Marin County district attorney's office for prosecution.
- The District may also disconnect the water service pursuant its code. If water service is disconnected, it shall be restored only upon payment of the turn-on charge fixed by the board of directors.

As discussed in Chapter 9 of the District's 2020 Urban Water Management Plan (UWMP), several District staff members jointly share the responsibility for implementation of the District's water conservation program. Staff time dedicated to water conservation and enforcement action will increase with the severity of a supply shortage. Additional duties may be assigned to current employees or hiring of temporary staff may be considered to meet staffing needs during extreme water shortages.

10 LEGAL AUTHORITIES

The District has the ability to declare and rescind a Water Shortage Emergency under the following authorities and conditions as described under the WSCP shortage levels:

- Article X, Section 2 of the California Constitution mandates that the water resources of the State be put to beneficial use to the fullest extent and that waste or unreasonable use or method of use of water be prevented.
- California Water Code Sections 350 and 71640 authorize the governing body of a municipal water district to find the existence or threat of a drought emergency or other threatened or existing water shortage, and that finding is prima facie evidence of the fact or matter so found, and such fact or matter shall be presumed to continue unchanged unless and until a contrary finding is made by the board by resolution or ordinance.
- Pursuant to California Water Code Sections 353 and 71641, the District may restrict the use of district water during the drought emergency or other water shortage condition and may prohibit the wastage of district water or the use of district water during such periods for any purpose other than household uses or other restricted uses as the District determines to be necessary.

- Pursuant to California Water Code Sections 376 and 71641 and Government Code Section 6061, the District must publish in a newspaper of general circulation any ordinance setting forth the restrictions, prohibitions, and exclusions determined to be necessary under Water Code Sections 353 and 71640 within 10 days after its adoption. The District's Board may adopt mandatory restriction and prohibitions on the consumption and use of water within the service area so that the water supply can be conserved for the greater public benefit.
- Pursuant to Water Code sections 350 and 71640, and for per the annual water supply and demand assessment, the Board may find the existence or threat of a drought emergency or other water shortage condition.
- The District shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency.

11 FINANCIAL CONSEQUENCES OF WSCP

Since the District bills its customers, in part, per unit volume of water consumed, the District would experience a reduction in revenue upon implementation of water conservation measures pursuant to the WSCP. The District may also experience expense increases related to increased public outreach, water waste patrols, emergency water transfers, and generators and fuel to allow for the transfer of water from Soulajule to Nicasio reservoir. To compensate for the expected revenue reduction caused by water conservation, the District may utilize reserves to the extent possible and has the authority to implement temporary drought rates, increasing water rates. Additionally, the District's Board of Directors may establish a water rate structure, including excess water use surcharges that provides incentives to conserve water. Individual customers may seek a waiver of excess water use surcharges through the variance process as described in Section 6.2.

12 MONITORING AND REPORTING

The District's local surface water supply and SCWA supply turnouts are all equipped with water meters. In addition, each potable water customer is metered. Non-residential landscape irrigation is metered separately from indoor use at most non-residential sites. The District reads meters on a bi-monthly basis and is able to document both demand reductions and a typically high water use. The District contacts individual customers to resolve issues related to a typically high water use.

Pursuant to California Code of Regulations (CCR) Title 23 §991, the District reports monthly water use and production to the SWRCB.[4] Effective October 1, 2020, during a governor declared drought emergency or when an urban water supplier invokes a water shortage level to respond to a drought greater than 10%, each supplier is required to submit an expanded report that contains the supplier's actions and statistics in achieving planning reductions.

[4] Water supplier monthly reports can be accessed at https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html

13 WSCP REFINEMENT PROCEDURES

The WSCP is implemented as an adaptive management plan. The District will evaluate the need to revise its WSCP every year after performing its Annual Water Supply and Demand Assessment. The evaluation will consider the effectiveness of WSCP actions and any anticipated water supply shortages. If the WSCP is revised, the District Board of Directors will adopt a new resolution adopting the revised WSCP.

14 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

Prior to adopting the Plan, the District held a formal public hearing to present information on the Updated 2020 UWMP and WSCP on 19 December 2023 at 7:30 pm, in a virtual and in-person meeting.

The Updated 2020 UWMP and WSCP was adopted by Resolution No. 8768 by the District Board during its January 9 2024 board meeting. A copy of the resolution is included in **Attachment 2**. A copy of the adopted 2024 WSCP including any amendments will be provided to the Department of Water Resources (DWR), the California State Library, and Marin County within 30 days of the adoption. An electronic copy of the adopted 2024 WSCP will be submitted to the DWR using the DWR online submittal tool.

A copy of the adopted 2024 WSCP will be available for public review on the District's website within 30 days after filing the plan with DWR.

ATTACHMENT 1: SONOMA COUNTY WATER AGENCY ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES (SCWA WSCP APPENDIX C)

This section presents the procedures that will be used by Sonoma Water to conduct an annual water supply and demand assessment (annual assessment). The annual assessment is required to be submitted annually to DWR beginning on July 1, 2022. The assessment forecasts near-term water supply conditions to ensure shortage response actions are triggered in a timely manner. The annual assessment will provide a description and quantification of each source of Sonoma Water's water supply compared to water demands for the current calendar year, with consideration of one subsequent dry year.

One of the most important functions provided by Sonoma Water is to monitor water supply conditions to gauge the likelihood of water shortages so that Sonoma Water's wholesale customers will be prepared to respond to the shortages. Sonoma Water constantly monitors the reservoir levels at Lake Pillsbury, Lake Mendocino, and Lake Sonoma, and estimates flows in and out of those reservoirs, weather forecasts, and natural flows into and diversions from the Russian River and Dry Creek. By using this data as well as historical data regarding water use in different climatic conditions, Sonoma Water can project when a water shortage may be imminent.

The following subsections describe the decision-making process and data and methodologies. Sonoma Water may modify these procedures based on its experience developing the annual assessment.

Decision Making Process

This section presents the decision-making process and timeline (see Table 1) that Sonoma Water will use each year to determine its water supply reliability. Sonoma Water may revise this decision-making process based on the experience gained from going through the process.
To develop the supply portion of the annual assessment, Sonoma Water staff will start monitoring water supply conditions in December prior to the January Decision 1610 trigger date for setting instream flow requirements per the water year classification specified in Decision 1610. Decision 1610 also requires an assessment of the water year classification and instream flow requirements at the beginning of each subsequent month until June 1, when it is set for the remainder of the year. Consequently, Sonoma Water staff will continue to monitor water supply conditions (reservoir levels, stream/river flows, soil moisture, precipitation, etc.) throughout this time period to ensure its assessment of water supply conditions are consistent with watershed hydrologic conditions and reservoir storage levels. The final annual assessment will include the actual supply conditions up to May. If a water shortage is forecast for the subsequent calendar year, the monitoring of water supply conditions would be conducted during the September to December period of the current calendar year.

To develop the demand portion of the annual assessment, the projections of water demand to be supplied by Sonoma Water for the calendar year and subsequent calendar year will be developed and provided by all of Sonoma Water's customers by February 1. Sonoma Water staff will use the most recent demand data to develop demand projections for those customers that do not provide projections. The annual assessment will consider all demands on Sonoma Water's system to establish the supply available for Sonoma Water's customers that must complete and submit their own annual assessments to DWR.

Sonoma Water will present and submit the annual assessment following the steps described below.

1. Present draft annual assessment to Sonoma Water's customers. The draft annual assessment will be presented to the TAC ad-hoc committee at the April meeting. The assessment will also be presented to the Sonoma Water's other customers. An initial evaluation will be made regarding the potential for a water shortage condition to occur. If a shortage is forecast for the current calendar year and particularly during the critical months of July to October, the initial implementation of WSCPs will be coordinated with all the customers.
2. Receive review comments. Sonoma water's customers will present their review comments including their updated demands and local supply projections at the May TAC meeting. Sonoma Water will communicate directly with Sonoma Water's other customers to obtain their review comments.
3. Present final annual assessment to the TAC. The final annual assessment report will be prepared and presented at the June TAC meeting. The annual assessment may be presented to the WAC. Sonoma Water will coordinate through the TAC to identify if any water supply gaps exist for each customer when considering both Sonoma Water supplies and local supplies. The assessment will be provided directly to Sonoma Water's other customers.
4. Optional presentation of the annual assessment to the Board of Directors. The annual assessment may be presented to Sonoma Water's Board of Directors during one of their regularly scheduled meetings, particularly if a shortage is anticipated or if an existing shortage condition is to be ended.
5. Submit annual assessment to DWR. Sonoma Water will submit the annual assessment report to DWR by July 1 of each year.

Table 1. Annual Assessment Timeline

Task	Dec	Jan	Feb	Mar	Apr	May	Jun
Monitor and forecast water supply conditions	■	■	■	■			
Sonoma Water's customers develop and provide water demand forecast by February 1.		■					
1. Present draft annual assessment to Sonoma Water's customers					■		
2. Receive review comments					■		
3. Present final annual assessment to the TAC						■	■
4. Present annual assessment to the Board of Directors							■
5. Submit annual assessment to DWR (due July 1st)							■

Data and Methodologies

This section presents the key data inputs and assessment methodology that will be used to evaluate Sonoma Water's water supply. The evaluation criteria, water supply, unconstrained demand, water supply, planned water use, infrastructure considerations, and other factors are described.

Evaluation Criteria

The evaluation criteria that will be relied on for each annual assessment include the key data inputs and the constraints that are imposed on the water supplies.

The key data inputs that are used by Sonoma Water staff to forecast water supply for the remainder of the current year and a subsequent dry year include the items described below.

• **Unconstrained customer demand.** Current and subsequent calendar year unconstrained demand for each of Sonoma Water's wholesale customers considering weather, growth, and other influencing factors.

• **Russian River operations.** Current reservoir releases from Lake Sonoma and Lake Mendocino, including anticipated releases to meet in-stream flow requirements and water demands and based on reservoir curves and forecast informed reservoir operations (FIRO) decision support tools.
• **Hydrology and watershed conditions.** Lake Sonoma and Lake Mendocino inflows and storage levels, and soil moisture.

• **Potter Valley Project inflows.** Lake Pillsbury storage levels and observed and projected project transfers.

• **Weather forecasts and historical hydrological records.** Weather forecasts combined with historical records will be used to evaluate probabilities using statistical methods.

The water supply constraints are due to a variety of agreements and decisions, as follows.

• **Lake Sonoma storage level.** Sonoma Water's water rights permits include a provision that requires Sonoma Water to impose a 30 percent reduction in deliveries from the Russian River to its service area when Lake Sonoma storage levels drop below 100,000 acre-feet (ac-ft) before July 15 of any year. This provision is described in more detail in Section 5.1.6.1 in the 2020 Plan.

• **Lake Mendocino storage level.** Having a sufficient supply of water in Lake Mendocino in the fall is of critical importance to the salmonid species in the Russian River and to meet municipal and industrial demands and agricultural irrigation needs.

• **Minimum instream flow requirements.** The minimum instream flow schedule varies based on the hydrologic classifications of Normal, Dry, and Critical water supply conditions as defined in Decision 1610. These classifications will be revised using a new hydrologic index. Minimum instream flow requirements for the Russian River and Dry Creek are met by releases from Coyote Valley Dam and Warm Springs Dam.

• **Flood control operations criteria.** The United States Army Corps of Engineers (USACE) determines the schedule and amount of water released from Lake Mendocino and Lake Sonoma during flood control operations when storage levels exceed the water supply storage pool. Rules of the water control manuals of the reservoirs (USACE, 1984 & 2003) require the flood control pool to be empty except during periods of high flows downstream. During high flow events water is temporarily detained in the flood control pool (above the water supply pool), and later released at rates that avoid exceeding downstream flood stage.

• **Maximum flow releases from Warm Springs and Coyote Valley Dams.** The Lake Mendocino and Sonoma water control manuals define maximum release that are a function of reservoir water elevation or storage level. The maximum release schedules typically only apply during flood control operations. Releases from the reservoirs are further constrained by rules that define the maximum rate of change of release (ramping rates) to minimize rapid changes in stage downstream and avoid

fish stranding. These ramping rates were defined in a 2016 letter to the USACE from the National Marine Fisheries Service (NMFS) (NMFS, 2016).

• **The Russian River Biological Opinion.** The Russian River Biological Opinion places certain terms and conditions on the Sonoma Water with respect to its water supply operations.

Water Supply

The Russian River provides most of Sonoma Water's water supply with groundwater supply from the Santa Rosa Plain as a secondary source. Sonoma Water diverts water from the Russian River near Forestville and conveys the water via its transmission system to its customers. Sonoma Water's 2020 Plan (Section 5) provides a more detailed description of the water supplies. The method used to forecast the quantify of water supply is described in Section 3.2.4 below.

Almost all of Sonoma Water's customers, surplus customers, and Russian River customers have other water supplies, in addition to those provided by Sonoma Water, which include local surface water, local groundwater, and recycled water. These local supplies will not be included in the assessment. Each customer will develop its own assessment of their available supplies.

Unconstrained Customer Demand

The assessment will present the current year unconstrained demands from Sonoma Water's customers, considering weather, growth, and other influencing factors. The unconstrained water demands will be provided by the customers or developed by Sonoma Water.

Planned Water Use for Current Year Considering Dry Subsequent Year

The assessment will present an evaluation of the amount of anticipated water supplies for the current calendar year as well as how the supplies will be used, while anticipating that the following calendar year will be dry.

The annual assessment will be based on evaluating the key data inputs to determine the water supply reliability. The methodology to develop the annual assessment will follow the general approach described below.

1. Quantify current calendar year water supply. The available water supply from all water supply sources will be estimated for the current calendar year based on the data inputs, evaluation criteria, and hydrological and regulatory conditions. The current calendar year consists of the latter portion of the current wet season and the earlier portion of the subsequent wet season. Sonoma Water staff will evaluate water supply conditions beginning at least mid-month prior from January to June to determine whether anticipated conditions warrant any actions by Sonoma Water. The wet season that starts in the Fall of the current year will be assumed to be dry as described in the next step. The projections of the water supply will be expressed as a range and based on the results of operations modeling of the Russian River system consisting of the statistical evaluation of multiple scenarios. The model is described later in this subsection. Figure 1 presents the key considerations for the assessment of Russian River supply conditions.

2. Quantify subsequent calendar year supply. The subsequent calendar year water supplies will be estimated by assuming that the next wet season that starts at the end of the current calendar year will be dry. Sonoma Water will select the climate type for the wet season that starts at the end of the subsequent calendar year. Sonoma Water will base the estimate of dry season water supplies on a statistical analysis of the historical precipitation record and the selection of an appropriate

exceedance frequency. The details of the methodology will be defined in the development of the assessment.

3. Identify infrastructure constraints. The existing infrastructure capabilities and plausible constraints as they impact Sonoma Water's ability to deliver supplies to meet expected customer water use needs in the coming year will be considered.

4. Quantify unconstrained water demand. The unconstrained water demands for all the customers will be provided by the customers or developed by Sonoma Water staff.

5. Compare projected water supplies to demands. The water supplies identified in the annual assessment will represent the water demand that can be met while maintaining adequate storage in Lake Mendocino and Lake Sonoma.

6. Identify and quantify anticipated water supply shortages, if any. The forecast of water supplies in comparison to water demands will identify and quantify any anticipated water shortages for the current calendar year. The forecast will be coordinated with Sonoma Water's customers, surplus customers, and Russian River customers. Depending on the extent of the forecast shortage, the appropriate shortage stage will be selected. If the early winter season has been wet and the forecast is for a wet season, there would be no concerns. If the season was dry in the early wet season, there would be a potential concern and river flows and reservoir levels would be monitored more closely. Depending on the extent of precipitation in the latter portion of the wet season, the forecast could be changed to no concern or to an anticipated shortage.

7. Implications of forecasted water shortage. Depending on the extent of the forecasted water shortage for the current calendar year and particularly the summer months, Sonoma Water may implement voluntary reductions of its diversions and request it customers to conserve and utilize local supplies. The State Water Resources Control could also mandate reduction of diversions by Sonoma Water. For example, mandatory reductions would be required (as specified in Sonoma Water's water rights) if Lake Sonoma levels reached 100,000 ac-ft by July 15 of a given year. Such reductions would be implemented in accordance with the applicable provisions of the Restructured Agreement and consistent with the defined shortage stages. If a shortage is identified, the water shortage allocation methodology specified by the Restructured Agreement would be used to allocate the reduced supply to each customer. Each of Sonoma Water's customers would develop their own annual assessments that will include estimates of their projected quantity of local water supplies.

The forecast of the amount of available water supplies will be developed by Sonoma Water using the Russian River System Model (RR ResSim). The model is used as a planning tool to simulate the effects of various climatic conditions, levels of demand, and operational criteria on the water supply available for use by Sonoma Water and others.

Infrastructure Considerations

The annual assessment will include an evaluation of how infrastructure capabilities and constraints may affect Sonoma Water's ability to deliver supplies to meet expected customer water use needs in the current year.

Other Factors

The annual assessment will describe any other locally applicable factors that could influence the amount of available water supplies.

Summary: D1610 contains trigger points at the first of the month (January – June) to establish the Hydrologic Index (HI) based on cumulative inflows into Lake Pillsbury (Eel River). Sonoma Water staff evaluate water supply conditions (as shown in Figure 1 below) beginning at least mid-month prior to each of the D1610 trigger dates to determine whether anticipated conditions at the trigger date warrant any actions by Sonoma Water. This assessment process may be revised to consider a changed HI based on the Fish Flow Project as described in Section 5.1.6.1 of the 2020 Plan. While D1610 is currently used, a proposal to change Sonoma Water's water rights may require an updated methodology.

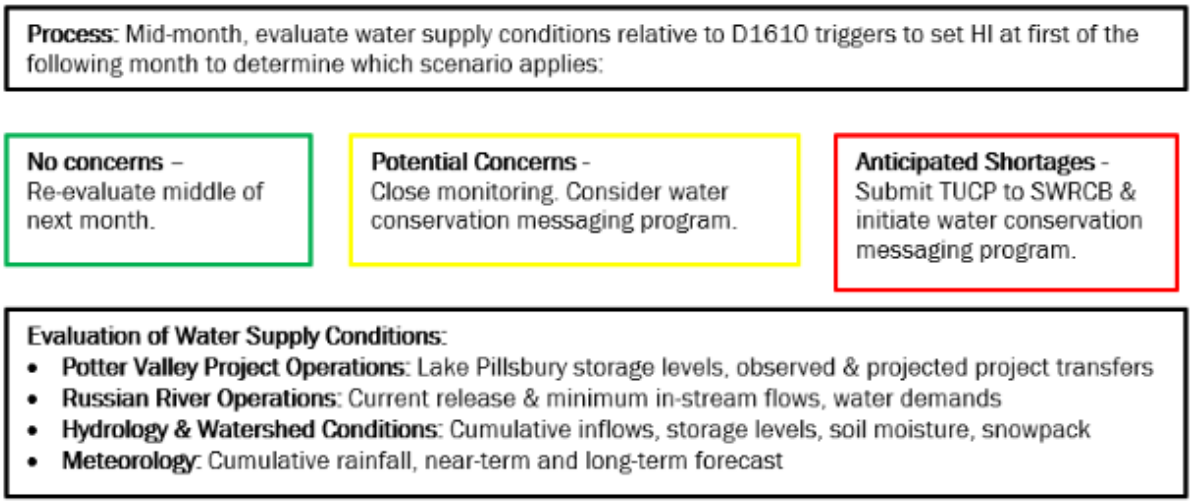


Figure 1. Assessment of Russian River Supply Conditions.

ATTACHMENT 2 WATER SHORTAGE CONTINGENCY PLAN RESOLUTION

MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO. 8768

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT ADOPTING THE UPDATED 2020 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act requires urban water suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually for municipal purposes to prepare and adopt an Urban Water Management Plan every five years; and

WHEREAS, the Marin Municipal Water District (District) meets the definition of an urban water supplier and has prepared Urban Water Management Plans since 1985, with the last update in 2020, with an updated to the Water Shortage Contingency Plan adopted on February 21, 2023; and

WHEREAS, the District prepared the draft Updated 2020 Urban Water Management Plan in accordance with the requirements and procedures set forth in the Urban Water Management Planning Act; and

WHEREAS, a public hearing for the Updated 2020 Urban Water Management Plan was held on the 19th day of December 2023; and

WHEREAS, notice of the time and place of said public hearing was duly given and published pursuant to California Government Code 6066and the draft Urban Water Management Plan was made available to the public for review per the California Water Code Section 10642 two weeks prior to the public hearing for two consecutive weeks; and

WHEREAS, the District Board of Directors considered the Updated 2020 Urban Water Management Plan during the public hearing held on December 19, 2023, and other testimony and public comments provided at the hearing.

NOW THEREFORE, BE IT HEREBY RESOLVED, that the Board of Directors hereby adopts the Updated 2020 Urban Water Management Plan, including final modifications incorporated based on comments received during the public hearing.

PASSED AND ADOPTED this 9th day of January, 2024, by the following vote of the Board of Directors.

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

NOES: None

ABSENT: Director Larry Russell

Monty Schmitt
President, Board of Directors

ATTEST:

Terrie Gillen
Board Secretary

ATTACHMENT 3: WATER SHORTAGE RESPONSE ACTIONS: PROHIBITIONS AND DISTRICT ACTIONS

DRY CONDITIONS STAGE

Shortage Level 1: 10% Voluntary (Trigger at Reservoir Storage < 70,000 acre-feet April 1)

Prohibitions on End Users

Water Waste Prohibitions outlined in District's Title 13.02

District Actions

Operations

- Increase supplemental water imports and closely monitor storage levels and weather conditions
- Enact dry year stream release flow restrictions

Outreach

- Initiate public outreach campaign to communicate about dry conditions
- Education focused on ongoing prohibitions and water waste reporting
- Provide list of simple actions that can be done to save water (e.g., use a broom instead of hosing down a sidewalk)
- Explain drought situation to the public and governmental bodies via "Drought Watch" to provide a snapshot of the water supply picture, restrictions, and water conservation tips
- Promote the Weekly Watering Schedule
- Explain other stages and forecast future actions

ADVISORY STAGE

Shortage Level 2: 20% Voluntary (Trigger at Reservoir Storage < 65,000 acre-feet April 1)

Prohibitions on End Users

Water Waste Prohibitions outlined in District's Title 13.02.020

District Actions

Operations

- Continue to maximize supplemental water imports and closely monitor storage levels and weather conditions
- Minimize system flushing
- Initiate water waste patrols

Outreach

- Accelerate public information and increase outreach
- Communicate up to 20% voluntary reduction goals
- Develop internal speakers bureau to provide educations presentations to community groups

- Develop (or use existing) brief and simple educational videos that cover topics normally touched on during water efficiency phone consultations
- Provide outreach toolkit to cities in service area of drought conditions to ensure collaboration
- Encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Drought Rates

- Implement drought rates consistent with District-wide targeted water savings

ALERT STAGE

Shortage Level 3: 30% Mandatory (Trigger at Reservoir Storage < 55,000 acre-feet April 1)

Prohibitions on End Users

- Water Waste Prohibitions outlined in District's Title 13.02.020, with trigger for additional Stage 3 measures, as follows:
- Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.
- Use of potable water for refilling or make-up water of any decorative water features, is prohibited.
- Golf course irrigation, with potable or raw water, shall be irrigated up to 70% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code Appendix A.
- Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.
- Limit sewer cleaning/flushing to only recycled water.
- Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.

District Actions

Operations

- Continue to maximize supplemental water imports and closely monitor storage levels and weather conditions
- Continue water waste patrols to align with Prohibitions on End Users
- Increase system leak repair rate
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix

Outreach

- Accelerate public information program, outreach campaign, and communication with news media to help amplify messaging
- Provide updated outreach toolkit to cities to ensure collaboration

- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

SEVERE STAGE

Shortage Level 4: 40% Mandatory (Trigger at Reservoir Storage < 45,000 acre-feet April 1)

Prohibitions on End Users

- Water Waste Prohibitions outlined in District's Title 13.02.020
- Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.
- Decorative water features, including the refilling or make-up of any decorative water features, is prohibited.
- Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.
- Limit sewer cleaning/flushing to only recycled water.
- Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.
- Golf course irrigation, with potable or raw water, shall be irrigated up to 60% of the sites Maximum Applied Water Allowance per District Water Efficient Landscape Code Appendix A.
- Limit irrigation to 1 day per week, assigned by the District.
- No installation of new landscapes including no expansion of existing landscapes.
- Request that local fire departments limit training exercises that use potable water and cease hydrant testing.

District Actions

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate to prioritize class 1-3 leaks
- Increase water waste patrols to align with Prohibitions on End Users
- Consider Temporary Urgency Change Petition

- Consider Declaration of Water Shortage Emergency
- Consider limiting or excluding new service connections.

Outreach

- Provide information to customers about trees preservation during drought conditions
- Accelerate public information program, outreach campaign, and communication with news media to help amplify messaging
- Provide updated outreach toolkit to cities to ensure collaboration
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering
- Explain other stages and forecast future actions

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

CRITICAL STAGE

Shortage Level 5: 50% Mandatory (Trigger at Reservoir Storage < 35,000 acre-feet April 1)

Prohibitions on End Users

- Water Waste Prohibitions outlined in District's Title 13.02.020
- Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.
- Decorative water features, including the refilling or make-up of any decorative water features, is prohibited.
- Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.
- No installation of new landscapes including no expansion of existing landscapes.
- Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.
- Limit sewer cleaning/flushing to only recycled water
- Request that local fire departments limit training exercises that use potable water and cease hydrant testing.
- Irrigation restricted to maintain tree health for all potable and raw water customers, including golf courses.
- Refilling a completely drained swimming pool and initial filling of any swimming pool for which application for a building permit was made after District specified date.
- Establish Water Use Limits and associated penalties

District Actions

Operations

- Continue to maximize Sonoma Water supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate
- Increase water waste patrols
- Implement Temporary Urgency Change Petition
- Implement Water Use Limits and Penalties
- The Board shall consider a moratorium on new water service connections, or no net water use requirements for new connections.

Outreach

- Accelerate public information program, outreach campaign, and additional communication with news media to help amplify messaging
- Provide updated outreach toolkit to cities to ensure collaboration
- Explain other stages and forecast future actions
- Communicate Water Use Limits and associated penalties
- Provide information to customers about trees preservation during drought conditions
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

EMERGENCY STAGE

Shortage Level 6: > 50% Mandatory (Trigger at Reservoir Storage < 25,000 acre-feet April 1)

- Water Waste Prohibitions outlined in District's Title 13.02.020
- Washing vehicles with potable water except at commercial carwash facilities that use recycled water, is prohibited.
- Decorative water features, including the refilling or make-up of any decorative water features, is prohibited.
- Use of potable water for dust control, soil compaction, street cleaning, or any other use, as determined by the District, which can be met with disinfected tertiary recycled water.

- No installation of new landscapes including no expansion of existing landscapes.
- Power-washing any structure using potable water, unless required for health and safety as required by Marin County Health Department.
- Limit sewer cleaning/flushing to only recycled water
- Refilling a completely drained swimming pool and initial filling of any swimming pool for which application for a building permit was made after District specified date.
- Request that local fire departments cease training exercises that use potable water and cease hydrant testing.
- The use of potable water for any purpose other than human health and sanitation is prohibited.
- Implement Health and Safety Water Allotments.
- New water service connections will not be granted.

District Actions

Operations

- Continue to maximize supplemental water imports and closely monitor storage levels and weather conditions
- Restrict line flushing to include only regulatory compliance actions
- Access stored Emergency Supply - Soulajule and Phoenix
- Increase system leak repair rate
- Increase Water waste patrols
- Implement Temporary Urgency Change Petition
- Decrease Water Use Limits and implement issuance of penalties to align with Health and Safety Water Allotments

Outreach

- Accelerate public information program, outreach campaign, and additional communication with news media to help amplify messaging regarding Health and Safety Water Allotments
- Provide updated outreach toolkit to cities to ensure collaboration
- Explain other stages and forecast future actions
- Provide information to customers about trees preservation during drought conditions
- Reduce Weekly Watering Schedule to deficit irrigation
- Continue to encourage use of graywater and weather-based landscape watering

Drought Rates

- Drought rates will continue to increase based on declaration of water shortage stage and water savings target.

13.02.020 Water waste prohibitions.

No customer of the district shall make, cause, use or permit the use of potable water from the district for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to any provision of this section.

(1) Prohibited Nonessential Uses Applicable to Customers. It is unlawful for any person, firm, partnership, association, corporation, or political entity to use potable water from the district for the following nonessential uses:

(A) The washing of sidewalks, walkways, driveways, parking lots and all other hard surfaced areas by direct hosing, except as may be permitted by current regulations pertaining to urban water runoff pollution prevention as defined by the Marin County Stormwater Pollution Prevention Program and other controlling agencies.

(B) The escape of water through breaks or leaks within the consumer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of 48 hours after the consumer discovers such a leak or break, or receives notice from the district of such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break.

(C) Non-recycling decorative water fountains.

(D) Restrictions on Irrigation. Irrigation shall not be conducted in a manner or to an extent that allows water to run off or overspray the areas being watered. Every consumer is required to have his or her water distribution lines and facilities under control at all times to avoid water waste.

(E) Any excess water runoff flowing onto the public right-of-way at a rate of one gallon per minute or greater not caused by storm water or naturally occurring groundwater, is prohibited.

(F) Using a garden hose without a shut-off nozzle.

(G) Landscape irrigation between the hours of 9:00 a.m. and 7:00 p.m.

(H) Operating outdoor sprinkler irrigation systems delivering overhead spray more than two days within any calendar week and drip irrigation more than three days per week within any calendar week, but excluding hand-watering. For the purpose of this section, "calendar week" shall mean a period running from Monday-Sunday.

(I) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.

(J) Irrigating ornamental turf on public street medians.

(2) Restrictions on Reverse Osmosis Units. The installation of reverse osmosis water purifying systems not equipped with an automatic shutoff unit is prohibited.

(3) The following are prohibited for new connections:

(A) Single pass cooling systems for air conditioning or other cooling system applications unless required for health or safety reasons;

(B) Non-recirculating systems for conveyer carwash applications.

(4) Exemption From Daytime Water Prohibition. Notwithstanding anything contained in this Title 13, testing and repairing irrigation systems for the purpose of eliminating water waste is permitted during the hours of 9:00 a.m. and 7:00 p.m.

(5) Sewer cleaning/flushing should be done using recycled water when available without hauling by truck and whenever reasonably possible. (Ord. 461 §2, 2022)

13.02.021

3(C) Pool and Spa Covers. All recreational pools and spas shall have covers, subject to the variance provisions as set forth in Section 13.02.050.
(6)Drinking Water Served Upon Request Only. By January 1, 2011, eating or drinking establishments, including, but not limited to, a restaurant, hotel, café, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.
(7)Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services. By January 1, 2011, hotels, motels and other commercial lodging establishments shall provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments shall prominently display notice of this option in each bathroom using clear and easily understood language.

11.32.090
No consumer shall cause or permit any water furnished to his property by the district to run to waste in any *gutter* or otherwise. The district may, after one warning, terminate the service of any consumer pursuant to Chapter 11.28 for failure to comply with the foregoing rule. Restoration of service may be conditioned upon installation of a flow restrictor on the consumer's service. Fees will be charged for the flow restrictor and installation or removal in addition to the turn-on charge provided for in Section 11.08.150. (Ord. 314 §2, 1990)

11.50.010 Private fire taps.
A "private fire tap" means a service to provide water for a private fire hydrant, fire sprinkler system or other fire protection installation. Private fire taps may be granted solely to provide water for fire protection and each private fire tap shall have an approved backflow assembly and bypass meter. A single detector check valve may be used when replacing a single detector check valve when a private fire tap upgrade is required as described in Section 11.56.015.The district's system shall extend approximately to the curb line or edge of the public right-of-way, and shall end with an insulating spool piece or kit, but shall not include the detector check valve, or above ground backflow device. All bypass piping, except the meter owned by the District, shall be the responsibility of the consumer. (Ord. 416 §3, 2010; Ord. 314 §2, 1990; Ord. 176 §1, 1978)

Appendix H: 2007 Water Conservation Plan

MARIN MUNICIPAL WATER DISTRICT

2007 Water Conservation Master Plan

Adopted June 20, 2007

This page intentionally left blank.

Acknowledgments

Marin Municipal Water District 2007 Board of Directors

Cynthia Koehler, President
Larry Russell, Vice President
David Behar, Director
Alex Forman, Director
Jack Gibson, Director

Paul Helliker
General Manager

Daniel Carney
Water Conservation Manager

MMWD has made every effort to be accurate and complete in the presentation of this report. Thanks to the many individuals who have contributed the ideas, questions, and comments that have made the preparation of this Master Plan possible, some of whom are recognized as follows:

Members of the Conservation Action Committee

Maddaus Water Management

Charlton Research

Descomstudios

MMWD Staff:

Environmental Review
Eric McGuire

Public Information
Neil Dukas
Libby Pischel

Finance
Cheryl Howlett
Terry Stigall

Water Conservation
Keith Bancroft
Charlene Burgi
Corinne Dare
Elena Freeman
Mark Guthrie
Robin McKillop
Nancy McQuilkin
Wendy Menara

Facilities & Watershed
Steve Phelps
Greg Renfort
Carl Sanders
Bill Yungert

Information Technology
Debby Barrett
Bob Fairchild
Nancy Gibbs
Gavin McGhie
Nick Salcedo
Mariette Shin

This page intentionally left blank.

TABLE OF CONTENTS

► ACKNOWLEDGMENTS i

► INTRODUCTION 1

► EXECUTIVE SUMMARY 7

► **SECTIONS**

- MMWD CONSERVATION PROGRAMS 15
  - STATEWIDE CONTEXT 15
  - FUTURE MMWD PROGRAM GOALS AND OBJECTIVES 18
  - AUTOMATED METER READING (AMR) & ADVANCED METER INFRASTRUCTURE (AMI) PROGRAM 19
  - LEAK DETECTION PROGRAM 21
  - CONSERVATION PROGRAM #1 24
  - CONSERVATION PROGRAM #2 26
  - CONSERVATION PROGRAM #3 28
  - CURRENT MMWD PROGRAM STATUS 30
  - PROGRAM ACTIVITY LEVELS 31
  - COMMUNITY INPUT 32
  - CONSERVATION SCRAPBOOK – 2006/2007 33
- POLICY RECOMMENDATIONS 37
- CONSERVATION MARKETING PLAN 41
- CONCLUSIONS 51
- APPENDICES
  - MADDAUS CONSERVATION TECHNICAL ANALYSIS ..... APPENDIX A
  - STAFF REPORTS ..... APPENDIX B
  - MMWD 2006 WATER MANAGEMENT REPORT ..... APPENDIX C
  - MMWD SURVEY (CHARLTON RESEARCH CO., 2005) ..... APPENDIX D

► LIST OF FIGURES

- FIGURE 1: RELATIONAL MODEL OF AN URBAN WATER CONSERVATION PROGRAM 6
- FIGURE 2: MADDAUS PRESENT VALUE OF UTILITY COSTS VERSUS CUMULATIVE WATER SAVED IN 2030 10
- FIGURE 3: STATEWIDE BMP COMPLIANCE 16
- FIGURE 4: PROGRAM #1 ORGANIZATIONAL CHART.....24
- FIGURE 5: PROGRAM #2 ORGANIZATIONAL CHART.....26
- FIGURE 6: PROGRAM #3 ORGANIZATIONAL CHART.....28

► LIST OF TABLES

- TABLE 1: COMPARISON OF MMWD AND MADDAUS CONSERVATION ANALYSES 8
- TABLE 2: MADDAUS PROGRAM DESCRIPTIONS AND FUTURE WATER SAVINGS 9
- TABLE 3: MADDAUS PROGRAM COSTS (2008-2030) 9
- TABLE 4: MADDAUS COST PER ACRE FOOT & WATER SAVINGS POTENTIAL.....10
- TABLE 5: MMWD CONSERVATION PROGRAM ALTERNATIVES.....11
- TABLE 6: COMPARISON OF BMP PROGRAM IMPLEMENTATION 17
- TABLE 7: PROGRAM #1 BUDGETED ACTIVITIES FY '08/'09.....25
- TABLE 8: PROGRAM #2 BUDGETED ACTIVITIES FY '08/'09.....27
- TABLE 9: PROGRAM #3 BUDGETED ACTIVITIES FY '08/'09.....29

INTRODUCTION

In 2007, the relationship between human activities and the resulting environmental impacts is a fact accepted by most people. We *know* we must act now in order to protect natural resources for future generations. Water is no exception. Worldwide, overuse and mismanagement of water supplies lead to over-drafted aquifers, depleted fisheries, habitat degradation, water-borne diseases, war, and economic hardship.

Marin is an oasis. Sweet, clean water runs off local mountains and flows abundantly in most years. If it were not for the problems of limited storage, recurring droughts, a growing population, and the financial and environmental costs of developing new water supplies, the need to increase efficiency would be less urgent. In light of these problems, it is appropriate for the District to redouble conservation efforts and sustain them in the future.

Conservation, however, is not intended to be a stand-alone strategy for managing the District's water portfolio. Efficiency measures have a point of diminishing returns, just as reservoirs have a limited storage capacity. Although there is a significant amount of water to be conserved in Marin, at a certain point it becomes too difficult, expensive, or inconvenient to use less water and still maintain a customary standard of living.

Ongoing capital improvements will always be necessary to increase system operating efficiencies and provide a hedge against catastrophic drought emergencies. To this end, the District is analyzing the benefits of detecting and repairing leaky pipes, augmenting delivery capacity, modernizing outdated equipment, entering into cooperative supply agreements with neighboring water agencies, and exploring new filtration technologies.

How much water can ultimately be conserved on a sustained, normal year basis? What will be the water demand in 2025? Will we get more or less rain due to global climate change? There are no certain answers to these questions. History shows us that conservation programs reliably and permanently reduce water demand. We do know that new water-saving products are in the stores today and more are being developed, and that the cost of these products will drop over time as more manufacturers enter the market in response to greater demand. We also know that public education is the golden key that can unlock and sustain the greatest water conservation potential.

Public opinion surveys indicate that the citizens of Marin value a healthy environment and that they value water conservation as one of the most important solutions to the ongoing specter of inadequate water supply. These surveys also indicate that most MMWD customers believe they are doing all they can to conserve water. Clearly, there are opportunities to educate our customers on new, cost-effective ways to use our water supplies as efficiently as possible.

In this Master Plan, the terms *water conservation* and *water efficiency* are used interchangeably to mean the practice of making the *best use of water resources*. The basic goal of the Plan is to draw a conservation trail map for the District. Several program options are presented, and all trails lead to the same destination—a future where water waste is reduced, the environment is protected, and water rates are based on the efficient use of available resources.

Reliability

In order to evaluate the reliability of water efficiency programs and the savings they can provide, two fundamental concepts come into play:

- ***Technical Savings Potential*:** savings resulting from the installation of efficient plumbing fixtures such as high-efficiency toilets, clothes washers and irrigation systems; and from maintaining the water system infrastructure.
- ***Behavioral Savings Potential***: savings resulting from activities such as taking shorter showers, turning off faucets, and reducing landscape watering.

The results the District can achieve by targeting both of these savings potentials are more than twice as great as the technical savings alone. This *elasticity* is a key concept that must be understood when determining the investment value of technical and behavioral programs such as plumbing fixtures and customer education.

Technical Savings comprise more than 90% of the potential water savings, costs, and benefits associated with the various conservation program options in this Plan. This is the 'standard method' used in the conservation industry because it is the most objective method to forecast future savings. It is more difficult to create a formula that predicts how people will behave. Fortunately, a method has been devised to quantify behavioral savings. Bill Maddaus, a recognized expert in the field of water efficiency, has calculated the behavioral savings that can be gained when people take shorter showers, fix leaks, and turn off running faucets. These detailed calculations are included in Appendix A, starting on page 37 of the *Maddaus Conservation Technical Analysis*.

The calculation below estimates the percentage of savings from technical and behavioral actions based on the calculations in Table 10 of the Maddaus Analysis. (Note: The behavioral savings of 500 acre feet represents 10% of the total conservation savings shown for Program D in Appendix A, Table 10, page 41 of the Maddaus Analysis.)

Plumbing Code	=	1,600 acre feet per year
Conservation Savings (technical)	=	2,900 acre feet per year
Technical Savings Potential	=	*4,500 acre feet per year*
25% Drought Ordinance	=	7,000 acre feet per year
Conservation Savings (behavioral)	=	500 acre feet per year
Behavioral Savings Potential	=	*7,500 acre feet per year*

Total District Potential in 2025 = 12,000 acre feet per year
(Plumbing Code + Technical + Behavioral)

The savings potential of daily activities can be illustrated with a simple 'shower scenario':

> If a 2.5 gallon-per-minute shower head is replaced with a 2.0 gallon-per-minute shower head, the savings can easily be formulated: i.e., **0.5 gallon**-per-minute is the *technical savings* potential for that shower head replacement—a **20%** savings per minute. If the person takes a 10-minute shower, then the technical savings would be **5 gallons** (10 minutes x 0.5 gallon-per-minute).
>
> Plus, there is a *behavioral savings potential*. How much more water would be saved if this person reduced their shower time from 10 minutes to 6 minutes? A 4-minute shorter shower would result in *behavioral savings* of **8 gallons** (4-minutes x 2.0 gallons-per-minute).

To recap:

> Original 2.5 gpm shower head x 10 minutes = 25 gallons
> New 2.0 gpm shower head x 6 minutes = 12 gallons
> **Savings for each shower = 13 gallons**

Savings elasticity can work in both directions, however, as customers can reduce or increase their water use. Increases in average water use are common whenever water agencies reduce conservation activities in the years following drought emergencies. This phenomenon is seen at MMWD today, where average water use is gradually increasing 15-years after the last drought and following a period of significant decreases in conservation program activity.

On the other hand, increases in conservation activities typically result in reductions in average consumption. This has been observed since 1991 with the enactment of conservation legislation and the implementation of sustained conservation programs in California. Every major water purveyor in California reports that total water consumption has remained virtually unchanged due to conservation—despite significant increases in population:

> *"While the District's customer base has increased by more than 20% and the population increased by more than 10% between 1970 and 2004, use in 2004 was essentially the same as use in 1970 due to a variety of water conservation efforts now in place."*
>
> *Source: MMWD UWMP 2005*

If the District was able to achieve the deployment rates of water-efficient technologies projected in the Maddaus analysis, and if we succeed in securing ongoing behavioral changes among our customers, or when required during infrequent 25% demand reduction rationing events, it could be possible to achieve water use savings of approximately **12,000** acre feet per year by 2025.

It is important to remember, however, that behavioral savings require ongoing effort to sustain them, while technical savings are less dependent on behavior and therefore more reliable. Additionally, it is important to note that the calculations in this Plan describe changes in customer's water *Demand,* and are completely separate from, and different than, MMWD's *supply* or *operational yield* calculations.

The most efficient and cost-effective conservation programs target both behavioral and technical savings. Providing thousands of rebates for toilets and clothes washers is expensive. Instead, if we can inspire (or require) people to buy these fixtures without a rebate, it can cost the District less money and achieve the same water-saving results.

The strategy recommended in this Master Plan places a greater emphasis on 'human resources' than on plumbing fixtures, per se, although both are essential components of each program alternative. Incentive programs, new development ordinances, and building codes generate the technical savings, while school education, public outreach, and customer survey programs create the social awareness needed to harvest the even greater behavioral savings.

There are financial impacts to the District and its customers when normal year water use is decreased *and* when it is increased. This Plan calculates costs and potential water savings associated with decreasing normal year water use in the District. A growing body of research indicates that combined **"triple bottom-line"** benefits—i.e., benefits to the *District* + *Customer* + *Environment*—exceed the relatively simple cost/benefit calculations included in this Plan. Numerous environmental impacts (and costs) are reduced when communities become more water efficient. Staff recommends that the District conduct advanced research to quantify the regional costs and benefits associated with environmental changes resulting from conservation activities. Areas of interest may include climate change, greenhouse gases, energy consumption, waste water, urban runoff pollution, air quality, water quality, invasive plants, fire safety, and changes in native habitats.

Modern water efficiency programs have been operating in California for almost two decades. Since 1991, research and field experience have demonstrated that these programs are the most cost-effective and reliable first line of defense for worsening water problems. Less waste means lower energy use, less urban runoff pollution, extending available storage supplies, more water for fisheries, reduced waste water treatment and discharge, downsizing or eliminating costly new water projects, and being better prepared to weather the next drought.

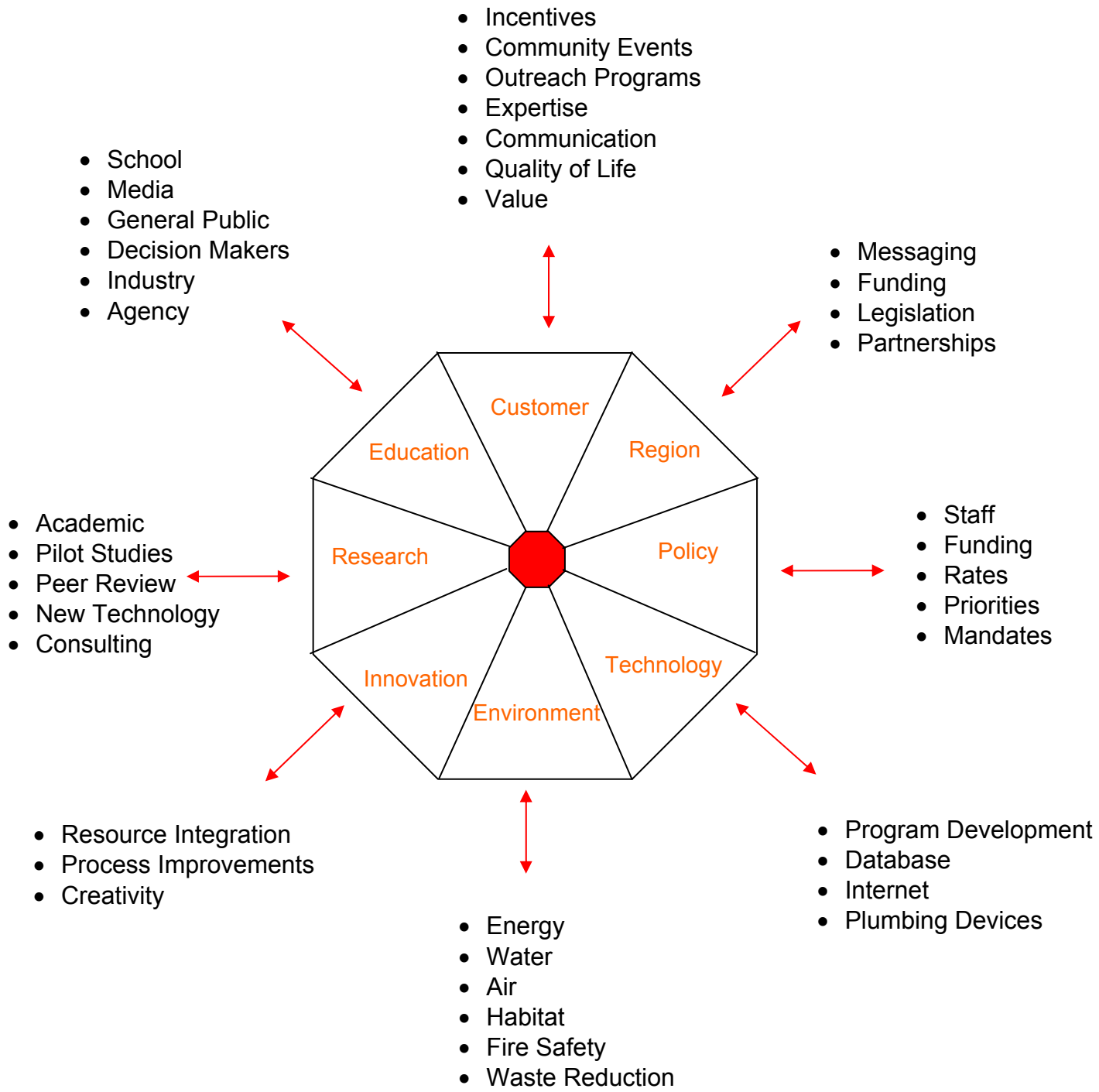
This Plan examines District conservation programs in the past, present, and future—from the 1970s through 2030. It incorporates the history of water shortages, current and future demands, marketing strategies, and the costs and benefits of conservation programs. Information is taken from a variety of sources including the general public, consultants, water agencies, Conservation Action Committee meetings, the Board of Directors, and District staff. The primary source materials referenced in the Plan include:

- *Water Conservation Baseline Study Final Report (DMC 1994)*
- *Water Efficient Conservation Master Plan (Barakat & Chamberlin 1994)*
- *Water Entitlement and Water Budget Program Report (MMWD Staff 1995)*
- *Water Conservation Action Plan for 1997 (MMWD Staff 1997)*
- *Review of Conservation Activities Final Report (Fiske, Stout, Nelson 2001)*
- *MMWD Urban Water Management Plan 2005 (MMWD Staff 2005)*
- *2006 Water Management Report (MMWD Staff 2006)*
- *Conservation Technical Analysis (Maddaus 2007)*
- *Memorandum of Understanding Regarding Water Conservation in California (CUWCC, Amended 2007)*

A well-structured conservation program is complex and is woven into the social fabric of the community. **Figure 1** shows relationships among elements in a model conservation program:

FIGURE 1

RELATIONAL MODEL OF AN URBAN WATER CONSERVATION PROGRAM



EXECUTIVE SUMMARY

Today, MMWD is increasing conservation activities in response to rising water demand caused by increasing population and 15 years of relatively drought-free conditions. In 2006 – 2007, the conservation department completed a major reorganization and embarked on a long-term strategy to strengthen relationships with MMWD customers and resource agencies in the region. Every program element is under review and is being revised as needed.

This strategy is based on several basic principles:

- Incentives are the backbone of effective conservation programs.
- Positive conservation messages build customer confidence and goodwill in the District.
- Customer participation increases when programs emphasize services rather than penalties and enforcement of ordinances.
- High-visibility public outreach and education programs are essential in order for conservation programs to achieve sustainable long-term reductions in demand.
- Water pricing is a powerful conservation tool that provides reliable improvements in efficiency.
- A conservation-focused analysis of the District's tiered rate structure, entitlements, connection fees, and water budgets is required.
- A revision of all conservation ordinances is required.

Program Analysis

The District has completed two studies of the District's water conservation potential in the past year:

- *2006 Water Management Report (MMWD)*
- *Conservation Technical Analysis (Maddaus)*

In April 2006, the Water Management Report was completed by District staff to accomplish three goals:

1. Calculate water savings resulting from conservation activities in the District from 1991 through 2006.
2. Reconcile the number of water-efficient plumbing fixtures that have been installed in the District and the number of inefficient fixtures remaining.
3. Calculate the maximum *technical* water savings remaining in the District.

Staff calculated current savings in the District to be approximately **3,000** acre feet per year, resulting from program activities and building code changes since 1991. The future *maximum technical savings* was determined to be approximately **7,000** acre feet per year in a normal rainfall year. Therefore, according to these calculations, the total normal year conservation potential in the District is approximately **10,000** acre feet per year (current + maximum technical savings). The Report concluded that the District would need to implement a model conservation program over at least the next ten years in order to obtain these savings (Appendix C, 2006 Water Management Report, pages 1-6).

In October 2006, the District engaged the Maddaus Water Management consulting group to analyze the District's conservation potential, using the Least Cost Planning Decision Support System (DSS) Model they developed. This analysis was completed in April 2007 and provides a detailed account of the savings potential of four program alternatives (Programs A – D) through the year 2030, as well as a drought and demand hardening assessment.

The Maddaus Analysis is used as the primary reference source because of the accuracy of the DSS model and expertise of Maddaus Water Management.

Table 1 summarizes the results of both analyses:

TABLE 1

COMPARISON OF MMWD AND MADDAUS CONSERVATION ANALYSES

STUDY	CURRENT DEMAND REDUCTION (ac. ft./year)	POTENTIAL DEMAND REDUCTION (ac. ft./year)	PROGRAM COST PER ACRE FOOT SAVED	AVERAGE % CUSTOMER SATURATION
Maddaus* *April 2007*	Not Calculated	**3,000 – 5,400** Programs A – D by 2030	$1,000	10 – 50%
MMWD* *April 2006*	2,800 – 3,400	**5,400 – 8,600** Maximum Savings by 2018	$1,400	90 – 100%

* Appendix A ** Appendix C

The Maddaus program alternatives include savings that will be obtained through the effects of state plumbing codes and new development ordinances. These savings will accrue as property owners replace older, less efficient appliances and in new building developments. Except for some minor costs associated with the administration of District ordinances related to plumbing retrofits and plan review, these savings are virtually 'free' from the utility cost perspective.

Table 2 describes the general elements and savings potential associated with each program option:

TABLE 2
Maddaus Program Descriptions and Future Water Savings*

Program	Description	2030 Water Savings, AF/Yr	2030 Water Savings with Plumbing Code, AF/Yr
Plumbing Code Only	No Conservation Program beyond Plumbing Code	2,000	2,000
A	Continue Current MMWD Program (Mostly BMPs) Market Penetration 6-12%	1,000	3,000
B	Add New Measures to Current Program Market penetration 10-20%	2,000	4,000
C	Add New Measures to Current Program Market penetration 20-30%	3,000	5,000
D	Add New Measures to Current Program Market penetration 30-50%	3,500	5,500

* Adapted from Maddaus Analysis, Appendix A, Table 8, page 35.

Table 3 lists the costs for the Maddaus program alternatives (B – D) in years 2008 – 2030. (Note: These three alternatives were selected for comparison based on staff's budget analysis and final program recommendations.)

TABLE 3
MADDAUS PROGRAM COSTS (2008-2030)

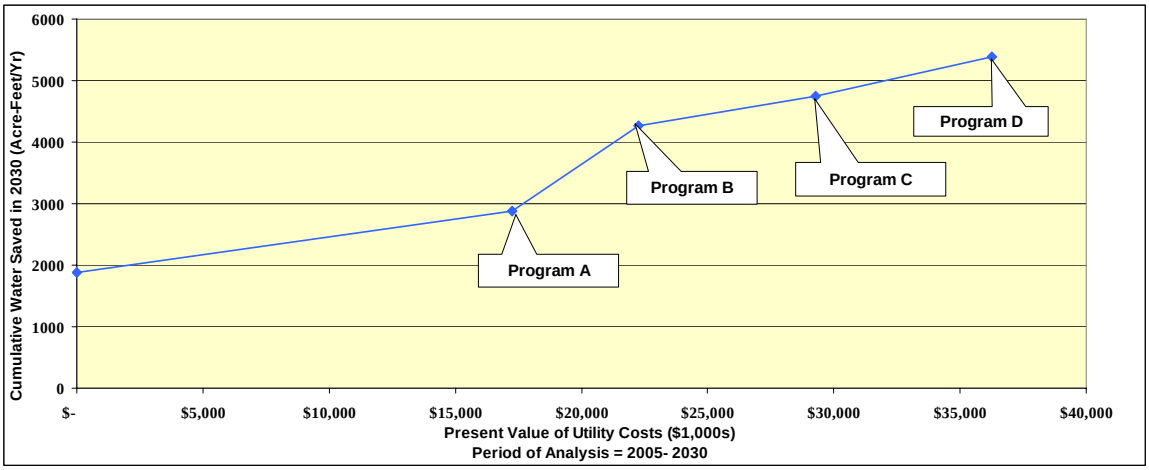
Program	Average Annual District Cost* ($1,000s)	Average Annual Customer Cost* ($1,000s)	Average Annual Community Cost (District + Customer)* ($1,000s)	Average Annual Community Cost Per Service Connection**	Total District Cost*** ($1,000s)	Total Customer Cost*** ($1,000s)	Total Community Cost*** ($1,000s)
B	$1,117	$2,300	$3,679	$61.00	$22,244	$41,136	$63,380
C	$1,316	$2,709	$4,333	$71.00	$29,269	$48,454	$77,723
D	$1,826	$3,262	$5,088	$84.00	$36,255	$60,031	$96,286

* Adapted from Maddaus Analysis, Appendix A, Attachment 2, page 51; costs are undiscounted.
** Based on 60,670 accounts. Source: CUWCC 2004 BMP Report.
*** Adapted from Maddaus Analysis, Appendix A, Table 8, page 35.

Figure 2 graphs the utility costs versus annual water savings in 2030.

FIGURE 2

Maddaus Present Value of Utility Costs versus Cumulative Water Saved in 2030*



* From Maddaus Analysis, Appendix A, Figure 11, page 36.

Table 4 lists the cost per acre foot and potential water savings during this same time period:

TABLE 4

MADDAUS COST PER ACRE FOOT & WATER SAVINGS POTENTIAL

Program	District Cost per ac. ft.*	Customer Cost per ac. ft.*	Community Cost per ac. ft. (District + Customer)*	Annual Water Savings Potential in 2030 (ac. ft.)*	Total Water Savings as a % of Total Production in 2030**
B, C, D	$400	$700	$1,100	**4,300 – 5,400**	**13% – 17%**

* Adapted from Maddaus Analysis, Appendix A, Table 8, page 35. Savings includes plumbing code.
** Adapted from Maddaus Analysis, Appendix A, Table ES-2, page 3. Percentage includes plumbing code.

MMWD Program Recommendations

By using the Maddaus Analysis as a reference model, and adapting Maddaus Programs B, C, and D to the organizational framework of the District, staff has prepared customized program alternatives for MMWD. The MMWD alternatives are roughly equivalent to Maddaus programs in terms of overall costs and savings targets, and Tables 1 – 4 can be used for purposes of direct comparison.

The MMWD Programs include an Automated Meter Reading (AMR)/Advanced Meter Infrastructure (AMI) and Leak Detection Program that will be operated by the Facilities and Watershed Division, and Conservation Programs 1 – 3 to be operated by the Water Conservation Department. **Table 5** summarizes the costs and savings targets associated with each MMWD program alternative and provides a description of program activities that would be accomplished during the next two-year budget cycle:

TABLE 5

MMWD CONSERVATION PROGRAM ALTERNATIVES

Program	AMR/AMI & Leak Detection	Conservation Program #1 (compare to Maddaus Program B)	Conservation Program #2 (compare to Maddaus Program C)	Conservation Program #3 (compare to Maddaus Program D)
Description	The District has not had an individual dedicated solely to leak detection in more than five years. Staff recommends that two positions be dedicated to leak detection. These positions would be classified as Utility Workers III, reporting to the Area Field Supervisor in the Facilities and Watershed Division. Based on past experience, it requires five years for one worker to survey all nine hundred miles of pipeline and sixty thousand meters in the District. With two Staff dedicated to leak detection, the task should be accomplished in three years. Automated Meter Reading (AMR) and Advanced Meter Infrastructure (AMI) technologies would replace existing meters and provide numerous technological opportunities for revenue recovery and conservation.	MMWD Program #1 is the "status quo" option – with program expenditures in FY '08/'09 similar to FY '07 levels. Program costs will change in response to inflation, staff salaries and benefits, and program implementation for all programs through 2030. New rebate programs initiated in FY '07 will be funded at partial levels, and customer saturation targets would remain at current levels. The Customer Assistance Program (CAP), water waste, and Time of Service programs will continue at minimum levels; and a new school education program will be initiated (Appendix B, Staff Reports). Some website and database tools will be developed.	Program #2 includes increases in spending for rebates, staffing, and customer services beyond FY '07 levels. New rebate programs initiated in 2007 will be funded at higher levels, and CAP services will increase significantly for all customer types. Three new Conservation Specialist I positions would be added to perform field surveys and provide program support. One existing Conservation Specialist III position would be upgraded to an existing Conservation Coordinator position, and the Mid-Manager position will be upgraded to a Senior Manager position. A new School Education Program will be initiated and funded at increased levels. Improvements to public outreach and marketing, conservation databases, website development, contractor education, and regional development projects will also be accelerated.	Five new Conservation Specialist I positions will be added to perform field surveys and provide program support. One new Conservation Specialist II will be added to support School Education Programs. One existing Conservation Specialist III position will be upgraded to an existing Conservation Coordinator position, and the Mid-Manager position will be upgraded to a Senior Manager. Rebate programs will be funded at higher levels, and very significant improvements in the CAP programs will occur for all customer types. The new School Education Program will be funded at above average levels. Significant improvements will be made in public outreach and marketing, conservation database and website development, contractor education, research, and regional development projects.
FY '08/'09 District Costs (per year)	AMR/AMI – $1,700,000 Leak Detection – $272,000	$1,800,000	$2,700,000	$3,300,000
Staff Requirements	AMR/AMI – to be determined Leak Detection – Add 2 positions	No new positions	Add 3 and upgrade 2 positions	Add 6 and upgrade 2 positions
2015 Demand Reduction (ac.ft./year)	AMR/AMI – to be determined Leak Detection – 400*	2,400**	2,800**	3,400**
2030 Demand Reduction (ac.ft./year)	AMR/AMI – to be determined Leak Detection – 800*	3,500**	3,900**	4,600**

* Adapted from Maddaus Analysis, Appendix A, Table 4, page 20. Savings are calculated as a "30-year Average".

** Adapted from Maddaus Analysis, Appendix A, Table 8, page 35. Savings includes plumbing code minus Leak Detection Program savings.

Program Implementation

Strategy

In order to cost-effectively operate MMWD's conservation programs, staff will work collaboratively with private and public partners to the greatest extent possible. This strategy is designed to produce the following results:

- Administrative costs can be reduced or deferred to other service providers.
- Program participation will increase via networking among partners.
- Communication and marketing messages will be more effective as they reach more customers more often.
- Rebate and incentive costs can be reduced more quickly if market transformation occurs at a faster pace—water-saving devices become more available and affordable.
- Public events will cost less to produce and will reach more customers.
- Water savings resulting from behavioral changes will increase with growing public awareness.
- Public support for rate increases may increase if more customers realize direct benefits from District programs.
- Funding opportunities for research and new technologies will increase with greater program visibility and wider regional benefits.

Communications and Marketing

MMWD's audience includes all of its 190,000 customers. Reminding them of the need to be mindful about water—use well, not waste—is an ongoing and overarching goal of the District's communications plan. MMWD has identified audiences where it expects to have the greatest impact on water use:

1. Residential customers
   - Homeowners with irrigation systems
   - Homeowners' Associations
   - Professional landscapers, plant nurseries, garden supply centers
   - Civic, health, environmental, and conservation organizations
   - Highest water users

2. Commercial customers
   - City and county public works departments
   - Schools (maintenance supervisors)
   - Hospitals
   - Private businesses
   - Golf courses
   - Owners of multi-family residential housing

3. Teachers, school-age children, and their families

District Policy

Funding

To provide long-term funding for conservation programs and revenue for District operations, the following funding mechanisms are proposed:

- Regular tier-break adjustments
- Service and/or connection fees dedicated to conservation programs
- On-bill conservation surcharges based on current consumption
- Bond financing secured with conservation surcharges
- On-bill financing (e.g., "Pay-As-You-Save")

Ordinances

Revising the existing conservation ordinances, and adding new development ordinances, should be a high priority for the District over the next year. Although overall savings resulting from ordinances will be relatively small, they are highly cost effective. Opportunities exist to increase the effectiveness of ordinances by building enforcement networks with local municipalities and other special districts.

Conclusions

The District is at a critical turning point in its history and must make significant investments that balance water supply and demand, and fund infrastructure maintenance and operations.

Investments in water conservation programs have reliably reduced water demand in the District for over 30 years and continue to yield consistent results. The conditions now exist for the District to launch an aggressive, sustained conservation campaign and set a new achievement standard for water efficiency in California: Water supplies are limited, new supplies are expensive to develop and impact the environment, the citizens of Marin are knowledgeable and motivated, the District has the in-house expertise to develop and operate programs successfully, and the technologies exist that can reliably reduce consumption in the future.

Although conservation is a cost-effective method that extends available water supplies and provides environmental benefits, under the current District pricing structure, lowered water sales also reduce District revenue. Solving this financial catch-22 is the most critical challenge limiting conservation today.

Finally, it is a political decision that will determine the level of conservation savings the District attains. Only by making a commitment to work together as an agency and a community, to overcome financial and social barriers, and to invest in public education and technology, can the conservation potential in Marin be achieved.

This page intentionally left blank.

MMWD CONSERVATION PROGRAMS

STATEWIDE CONTEXT

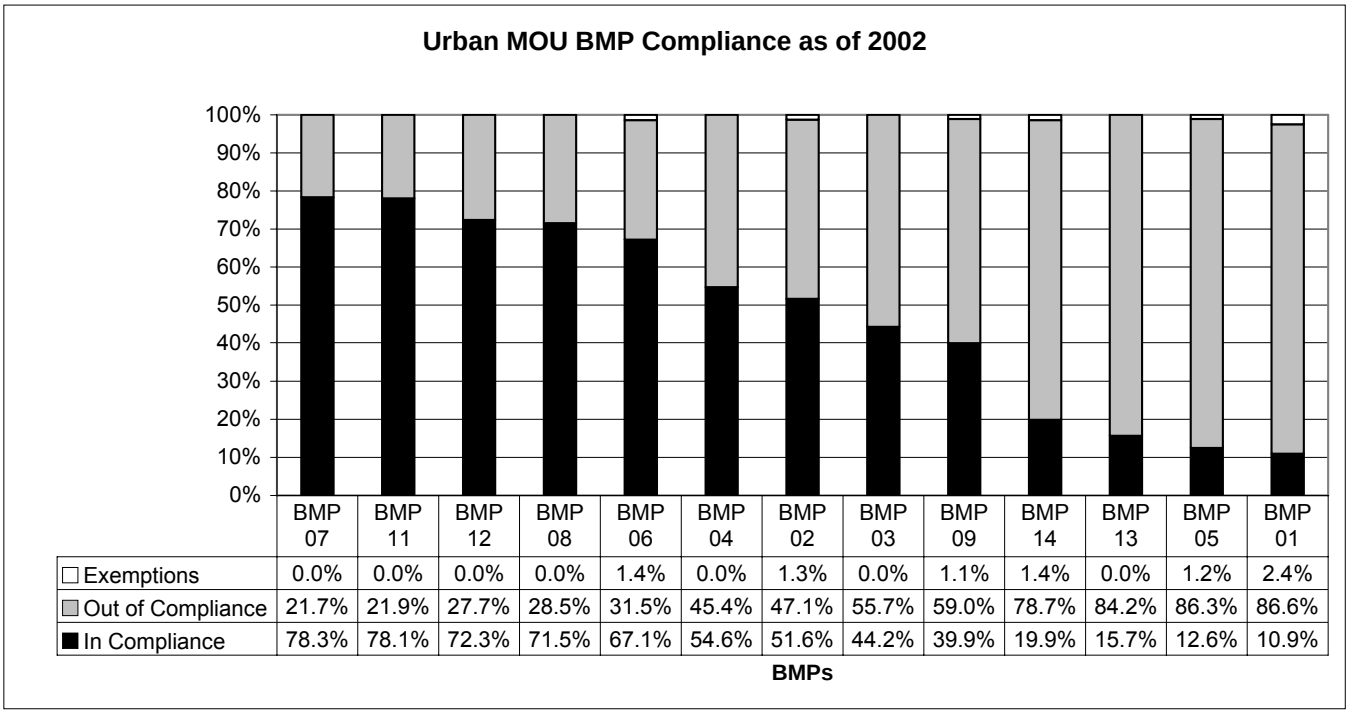
California communities are under increasing pressure to meet future water demands. Increasing population, environmental conditions, rising capital and operational costs, recreational needs, agricultural demands, and changing weather patterns are all contributing factors. Statewide, modern conservation programs began in 1991 when MMWD and most other water agencies signed the first *Memorandum of Understanding Regarding Water Conservation in California*. This historic event transformed conservation programs among individual agencies into a statewide coalition dedicated to sustained water use efficiency practices. The *Memorandum* describes 14 Best Management Practices (BMPs) that include everything from toilets to irrigation systems and rate structures. An agency is considered "on track" for a given BMP if it is meeting the implementation schedule. For example, MMWD has completed the implementation of BMP #14, the "Residential Ultra-low Flow Toilet BMP", because an estimated 48,000 ULFTs have been installed in the District since 1994.

For an agency to be 'on-track' with the BMPs is comparable to constructing a building to meet minimum building codes. BMPs were born out of statewide political compromise, and as such, represent a fairly low standard of achievement. Nevertheless, it is a good standard and serves as a starting point for future conservation efforts. If all the BMPs were fully implemented by all water agencies, plus savings from building codes, demand in California would be reduced by approximately 1 million acre feet each year by 2030. This represents approximately 33% of the maximum savings technically available through improved water efficiency practices.

Currently, however, no water agencies have fully implemented the BMPs. As a result, actual water savings equal only one-third of the BMP goal. Lack of resources dedicated to conservation programs is the primary reason for not achieving anticipated savings.

Figure 3 below is extracted from a presentation of the CUWCC *CALFED Year 4 Comprehensive Report*, and it shows the relative levels of water agency BMP compliance as of 2002.

FIGURE 3
Statewide BMP Compliance



	BMP 07	BMP 11	BMP 12	BMP 08	BMP 06	BMP 04	BMP 02	BMP 03	BMP 09	BMP 14	BMP 13	BMP 05	BMP 01
Exemptions	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.3%	0.0%	1.1%	1.4%	0.0%	1.2%	2.4%
Out of Compliance	21.7%	21.9%	27.7%	28.5%	31.5%	45.4%	47.1%	55.7%	59.0%	78.7%	84.2%	86.3%	86.6%
In Compliance	78.3%	78.1%	72.3%	71.5%	67.1%	54.6%	51.6%	44.2%	39.9%	19.9%	15.7%	12.6%	10.9%

Table 6 on the following page compares BMP program statistics of seven California water agencies, including MMWD.

TABLE 6

Comparison of BMP Program Implementation *

Water Agency (%) indicates customer saturation	Alameda County Water District	Redwood City	East Bay Municipal Utility District	Irvine Ranch Water District	Long Beach Water Department	San Francisco PUC	Marin Municipal Water District
BMP 1 Residential Surveys	8,014 (11.3%)	368 (1.8%)	67,056 (19.2%)	3,052 (4.0%)	32,697 (40.8%)	89,379 (60.6%)	4,653 (8.4%)
BMP 3 Leak Detection	System audit in 2004	No program reported	2 – Staff 1 – Vehicle	No audit reported	System audit in 2000	Program to begin in 2005	System audit in 2001
BMP 5 Landscape Surveys	842 (16.0%)	22 (1.1%)	2,025 (7.2%)	0 reported	364 (4.0%)	3,165 (14.0%)	97 (9.5%)
BMP 6 2006 Data Clothes Washers	13,324 (18.8%)	1,080 (5.4%)	30,368 (8.7%)	8,435 (9.9%)	6,703 (8.4%)	7,811 (5.3%)	6619 (11.9%)
BMP 9 CII Audits	370 (10.6%)	0 reported	3,393 (14.8%)	50 (1.0%)	2,336 (28.5%)	12,885 (60%)	253 (7.1%)
BMP 14 ULF Toilets	0 reported	0 reported	24,443	26,707	43,419	37,034	48,857
Total Accounts	77,907	22,931	377,318	85,728	89,381	170,670	60,670
Dollars Spent on BMP Programs*	$683,444	$660,486	$4,848,518 ('03/'04 avg.)	$633,752	$1,489,364	$1,016,952	$973,312 (source:MMWD)
Dollars Spent per Person	$2.11	$7.96	$7.96	$2.06	$3.04	$1.28	$5.23
Dollars Spent per Ac. Ft. Delivered	$12.11	$48.36	$18.54	$7.05	$17.93	$9.98	$29.97
Population*	323,250	83,000	1,325,000	308,400	490,000	792,700	186,000
Water Deliveries (Ac. Ft.)*	56,427	13,659	261,560	89,916	83,086	101,870	32,478
Ac. Ft. Saved per Year		563 ac.ft @ $1,173/ac. ft. in 2005[1]	18,412 ac.ft./year @ $263/ac. ft.[2]				3,000 ac. ft./year @ $324/ac. ft.[3]

* Source: http://bmp.cuwcc.org/bmp/read_only/list.lasso. **Important Note: All data is from CUWCC 2004 BMP reports, except where indicated.**

1. Source: 2005 UWMP, Table 6.2, City of Redwood City.
2. Source: EBMUD 2004 Water Conservation & Water Recycling Annual Report page E-2.
3. Source: MMWD 2006 Water Management Report, Appendix C, page 6.

FUTURE MMWD PROGRAM GOALS AND OBJECTIVES

Goals:

1. Produce reliable water savings at the lowest cost
2. Protect the natural environment
3. Foster positive customer experiences
4. Enhance the health of urban forests
5. Cultivate the conservation ethic in Marin

Objectives:

- Promote behavioral conservation actions to the greatest extent possible through sustained public outreach programs
- Develop programs with manufacturers and retailers that leverage bulk discounts on plumbing fixtures
- Enact new development ordinances in coordination with all municipal agencies and special districts
- Enlist local community organizations as program partners to increase the effectiveness and number of customer contacts
- Provide service-oriented programs that enhance customers' lifestyles and property values
- Offer financial incentives that promote market transformation
- Increase public education activities
- Develop technologies that lower program transaction costs and barriers to customer participation
- Participate in regional partnerships related to funding, marketing, and customer education
- Promote programs that protect environmental resources

FUTURE MMWD PROGRAM DESCRIPTIONS

Each of the program options listed below is based on a combination of information from the Maddaus Analysis, MMWD's budget projections, and staff's professional judgment. In general, the programs are designed to maximize staff resources by leveraging community resources and to minimize costs through volume purchases and technology.

- ***Automated Meter Reading (AMR) & Advanced Meter Infrastructure (AMI)***
- ***Leak Detection Program***
- ***Conservation Program #1***
- ***Conservation Program #2***
- ***Conservation Program #3***

Automated Meter Reading (AMR) & Advanced Meter Infrastructure (AMI)

- **Total FY '08/'09 Utility Costs: $1,700,000 per year**
- **Average Annual Cost (10 years): $1,700,000 per year***
- **Total 10-year cost: $14 – 18 million**
  (including replacement of 60,000 meters)
- **Staff Requirements: To be determined**
- **Demand Reduction potential 2015: To be determined**
- **Demand Reduction potential 2035: To be determined**

** Based on an estimated total project cost of $15 million at a nominal annual interest rate of 4.160%*

Background

District staff has conducted research on various new meter reading technologies over the past several years. Many unanswered questions remain regarding potential costs for additional staff resources, demand reduction potential, and changes in revenue that may result from more accurate meter readings. In order to answer these questions, MMWD has engaged an industry consultant that is currently conducting a detailed assessment that will be completed by August 2007. Once this assessment is completed staff will have the information needed to make a more informed recommendation on how the District should proceed and what the costs associated with such a program would be.

While new technologies continue to be developed at a rapid pace, AMR and AMI systems are becoming increasingly cost-effective tools offering a variety of benefits. Automated Meter Reading (AMR) refers to the ability to collect data from a meter remotely and automatically via various different methods, RF (radio frequency) wireless, power line, and telephone lines. Advanced Meter Infrastructure (AMI) is the next, newest step in meter technology. AMI represents an infrastructure that utilizes smart meters with advanced two-way communications that enable utilities to meet their business needs for meter data collection. Utilities with AMI systems have the ability to collect data on an hour-by-hour basis, if needed. And, it enables consumers to actively and frequently collect their own consumption data.

The District has approximately 60,000 meters in the system. Of these, approximately 55,000 are residential meters; 2,000 are irrigation meters; and the remainder serves businesses and/or office complexes. The District's current Meter Change Program (MCP) is based on a 20-year meter life. Meters are warranted by the manufacturer for 15 years or 1.5 million gallons of water/2,000 ccfs. Within the next six years, 32,000 of the District's meters are scheduled for replacement, representing more than 50% of the District's meters.

The cost of the basic meter currently being installed by the District is approximately $48.00, while the cost of an AMR/AMI meter is approximately $180.00, not including the cost of installation.

Potential Benefits

AMR/AMI meters can provide the District and its customers with a wide range of benefits that are unavailable with manually read meters. Some of these benefits are summarized below:

Meter Operations

- Reduces stuck meter maintenance calls
- Decreases vehicle traffic
- Decreases vehicle carbon gas emissions
- Decreases vehicle maintenance and fuel costs

Customer Service/Finance

- Improves service by providing in-home water usage monitoring by consumers
- Facilitates monthly billing
- Decreases re-reads/mis-read trips
- Decreases move-in/move-out trips
- Decreases vehicle traffic on the road
- Decreases vehicle carbon gas emissions
- Decreases vehicle maintenance and fuel costs

Engineering

- Decreases unaccounted for water loss

Water Conservation

- Provides leak detection, data logging, and usage monitoring
- Allows time-of-day use monitoring and reporting
- Facilitates accurate water savings calculations

Safety

- Reduces Workmen's Compensation liability claims

Leak Detection Program

- **Total FY '08/'09 Utility Costs*:** **$230,000 per year**
- **Average Annual Cost (30 years):** **$190,000**
- **Staff Requirements:** **Add 2 positions**
- **Leak Reduction Potential (30-year average, ac. ft./year)**:** **1.5% = 400 acre feet**
  2.0% = 500 acre feet
  3.0% = 800 acre feet

* Note: The leak detection program is included in each of Maddaus Programs B, C, and D—see Appendix A on page 44 of the Maddaus Analysis for details on leak detection program costs. However, since the leak detection program will be operated separately from the MMWD Conservation Programs, staff has calculated the costs for this program separately.

** Adapted from Maddaus Analysis, Table 4, page 20.

Background

The District measures annual "unaccounted for water losses" due to leaks and other unknown sources. There has been a marked improvement in loss control since the 1970s, when the average system losses were around 14%. Today, due to pipeline replacements and leak repairs, the average system loss is 10%. This 4% reduction in losses equates to a savings of about 1,200 acre-feet of water each year.

The District has not had an individual dedicated solely to leak detection in more than five years. Leak detection/survey is now handled by the Valve Technicians on an incident by incident basis. The Valve Technicians are first responders to all mainline leaks, mainline shut downs for the crews and contractors, consumer calls, and meter turn-on/offs. Under this scenario, it is difficult to dedicate the required blocks of time to complete leak survey work in a systematic manner.

The process of leak detection involves pinpointing a specific leak location. This process assists staff in completing repairs with a minimal amount of excavation. Leak surveying is accomplished by canvassing the entire water distribution system. Using sonic leak detection equipment, technicians are able to locate leaks that may be hidden from view, because they are not yet surfacing. The leaks typically found during a survey include District leaks—mainline and service line—and consumer leaks.

Benefits

Detecting and repairing leaks in the District's delivery system and on a customer's property is a highly cost-effective way to conserve water that the District has already purchased, treated, and delivered.

For example: Every 1% decrease in system water loss equals a savings of about 300 acre-feet per year. At Tier I prices, the retail value of this water is over $300,000 every year. By factoring in the additional benefits derived from avoided costs for potential property damages, and treating and pumping this water, the value of leak detection increases. Leak detection programs can provide other substantial benefits, including:

- Safeguarding public health and property. Discovery of leaks before they turn into larger main breaks and reduce the likelihood of property damage and public safety.
- Improved public relations. Consumers appreciate maintenance of the water system and help with consumer problems. Field personnel doing leak detection provide visual assurance that the system is being maintained.
- Reduced legal liability. By early detection, we are able to repair leaks before they become large main breaks. This helps protect the District from expensive lawsuits.
- Reduced disruption to consumers. More leaks are repaired on a planned basis rather than developing into major breaks that disrupt service.

Recommendations

Staff recommends that two positions be dedicated to leak detection. These positions would be would be filled by in-house candidates, and classified as Utility Workers III; based on the job skills and experience the position requires. They would report to the Area Field Supervisor in the Facilities and Watershed Division.

Based on past experience, it requires five years for one worker to survey all nine hundred miles of pipeline and sixty thousand meters in the District. With two staff dedicated to leak detection, the task should be accomplished in three years. New technology is available for leak detection, including data loggers that are placed at various locations within the District's system, such as service laterals, system mainline valves and hydrants. These data loggers are programmed to turn on automatically at different intervals during the night and 'listen' for leaks. This information is downloaded to a computer and then used to pinpoint leaks. This is a great tool and will be used to conduct a thorough and comprehensive leak survey, especially at program start up.

Based on the fact that it has been over five years since the last leak survey, staff is recommending the following approach be taken to initiate this program:

- Survey the District's distribution system by walking the entire service area, listening on all service laterals and other points of contact. This will enable the surveyor to find the smaller meter leaks, service leaks, and also consumer leaks that would not be picked up by the data loggers.

- A large portion of the work would be done at night. Typically, the best hours for leak detection are between 10 pm and 5 am. These are the hours of the least amount of water consumption and there is not the noise from traffic that you would find during daylight hours.

First-Year Startup Costs

(2) Utility Worker III	$140,000 (@ step 5)
Benefits	50,000
(2) Trucks	60,000
Sonic Leak Detectors & Pipe Locators	10,000
Total First-Year Costs	$260,000

Staff will reevaluate the leak detection program after approximately three years, following the initial survey of the entire water distribution system. Recommendations about future staffing and funding levels will be provided to the District based on the volume of survey activity.

Costs for mainline, service, and meter leaks would be borne by the respective cost centers already in place. Although additional staff and equipment for leak repairs may be needed, depending on the volume of leaks discovered, staff does not anticipate this occurring at this time.

The Leak Detection Program could start as soon as the positions are advertised by Human Resources and filled.

Conservation Program #1

(compare to Maddaus Program B)

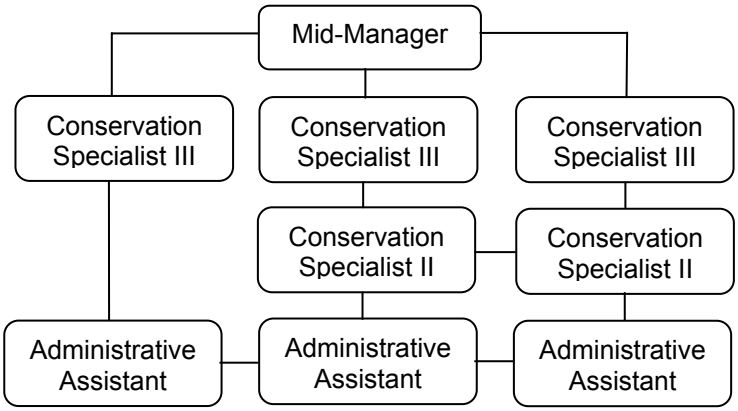
- **Total FY '08/'09 Utility Costs: $1.8 million per year***
- **Total Utility Costs FY 2008 – 2022: $25,000,000****
- **Staff Requirements: No change**
- **Market Penetration: 10 – 20%**
- **Demand Reduction with plumbing code 2015: 2,400 acre feet per year*****
- **Demand Reduction with plumbing code 2030: 3,900 acre feet per year*****

* MMWD calculated the "Total FY '08/'09 Utility Costs" based on staff's budget analysis using actual full-time equivalent costs and program expenditures.

** "Total Utility Costs FY 2008 – 2022" are based on the Maddaus Program B cost projections listed on page 51 of Appendix A and have been adjusted by MMWD to include a 3% inflation rate.

*** Demand Reductions are derived by subtracting leak detection program savings of 1.5% from the Conservation Program B + plumbing code savings listed in Table 8 on page 35 of the Maddaus Analysis.

FIGURE 4
Program #1 Organizational Chart



The MMWD conservation programs are currently operated using an interactive team approach. **Figure 4** illustrates this interactivity, using multiple lines that connect staff positions. These lines indicate that a staff member coordinates job tasks with multiple teams. MMWD Program #1 is the "status quo" option—with program expenditures in FY '08/'09 similar to FY '07 levels. Program costs will change in response to inflation, staff salaries and benefits, and program implementation for all programs through 2030. New rebate programs initiated in FY '07 will be funded at partial levels, and customer saturation targets would remain at current levels. The Customer Assistance Program (CAP), water waste, and Time of Service programs will continue at minimum levels; and a new school education program will be initiated (Appendix B, Staff Reports). Some website and database tools will be developed.

Table 7 compares **MMWD Conservation Program #1** budgeted activities in FY'08/'09 with the number of activities listed in the Maddaus Program B analysis:

TABLE 7
Program #1 Budgeted Activities FY '08/'09

Activity Description	MMWD Budgeted Activities per year in FY '08/'09	Maddaus Program B Activities per year	Maddaus Water Use Reduction Target	Maddaus Market Penetration Goal
Indoor Residential Survey BMP 1	440	588	5%	30%
Outdoor Residential Survey BMP 1	440	588	10%	30%
Landscape Budgets BMP 5	300	116	15%	90%
Landscape Survey BMP 5	20	7	10%	1.8%
Clothes Washers BMP 6	1,200	1,200	34%	26%
Public Education BMP 7	51,000	51,000	1%	100%
Commercial Audits BMP 9	12	49	12%	12%
ULFT Ordinance BMP 14	2,000	575	Equals service change rate	60%
Rain Sensor Retrofit	1,500	3,259	30%	9%
San Quentin Toilets	300	200	NA	54%
HET Rebates	1,000	1,085	20%	57%
Homeowner Classes	54	272	5%	5%
Coin-Op Washers	71	22	15%	34%
Irrigation Incentives	275	212	5% Residential 15% Commercial	15%
Hotel Retrofit	50	48	40%	20%
Commercial Rebate	150	24	10%	10%
HE Urinal Rebate	100	24	10%	71%
New Development Ordinance	Yes	Yes	NA	100%

Conservation Program #2

(compare to Maddaus Program C)

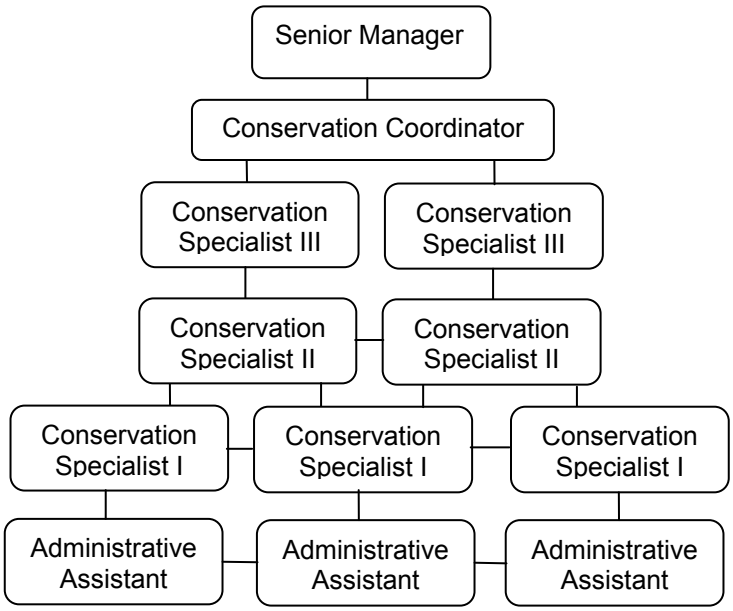
- **Total FY '08/'09 Utility Costs: $2.7 million per year***
- **Total Utility Costs FY 2008 – 2022: $36,000,000****
- **Staff Requirements: Add 3 positions/Upgrade 2**
- **Market Penetration: 20 – 30%**
- **Demand Reduction with plumbing code 2015: 2,700 acre feet per year*****
- **Demand Reduction with plumbing code 2030: 4,200 acre feet per year*****

* MMWD calculated the "Total FY '08/'09 Utility Costs" based on staff's budget analysis using actual full-time equivalent costs and program expenditures.

** "Total Utility Costs FY 2008 – 2022" for program C are based on 81% of the Maddaus Program D cost projections listed on page 51 of Appendix A and have been adjusted by MMWD to include a 3% inflation rate.

*** Demand Reductions are derived by subtracting leak detection program savings of 2.0% from the Conservation Program C + plumbing code savings listed in Table 8 on page 35 of the Maddaus Analysis.

FIGURE 5
Program #2 Organizational Chart



Program #2 includes increases in spending for rebates, staffing, and customer services beyond FY '07 levels. New rebate programs initiated in 2007 will be funded at higher levels, and CAP services will increase significantly for all customer types. Three new Conservation Specialist I positions would be added to perform field surveys and provide program support. One existing Conservation Specialist III position would be upgraded to an existing Conservation Coordinator position, and the Mid-Manager position will be upgraded to a Senior Manager position. A new School Education Program will be initiated and funded at increased levels. Improvements to public outreach and marketing, conservation databases, website development, contractor education, and regional development projects will also be accelerated.

Table 8 compares **MMWD Conservation Program #2** budgeted activities in FY '08/'09 with the number of activities listed in the Maddaus Program C analysis:

TABLE 8
Program #2 Budgeted Activities FY '08/'09

Activity Description	MMWD Budgeted Activities per year in FY '08/'09	Maddaus Program C Activities per year	Maddaus Water Use Reduction Target	Maddaus Market Penetration Goal
Indoor Residential Survey BMP 1	575	588	5%	30%
Outdoor Residential Survey BMP 1	575	588	10%	30%
Landscape Budgets BMP 5	360	116	15%	90%
Landscape Survey BMP 5	60	7	10%	1.8%
Clothes Washers BMP 6	1,440	1,200	34%	26%
Public Education BMP 7	100,000	51,000	1%	100%
Commercial Audits BMP 9	40	83	26%	12%
ULFT Ordinance BMP 14	2,000	575	Equals service change rate	60%
Rain Sensor Retrofit	4,483	6,085	30%	9%
San Quentin Toilets	300	200	NA	54%
HET Rebates	1,800	1,671	30%	57%
Homeowner Classes	297	542	5%	10%
Coin-Op Washers	150	37	25%	34%
Irrigation Incentives	750	518	10% Residential 25% Commercial	15%
Hotel Retrofit	137 Rooms	72 Rooms	60%	20%
Commercial Rebate	150	24	10%	10%
HE Urinal Rebate	250	50	20%	71%
New Development Ordinance	Yes	Yes	NA	100%

Conservation Program #3

(compare to Maddaus Program D)

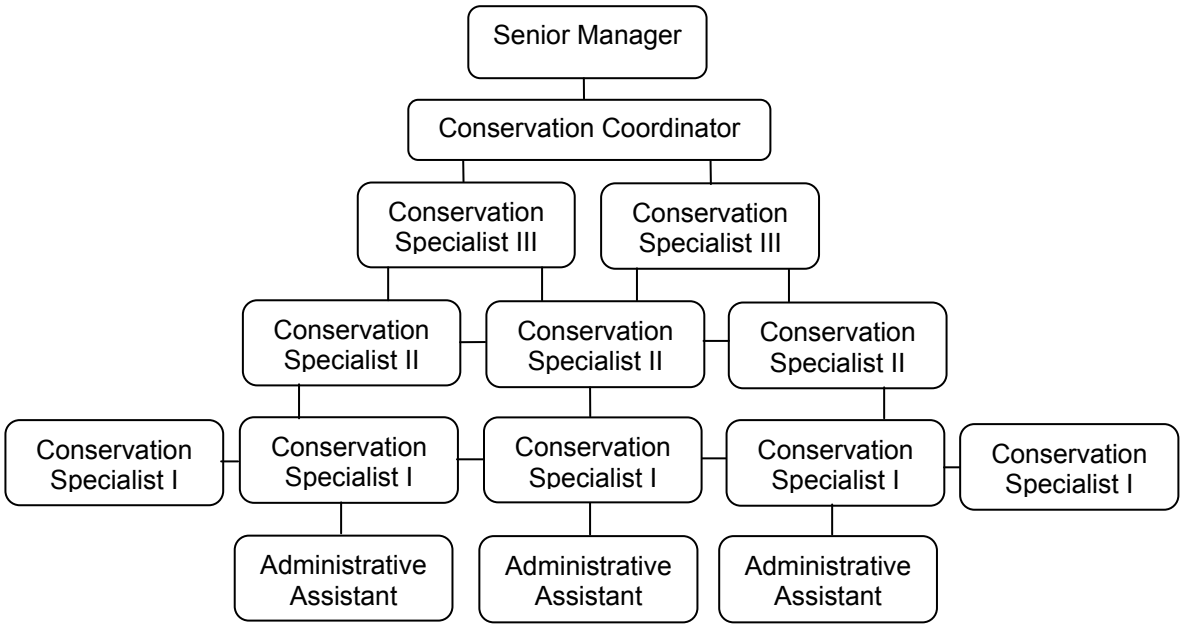
- **Total FY '08/'09 Utility Costs: $3.3 million per year***
- **Total Utility Costs FY 2008 – 2022: $44,000,000****
- **Staff Requirements: Add 6 positions/Upgrade 2**
- **Market Penetration: 30 – 50%**
- **Demand Reduction with plumbing code 2015: 3,000 acre feet per year*****
- **Demand Reduction with plumbing code 2030: 4,600 acre feet per year*****

* MMWD calculated the "Total FY '08/'09 Utility Costs" based on staff's budget analysis using actual full-time equivalent costs and program expenditures.

** "Total Utility Costs FY 2008 – 2022" are based on the Maddaus Program D cost projections listed on page 51 of Appendix A and have been adjusted by MMWD to include a 3% inflation rate.

*** Demand Reductions are derived by subtracting leak detection program savings of 3.0% from the Conservation Program D + plumbing code savings listed in Table 8 on page 35 of the Maddaus Analysis.

FIGURE 6
Program #3 Organizational Chart



Program #3 increases program expenditures for staffing and customer services beyond Program #2 levels. Five new Conservation Specialist I positions will be added to perform field surveys and provide program support. One new Conservation Specialist II will be added to support School Education Programs. One existing Conservation Specialist III position will be upgraded to an existing Conservation Coordinator position, and the Mid-Manager position will be upgraded to a Senior Manager. New rebate programs initiated in 2007 will be funded at higher levels, and very significant improvements in the CAP programs will occur for all customer types. A new School Education Program will be initiated and funded at above average levels. Significant improvements will be made in public outreach and marketing, conservation database and website development, contractor education, research, and regional development projects.

Table 9 compares **MMWD Conservation Program #3** budgeted activities in FY '08/'09 with the number of activities listed in the Maddaus Program D analysis:

TABLE 9
Program #3 Budgeted Activities FY '08/'09

Activity Description	MMWD Budgeted Activities per year in FY '08/'09	Maddaus Program D Activities per year	Maddaus Water Use Reduction Target	Maddaus Market Penetration Goal
Indoor Residential Survey BMP 1	1200	588	5%	30%
Outdoor Residential Survey BMP 1	1200	588	10%	30%
Landscape Budgets BMP 5	750	116	15%	90%
Landscape Survey BMP 5	120	7	10%	1.8%
Clothes Washers BMP 6	1,750	2,700	34%	26%
Public Education BMP 7	120,000	51,000	1%	100%
Commercial Audits BMP 9	165	123	26%	12%
ULFT Ordinance BMP 14	2,500	575	Equals service change rate	60%
Rain Sensor Retrofit	4,900	6,085	30%	9%
San Quentin Toilets	400	200	NA	54%
HET Rebates	1,980	1,671	30%	57%
Homeowner Classes	325	542	5%	10%
Coin-Op Washers	150	37	25%	34%
Irrigation Incentives	1,000	1,036	10% Residential 25% Commercial	15%
Hotel Retrofit	150 Rooms	72 Rooms	60%	20%
Commercial Rebate	165	24	10%	10%
HE Urinal Rebate	275	50	20%	71%
New Development Ordinance	Yes	Yes	NA	100%

CURRENT MMWD PROGRAM STATUS

Since 1991, MMWD has completed, or is on track to complete, 11 out of 14 BMPs. This is a very good track record compared to many other water agencies in California. The District has excelled in programs to install ULFTs, residential showerheads and high-efficiency clothes washers; promote public information; and implement conservation pricing. Areas needing improvement include customer site surveys, landscape equipment retrofits, and school education programs. A complete history of the District's conservation achievements is included in Appendix C, the *2006 Water Management Report*.

Four new conservation programs have been approved and implemented in 2006 – 2007: the Conservation Action Committee; High-Efficiency Toilet Rebate Program; Landscape Equipment Rebate; and Conservation Outreach and Marketing Programs. A new School Education Program proposal (Appendix B) has also been prepared for Board review.

In order to track and report on the progress of conservation programs at the District, new database tools are currently under development. These tools will be integrated with the existing SAP system, Access databases, and GIS programs. When completed, the District will have the ability to track conservation activities for each service address and report on changes in water consumption before and after activity. Additionally, landscape area measurements and the water budget process will be automated and allow significant increases in staff productivity.

Collaborations are under way with the following community partners:

School Education Programs

- Next Generation
- California Regional Environmental Education Community (CREEC) Network
- Environmental Education Council of Marin
- The Bay Institute
- School Environment Education Docents (SEED)
- PlayFair

Landscape Programs

- Marin Master Gardeners
- Bay-Friendly Landscaping and Gardening
- Irrigation manufacturers and retailers
- California Landscape Contractors Association
- U.C. Cooperative Extension

Commercial and Residential Programs

- Bay Area Public Agencies
- Intergy
- Electric & Gas Industries Association (EGIA)
- California Youth Energy Services

PROGRAM ACTIVITY LEVELS

Customers are responding positively to MMWD's customer-friendly conservation strategy. For example, the new high-efficiency toilet rebate program (started in January 2007) has issued more than 300 toilet rebates over the first 3-month period, and interest in this program continues to grow. To put this number of rebates into perspective, other larger water agencies in the Bay Area completed only 150 – 300 HET rebates in all of 2006, while Redwood City installed 4,800 residential toilets between 2005 and 2006 with their direct-installation program.

MMWD's high-efficiency clothes washer program also continues to rebate an average of 1,200 washers each year, after 12 years in operation and more than 9,000 rebates. Staff calculates that as many as 40,000 washers are eligible for rebates in the next 10 years (Appendix C, 2006 Water Management Report, page 14).

This positive response to District programs can be attributed to several demographic characteristics—which are indicators that conservation programs can maintain high activity levels in Marin:

- Residential accounts represent more than 90% of the customer base.
- Residential remodeling projects are very common in Marin and provide opportunities to upgrade plumbing fixtures.
- The average construction age of houses is 1968, prior to enactment of the National Energy Policy Act in 1992 that mandated water efficient plumbing fixtures, indicating a larger than average pool of older, less efficient fixtures.
- Marin is an affluent and highly educated community, with fewer economic barriers and a strong history of participation in conservation activities.
- Public opinion surveys and comments indicate that a majority of residents see conservation as the preferred water supply option.
- Conservation is a cost-effective method to extend limited water supplies and provide a host of environmental benefits to the community.

COMMUNITY INPUT

Marin residents are extraordinarily interested in environmental issues, including water conservation. District customers have contributed many outstanding ideas intended to improve the environment through natural resource conservation. In 2006 – 2007, Staff conducted two Conservation Action Committee meetings and a "HydroForce Workshop" at College of Marin, and also published a notice about the Master Plan in the March/April edition of *On the Water Front* to solicit input on the future of conservation programs in the District. Staff has recorded the following ideas voiced at Board meetings, public events, during informal conversations, and from e-mails and letters:

- Expedite installation of water-saving devices for large municipal water users by providing direct-installation programs that remove financial and institutional barriers.
- Encourage the use of rain water catchments, grey water, and wells to offset irrigation requirements.
- Increase public awareness through highly visible logos, messages, and product branding.
- Institute a District conservation fee on each water bill that would be removed during any billing cycle that the customer stayed within a set water budget.
- Improve the District's phone system and website so it is easier to contact Staff, participate in incentive programs, and get information.
- Create demonstration projects (gardens, art, retrofit public facilities) to increase awareness.
- Proactively contact customers who are over their water budget to offer program assistance.
- Encourage the use of sub-meters to help customers self-monitor their water use throughout the month.
- Work with manufacturers to provide local "time of purchase" rebates to simplify and enhance incentive programs.
- To highlight the relationship between water and power, a special brochure— "101 Ways to Save Water and Power"— was created.
- Coordinate with relevant programs and ordinances in the County, Cities, wastewater districts, and other water agencies.
- Expand recycling and storm water capture systems throughout the District.
- Increase education programs and internships for students.
- Work with retailers and manufacturers to add labels to plants and irrigation equipment to help consumers identify water-conserving products.
- Implement on-bill financing opportunities like the "Pay-As-You -Save" program.
- Conduct pilot studies on a community or neighborhood scale.
- Study the potential to reduce evaporation from surface reservoirs.
- Require auto dealerships and rental agencies to use recycling car washes.
- Study the potential for composting toilets.
- Sponsor friendly community competitions offering prizes and recognition to the most efficient participants.

The following section titled the 'Conservation Scrapbook' is provided in order to illustrate many of the activities currently underway or completed in the past year by the conservation department:

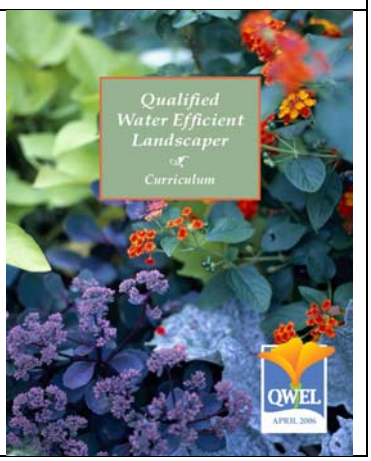
CONSERVATION SCRAPBOOK – 2006/2007

<table>
<tr><td rowspan="2">Analysis</td><td>Commissioned the Conservation Technical Analysis by Maddaus Water Management (Appendix A).
A detailed technical analysis of the conservation savings potential through 2030.

MADDAUS WATER MANAGEMENT</td></tr>
<tr><td>District staff completed the MMWD 2006 Water Management Report (Appendix C) in April 2006. This history of conservation program accomplishments from the 1970s through April 2006 provides a detailed account of the water savings achieved in the past and calculates the maximum technical savings in the future.

 </td></tr>
<tr><td rowspan="2">Education</td><td>

MMWD hosted 30 public events and workshops. Contractors were trained in new irrigation technologies. Staff partnered with a variety of groups including the Girl Scouts, Marin Environmental Forum, Marin Art & Garden Center, County of Marin, College of Marin, Sustainable Marin, and many others, who joined together to build a strong social awareness around water conservation.</td></tr>
<tr><td>Qualified Water Efficient Landscape Training Program – MMWD partnered with the Sonoma County Water Agencies, College of Marin, the California Landscape Contractors Association and numerous landscape professionals to develop a comprehensive certification program. Over a period of weeks, the program trains landscape workers in the principles of water conservation, integrated pest management, and irrigation systems.

 
</td></tr>
</table>

Education	The Northern California Water Management & Technology Education Center N o r C a l W A M T E C **College of Marin** – Together with staff from the Environmental Landscape and Biology Departments at the College, MMWD staff are at the forefront of developing a new Northern California Irrigation Technology Center. This Center will be the first of its kind north of Fresno and is envisioned to offer students and the community a world-class conference center, classrooms, and research facilities focusing on sustainable urban landscape practices. The first ground-breaking class will be hosted by MMWD at the proposed site of the new Center at the Indian Valley Campus on Saturday, July 22. The California Conservation Corps, U.C. Davis Extension, and the Master Gardeners are also new partners in this effort.
Technology	 MMWD completed a pilot ***landscape water use satellite study*** and developed GIS tools that enable measurements of landscape water needs automatically. Partnerships with regional agencies, the Department of Water Resources and the Bureau of Reclamation are being explored to obtain higher resolution images and develop a full-scale production tool to measure landscape areas. This tool will transform the process of creating water budgets, increasing staff productivity 10-fold when combined with an improved conservation database.
Partnerships	In cooperation with the College of Marin and SPAWN, MMWD helped to create "Balance on the Edge", a streamside garden exhibit at the San Francisco Flower and Garden Show. This design demonstrates how beautiful landscapes can also benefit natural ecosystems.

Partnerships

To make it easier for MMWD customers to adopt Bay-Friendly gardening practices, the District is introducing a new rebate program for efficient irrigation equipment and supplies.

Bay-Friendly gardening mimics natural systems which recycle everything—water, debris, and nutrients—endlessly. It means paying attention to climate and local conditions, and using appropriate plants that are adapted to those conditions.

"Bay-Friendly Landscaping" is a Stopwaste.org program developed by the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board.

MMWD is actively working with PG&E, the Marin Energy Team, and Sustainable Marin to explore relationships between the benefits of energy and water conservation. MMWD was one of the first water agencies to join the Cities for Climate Protection program that is dedicated to reducing greenhouse gases caused by electrical generation.

Events

At the Marin County Fair, the first-ever ***"Eco-Sperience"*** focusing on healthy living in a healthy environment will be hosted by the Marin Municipal Water District. With over 10,000 square feet of outdoor space filled with hands-on educational activities for people of all ages, the ***"Eco-Sperience"*** is sure to be action packed!

Innovation

Facilities & Watershed and Conservation staff worked together to build a 4-foot high waterwheel made of redwood recovered from Mt. Tam. In this picture, students learn about the relationship between water and energy by turning a hand-operated pump. The water is pumped to a trough and falls onto the wooden paddles which cause the wheel to turn.

This page intentionally left blank.

POLICY RECOMMENDATIONS

Water supply and water demand are two sides of same decision making equation. If either side is over- or under-estimated, serious financial and social consequences can occur. Policies that encourage water efficiency through rate structures, incentives, and public awareness messaging make the best use of public dollars and, at the same time, reduce impacts to the environment and the cost of new water supply projects.

The job of conservation programs is to stabilize long-term consumption patterns at the lowest level possible. This task must be accomplished cost-effectively, and the programs must be embraced by a majority of customers in order to succeed.

Staff recommends an overall policy strategy that encourages participation by the greatest number of customers. This strategy differs from recommendations in the District's 1994 Master Plan, which contained programs to target customers using the greatest amount of water. Facts that support this recommendation include:

- Data derived from site survey experience shows that customers in the "top 20%" include parks, golf courses, and estates with extensive landscaping. When these sites have quality irrigation systems and are professionally managed, potential water savings can be relatively small. Residential customers in the "top 20%" have proven to be particularly resistant to changing water use behaviors. Resources spent to influence this small group of customers are often ineffective.

- Approximately 70% – 95% of residential accounts are billed at the Tiers 1 and 2 levels. Although each of these accounts uses less water than customers in Tiers 3 and 4, the water use efficiency is often low. By casting a wider program "net", the cumulative savings potential is increased.

- Conservation programs that reach a larger customer base increase the probability for behavior-based savings. Experience during drought emergencies shows that short-term savings can be as high as 65%. Long-term savings would be substantial if even 10% of customers implemented behavioral changes (e.g., turning off faucets, taking shorter showers, or reducing minutes on sprinkler timers).

- Customer surveys done in 2003 and 2005 indicate that more than 80% of customers support increased conservation, while 57% of those asked were not aware of any programs at the District. Thirty-seven percent had done nothing to conserve water.

The most successful conservation programs provide financial support, services, and information to help customers reduce costs and enhance their lifestyle. We have learned that:

- Incentives are the backbone of effective conservation programs. Incentives reinforce the District's role as a good steward of public resources.
- Positive messages about conservation build customer confidence and goodwill in the District. For example, in the past year, MMWD has shifted the conservation message away from penalties and enforcement action to focus on services and rebates. This shift has resulted in greater customer participation in programs, and a significant reduction in antagonistic phone calls.
- High visibility public outreach and education programs are essential for conservation programs to achieve sustainable long-term demand reductions. When asked, most customers want to help take care of Marin's natural resources.
- Water pricing is a powerful conservation tool that can provide reliable improvements in efficiency.
- Staff recommends a comprehensive study of the District's tiered rate structure, entitlements, connection fees, and water budgets be performed. As many as one-half of the water budgets in the District are inaccurate and based on inefficient historical use patterns.
- Conservation ordinances and penalties can be effective if they are enforceable. New development ordinances and conservation requirements attached to re-development permits are enforceable and should be a primary goal for MMWD during the next year. Widespread adoption of conservation requirements by local permitting agencies would yield significant savings at a very low cost to the District.

Funding

To provide long-term funding for conservation programs and revenue for District operations, the following funding mechanisms are proposed:

- Regular tier-break reviews and adjustments, as warranted, to monitor consumption trends and maintain customer awareness about the importance of conservation.
- Service and/or connection fees that fund conservation programs and offset revenue losses resulting from lowered consumption.
- On-bill conservation surcharges based on current consumption. Surcharges would be waived in any billing period where consumption was within a pre-determined water budget. Surcharges would be added in any billing period where use exceeded budgeted amounts. Budgets would be determined based on number of residents and landscape area.
- Bond financing to provide capital for conservation plumbing fixtures, secured with conservation surcharges.
- On-bill financing, such as the "Pay-As-You-Save" system or other zero-interest loan option.

COST SAVING STRATEGIES

Staff will work collaboratively with agencies, organizations, retailers, and manufacturers that can provide co-sponsoring, or in-kind support for MMWD's programs. Cost savings will be realized in several key program areas:

- Administrative costs can be reduced or deferred to other service providers.
- Program participation will increase via networking among customers.
- Communication and marketing messages will be more effective as they reach more customers more often.
- Rebate and incentive costs can be reduced more quickly if market transformation occurs at a faster pace—water-saving devices become more available and affordable.
- Public events will cost less to produce and reach more customers.
- Water savings from devices and behavioral changes will increase more rapidly with growing public awareness.
- Political support for rate adjustments may increase if more customers realize direct benefits from District programs.
- Funding opportunities will be increased due to greater program visibility and regional impacts.

This page intentionally left blank.

CONSERVATION MARKETING PLAN

Background

Historically, Marin Municipal Water District has been at the forefront of promoting water conservation. But record rainfall in recent years has lulled the public's concern about water conservation. The District has not communicated about the need for conservation as aggressively as in the past. Marin's water use is currently at its highest levels for the quarter since 1987.

Marin's water supplies are limited and precariously tied to annual rainfall. Marin is never more than one year away from a drought.

While drought conditions do not currently exist, MMWD recognizes the need to reinvigorate awareness of the need to use water wisely among customers. This has recently become even more urgent, as Marin's access to Sonoma County water may be curtailed because of last winter's scant rainfall.

Marin residents have a strong connection to the natural environment, are highly informed about environmental issues, and have rallied to conserve water in past drought years. Research and history indicate they are willing to "do the right thing" if given the information and support to do so. With environmental concerns at an all-time high, the public is highly receptive to taking action that can advance environmental solutions.

Water-saving technologies have evolved since Marin was last hard hit by drought, and MMWD is stepping up efforts to replace toilets, urinals, washing machines, and sprinkler systems with models offering greater efficiency. But MMWD's conservation messages cannot be limited to the installation of water-saving devices, "tips," rebates, or telling people that saving water is a good idea. As a public utility capable of reaching a vast customer base, and as the county's largest user of electricity, MMWD has an opportunity—and a responsibility—to assume a leadership role in conservation.

We recommend that MMWD position itself as a responsive, well-run public agency committed to conservation. This can be addressed by reinforcing conservation messaging throughout our communications with our customers, and by modeling conservation, leadership, and customer care throughout our operations.

Messaging and Positioning

Connecting MMWD to what our customers believe in and care about is essential to garnering their trust and buy-in.

Currently, the District isn't communicating a coherent conservation message. There is an abundance of collateral material offering conservation tips, technical fixes, and rebates. This information is by and large technical, not clearly targeted to intended audiences, and does not connect to the conservation values that are deeply held among people living in Marin.

The goal isn't to inform customers about MMWD or what it does. The goal is to build a reservoir of confidence and trust, which will be critical should conditions require MMWD to ration water use. MMWD needs to focus less on what it does than on the benefits provided.

The core strategies of MMWD's conservation campaign are to:

1. Connect the District's values to community values;
2. Make MMWD user-friendly and a "partner" in its interactions with customers;
3. Provide customers with easy-to-adopt programs and behaviors for using less water;
4. Demonstrate that the District is itself taking steps to conserve and sustain Marin's environment.

Audience

MMWD's audience includes all of its 190,000 customers. Reminding them of the need to be mindful about water—use well, not waste—is an ongoing and overarching goal of the District's communications.

MMWD has identified audiences where it expects to have the greatest impact on water use as well as awareness of water conservation ethic and education (see accompanying grid for breakout of targets and potential actions):

1. Residential customers
    - Homeowners with irrigation systems
    - HOAs
    - Professional landscapers, plant nurseries, garden supply centers
    - Civic, health, environmental, and conservation organizations
    - Highest water users
2. Commercial customers
    - City and county public works departments
    - Open space and parks departments
    - Schools (maintenance supervisors)
    - Colleges (maintenance, programs)
    - Hospitals
    - Private businesses
    - Golf courses
    - Owners of multi-family residential housing
    - Visitors/Hotels/Restaurants
3. Teachers, school-age children, college students and their families

MARIN MUNICIPAL WATER DISTRICT

descomstudios

CONSERVATION MARKETING

target audiences, programs, strategies

ACTIONS

AUDIENCES

		REBATES			INCENTIVES			PUBLIC EDUCATION			PARTNERSHIPS			CHANGE AGENTS	
		Urinal/Toilet	Washer	Irrigation	Bill Savings %	Staff visit	Premiums (Bottles, bags, etc)	Signage, icon, emblem	Consultation, Persuasion, Ordinance	Education, Workshops, Training	Certification	CoBranding & CoPromotion	Sponsorship	Pilot Projects	Front Line Marketers
RESIDENTIAL	Homeowner/tenant	•	•	•	•	•	•	•	•	•					•
	Neighborhood Assn					•	•	•	•	•	•	•	•	•	•
	HOAs			•	•	•	•	•	•	•	•	•	•	•	•
	MultiFamily Bldg	•	•	•	•	•	•	•	•					•	•
	Building/Grounds Manager			•	•	•	•	•	•	•	•				•
COMMERCIAL	Business	•	•	•	•	•	•	•	•			•	•	•	•
	Garden/supply	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Laundry	•	•	•	•	•	•	•	•			•	•		•
	Retail	•		•	•	•	•	•	•				•		•
	Restaurant	•		•	•	•	•	•	•			•	•		•
	Landscapers			•	•	•	•	•	•	•	•	•	•	•	•
MUNICIPAL	County	•		•	•	•	•	•	PARTICIPATE IN DEVELOPING		•	•	•	•	•
	Cities	•		•	•	•	•	•			•	•	•	•	•
	Special Districts	•		•	•	•	•	•			•	•	•	•	•
	Hospitals	•	•	•	•	•	•	•			•	•	•	•	•
EDUCATION	K12	•		•	•	•	•	•		•	•	•	•	•	•
	College of Marin (2)	•		•	•	•	•	•		•	•	•	•	•	•
	Dominican University	•	•	•	•	•	•	•		•	•	•	•	•	•
	PTAs							•					•		•
ORGANIZATIONS & NONPROFITS	Health	•		•	•	•	•	•		•	•	•	•	•	•
	Sustainables						•	•		•	•	•	•		•
	Social Services (assist)	•					•	•				•	•		•
	Social Service (ie, Rotary)						•	•				•	•	•	•
	Trade Associations	•		•	•	•	•	•			•	•	•		•
	Chambers of Commerce	•		•	•		•	•				•	•		•
	Environmental & Energy						•	•		•	•	•	•	•	•
REAL ESTATE PROFESSIONALS	Developers	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Inspectors							•		•	•	•			•
	Architects	•		•	•	•	•	•		•	•	•	•	•	•
	Landscape Architects			•	•	•	•	•	•	•	•	•	•	•	•
	Agents & Brokers	•						•	•	•	•	•		•	•
	Contractors	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Tradespeople	•	•	•	•		•	•	•	•	•	•	•		•
	Board of Realtors	•						•		•		•			•

Trends

In addition to developing conservation programs and incentives—some of which are included below—MMWD can have a greater impact by connecting its messages with issues the media is currently covering, as well as those of concern to customers.

Some examples of current media trends that MMWD can tie to are:

- Alternative energy/energy savings
- Bottled water
- Carbon trading/offsets
- Clean Technologies
- Climate change
- Dams
- Ecological footprint
- Endangered species
- Environment and health
- Fitness
- Fuel efficiency
- Gas prices
- Global warming
- Green building
- Green business
- Greenhouse gases
- High efficiency light bulbs
- Land use
- Organics and local food
- Outdoor recreation
- Recycling
- Salmon
- Sustainability
- Transportation
- Voluntarism
- Waste reduction

Recommendations

- MMWD establish and publicize a measurable, achievable, short-term target to rally around and demonstrate the water savings that Marin can achieve with small changes in water-use habits.
- MMWD adopt ongoing and consistent messaging that responsible water use is a way of life, whether or not drought conditions are present.
- MMWD audit, set targets, and create a plan to reduce its own ecological footprint and set an example to other Marin agencies, businesses, and customers.
- MMWD associate itself with the mountain, not the faucet (emphasizing values, not plumbing).

Communication and Customer Support

** suggests high priority*

*1. Institute semi-annual personal letters from Board members to their constituents, explaining MMWD's current water situation, commitment to conservation, conservation efforts, drought protocols, and what customers can do to be more conscious consumers.

*2. Institute a monthly email from MMWD Board to Marin's elected officials/staffs on status of water supply, to build awareness and support for MMWD's conservation efforts.

*3. Cultivate a network of elected and agency leaders, educators, conservation leaders, and green businesses. Enlist public agencies and Marin businesses as co-sponsors/ endorsers of MMWD water-saving campaign.

*4. Redesign and produce a series of billing inserts and billing envelopes tied to the conservation campaign and designed to regain customers' attention and inspire them to take water-saving actions.

*5. Give customers an opportunity to opt-in to a "conservation education fund" or add small assessment to bills that would be dedicated to conservation education and restoration activities, including school gardens, community gardens, field trips, volunteer programs, and outreach.

*6. Upgrade Web site to be interactive and customer-friendly, including features such as:

- Calculators for water use and reduction
- Plant selection database
- "How-tos" (video/multimedia format?) such as correcting irrigation problems, resetting sprinklers, installing a pressure valve, finding a leak, testing your toilet, etc.
- Downloadable rebate forms with online submission, online scheduling for a water audit, etc.
- Enable email from Web site to permit MMWD to answer customers' conservation questions
- Enable one-click email contact from Web site to report a leak or misuse
- Include ETo information, standardized run times, when to start watering, etc., on home page

*7. Collect email addresses. Develop an email news format with visually interesting and timely information and customer incentives.

*8. Upgrade phone system and install a "Conservation Hot Line," with recorded messages to answer common questions, as well as the ability to talk to an "expert" or leave a message with assurance of a reply via phone or email within a specific time period.

*9. Develop a graphically unified family of brochures to replace the many now in use, to create a visual identity for MMWD's conservation programs.

10. Develop a "conservation pledge" that customers can take. Display pledge at public events, in stores, and on Web site. Offer incentives (such as coupons for water-saving devices, plants) or premiums (such as non-plastic water bottle, watershed recreation map, etc.) for those who sign the pledge.

11. Host a workshop of water agencies to share best practices.

12. Create a branded "certification" program, modeled on Marin's Green Business Certification program, for organizations that take actions to reduce water use and promote resource efficiency to their colleagues, customers, and employees.

13. Display outdoor banners and install attractive display in MMWD lobby. Identify opportunities for public displays.

14. Participate in and create tie-ins to community events—town parades, picnics, Farmers' Markets, art festivals, and fairs (such as MMWD's Eco-Sperience environment at the Marin County Fair that focuses on water and healthy living in a healthy environment).

Media Outreach

*15. Develop a regular graphic feature (for Marin IJ) that illustrates progress toward a water-saving goal. (Current graphic is on existing supply).

*16. Proactively place stories on topics tied to current trends:

- What's on the horizon in ways to save water (new water meter technologies, smart irrigation controllers, GPS to pinpoint progress of invasive plants in the watershed)?
- Who's leading the way in water conservation?
- How does Marin compare to other districts, states, and nations in innovations and achievements in water conservation?
- What are the economic benefits/impacts of water conservation?

*17. Develop and run advertising on water conservation themes.

18. Develop a graphic or illustration tracing where Marin's water comes from. Highlight non-human dependence on water.

19. Develop outreach materials for publication in newsletters of nonprofits, agencies, and large employers, and posters for display in schools, stores, and businesses.

Programs

*20. Simplify rebate programs. Make rebates seamless for customers— i.e., rebate submission at point of purchase.

*21. Offer cash rebates and incentives to customers who voluntarily cut their water use 10% (note: PG&E's Flex Your Power campaign). Incentives might include coupon for drought-resistant plants, non-plastic water bottle, calendar, watershed recreational map, etc.)

*22. Institute amnesty and incentive campaign for multi-unit dwellings. (Despite free install and rebates, many residential multi-dwelling units are out of compliance with plumbing efficiency standards.)

*23. Prepare water conservation outreach targeted to renters, both residential and commercial.

*24. Mount "do-it-yourself" leak-detection awareness campaign.

*25. Work with schools and existing school programs (i.e., Next Generation, River of Words, school and community gardens) to make nature/conservation ethic message congruent with MMWD messaging.

*26. Provide Spanish-language programs and collateral materials for district communications. Market to Spanish-speaking landscape workers.

27. Capitalize on current high level of interest in the environment by offering direct install of residential toilets, with charge to customers' water bill (on-bill financing).

28. Develop field trip programs for schools, families, scouts, church, and other groups.

29. Explore creating a "junior watershed ranger" program.

Partnerships and Sponsorships

*30. Leverage broad awareness and interest in climate change and "being green" with partnerships and sponsorships with nonprofits, organizations, businesses, and agencies who share MMWD's environmental and public service goals.

Sample Campaign: NURSERY/GARDEN SUPPLY CENTER

District customers are purchasing new plants and irrigation equipment for summer; below is a menu of ideas. Implementing such a campaign typically requires months of development and coordination with all parties and partners.

1. Signage promoting low water use and native plants, zone designations, and proper irrigation equipment, timing, rain shut-off, and irrigation best practices at nurseries and garden centers.

2. Advertising with the same message in the IJ and Pacific Sun. If possible, tie in a special discount or sale at the store for co-branding and cooperation to bring in lots of customers at one time.

3. Collection of email address at time of purchase to send irrigation/conservation tips via email: when to start watering, when to add or decrease time on automatic systems, when new information or interactive features are posted at www.marinwater.org.

4. Co-branded incentive with retailer, offering a discount coupon on future purchase of water saving plants and products.

5. Garden signs for home use displaying an icon with strategic message: “doing our part to save water for next year” (language to be developed) along the lines of the ladybug “pesticide free zone” signs or the “Certified Green Business” logo.

6. Eye-catching and thematically unified tips card showing the top 5 – 10 things a water conscious gardener does.

7. Display of appropriate plants and irrigation equipment.

8. Discount tickets to Eco-Sperience/County Fair with minimum purchase; perhaps tie in visits to the various exhibits or workshops.

9. Offer a simplified rebate application process (perhaps an MMWD staff person at a table to help customers complete) as well as a coupon for a discount at that store for suitable devices or plants at the next visit if rebate form is filled out in store.

10. Contact and coordinate with environmental and sustainability groups for assistance in “getting the word out” through their email lists, communications, and meetings. Craft a simple message and identifying graphic to supply for their use. Investigate opportunities for MMWD spokespersons to make short presentations.

This page intentionally left blank.

CONCLUSIONS

1. The District is at a critical turning point in its history and must make significant investments that balance water supply and demand, and fund infrastructure maintenance and operations.

2. Investments in water conservation programs have reliably reduced water demand in the District for over 30 years and continue to yield consistent results.

3. The conditions now exist for the District to launch an aggressive, sustained conservation campaign and set a new achievement standard for water efficiency in California:

   - Water supplies are limited; new supplies are expensive to develop and impact the environment.

   - The pubic is knowledgeable and motivated.

   - The District has the in-house expertise to develop and operate successful conservation programs.

   - New technologies are available to reliably reduce consumption into the future.

   - Although conservation is a cost-effective method to extend available water supplies and provides environmental benefits, under the current District pricing structure, lowered water sales also reduce District revenue. Solving this financial catch-22 is the most critical challenge limiting conservation today.

4. Only by making a long-term commitment to overcome financial and social barriers, and to invest in public education and technology, can the District secure reliable conservation savings.

This page intentionally left blank.

Appendix I: Title 13

Title 13

WATER SERVICE CONDITIONS AND WATER CONSERVATION MEASURES

Chapters:

13.01 Eliminated (Ord. 346, 1993)
13.02 Water Conservation and Dry Year Water Use Reduction Program
13.03 Water Budgets and Related Conservation Measures

Chapter 13.02

WATER CONSERVATION AND DRY YEAR WATER USE REDUCTION PROGRAM*

Sections:

13.02.010 Declaration of purpose.
13.02.015 Declaration of Water Shortage Emergency.
13.02.020 Water waste prohibitions.
13.02.021 Water Conservation: Normal Year Water Conservation
13.02.030 Water use reduction in dry periods.
13.02.040 Calculation of allowable water use.
13.02.050 Variances.
13.02.060 Enforcement.
13.02.065 Unauthorized water use.
13.02.070 Further prohibitions.
13.02.080 Penalty for violations.
13.02.090 Appeals.
13.02.100 Remedies/cumulative.
13.02.110 Chapter controlling.

13.02.010 Declaration of purpose. The purpose of this chapter is to provide a water conservation plan to minimize the effect of a shortage of water on the district's consumers and to adopt provisions that will significantly reduce the consumption of water during an extended dry weather period (drought), thereby extending the available water for the district's consumers while reducing the hardship on the general public to the greatest extent possible, voluntary conservation efforts having proved insufficient to achieve these ends. The programs developed in this chapter are triggered based on lake storages developed by computer simulations performed utilizing the district's seven reservoirs with approximately eighty thousand acre-feet of total capacity and up to nine thousand acre-feet per year of imported water. (Ord. 387 §1, 1999; Ord. 316 §2 (part), 1991).

* Prior ordinance history: Ords. 279, 286, 290 and 314.

13.02.015 Declaration of Water Shortage Emergency. When the district's lake storage on December 1 is projected to be in the vicinity of, or less than, thirty thousand acre-feet, the board may declare by resolution a Water Shortage Emergency as defined in the Water Code and then advise the State Water Resources Control Board of the need to conserve local storage. (Ord. 387 §1, 1999)

13.02.020 Water waste prohibitions. No customer of the district shall make, cause, use or permit the use of potable water from the district for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to any provision of this section.

(1) Prohibited Nonessential Uses Applicable to All Consumers. It is unlawful for any person, firm, partnership, association, corporation, or political entity to use water from the district for the following nonessential uses:

(A) The washing of sidewalks, walkways, driveways, parking lots and all other hard-surfaced areas by direct hosing, except as may be permitted by current regulations pertaining to urban water runoff pollution prevention as defined by the Marin County Stormwater Pollution Prevention Program and other controlling agencies;

(B) The escape of water through breaks or leaks within the consumer's plumbing or private distribution system for any substantial period of time within which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of forty-eight hours after the consumer discovers such a leak or break, or receives notice from the district of such leak or break, whichever occurs first, is a reasonable time within which to correct such leak or break;

(C) Non-recycling decorative water fountains.

(D) Restrictions on Irrigation. Irrigation shall not be conducted in a manner or to an extent that allows water to run off or overspray the areas being watered. Every consumer is required to have his/her water distribution lines and facilities under control at all times to avoid water waste.

(E) Any excess water runoff flowing onto the public right of way at a rate of 1 gallon per minute or greater not caused by storm water or naturally occurring groundwater, is prohibited.

(F) Using a garden hose without a shut-off nozzle.

(G) Landscape irrigation between the hours of 9:00 a.m. and 7:00 p.m.

(H) Operating outdoor irrigation systems using potable water for the purpose of irrigating ornamental landscape areas or turf areas on more than three days within any week of the calendar year. Customers are strongly encouraged to irrigate ornamental landscapes or turf on fewer days and only as required to maintain plant health and replace evapotranspiration loss as defined by the California Irrigation Management Information System.

(I) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.

(2) Restrictions on Reverse-Osmosis Units. The installation of reverse-osmosis water purifying systems not equipped with an automatic shutoff unit is prohibited.

(3) The following are prohibited for new connections:

(A) Single-pass cooling systems for air conditioning or other cooling system applications unless required for health or safety reasons;

(B) Non-recirculating systems for conveyer carwash applications.

(4) Exemption from daytime water prohibition: Notwithstanding anything contained in this Title 13, testing and repairing irrigation systems for the purpose of eliminating water waste is permitted during the hours of 9:00am and 7:00pm.

(Ord. 428 §2, 2015; Ord. 427 §2, 2014; Ord. 421 §2, 2011; Ord. 387 §1, 1999; Ord. 332 §1, 1992; Ord. 316 §2 (part), 1991).

13.02.021 Water Conservation: Normal Year Water Conservation.

(1) Declaration of Purpose. The purpose of this chapter is to provide a water conservation plan to maximize the water supply during periods of relatively normal rainfall and to minimize the effect of a shortage of water on the district's consumers during an extended dry weather period (drought). The normal year conservation programs in this chapter are based on industry standards promulgated by the American Rainwater Catchment Systems Association (ARCSA), Bay-Friendly Landscape and Gardening Practices (Bay-Friendly), Best Management Practices developed by the California Urban Water Conservation Council (CUWCC), California Department of Water Resources (DWR), California Invasive Plant Council (Cal-IPC), California Irrigation Management Information System (CIMIS), Consortium for Energy Efficiency (CEE),University of California Cooperative Extension (U.C. Extension), USEPA WaterSense Program (WaterSense), Water Use Classification of Landscape Species (WUCOLS), and other recognized conservation industry standards. In every case, the intent of this chapter is to remain a living document, incorporating the most restrictive industry standards in practice at the time in question. In the event that there is a conflict in regulations, the default shall be determined by the District, or as required by law.

Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use. This policy protects local water supplies through the implementation of a whole systems approach to design, construction, installation and maintenance of the landscape resulting in water conserving climate-appropriate landscapes, improved water quality and the minimization of natural resource inputs.

(2) Definitions. Definitions used in this chapter are as follows:

A. Application for Service from an Existing Connection: The application for service from an existing connection, whether it is a new, increased, or modified water service, in a customer’s name for a property.

B. Backflow Prevention Device: means an approved device installed to District standards which will prevent backflow or back-siphonage into the potable water system.

C. Booster Pumps: used where the normal water system pressure is low and needs to be increased.

D. Bubblers: Irrigation heads that produce a large volume of output, measured in gallons per minute (gpm) that flood the soil area surrounding the bubbler head.

E. Check Valve: a valve located under a sprinkler head or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

F. Common Interest Development: community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

G. Compost: the decayed remains of organic matter that has rotted into a natural fertilizer suitable as a soil amendment to enhance plant growth.

H. Developed landscape area: All outdoor areas under irrigation, swimming pools, and water features, but excluding hardscape areas.

I. Ecological Restoration Project: a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

J. Effective Rainfall: the portion of total rainfall which becomes available for plant growth and that is used by the plants, defined as an average of 25% of total rainfall.

K. Emitter: a drip irrigation device that delivers water slowly from the system to the soil.

L. Estimated Total Water Use (ETWU): a calculated amount of water needed to irrigate a given landscape, and used as the basis for assigning water budgets at a site.

M. ET Adjustment Factor: a factor of 0.6, that, when applied to reference evapotranspiration as measured by a CIMIS weather station, or equivalent, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

N. Evapotranspiration rate: the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific specified time.

O. Flow Rate: the rate at which water flows through pipes, and valves and emission devices, measured in (gallons per minute, gallons per hour, or cubic feet per second).

P. Hardscape: Impermeable areas including patios, decks and paths, driveways and sidewalks.

Q. Head-to-Head Coverage: a high-flow irrigation system designed to provide an irrigation spray pattern that delivers water from one sprinkler head to the next.

R. High-efficiency Fixture(s): High efficiency fixtures shall, at a minimum, meet the current requirements of the Water Sense labeling program and those of the California Department of Water Resources and the District.

1. High-efficiency Irrigation Controller: An electronic device that controls the amount of time and frequency of operation for an irrigation system and adjusts automatically to compensate for the seasonal plant water requirements at the site (commonly referred to as weather-based irrigation controllers).
2. High-efficiency Irrigation System: An irrigation system connected to a water service where the overall distribution uniformity (how evenly water is distributed across the irrigated landscape area) is a minimum of 71% and the volume of water used is consistent with seasonal plant requirements as defined by the District.

S. High volume irrigation: An irrigation device or system that delivers water to the landscape in a spray, stream-like, or flooding manner from above-ground irrigation nozzles with output expressed in gallons per minute (include many bubblers and micro-spray devices).

T. High-Flow Sensor: a device for sensing the rate of flow in the irrigation system.

U. High-water-use plants: Annuals, plants in containers, and plants identified as high-water-use in the current edition of the WUCOLS list published by the U.C. Extension. High-water-using plants are characterized by high transpiration rates, shallow rooting, the need for frequent watering during summer months or with exposure to hot and drying climatic conditions.

V. Hydrozones: A distinct grouping of plants with similar water needs and climatic requirements. Hydrozone types include, but are not limited to turf, high-water-use plants, low-water-use plants, microclimates (i.e., sun or shade, southern or northern exposures, surrounded by highly reflective surfaces), and partially hardscaped areas with plants, pool areas and water-use features.

W. Infiltration Rate: the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

X. Invasive Plant Species: species of plants not historically found in California and/or that spread outside cultivated areas and can damage environmental or economic resources as determined by Cal-IPC (www.cal-ipc.org) and the District.

Y. Irrigation Design Capacity: The maximum amount of water calculated to flow through an irrigation system, or section of a system, based on pipe size, pipe material, and operating pressure.

Z. Irrigation Efficiency (IE): a calculated measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this chapter is 0.71.

AA. Irrigation Meter: a separate water meter that measures the amount of water used exclusively for landscape uses, such as lawns, washing exterior surfaces, washing vehicles, filling pools, etc.

BB. Isolation Valves: used to isolate and shut-off water to a portion of the piping system.

CC. Landscape Agent: The consumer's designated representative for interacting with the District on landscape plan reviews.

DD. Landscape Plans: This includes a planting plan, an irrigation plan, and a grading plan drawn at the same scale and that clearly and accurately identify specified plants, irrigation layout, equipment, finish grades and drainage, specifications and construction details, plan sheet numbers, and drawing date of plans.

EE. Landscape Water Budget: The amount of water allowed for landscape water use at a site, adjusted on a seasonal basis, as determined by the District.

FF. Landscaped Area: the entire parcel, less the building footprint, driveways, and non-irrigated portions of parking lots and hardscapes. Water features, areas dedicated to edible plants, such as orchards or vegetable gardens are included in the calculation of the landscaped area. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other nonirrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

GG. Lateral Line: Non-pressurized pipe that is located downstream of an irrigation valve.

HH. Low Volume Irrigation: Irrigation devices, commonly called drip or point-source irrigation, with output measured and typically expressed in gallons per hour (gph), that apply water directly to soil in the plants root zone.

II. Low-Head Drainage: water that flows out of the system after the valve turns off due to elevation changes within the system.

JJ. Low-water-use plants: Plants identified as low-water-use in the current edition of the Water Use Classification of Species list published by the U.C. Extension. (generally, plants that once established, can survive on two irrigations per month during the summer months).

KK. Main Line: the pressurized pipeline that delivers water from the water source to the valve or outlet.

LL. Maximum Applied Water Allowance (MAWA): for design purposes, the upper limit of annual applied water for the established landscape as determined by the District.

MM. Microclimate: The climate of a specific area in the landscape that has substantially differing sun exposure, temperature, or wind, than adjacent areas or the area as a whole.

NN. Moderate Water Use Plants: ornamental trees, shrubs ground covers, and perennials and other plants recognized as moderate-water-use by WUCOLS.

OO. Mulch: any organic material such as leaves, bark, straw, compost or other inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.

PP. Operating Pressure: the pressure when water is flowing through the irrigation system.

QQ. Overhead Irrigation: those systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

RR. Overspray: Water delivered by an irrigation system outside the targeted landscape area during average operating conditions onto any adjacent hardscapes or other non-landscaped areas during an irrigation cycle, and specifically, for purposes of this Code, limited to maximum of 5% of spray radius area for each nozzle.

SS. Pervious: any surface or material that allows the passage of water through the material and into the underlying soil.

TT. Plant Factor: a factor specified in WUCOLS that, when multiplied by reference evapotranspiration (ETo), estimates the amount of water used by specified plants.

UU. Point of Connection (POC): The location where an irrigation system is connected to water supply.

VV. Precipitation Rate: the rate of application of water measured in inches per hour.

WW. Pressure Regulating Valve: a valve that automatically reduces the pressure in a pipe.

XX. Project Applicant: the individual or entity submitting a Landscape Documentation Package, to request a permit, plan check or design review from the local agency. A project applicant may be the property owner or his or her designee.

YY. Property: Any structure, including but not limited to single family residential, multi-family residential and floating homes, built and/or intended primarily for sheltering or housing of any person and ancillary structures thereto.

ZZ. Property Owner: A person or entity that owns or has the financial authority or control over the property to comply with the requirements set forth in this chapter.

AAA. Rain Sensor: a system component which automatically shuts off and suspends the irrigation system when it rains.

BBB. Recreational Area: areas dedicated to active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic parks, sports fields and golf courses where turf provides a playing surface.

CCC. Recycled Water: means tertiary treated water which results from the treatment of wastewater, is suitable for direct beneficial use, and conforms to the definition of disinfected tertiary recycled water in accordance with state law.

DDD. Reference Evapotranspiration or ETo: a standard measurement of environmental parameters which affect the water use of plants and are an estimate of the evapotranspiration of a large field of four to seven-inch tall, cool-season grass that is well watered.

EEE. Rehabilitated Landscape: any re-landscaping project that requires a building or grading permit, plan check or design review.

FFF. Residential Customer: The person(s) or entity with an existing water service connection for a residential property.

GGG. Runoff: Irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other non-targeted areas, including runoff into storm drain systems.

HHH. Soils Laboratory Report: the analysis of a soil sample to determine nutrient content, composition and other characteristics, including contaminants, for horticultural purposes.

III. Special Landscape Area (SLA): an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

JJJ. Sprinkler Head: a high volume irrigation device that delivers water to the landscape through a spray nozzle.

KKK. Static Water Pressure: the pipeline or municipal water supply pressure when water is not flowing.

LLL. Station: an area served by one valve or by a set of valves that operate simultaneously.

MMM. Submeter: a separate meter that is located on the private side of the water system and is plumbed to measure all water that flows only through the irrigation system. This meter is to be used by the owner to monitor irrigation water use and will not be read or maintained by the District.

NNN. Swing Joint: an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

OOO. Turf: A mat layer of monocotyledonous plants with shallow rooting structures requiring frequent watering during the growing season; i.e., cool or warm season grass consisting, but not limited to Blue, Rye, Fescue, Bent, Bermuda, Kikuyu, St. Augustine, Zoysia, and Buffalo.

PPP. Valve: a device used to control the flow of water in the irrigation system.

QQQ. Valve Manifold: a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.

RRR. Water Budget: an allocation of water based on plant water needs, used to determine the billing tiers for customers with dedicated landscape irrigation meters, for example.

SSS. Water Feature: a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.

TTT. Weather Based or Sensor Based Irrigation Control Technology: uses local weather and landscape conditions to tailor irrigation schedules to actual conditions on the site or uses historical weather data.

UUU. WUCOLS: the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

(Ord. 421 §3(part), 2011: Ord. 403 §4, 2004: Ord. 394 §1, 2001: Ord. 385 §1(part), 1999): Ord. 326 §1(part), 1991).

(3) Requirements for All Services.

A. Pressure Regulation. A pressure-regulating valve shall be installed and maintained by the consumer if static service pressure exceeds 80 pounds per square inch (psi), and be set at a maximum operating pressure of 60 psi at the regulator outlet. The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and pressure-relief valves and other plumbing safety devices shall be installed as required by local codes. The operating pressure requirement may be waived if the consumer presents evidence satisfactory to the District that high pressure is necessary in the design and that no water will be wasted as a result of higher pressure operation.

B. Interior Plumbing Fixtures. All plumbing installed, replaced or moved in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements:

1. High-efficiency Clothes Washers: Residential or commercial clothes washers that meet the current highest water efficiency standards as defined by the District. The General Manager shall have authority to grant a variance from the requirements of this section based upon financial hardship.

2. High-efficiency Lavatory Faucet: The maximum flow rate shall not exceed 1.5 gallons per minute (gpm) at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

3. High-efficiency Shower Head: The manufacturer shall specify a maximum flow rate equal to or less than 2.0 gallons per minute (gpm), at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

4. High-efficiency Toilet: Any WaterSense listed toilet rated at an effective flush volume of no greater than 1.28 gallons.

5. High-efficiency Urinal: The average water consumption shall not exceed 0.25 gallons per flush (gpf).

C. Pool Covers. Pool covers are required for all new outdoor swimming pools. (Ord. 421 §3(part), 2011; Ord. 385 §1(part), 1999); Ord. 326 §1(part), 1991).

(4) Non-Residential Interior Plumbing Fixtures. All plumbing installed, moved or replaced in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements: (Ord. 421 §3(part), 2011).

A. Faucets. Lavatory faucets, other than public lavatory or metering faucets, shall deliver 1.5 gallons, or less of water per minute.

1. **Metered Faucets** Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver no more than .25 gallons of water per use. Self-closing faucets shall deliver no more than .5 gallon per minute.

2. **Public Lavatory** (other than metering) faucets shall deliver 0.5 gallons, or less, of water per minute.

3. **Kitchen, Bar and Utility/Service** (other than hand-washing sinks) faucets shall deliver 2.2 gallons, or less, of water per minute.

B. Private Use, Public Use. *Pursuant to the International Plumbing Code (IPC):* "In the classification of plumbing fixtures, "private" applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual…"public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted".

C. Commercial Equipment Specifications.

1. **Dishwashers.** Dishwashers are machines designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution (with or without blasting media granules) and a sanitizing final rinse. Dishwashers shall meet the current specifications set by the Consortium for Energy Efficiency's (CEE) "High Efficiency Specifications for Commercial Dishwashers and any and all amendments thereto".

2. **Steamers.** A "steamer" or "steam cooker" is a device with one or more food steaming compartments in which the energy in the steam is transferred to the food by direct contact. Steamers shall meet the current specifications set by the CEE's "High Efficiency Specifications for Commercial Steamers and any and all amendments thereto".

3. **Pre-Rinse Spray Valves.** Pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. Pre-rinse spray valves shall (1) deliver 1.3 gallons, or less, of water per minute based on tested performance by the FSTC and (2) meets the cleaning performance standard of 26 seconds per plate or less, based on the ASTM *Standard Test Method for Performance of Pre-Rinse Spray Valves and any and all amendment thereto*.

4. **Dipper Wells.** A "dipper well" is a basin into which clean tap water flows constantly to provide a fresh supply of water for soaking utensils. The run-off goes down the drain. Dipper well flow rate shall be .3 gallon, or less, per minute.

5. **Ice Machines.** Ice machine are a factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It is an assembly that makes up to 4,000 lbs of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of ARI Standard 810-2006, and may also include means for storing or dispensing ice, or both. Ice machines shall (1) be Energy Star qualified and (2) meet the current highest Tier specification set by the CEE's "High Efficiency Specifications for Air-Cooled Ice Machines and any and all amendments thereto".

6. **Clothes Washers.** "Commercial clothes washer" means a soft mount front-loading or soft mount top loading clothes washer with clothes container compartment no greater than 3.5 ft^3 for horizontal axis clothes washers, or nor greater than 4.0 ft^3 for vertical axis clothes washers, that is designed for use in (1) applications where the occupants of more than one household will be using it, such as multi-family housing common areas and coin laundries, or (2) other commercial applications. Commercial clothes washers shall meet the minimum Modified Energy Factor (MEF) and maximum Water Factor (WF) corresponding to the highest efficiency machines on the most recent CEE "High Efficiency Specification for Commercial, Family-Sized Clothes Washers and any and all amendments thereto". As of January 1, 2007, the highest efficiency machines have a minimum MEF of 2.20 and a maximum WF of 4.5.

7. **Heating, Ventilation and Air Conditioning (HVAC) Equipment.** HVAC Equipment shall eliminate all once-through cooling, replacing with an air-cooled system or a cooling tower. For cooling towers, the following are recommended:

   (a) flow submeters on make-up and bleed-off lines; submeters should, at a minimum, be capable of totaling the flow.

(b) conductivity controllers that activate the blowdown valve for dissolved solids control.

(c) overflow sensors on the overflow pipes.

(d) baffles or drift eliminators.

All cooling towers shall be monitored and maintained in a manner consistent with applicable regulatory guidelines and manufacturers recommendations.

(5) Water Efficient Landscaping

A. After January 1, 2011, this chapter shall apply to all of the following:

1. New construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check or design review;

2. New construction and rehabilitated landscapes which are developer or contractor-installed in single-family and multi-family projects with a landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check, or design review;

3. New construction and rehabilitated landscapes which are homeowner-provided in single family and multi-family residential projects with a total project landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review.

B. This chapter shall not apply to:

1. Registered local, state or federal historical sites;

2. Ecological restoration projects that do not require a permanent irrigation system;

3. Mined-land reclamation projects that do not require a permanent irrigation system; or

4. Plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

C. Landscape Design Plan. For each landscape project subject to this chapter applicants shall submit a landscape design plan in accordance with the following:

1. Amendments, Mulching and Soil Conditioning: A minimum of 8" of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.

2. Incorporate compost or natural fertilizer into the soil to a minimum depth of 8" at a minimum rate of 6 cubic yards per 1000 square feet or per specific amendment recommendations from a soils laboratory report.

3. A minimum 3" layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers or direct seeding applications.

4. Plants.

   (a) Selected plants shall not cause the Estimated Total Water Use to exceed the Maximum Applied Water Allowance (see calculation in Appendix A).

   (b) Plants with similar water use needs shall be grouped together in distinct hydrozones and where irrigation is required, the distinct hydrozones shall be irrigated with separate valves.

   (c) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.

   (d) High water use plants shall not be mixed with low or moderate water use plants.

   (e) All non-turf plants shall be selected, spaced, and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.

   (f) Turf shall not be allowed in the following conditions: Slopes exceeding 10%, planting areas 8 feet wide or less, street medians, traffic islands, planter strips adjacent to hardscape, or bulbouts of any size.

   (g) Invasive plants as listed by the Cal-IPC are prohibited. Weedy species, listed as invasive in California at (www.cal-ipc.org/ip/inventory/index.php) shall not be planted. Please check the species you might be thinking of planting against these lists, broken out by plant type. Exemptions may be granted on a case by case basis if District staff determine that the proposed location, species, size, number

of plants, and other cultural methods are not likely to cause harm to the watershed ecosystem.

(h) Fire Safe Landscape Practices. The requirements in this chapter are intended to support, and be in compliance with, all local and State requirements related to Fire Safe Landscaping practices, including, but not limited to, requirements for Wildlife Urban Interface zones as specified by the local authority.

(i) Identify any applicable rain harvesting, graywater, or catchment technologies (e.g. rain gardens, cisterns, etc.). Applicants are encouraged to employ alternative irrigation techniques as appropriate, and where permitted by law.

(j) Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Appropriate stormwater best management practices are encouraged in the landscape design.

5. Water Features.

(a) Re-circulating water systems shall be used for water features.

(b) Recycled water shall be used when available and approved for use onsite.

D. Irrigation Design Plan.

1. For each landscape project subject to this chapter applicants shall submit an irrigation design plan that is designed, and installed, to meet irrigation efficiency criteria as described in Appendix A (MAWA) and in accordance with the following:

(a) Irrigation systems with meters 1 ½" or greater require a high-flow sensor that can detect high flow conditions and have the capabilities to shut off the irrigation system.

(b) Isolation valves shall be installed at the point of connection and before each valve or valve manifold.

(c) High-efficiency controllers, weather-based, or other sensor based self-adjusting irrigation controllers shall be required.

(d) Rain sensors shall be installed for each irrigation controller.

(e) Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.

(f) Irrigation systems shall be designed to prevent runoff or overspray onto non-targeted areas, and wherever overhead irrigation is located directly adjacent to hardscape areas, where runoff water flows into the curb and gutter; all spray heads shall be setback a minimum of 24" from hardscape edges.

(g) Low volume or bubbler irrigation is required where plant height at maturity will affect the uniformity of a high volume overhead spray system.

(h) Minimum 24" setback of overhead spray irrigation is required where turf is directly adjacent to a continuous hardscape area where runoff water flows into the curb and gutter.

(i) Slopes greater than 15% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour (or lower if appropriate for site conditions as determined the District). This restriction may be modified if the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.

(j) A single valve shall not irrigate hydrozones that mix high water use plants with moderate or low water use plants.

(k) Trees shall be placed on separate irrigation valves except when planted in turf areas.

(l) Sprinkler heads, rotors and other emission devices on a valve shall have matched precipitation rates.

(m) For all irrigation systems, coverage to sustain plant material in a healthy condition and provide irrigation efficiency shall be required. Head-to-head coverage is required for high volume spray systems unless otherwise directed by the manufacturer's specifications.

(n) Swing joints or other pipe protection components are required on above-ground irrigation piping.

(o) Check valves shall be installed to prevent low-head drainage.

E. Separate District landscape water service meters shall be required for all new landscapes, other than single-family and two-unit residential landscapes, for which the irrigated area is equal to or greater than 1,000 square feet.

1. A private submeter shall be required for all rehabilitated landscapes, other than single-family and two-unit residential landscapes, for which the irrigated landscape area is equal to or greater than 1,000 square feet.

2. A private submeter shall be required for all points of connection on single-family and two-unit residential sites for which the irrigated landscape area is equal to or greater than 2,500 square feet.

F. Documentation for Compliance. The following documentation is to be presented to the District at each of the three steps of review defined below. This documentation shall be required for compliance with this chapter. 13.02.021

1. STEP 1: DESIGN REVIEW. For those landscape projects that require Design Review, applicants shall submit the following documentation to the District:

(a) Completed Appendix A, Maximum Applied Water Allowance (MAWA)

(b) A landscape planting design plan that accurately and clearly identifies and depicts new and existing trees, shrubs, groundcovers, turf, and any other planting areas; plants by botanical name, common name, and plant factor; plant sizes and quantities; property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features; pools, fountains, water features.

(c) An irrigation design plan drawn at the same scale as the planting plan that:

(i) Accurately and clearly identifies and depicts irrigation system point(s) of connection;

(ii) Accurately and clearly identifies and depicts irrigation system components, e.g. controller, pipe, remote-control valves, sprinklers, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices, and other required devices

(iii) Includes the Hydrozone Table (See Appendix B).

(iv) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading design plan drawn at the same scale as the planting design plan shall be submitted as part of the Landscape Documentation Package. Items 1(a-e) below are required for all projects.

(1) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
   (a) height of graded slopes:
   (b) drainage patterns:
   (c) pad elevations;
   (d) finish grade: and
   (e) stormwater retention improvements, if applicable.

(2) It is highly recommended that, when site conditions allow, project applicants consider grading so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes.

The grading design plan shall contain the following statement: "I have complied with the criteria of this chapter and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of a licensed professional or contractor as authorized by law.

(d) For homeowner-provided projects, a completed Homeowner's Irrigation Design Statement, Appendix B, which describes irrigation methods and design actions that will be employed to meet the irrigation specifications of this chapter, may be submitted in lieu of the irrigation design plan.

2. STEP 2: COMPLETION OF INSTALLATION. Upon installation and completion of the landscape, applicant shall submit Appendix D, the Certificate of Completion.

The certificate shall be accompanied by an irrigation audit that contains the following:

(a) Operating pressure of the irrigation system.

(b) Distribution uniformity of overhead irrigation.

(c) Precipitation rate of overhead irrigation.

(d) Report of any overspray or broken irrigation equipment.

(e) Irrigation schedule including:

(f) Plant establishment irrigation schedule.

(i) Regular irrigation schedule by month including: plant type, root depth, soil type, slope factor, shade factor, irrigation interval (days per week), irrigation runtimes, number of start times per irrigation day, gallons per minute for each valve, precipitation rate, distribution uniformity and monthly estimated water use calculations.

(ii) An irrigation maintenance schedule timeline shall be attached to the certificate of completion that includes: Routine inspections, adjustment and repairs to the irrigation system, aerating and dethatching turf areas, replenishing mulch, fertilizing, pruning and weeding.

3. STEP 3: FINAL INSPECTION. A final inspection shall be performed by District staff to verify compliance with this chapter. Once the completion form is received, the District will conduct an inspection to check for proper installation and operation of all landscape and irrigation elements per the approved plan; however, the District reserves the right to perform site inspections at any time before, during, or after irrigation system and landscape installation and to require corrective measures if requirements of this chapter are not satisfied. If corrective measures are necessary, the District will set the water budget to zero until corrective measures are completed.

   Advanced notice is required for all inspections. Inspections can be requested for either morning or afternoon during regular business hours. Final approval shall not be completed until the landscape inspection is approved. An extension of the approval process, to complete landscape and irrigation installation, shall be requested and shall be approved District staff.

(Ord. 421 §3(part), 2011).

(6) Drinking Water Served Upon Request Only.

By January 1, 2011, eating or drinking establishments, including but not limited to a restaurant, hotel, café, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.

(7) Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services.

By January 1, 2011, hotels, motels and other commercial lodging establishments shall provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments shall prominently display notice of this option in each bathroom using clear and easily understood language.

(8) Grey Water Systems. This section is reserved for future provisions regarding grey water systems.

(9) Rain Water Harvesting Systems. This section is reserved for future provisions regarding rain water harvesting systems.

(10) Other Provisions. The General Manager will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements. The General Manager may accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of Chapters 14-30.040 and 14-30.050 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

(11) Provisions For Appeal. The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the General Manager, The decision of the General Manager shall be final. An appeal regarding plan check shall be submitted prior to the installation of the landscape or it will be deemed to have been waived.

(12) **Forms.** The following forms shall be submitted as described in this chapter: Appendix A, Maximum Applied Water Allowance; Appendix B, Homeowner's Irrigation Design Statement; Appendix C, Hydrozone Table; Appendix D, Certificate of Completion. (Ord. 421 §3(part), 2011; Ord. 414 §2, 2010)

Appendix A

Maximum Applied Water Allowance

The following calculations will help you determine your site specific water budget and establish a planting mix that will allow you to meet your water budget. Your Estimated Total Water Use must be less than your Maximum Applied Water Allowance.

1.) Maximum Applied Water Allowance (MAWA)

MAWA = (ETo) (0.62)[(0.6x LA) + (0.4 x SLA)]

Where:
ETo = Annual Net Reference Evapotranspiration (inches)
0.6 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.62 = Conversion factor (to gallons per square foot)
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.4 = the additional ET adjustment factor for Special Landscape Area (1.0 - 0.6 = 0.4)

A.) Net Evapotranspiration Calculation

(Annual ETo)

(Annual Rainfall) x .25 = (Effective Rainfall)

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation

(Landscaped Area) x 0.6 Adjustment Factor =

(Special Landscaped Area) x 0.4 Adjustment Factor =

Sum of Adjusted Landscape Area =

MAWA = x 0.62 x =

2.) Estimated Total Water Use (ETWU)

A.) Net Evapotranspiration Calculation

Net Evapotranspiration Calculation = Annual ETo - Effective Rainfall =

B.) Adjusted Landscape Area Calculation /

(Low water use plant sqft) x 0.3 =

(Moderate water use plant sqft) x 0.6 =

(High water use plant sqft) x 1.0 =

Sum of Adjusted Landscape Area =

ETWU = x 0.62 x =

Irrigation Efficiency Factor		
Percent of total landscape Irrigated with Drip		
0-25%		0.71
26-50%		0.75
51-75%		0.80
76-100%		0.85

Appendix B
Homeowner's Irrigation Design Statement

The intent of this statement is to provide the homeowner with an alternative method for conceptualizing the irrigation design. A signed, written statement shall be submitted to the District as part of the design review process, and shall include the following elements:

- ☐ Accurately and clearly describes the types and locations of all irrigation system point(s) of connection;
- ☐ Accurately and clearly describes the types and locations of all irrigation system components by valve zone, including high-efficiency irrigation controller, pipe, valves, high and low volume irrigation devices, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices, and all other irrigation devices required by the District.
- ☐ **A completed hydrozone table, Appendix C.**
- ☐ **A description of plant species irrigated in each valve zone by scientific name, water use of each plant species as High, Moderate, or Low water use according to WUCOLS (Water Use Classification of Landscape Species) , and plant height at maturity for each plant. Plant height is not necessary where drip or bubbler will be used.**
- ☐ **A statement signed by the homeowner that includes the following certifying language: "The irrigation system will be installed as described in this statement, and in compliance with the requirements of the District".**

Appendix C
Hydrozone Table

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
	Total			**100%**

Summary Hydrozone Table		
Hydrozone*	**Area (Sq. Ft.)**	**% of Landscape Area**
High Water Use		
Moderate Water Use		
Low Water Use		
	Total =	100%

***Hydrozone**
HW= High Water Use Plants
MW=Moderate Water Use Plants
LW=Low Water Use Plants

****Irrigation Method**
MS=Micro-spray
S=Spray
R=Rotor
B=Bubbler
D=Drip
O=Other

Appendix D
Certificate of Completion

This certificate is filled out by the project applicant, landscape architect and/or landscape contractor upon completion of the landscape project.

Part 1. Project Information Sheet

Date		
Project Name	Project Address	
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature Date

Part 2. Landscape Architect and/or Landscape Contractor/Installer

Landscape Architect Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code
Landscape Contractor/Installer Name	Telephone No.	
	Fax No.	
Title	Email Address	
License No. or Certification No.	Telephone No.	
Company	Street Address	
City	State	Zip Code

"I/we certify that the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform to the criteria and specifications of the approved Landscape Documentation Package. Additionally, the landscape audit and irrigation maintenance schedule have been completed as required and are attached to this certificate showing that the system meets the efficiency requirements used in the Estimated Total Water Use calculation"

Landscape Architect Signature Date

Landscape Contractor Signature Date

13.02.030 Water use reduction in dry periods. No customer of the district shall make, cause, use or permit the use of potable water from the district for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to any provision of this section.

(1) Program to Reach a Ten Percent Water Use Reduction Goal (alert stage). When lake storage on April 1st in any year is below fifty thousand acre-feet and system modeling based on historic hydrologic data and use patterns indicates that a minimum reduction in use is required to assure a sufficient carry-over storage, the board may activate by resolution a voluntary use reduction program and should review its financial reserves to determine if a reduction in tier breaks is fiscally warranted to achieve ten percent savings in district's overall water use as follows:

(A) Consumer Percentage Curtailment. Every consumer shall eliminate water wastage in an effort to aid the district in achieving a ten percent reduction of the amount of potable water used by all consumers during the last year in which no restrictions in water use were required.

(B) Curtailment of Program. When lake storage on April 1st of any year is above fifty thousand acre-feet or when lake storage on or after January 1st is sufficiently above fifty thousand acre feet and projected demands will not reduce lake storage below fifty thousand acre-feet by the following April 1st, the requirements of this subsection shall be deactivated by resolution of the board.

(2) Twenty-five Percent Water Use Reduction Program. When lake storage on April 1st is below forty thousand acre-feet and system modeling based on historical hydrologic data and use patterns indicates a reduction in use is required to assure sufficient carry-over storage, the board may activate by resolution a mandatory use reduction program to achieve twenty-five percent savings in district's overall water use as follows:

(A) Consumer Use Reduction. Residential consumers, Billing Codes 1 through 5, shall use no more than the water use allocation assigned by the district based on an allotment per resident to aggregate a thirty-two percent reduction by all residential consumers. A resident is considered to be an individual who resides, or is expected to reside in the structure for a minimum of six months of the year.

Each nonresidential consumer, Billing Code 6 shall use no more than seventy-five percent, Billing Code 7 shall use no more than eighty percent, and Billing Code 8 shall use no more than fifty percent, of the annual water budget calculated by the district for said consumer pursuant to Chapter 13.03 of the district's code.

Every consumer shall eliminate water wastage and non-essential use of potable water from the district in an effort to aid the district in achieving a twenty-five percent reduction in the amount of water used by all consumers in the last year in which no restrictions in water use were required.

(B) Prohibited Nonessential Uses Applicable to All Consumers. It is unlawful for any person, firm, partnership, association, corporation or political entity to use potable water from the district contrary to the provisions of this subsection, or, if more restrictive, subsections (1), (2) and (3) of this section, or to use potable water for: refilling or as make-up water for decorative fountains or pools; irrigation between the hours of 11 AM and 7 PM; irrigation of new turf areas; washing of cars, boats, airplanes with hose without a shut-off nozzle; or serving water to restaurant patron except on request.

(C) Curtailment of Program. When lake storage on April 1st is above forty thousand acre-feet or when lake storage is sufficiently above forty thousand acre-feet and projected demands will not reduce lake storage below forty thousand acre-feet by the following April 1st,

the requirements of this subsection shall be deactivated by resolution of the board. (Ord. 387 §1, 1999; Ord. 376 §8, 1997; Ord. 325 §1, 1991; Ord. 323 §1, 1991; Ord. 316 §2 (part), 1991).

13.02.040 Calculation of allowable water use. When the requirements of Section 13.02.030 (2) are in effect, consumers in Billing Codes 6, 7 and 8 will reduce their use by the appropriate percentage of their water budget. (Ord. 387 §1, 1999; Ord. 376 §9, 1997; Ord. 316 §2 (part), 1991).

13.02.050 Variances. The general manager of the district may grant variances for use of water otherwise prohibited by this chapter if the general manager finds and determines that:

(1) The applicant, if requesting a variance for a nonresidential service (Billing Codes 6, 7 and 8), has agreed to abide by an annual water budget calculated pursuant to Chapter 13.03 of this title; and

(2) The applicant has agreed to adjust his water usage by complying with Section 11.04.080 of this code where determined to be applicable by district staff; and

(3) Failure to do so would cause an unnecessary and undue hardship on applicant or the public, including but not limited to, adverse economic impacts, such as loss of production or jobs; or

(4) Failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or the public. (Ord. 387 §1, 1999; Ord. 316 §2 (part), 1991).

13.02.060 Enforcement.

(1) Any customer violating the regulations and restrictions on water use set forth in this chapter shall receive a written warning for the first such violation.

(2) Upon a second violation, the following enforcement process shall be implemented by the District:

(A) The customer shall receive a written warning describing the nature of the second violation and the required corrective action(s).

(B) Upon receipt of the written warning for the second violation, the customer shall have a 15 calendar day period in which to implement the corrective action(s) and shall notify the District when the corrective actions have been completed.

(C) District staff will conduct a site visit to verify that the corrective action(s) are complete and satisfy the requirements in this chapter.

(3) If the customer fails to complete the required corrective action(s), and notify the District within the 15 calendar day period, the District shall issue a Notice of Violation by certified mail or personal delivery at least 10 calendar days before imposing a $250 fine on the customer's water bill. The notice shall inform the customer that he/she may appeal the imposition of the fine to the District's General Manager by filing a written appeal within 7 calendar days of the date of the letter. Any Notice of Violation not timely appealed will be final. Upon receipt of a timely appeal, a hearing on the appeal will be scheduled and the District will mail notice of this date to the customer at least 10 calendar days before the hearing. The General Manager's decision is final. Pending receipt of a written appeal or pending hearing pursuant to an appeal, the District may take appropriate steps to prevent unauthorized use of water as appropriate to prevent waste. This notice and hearing procedure shall not apply to those water waste situations charged as misdemeanors.

(4) Failure by the customer to pay the fine and correct the violation, may cause the District to install a flow restrictor to be installed in the service. If a flow restrictor is placed, the cost of installation and removal specified in Section 11.32.020 of this code shall be paid by the violator.

(5) Any willful violation occurring subsequent to the issuance of the second written warning may constitute a misdemeanor and may be referred to the Marin County district attorney's office for prosecution pursuant to Section 13.02.080.

(6) The district may also disconnect the water service in accordance with Section 11.28.030 of this code. If water service is disconnected, it shall be restored only upon payment of the turn-on charge fixed by the board of directors under the provisions of Section 11.08.130(2) of this code. (Ord. 421 §4, 2011; Ord. 387 §1, 1999; Ord. 316 §2 (part), 1991).

13.02.065 Unauthorized water use. Use of water without having made application to the district for water service or use of any district water not metered pursuant to such application is prohibited pursuant to this chapter, and in addition to the penalties contained in Section 13.02.080, violators will be subject to the charges for use of such water set forth in Section 6.01.080 of this code. (Ord. 316 §2 (part), 1991).

13.02.070 Further Prohibitions. It is unlawful for any person, firm, partnership, association, corporation or political entity to remove, replace, alter or damage any water meter or components thereof, including but not limited to the meter face, its dials or other water usage indicators and any flow restricting device installed pursuant to Section 13.02.060. (Ord. 316 §2 (part), 1991).

13.02.080 Penalty for violations. Except as provided in Section 13.02.060, for the first and second violations any person, firm, partnership, association, corporation or political entity violating or causing or permitting the violation of any of the provisions of this chapter or providing false information to the district in response to district's requests for information needed by the district to calculate consumer water allotments shall be guilty of a misdemeanor punishable by imprisonment in the county jail for not more than thirty days or by a fine not exceeding one thousand dollars or both. Each separate day or portion thereof in which any violation occurs or continues without a good faith effort by the responsible party to correct the violation shall constitute a separate offense and, upon conviction thereof, shall be separately punishable. (Ord. 316 §2 (part), 1991).

13.02.090 Appeals. Variances from the requirements of this chapter may be granted by the board of directors only after denial of a variance request by the general manager. Appeals of variance request denials shall be made in writing to the secretary of the board at least two weeks prior to the meeting at which they will be heard. Upon granting any appeal, the board of directors may impose any conditions it determines to be just and proper. Variances granted by the board of directors shall be prepared in writing, the original to be kept on file with the district and a copy to be furnished to the applicant. The board of directors may require it to be recorded at applicant's expense. (Ord. 316 §2 (part), 1991).

13.02.100 Remedies/cumulative. The remedies available to the district to enforce this chapter are in addition to any other remedies available under the district's code, or any state statutes or regulations, and do not replace or supplant any other remedy, but are cumulative. (Ord. 316 §2 (part), 1991).

13.02.110 Chapter controlling. The provisions of this chapter shall prevail and control in the event of any inconsistency between this chapter and any other rule, regulation, ordinance or code of this district. (Ord. 316 §2 (part), 1991).

Chapter 13.03

WATER BUDGETS AND RELATED CONSERVATION MEASURES*

Sections:

13.03.010	Declaration of purpose.
13.03.020	Basis for determination of water budget.
13.03.030	Water budgets, when required.
13.03.031	Increasing a Service's Water Budget.
13.03.040	Efficient plumbing fixtures.
13.03.050	Variances from Section 13.13.040.
13.03.060	Appeals.
13.03.070	Penalty for violations.
13.03.080	Recordation of notice.
13.03.090	Cost of enforcement.
13.03.100	Chapter controlling.
13.03.110	Remedies/cumulative.
13 03 120	Flow restrictors.

13.03.010 Declaration of purpose. The purpose of this chapter is to specify the terms and conditions under which water budgets will be required and to specify when consumers will be required to retrofit water using fixtures with low-flow or ultra-low-flow fixtures, all for the purpose of permanently reducing the per capita consumption of water by the district's customers, thereby reducing the hardship on the district's consumers resulting from over-subscription of the district's water supplies which has increased the susceptibility of the district's supply to shortfalls in dry years. (Ord. 316 §2 (part), 1991).

13.03.020 Basis for determination of water budget. The initial annual water budget for each existing service which is not a single-family residential or multi-unit residential structure is determined by the district assigning the amount of the water entitlement based on the purchased water entitlement, calculated consumption or designated annual consumption as defined in Section 11.08.180 of this code. The water budget for each service may be adjusted below the water entitlement as set forth in Section 11.08.035. All customers except residential customers exceeding their annual water entitlements are subject to terms and conditions of Section 11.08.030 of this code regarding changing character and/or increasing use of water. (Ord. 376 §9, 1997; Ord. 340 §1 (part), 1992; Ord. 316 §2 (part), 1991).

13.03.030 Water budgets when required. Services must conform to the annual water budget calculated by the district for each property receiving water service as follows:

(1) New services: immediately upon connection.

---

* Prior ordinance history: Ords. 295, 301, 309, 310 and 314.

(2) Existing services: as a condition of receipt of a variance or as part of the calculation of allowable use pursuant to Section 13.02.040 of this title, or upon receipt of notification from district that an annual water budget has been prepared by district staff. (Ord. 316 §2 (part), 1991).

13.03.031 Increasing a Service's Water Budget. Requests to increase a service's Water Budget, as a result of an entitlement purchase or transfer, or where the service's water budget is less than the service's water entitlement shall meet the following requirements:

(1) Mixed-use Non-Residential Services:

(A) Interior Fixtures. Interior Fixtures shall meet conditions as stated in District Code Section 13.02.02.

(B) Irrigated Landscape Areas. A minimum 3" layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas or creeping or rooting groundcovers. Rain sensors shall be installed for each irrigation controller. Irrigation system shall be adjusted to minimize runoff or overspray onto non-targeted areas.

(2) Dedicated Irrigation Services. The following items shall be completed by the applicant according to the requirements in District Code Section 13.02.02:

- A landscape water budget calculating both MAWA & ETWU requirements.
- A landscape hydrozone table.
- A minimum 3" layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas or creeping or rooting groundcovers.
- Rain sensors shall be installed for each irrigation controller.
- Irrigation system shall be adjusted to minimize runoff or overspray onto non-targeted areas.
- Backflow prevention equipment shall be installed and tested as required by the District.

Upon determining the service meets the requirements for both indoor and outdoor water use, and based on the current water efficiency standards established by the District, the service may be eligible to increase the annual water budget as calculated by staff, but in no case shall the budget exceed the services entitlement. Requests to increase a service's water budget may be made once per calendar year. (Ord. 421 §5, 2011).

13.03.040 Efficient plumbing fixtures. Any plumbing fixture in any existing service which is replaced, added or moved shall conform to the criteria contained in District Code Section 13.02.021. (Ord. 414 §3, 2010; Ord. 316 §2 (part), 1991).

13.03.050 Variances from Section 13.13.040. The general manager may, in his discretion, exempt services from the requirements of Section 13.03.040 of this chapter, or impose reasonable conditions in lieu of compliance therewith, if he determines that any of the following conditions apply:

(1) Hardship. The general manager may grant an extension for hardship where the requirements of Section 13.03.040 cause an unnecessary and undue substantial hardship upon the owner, or purchaser of the facility or the public. Substantial hardship may include, but is not limited to:

(A) Plumbing in an existing facility which does not match the connections with efficient plumbing fixtures and would, therefore, require partial replumbing of the structures;

(B) Unavailability of efficient plumbing fixtures to match a well-defined historic architectural style in a locally, state or federally recognized building of historic significance, fitted with authentic plumbing fixtures;

(C) Any project exempted pursuant to subsection (1) of this section shall be required to have installed toilets using a maximum of 3.5 gallons per flush and three gallons per minute showerheads if not already so provided.

(2) Emergency. The general manager may grant an exemption for emergency purposes when the requirements of Section 13.03.040 would create a condition affecting the health, sanitation, fire protection or safety of the facility owner or the public.(Ord. 316 §2 (part), 1991)

13.03.060 Appeals. Except for variances from Section 13.03.040, variances from the requirements of this chapter may be granted by the board of directors only after denial of a variance request by the general manager. Appeals of variance request denials shall be made in writing to the secretary of the board at least two weeks prior to the meeting at which they will be heard. Upon granting any appeal, the board of directors may impose any conditions it determines to be just and proper. Variances granted by the board of directors shall be prepared in writing, the original to be kept on file with the district and a copy to be furnished to the applicant. The board of directors may require it to be recorded at applicant's expense. (Ord. 316 §2 (part), 1991).

13.03.070 Penalty for violations. Any person, firm, partnership, association, corporation or political entity violating or causing or permitting the violation of any of the provisions of this chapter shall be guilty of a misdemeanor punishable by imprisonment in the county jail for not more than thirty days or by a fine not exceeding one thousand dollars or both. Each separate day or portion thereof in which any violation occurs or continues without a good faith effort by the responsible party to correct the violation shall constitute a separate offense and, upon conviction thereof, shall be separately punishable. (Ord. 316 §2 (part), 1991).

13.03.080 Recordation of notice. Whenever the general manager determines that low water-use plumbing fixtures required by Section 13.03.040 have not been installed or have been removed since initial installation, the general manager may record a notice of violation with the office of the county recorder. The owners of the property as revealed by the assessment roll on which the violation is situated and any other person responsible for the violation shall be notified of the recordation, if their address is known. The owner of record shall have ninety days to take corrective action. Failure to take corrective action within ninety days shall constitute a violation of this code. The general manager shall cause a notice of correction to be recorded at such time as the property owner has established full compliance with the provisions of this chapter. (Ord. 316 §2 (part), 1991).

13.03.090 Cost of enforcement. Any person, firm or corporation or upon whose property a notice of violation has been recorded shall, if the condition creating the nuisance or constituting the violation is not corrected within thirty days, be liable for the cost of abatement and cost of correction which shall include, but not be limited to, cost of investigation, court costs, attorney fees and costs of monitoring compliance. (Ord. 316 §2 (part), 1991).

13.03.100 Chapter controlling. The provisions of this chapter shall prevail and control in the event of any inconsistency between this chapter and any other rule, regulation, ordinance or code of this district. (Ord. 316 §2 (part), 1991).

13.03.110 Remedies/cumulative. The remedies available to the district to enforce this chapter are in addition to any other remedies available under the district's rules and regulations, or any other state statutes or regulations, and do not replace or supplant any other remedy, but are cumulative. (Ord. 316 §2 (part), 1991).

13.03.120 Flow restrictors. In addition to the penalties provided for in Section 13.03.070 of this chapter, district may install a flow restrictor in the service of a customer who violates the provisions of this chapter if, after receiving notice from district that he is in violation, he does not rectify the violation within a reasonable time specified by the district not to exceed sixty days. (Ord. 316 §2 (part), 1991).

MARIN MUNICIPAL WATER DISTRICT

ORDINANCE NO. 429

AN ORDINANCE AMENDING TITLE 13 OF THE MARIN MUNICIPAL WATER DISTRICT CODE ADDING ANOTHER ELEMENT OF THE DISTRICT'S WATER CONSERVATION PROGRAM PURSUANT TO WATER CODE SECTION 375 BY ADDING SECTION 13.02021(2) O-1 "DEFINITIONS" TO INCLUDE "GRAY WATER" AND AMENDING CHAPTER 13.02.021(8) ENTITLED "GRAY WATER SYSTEMS" OF THE DISTRICT CODE

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 adopt another element of the District's water conservation program pursuant to Water Code Section 375. The purpose of this ordinance is to require applicants for new water service and applicants requesting an enlarged water service for substantial residential or commercial remodels to install a gray water recycling system to reuse the maximum practicable amount of gray water on site. The Board of Directors views this conservation program as a fundamental and necessary step in its on-going efforts to reduce overall water use District-wide.

SECTION 2. Ordinance Amendments:

A. Section 13.02.021 (2) O-1 is added to Section 13.02.021 (2) entitled "Definitions" to read as follows:

O-1.Gray Water: Untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Gray water" includes wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

B. Section 13.02.021(8) is amended to read as follows:

(8) Gray Water Systems. All applicants requesting a water service for a new residential or commercial structure which requires the installation of a new service, and all applicants requesting an enlarged water service for a "substantial remodel" to an existing residential or commercial structure as that term is defined under Marin County Code Section 19.04.063 or any successor ordinance shall install a gray water recycling system to reuse the maximum practicable amount of gray water on site. Installation and operation of all gray water systems shall comply with all rules and regulations of the District, the local jurisdiction having zoning authority over the parcel and the California Plumbing and CALGreen Code.

SECTION 3. Findings of Necessity: The Board of Directors, after considering all information and testimony presented at its November 3 , 2015 meeting and all of the comments and protests lodged in relation thereto and in the other portions of the record of this rate-making, finds as follows:

A. Water is a finite and precious resource.

B. Currently, California is in its fourth year of drought.

C. On January 17, 2014, Governor Jerry Brown issued a drought state of emergency declaration in response to record-low water levels in California's rivers and reservoirs as well as an abnormally low snowpack. On April 1, 2015, Governor Brown issued an Executive Order calling for statewide mandatory water reductions of up to 25%.

D. On May 5, 2015, the State Water Resources Control Board approved regulations, based on Governor Brown's Executive Order, mandating the District to reduce its water consumption by 20% percent for June 2015 through February 2016 as compared to the same months in 2013.

E. California Plumbing Code Chapter 16 entitled "Alternative Water Sources for Nonpotable Application" contains the current state-wide requirements for the construction, alteration, discharge, use and repair of alternative water source systems", including gray water.

F. The provisions of Chapter 16 of the state Plumbing Code are intended to, among other things, to conserve water by facilitating greater reuse of laundry, shower, lavatory, and similar sources of discharge for irrigation and/or indoor use.

G. Requiring the installation of gray water reuse standards will improve the effectiveness of the District's efficiency standards for interior and exterior water use.

H. Conditioning the approval for a new water service or enlargement of an existing service based upon a substantial remodel as defined above on an applicant's installation of gray water systems will encourage water re-use and preserve the water supply.

I. Careful water management requires the implementation of a host of water conservation at all times, not just in times of drought.

J. Article X Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use to the fullest extent of which they are capable and that the waste, unreasonable use or unreasonable method of use of water be prevented, and that 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.

K. California Water Codes Section 375 authorized water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

L. The adoption and enforcement of the water conservation program contained in this

ordinance is necessary to manage and conserve the District's water supply and ensure the sustainability and reliability of the same while preventing water waste.

M. The Board finds this ordinance is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15061(b) (3) of the CEQA Guidelines.

N. After more than twenty years of innovative and aggressive conservation efforts, more needs to be accomplished. The water conservation program required by this ordinance is necessary to conserve additional water for beneficial use and to preserve the District's water supply.

SECTION 4. Environmental Determination: This project has been reviewed for compliance with the California Environmental Quality Act and qualifies for an exemption under the General Rule section 15061(b) (3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 5. 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, clauses, phrases, parts or portions be declared invalid or unconstitutional.

SECTION 6. Effective Date: This ordinance shall be effective 90 days from the date of its adoption.

PASSED AND ADOPTED this 3rd day of November 2015, by the following vote of the Board:

AYES: Directors Bragman, Gibson, Quintero and Russell

NOES: None

ABSENT: Director Koehler (recusal)

President, Board of Directors

ATTEST:

Secretary, Board of Directors

Appendix J: Resolution to Adopt UWMP and WSCP

PLACEHOLDER

STAFF REPORT

Meeting Type:	Board of Directors
Title:	Capital Program Update
From:	Alex Anaya, Director of Engineering
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: Action X Information

RECOMMENDATION: Receive a staff update on Fiscal Year 2026 (FY26) third quarter Capital Improvement Program

SUMMARY: Staff has been working on various capital projects identified in the District's adopted FY26 Budget since the last Capital Program Update to the Board on February 3, 2026. Staff continue to make progress on the variety of capital projects identified in the adopted budget, which includes tank, pump station, treatment plant and pipeline projects as well as unplanned capital projects. To ensure continued capital project delivery, staff has hired on-call consultants and will continue to use this strategy of leveraging staff resources to maintain the pace of the capital program. Staff is also starting to develop the next two year capital budget and priority project list to help inform the upcoming rate setting process for future Board consideration.

DISCUSSION: Staff has been diligently working on various capital projects identified in the District's adopted budget for FY26 ranging from treatment plant to pipeline projects. To help execute some of the more complicated work, the District has hired consulting firms for design assistance on pump station, tank, treatment plant and dam projects. Many projects identified in the current budget cycle span a two-year period due to the size and timing of the projects. Some of those projects currently underway in construction include highly visible pipeline projects such as the Bolinas Road Pipeline Replacement Project, Miracle Mile East Pipeline Replacement Project along with the completion of the Marin City and Sleepy Hollow Pipeline project. Staff is also completing the designs on the Palm Avenue Pipeline Replacement Project that will replace 1,430 feet of cast iron pipe installed in 1937 in the unincorporated Marin County and Hillside Avenue Pipeline Replacement Project that will replace 7,000 feet of fire flow deficient pipe in the Town of San Anselmo. Both projects are components of the Districts Fire Flow Improvement Program. In addition, staff is finalizing the first phase of the North Marin Line Creek Crossing Replacement Project. This first phase will relocate isolation valves at Shafter Bridge and install approximately 200 feet of 24-inch pipe in preparation for the second phase of the project that will include the relocation of approximately 1,700 feet of 36-inch pipe and the

replacement of one creek crossing. Advertisement of these projects is anticipated in the next two months.

The District is starting on the fourth year of construction on the Gibson Tank Project, which will involve constructing both tank foundations, tank pads and tank walls. Once completed in 2029, the Gibson Tanks will provide seismically resilient water storage with increased capacity to the Ross Valley Area which is approximately 23% of the District's service area. The Scenic Avenue Tank Replacement Project is currently in construction and will replace one of the four remaining redwood storage tanks with a new 20,000 gallon bolted steel tank. Staff identified an easement conflict during the completion of the 60% project design of the Hind Tanks Replacement Project and is working to resolve the matter this summer 2026 to finalize the design of this project. The updated schedule now shows advertising this project in Winter 2026 for the Spring 2027 start of construction. Once completed, the Hind Tanks Replacement Project will replace two of the four remaining redwood tanks in the system with steel tanks improving seismic resiliency to the system. Staff will be working on the design to replace the last remaining redwood storage tank by 2028.

The Kastania Pump Station Phase 2 Project and Tocaloma Pump Station Rehabilitation Project are both currently in construction and the review and procurement of electrical and mechanical equipment by the respective contractors is underway. Once completed, both projects will improve system reliability and ensure the District's continued ability to provide water to its customers. These complex projects will span a two year construction window, where this first year involves the procurement of electrical and mechanical equipment before demolition and construction begins.

Staff continues to work on the unplanned Fairfax Manor Pump Station Project to replace the damaged pump station that occurred from an unfortunate paving accident in May 2024. Complicated site issues have caused this project to take longer than expected. Staff recently received correspondence from the Division of Safety of Dams regarding condition assessment findings on Seeger Dam Spillway. Staff will be meeting with DSOD to discuss the letter and plan to provide a more detailed update to the Board at an upcoming Board meeting.

As the District enters into its second year of the approved capital budget, staff is developing the next two year capital program budget and projects priorities. While budgets are developed and projects identified through the Capital Steering Committee, additional capital work outside of the projected two-year budget will be provided for future Board consideration and to provide guidance during the upcoming rate setting process.

ENVIRONMENTAL REVIEW: Not Applicable.

FISCAL IMPACT: None.

ATTACHMENT(S): None.

MARIN WATER

STAFF REPORT

Meeting Type:	Board of Directors
Title:	Biodiversity, Fire, & Fuels Integrated Plan (BFFIP) Updates to Increase Annual Broadcast Prescribed Burning and Addendum to the Biodiversity, Fire, and Fuels Integrated Plan Program Environmental Impact Report
From:	Shaun Horne, Director of Watershed Resources
Through:	Ben Horenstein, General Manager
Meeting Date:	June 16, 2026

TYPE OF ITEM: X Action Information

RECOMMENDATION: Adopt an Addendum to the Biodiversity, Fire, and Fuels Integrated Plan Program Environmental Impact Report (PEIR), which incorporates updates to the BIFFIP to allow for up to a total of 1,000 acres of broadcast prescribed burning annually

SUMMARY: In October of 2019, the District adopted the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP), which describes the actions the District will implement to reduce wildfire hazards and maintain and enhance ecosystem function on District watershed lands. Since adoption of the BFFIP, the District has implemented vegetation management and prescribed burning activities to reduce hazardous fuel loads, support ecological restoration, and improve wildfire resilience.

The BFFIP includes an adaptive management framework that allows the District to refine management approaches based on implementation experience, monitoring results, and evolving best practices. In July 2023, the District approved an Addendum to the BFFIP Program Environmental Impact Report (PEIR) prepared pursuant to the California Environmental Quality Act (CEQA) to address refinements to vegetation management activities and prescribed burning[1] procedures under the BFFIP.

The District is now proposing revisions to the broadcast burning components of the BFFIP to allow for an increase in annual broadcast burning acreage, up to a maximum of 1,000 acres annually. The proposed revisions would expand the proposed use of broadcast fire within identified habitat types and management actions as previously analyzed in the certified PEIR. The proposed revisions would better align treatment levels with historic fire return intervals and regional wildfire resilience goals.

An Addendum to the certified BFFIP PEIR has been prepared pursuant to CEQA Guidelines Section 15164. The Addendum evaluates the proposed revisions and concludes that the changes would not

[1] Prescribed burning is inclusive of pile burning and broadcast burning.

result in new significant environmental impacts or substantially increase the severity of previously identified impacts.

DISCUSSION: California continues to face increasing wildfire risk as a result of climate change, historical fire suppression practices, prolonged drought conditions, and accumulated vegetation fuels. In many California ecosystems, periodic fire plays an important role in maintaining biodiversity, ecosystem function, and overall forest resilience. The District manages approximately 22,000 acres of watershed lands on Mount Tamalpais, where vegetation management activities are conducted to reduce wildfire hazards, protect water supply infrastructure, support ecological restoration, and improve ecosystem resilience.

Under the BFFIP, the District implements vegetation management activities including fuelbreak maintenance, forest thinning, invasive species management, habitat restoration, and prescribed fire. Vegetation management is conducted continuously throughout the year with the goals of reducing fuel loads, improving forest health, maintaining biodiversity, and reducing risks to District infrastructure and surrounding communities. The BFFIP also includes an adaptive management framework that allows the District to evaluate implementation activities and refine management approaches based on monitoring results, operational experience, and evolving best practices.

Since adoption of the BFFIP in 2019, the District has successfully implemented prescribed pile and broadcast burning projects in coordination with Marin County Fire Department and regional partners. These projects have demonstrated the effectiveness of prescribed fire for reducing hazardous fuel loads, supporting native ecosystems, controlling invasive vegetation, and improving landscape resilience. Broadcast burning under the current BFFIP is authorized within several Management Actions, including treatments within conifer forests, mixed hardwood forests, grasslands, oak woodlands, and habitat restoration areas. Existing BFFIP parameters currently allow for 180 acres of broadcast burning annually.

Based on six years of implementation experience, increasing regional use of prescribed fire, and updated scientific understanding regarding the ecological and wildfire resilience benefits of managed fire, staff is proposing revisions to the broadcast burning components of the BFFIP. The proposed revisions would allow for an increase in annual broadcast burning acreage, up to a maximum of 1,000 acres annually. The revised program would expand the use of broadcast burning within habitat types and management actions already analyzed in the certified PEIR and would better align treatment levels with historic fire return intervals and regional wildfire resilience goals.

The Addendum evaluates the environmental impacts associated with the proposed revisions to the BFFIP and concludes that implementation of the revised broadcast burning program would not result in new significant environmental impacts or substantially increase the severity of previously identified impacts. The Addendum further concludes that no substantial changes have occurred with respect to the project or the circumstances under which the project would be undertaken that would require preparation of a Subsequent or Supplemental EIR.

ENVIRONMENTAL REVIEW: The District's Board of Directors certified the Program Environmental Impact Report (PEIR) for the Biodiversity, Fire, and Fuels Integrated Plan (State Clearinghouse No. 2017012007) on October 15, 2019. In July 2023, the District approved an Addendum to the BFFIP PEIR addressing refinements to vegetation management activities and broadcast burning procedures. The

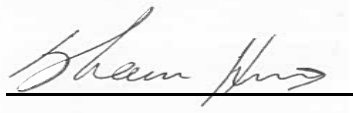
current Addendum evaluates additional revisions related to the expansion of broadcast burning activities under the BFFIP.

Pursuant to CEQA Guidelines Section 15164, an Addendum to a certified EIR is appropriate when only minor technical changes or additions are necessary and none of the conditions described in CEQA Guidelines Sections 15162 or 15163 requiring preparation of a Subsequent or Supplemental EIR have occurred. The Addendum concludes that the proposed revisions would not result in new significant environmental impacts or substantially increase the severity of previously identified impacts, and that no new information of substantial importance has become available requiring additional environmental review. Accordingly, preparation of an Addendum is the appropriate level of CEQA review, additional circulation and review of public comments are not required.

FISCAL IMPACT: None.

ATTACHMENT(S):

1. BFFIP Addendum

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Watershed		
	Shaun Horne **Watershed Resources Director**	**Ben Horenstein** **General Manager**

Marin Municipal Water District

Addendum to the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP) Program Environmental Impact Report

State Clearinghouse No. 2017012007

May 2026

717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com

PANORAMA ENVIRONMENTAL, INC

Marin Municipal Water District

Addendum to the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP) Program

May 2026

Prepared for:
Marin Municipal Water District
220 Nellen Avenue, Corte Madera, CA 94925
carly.blanchard@MarinWater.org

Prepared by:
Panorama Environmental, Inc.
717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
caitlin.gilleran@panoramaenv.com

Table of Contents

1 Introduction 1
1.1 Background and Proposed Addendum 1
1.2 CEQA Compliance 1
1.3 BFFIP Management Actions Pertaining to this Addendum 2
1.4 Summary of Plan Changes 3
1.5 Revised BFFIP 2-5

2 Evaluation 2-14
2.1 Aesthetics 2-14
2.2 Agriculture and Forestry Resources 2-15
2.3 Air Quality 2-16
2.4 Biological Resources 2-20
2.5 Cultural Resources 2-23
2.6 Energy 2-24
2.7 Geology and Soils 2-24
2.8 Greenhouse Gas Emissions 2-25
2.9 Hazards and Hazardous Materials 2-26
2.10 Hydrology and Water Quality 2-27
2.11 Land Use and Planning 2-29
2.12 Mineral Resources 2-29
2.13 Noise 2-29
2.14 Population and Housing 2-30
2.15 Public Services 2-30
2.16 Recreation 2-31
2.17 Transportation 2-32
2.18 Tribal Cultural Resources 2-33
2.19 Utilities and Service Systems 2-33
2.20 Wildfire 2-34
2.21 Other CEQA Topics 2-35

3 Determination 3-37

4 References 4-38

List of Tables

Table 1.4-1 Overview of 2026 BFFIP Updates 3
Table 2.3-1 Estimated Revised Maximum Criteria Air Pollutant Generation (tons/year) 2-16
Table 2.8-1 Estimated Revised Maximum Greenhouse Gas Emissions (metric tons CO_2e/year) ... 2-25

List of Appendices

Appendix A Mitigation Monitoring and Reporting Program

TABLE OF CONTENTS

This page is intentionally left blank.

1 Introduction

1.1 Background and Proposed Addendum

The Marin Municipal Water District (District), chartered on April 25, 1912, is one of the first municipal water districts in California and was formed to ensure reliable water service in central and southern Marin, which had previously been served by small private companies. The District's mission is to manage natural resources in a sustainable manner, and to provide high-quality water at a reasonable price. As of 2025, the District serves more than 192,000 people in central and southern Marin and is an environmental steward to 22,000 acres of watershed land on Mount Tamalpais and in West Marin.

In 2019, the District adopted its Biodiversity, Fire, and Fuels Integrated Plan ("BFFIP", or "plan") and certified the Program Environmental Impact Report (PEIR) to reduce wildfire risk and enhance ecosystem function through 27 management actions, including year-round vegetation management to reduce fuel loads, maintain fuelbreaks and defensible space, and control invasive species. The District has been implementing vegetation management activities under the BFFIP for more than 6 years. These activities reduce the risk of high-intensity wildfire and support ecological restoration in the Mount Tamalpais Watershed through the removal of invasive plant species.

In 2023, the District amended the BFFIP and approved an addendum to the 2019 BFFIP PEIR, referred to as the 2023 addendum, to address several larger refinements to the approved plan, specifically it authorized beneficial treatments, including prescribed burning in rare plant areas; consolidated broom treatments into a single management action and expedited treatment of maximum allowable broom acreages; expanded conifer and hardwood forest stand treatments; and clarified procedures related to broadcast burning.

The purpose of this addendum is to allow for additional beneficial broadcast burning under the BFFIP, increasing the currently allowed annual maximum of 180 acres of burning to allow for up to 1,000 acres of annual burns.

1.2 CEQA Compliance

The District's Board of Directors certified the PEIR for the BFFIP (State Clearinghouse Number 2017012007) on October 15, 2019 (Marin Water District, 2019). The 2019 BFFIP PEIR was prepared in accordance with the California Environmental Quality Act (CEQA) to assess the environmental effects of the BFFIP. An Initial Study was prepared in support of the 2019 BFFIP PEIR and is attached to that document. The Notice of Determination for the 2019 BFFIP PEIR

was posted on October 28, 2019. The 2023 addendum was prepared and approved March 16, 2023, to account for minor modifications to the BFFIP and BFFIP PEIR.

Pursuant to Section 15164 of the CEQA Guidelines, an addendum to an adopted Environmental Impact Report (EIR) shall be prepared if only minor technical changes or additions are necessary and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines have occurred that call for preparation of a subsequent or supplemental EIR. As described in Section 15162(a), a subsequent or supplemental EIR would be required if substantial changes occur to the project or substantial changes to the circumstances under which the project is undertaken occur that would involve either (a) a new significant environmental effect or (b) a substantial increase in the severity of a previously identified significant effect.

Certain aspects of the BFFIP are proposed to be revised from what was analyzed in the certified 2019 BFFIP PEIR. Accordingly, this addendum describes the proposed changes and additions to the BFFIP and BFFIP PEIR (referred to as the "proposed revisions" and "2026 update", respectively) and identifies any additional analysis in accordance with the Appendix G resource questions analyzed in the 2019 BFFIP PEIR and 2023 addendum.

The best management practices (BMPs) incorporated into the BFFIP, and the mitigation measures (MMs) adopted as part of the 2019 BFFIP PEIR, incorporating revisions from the 2023 addendum, are presented in Appendix A. Further, the revisions proposed pursuant to the 2026 addendum are shown in gray highlighted underline and ~~strikeout~~ in Appendix A.

Section 15164(c) of the CEQA Guidelines states that "[a]n addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration." Because, as documented below, the impact determinations in the 2019 BFFIP PEIR have not changed, preparation of additional environmental documents, circulation, and review of public comments, are not required.

1.3 BFFIP Management Actions Pertaining to this Addendum

The BFFIP established goals for broadcast burning through following management action (MA), as follows:

- MA-23: Improve conifer and mixed hardwood forest stand structure and function in the Ecosystem Restoration Zone/ Wide Area Fuel Reduction Zone (WAFRZ)
- MA-24: Improve grassland and oak woodlands in the Ecosystem Restoration Zone

Under the existing plan, the District has successfully implemented broadcast burning in collaboration with the Marin County Fire Department under both of these MAs. Most recently, the District completed two broadcast burns in 2025 under MA-24 totaling 109 acres. Currently, the District has burn plans underway for approximately 216 acres.

1.4 Summary of Plan Changes

The BFFIP calls for periodic review as part of its adaptive management framework. Since certification of the 2019 BFFIP PEIR and 2023 addendum, the District and other entities within the greater Bay Area have seen success in use of controlled broadcast fire in the reduction of wildfire risk and advancement of long-term ecological restoration These successes include the District's limited controlled broadcast burning within the Mount Tamalpais Watershed. Accordingly, the District now proposes to increase allowable annual broadcast burning treatment thresholds to better mimic historic fire return intervals, as feasible, by vegetation types.

Table 1.4-1 provides an overview of the proposed 2026 BFFIP changes in comparison to the approved BFFIP as assessed in the 2019 BFFIP PEIR and 2023 addendum. The primary change is to allow for up a total of 1,000 acres of broadcast fire annually, which is an increase from the current maximum of 180 acres of annual burning. The purpose of this change is to reflect increased use and acceptance of broadcast burning by the public and fire agencies, as well as its demonstrated benefits as a cost-effective vegetation management tool. Specifically, the proposed increases in broadcast burning under MA-23 and MA-24 include 240 acres of forest understory annually and 760 acres annually of grasslands and open woodlands, as detailed in Table 1.4-1.

Table 1.4-1 Overview of 2026 BFFIP Updates

Topic	Approved 2019/2023 BFFIP and PEIR	Proposed 2026 BFFIP Updates
MA-23: BFFIP	• Ramp up of burning up to two 20-acre projects annually (40 acres) by the 5th year of the BFFIP • Up to 100 acres of broadcast burning in forest understory within the first 5 years of the BFFIP adoption (Year 1 through Year 5; 2020 to 2024)	• Annual burning up to 240 acres in forest understory (Year 7 [2027] and beyond)
MA-23: 2019 PEIR Modeling Assumption	• Maximum of 40 acres of broadcast burning in conifer forest, mixed hardwood forest, and intermixed shrub and grassland communities • Manual and mechanical pre-treatment acres are accounted for in the initial reduction and maintenance actions	• Maximum of 240 acres of broadcast burning in conifer forest, mixed hardwood forest, and intermixed shrub and grassland communities • No change needed for manual and mechanical pre-treatment acres
MA-24: BFFIP	• Ramp up of burning up to three projects annually (not exceeding 140 acres) by the 5th year of the BFFIP • Up to 450 acres of broadcast burning in grasslands and open oak woodlands within 5 years of the BFFIP adoption (2020 to 2024)	• Annual burning up to 760 acres in grasslands and open oak woodlands (Year 7 [2027] and beyond)

Topic	Approved 2019/2023 BFFIP and PEIR	Proposed 2026 BFFIP Updates
MA-24: 2019 PEIR Modeling Assumption	• Maximum of 112.4 acres of broadcast burning in oak woodlands and grasslands • Manual and mechanical pre-treatment acres are accounted for in the initial reduction and maintenance actions	• Maximum of 760 acres of broadcast burning in oak woodlands and grasslands • No change needed for manual and mechanical pre-treatment acres
MA-25, MA-26, MA-27: BFFIP	• Broadcast burning may be used under MA-25, MA-26, and MA-27	• Clarity that broadcast burning under MA-23 and MA-24 may be designed to achieve the desired outcomes of MA-25, MA-26, and MA-27
Total Broadcast Burning In All Management Actions	• Maximum of 180 acres of annual broadcast burning	• Maximum of 1,000 acres of annual broadcast burning (an increase of 820 acres)
Changes to MM Biology-9	• Provided Protection of Western Pond Turtle Nesting Habitat and Overwintering	• Name revised to 'Northwestern Pond Turtle' due to species name change
Changes to MM Biology-11	• Focused on Marin Elfin Butterfly Host Plant Avoidance	• Broadened scope of this measure to cover other special-status butterfly species, such as the monarch butterfly

Revisions to the BFFIP are proposed in sections ES-5, 6.2.4, 6.2.5, and 6.3.3 as well as Table ES-9 and Table 6-1. The proposed revisions to the adopted BFFIP are displayed in the following sections in gray highlighted ~~strikeout~~ and underline.

1.5 Revised BFFIP

1.5.1 ES.5 Implementation of the BFFIP

Table ES-3 on page ES-9 is proposed to be revised as follows:

Management Action No.	Action	Performance Criteria	Year 5 (2024) Implementation Level	Year 7 (2026) Implementation Levels
MA 23	Improve conifer and mixed hardwood forest stand structure and function in the Ecosystem Restoration Zone/WAFRZ	• Initial reduction in accumulated fuels and brush density in 180 acres of conifer and mixed hardwood stands within 5 years of plan adoption.	150 acres	150 acres
		• Maintenance of areas where fuels and brush density were reduced and trees planted.	300 acres	300 acres
		• Complete 100 acres of broadcast burning in forest understory within 5 years of the plan adoption. • Complete up to 240 acres of annual broadcast burning in forest understory from Year 7 onward.	Up to ~~two 20~~ 40-acres ~~projects~~	Up to 240 acres
MA 24	Improve grasslands and oak woodlands in the	• Conduct Douglas-fir thinning in grasslands and the understory of oak woodlands.	200 acres	200 acres

Management Action No.	Action	Performance Criteria	Year 5 (2024) Implementation Level	Year 7 (2026) Implementation Levels
	Ecosystem Restoration Zone. ~~b~~	• Complete 450 acres of broadcast burning in grasslands and open oak woodlands within five years of plan adoption. • Complete up to 760 acres of annual broadcast burning in grasslands and open oak woodlands from Year 7 onward.	~~Three projects (not to exceed~~ Up to 140 acres ~~combined per year)~~	Up to 760 acres
		• Reduce goat grass to less than 5 percent of 2016 mapped levels.	35 acres	35 acres
		• Reduce effort needed to maintain 2016 extent of yellow starthistle by 25 percent.	120 acres	120 acres
		• Control other high priority weeds to prevent expansion beyond spatial extent documented in 2016 and achieve a 25 percent reduction in both weed cover and the level of effort needed to maintain it.	Covered by patches identified in MA-22	Covered by patches identified in MA-22

1.5.2 Chapter 6: Implementation of Vegetation Management Actions

Table 6-1 on page 6-3 is proposed to be revised as follows to account for the increase in the upper annual thresholds for broadcast burning:

Management Action No.	Action	Performance Criteria	Year 5 (2024) Implementation Level	Year 7 (2026) Implementation Levels	Goal	Approach
MA 23	Improve conifer and mixed hardwood forest stand structure and function in the Ecosystem Restoration Zone/WAFRZ. [b]	• Initial reduction in accumulated fuels and brush density in 180 acres of conifer and mixed hardwood stands within 5 years of plan adoption.	150 acres	150 acres	1.2	1.1, 1.2, 1.3, 1.4
		• Maintenance of areas where fuels and brush density were reduced and trees planted.	300 acres	300 acres		
		• Complete 100 acres of broadcast burning in forest understory within 5 years of plan adoption. • Complete up to 240 acres of annual broadcast burning in forest understory from Year 7 onward.	Up to ~~two 20~~ 40-acres ~~projects~~	Up to 240 acres		
MA 24	Improve grasslands and oak woodlands in the Ecosystem Restoration Zone. [b]	• Conduct Douglas-fir thinning in grasslands and the understory of oak woodlands.	200 acres	200 acres	1.2	1.1, 1.3, 2.3, 2.4,
		• Complete 450 acres of broadcast burning in grasslands and open oak woodlands within five years of plan adoption. • Complete up to 760 acres of annual broadcast burning in grasslands and open oak woodlands from Year 7 onward.	~~Three projects (not to exceed~~ Up to 140 acres ~~combined per year)~~	Up to 760 acres		

Management Action No.	Action	Performance Criteria	Year 5 (2024) Implementation Level	Year 7 (2026) Implementation Levels	Goal	Approach
		• Reduce goat grass to less than 5 percent of 2016 mapped levels.	35 acres	35 acres		
		• Reduce effort needed to maintain 2016 extent of yellow starthistle by 25 percent.	120 acres	120 acres		
		• Control other high priority weeds to prevent expansion beyond spatial extent documented in 2016 and achieve a 25 percent reduction in both weed cover and the level of effort needed to maintain it.	Covered by patches identified in MA-22	Covered by patches identified in MA-22		

Notes:

[a] CAL FIRE determines the start of the official fire season each year based on weather conditions. Fire season typically starts between mid-May and early- June and extends into mid-November but changes depending upon the conditions in each year.

~~[b] The Ecosystem Restoration Zone includes the WAFRZ.~~

[c] A patch is defined as a maximum of 100 square meters (0.02 acre).

~~[d] A project is defined as 38 acres but could vary by year.~~

Section 6.2.4 on pages 6-9 to 6-10 is proposed to be revised as follows:

Prescribed Burning

The District will conduct broadcast burning in the understory of conifer and mixed hardwood forests located within the Ecosystem Restoration Zone/WAFRZ as part of the follow-up maintenance described above. Broadcast burning will help improve the forest stand structure by suppressing the re-establishment of brush in the understory that competes with native trees and by stimulating seed germination of fire-dependent native species. A description of how the District will conduct broadcast burning is described later in this document, in Section 6.3.3. The initial target is to complete broadcast burning on 100 acres of forest understory in the Ecosystem Restoration Zone within 5 years of plan adoption. Up to 240 acres may be burned annually in subsequent years of plan implementation. Individual ~~with individual~~ burn projects may be ~~limited to 20 acres in size~~ up to 240 acres. Pile burning of accumulated brush is also included under prescribed burning, but not included within broadcast burning annual acreage assumptions.

Section 6.2.5 on page 6-10 is proposed to be revised as follows:

Prescribed Burning

The District will conduct broadcast burning in grasslands and oak woodlands within the Ecosystem Restoration Zone. Broadcast burning will help improve grassland and oak woodland by minimizing the spread of invasive species. Broadcast burning would also be used to treat some areas of weeds, including starthistles and goatgrass. These weeds occur in grasslands but also could be burned in chaparral. A description of how the District will conduct broadcast burning may be found in Section 6.3.3. The initial target is to complete broadcast burning on 450 acres of grasslands and open oak woodlands (and potentially chaparral) in the Ecosystem Restoration Zone within 5 years of plan adoption. Up to 760 acres may be burned annually in subsequent years of plan implementation. ~~The District will conduct one to three broadcast burns per year; i~~ Individual burn projects ~~range from 30 to 100 acres in size.~~ may be several hundred acres. Pile burning of accumulated brush is also included under prescribed burning, but not included within broadcast burning annual acreage assumptions.

Table 6-2 on page 6-16 is proposed to be revised as follows to account for the increase in the upper annual thresholds for broadcast burning:

Technique		MA 20 Infrastructure Zone Maintenance	MA 21 Fuelbreak Construction	MA 22 Early Detection Rapid Response	MA 23 Forest Stand Structure Improvement	MA 24 Grasslands and Oak Woodland Improvement	MA 25 Reintroduce or Enhance Species	MA 26 Restoration Plans	MA 27 Weed Control Trials
Prescribed Burning	Broadcast burning	-	-	-	as appropriate per prescription ~~infrequent~~	as appropriate per prescription ~~infrequent~~	infrequent (refer to MA-23 and MA-24)	Infrequent (refer to MA-23 and MA-24)	Infrequent (refer to MA-23 and MA-24)
	Pile burning	infrequent	often	-	often	often	infrequent	infrequent	-

Section 6.3.2 on page 6-19 is proposed to be revised as follows:

~~Conifer and Mixed Hardwood~~ Forest Stand and Woodland Enhancement

The methods and tools used to improve stand structure and woodlands to achieve multiple benefits include those described above. Mechanical methods will be used to remove dead and diseased trees and understory brush such as tanoak resprouts as well as encroaching trees in woodland communities that perpetuate undesirable fuel loading conditions and suppress the growth of desired native species. It will also include mulching and masticating in-place, and hand planting new seedlings or spreading seed.

Understory brush and diseased trees will be thinned and masticated with a combination of heavy equipment (excavators of various sizes and/or skidsteers with various mulching heads) and hand crews with chainsaws or brushcutters where slopes do not exceed 30 percent. Mulch will be redistributed evenly on site to maximize soil moisture retention and weed suppression. In areas cut by hand crews, material may be piled and burned. Stand manipulations will be limited to dead and downed trees, standing trees showing advanced disease, and understory brush. To the fullest extent feasible, existing healthy trees and seedlings will be retained. After initial work, there will be at least two rounds of follow-up brushing with heavy equipment to temporarily suppress resprouting tanoak, followed by planting of native trees, where appropriate. Maintenance work will be performed as needed to ensure trees establish, with a goal of transitioning to a minimal or no management regime within 5 years.

Revegetation efforts, where appropriate, will be designed with an end goal of establishing new trees in areas where disease has resulted in a discontinuous canopy with gaps large enough to contribute to hotter, drier soil conditions and natural regeneration is insufficient. A combination of disease-resistant native conifer and hardwood species may be used including Douglas-fir, redwood (*Sequoia sempervirens*), California nutmeg (*Torreya californica*), valley oak (*Quercus lobata*), and Oregon white oak (*Quercus garryana*). Both direct seeding and seedling installation may be used, and both will employ regionally appropriate material that incorporates genotypes from hotter and drier locations on Mount Tamalpais in anticipation of future climatic conditions. Natural regeneration of Douglas-fir, redwood and other desired tree species will be encouraged through the installation of protective flagging and structures ahead of any secondary treatment of resprouting tanoaks.

Control of Invasive Species

The methods used to control weeds include prevention, EDRR, ongoing control, and targeted restoration plantings. On District lands, weeds will be controlled on a species basis, a site basis, or both. Eliminating new colonies of weeds is the most effective action the District can take to preserve biodiversity (as well as reduce fuelbreak maintenance costs). The Early Detection and Rapid Response (EDRR) program includes conducting regular surveys of those parts of the watershed lands where weed invasion is most likely, and periodic surveys in remote areas where new weed invasions are likely to be

less frequent. The surveys are performed by trained surveyors including District staff and volunteers. EDRR staff, led by new seasonal aides, pull, hoe, or dig out newly discovered invasions. A database of all EDRR populations is maintained and used to facilitate follow-up visits ensuring that the invasion was eliminated. Weeds are eliminated through pulling or cutting. In some instances, broadcast burning may be appropriate for weed management.

Weed removal sites are revisited and retreated annually until five consecutive years with no weed observations are recorded. The District's ongoing control of the invasive species population is accomplished entirely through pulling invasive weeds.

Section 6.3.3 on page 6-20 is proposed to be revised as follows:

Prescribed burning includes broadcast burning and pile burning. Permits from the Bay Area Air ~~Quality Management~~ District (BAA~~QM~~D) are required for all burns, as burning is only allowed on designated burn days during a specific time of the year.

Section 6.3.3 on page 6-21 is proposed to be revised as follows:

Broadcast burning will be used to achieve desired outcomes under MA-23 and MA-24. Burns will be conducted under optimal burn conditions (e.g., fuel moisture content) in accordance with a Burn Plan written by a qualified Burn Plan preparer and/or Smoke Management Plan. Burns may be scheduled to occur before new vegetation growth increases fuel loads, when logistically appropriate. The requirements of relevant regional, state, and federal laws pertaining to human health during ~~prescribed~~ broadcast burning will be included in the Burn Plan and/or Smoke Management Plan. Burns in Marin County are typically conducted when appropriate based on site and weather conditions per unit-based prescription ~~between June and October~~ to achieve the benefits of mimicking the historic fire regime, and when vegetation is dry enough to carry a fire with minimal smoke production and minimal damage to the seed bank. Broadcast burning under MA-23 and MA-24 may be used to achieve the desired outcomes of MA-25, MA-26, and MA-27.

MM Biology-9 and MM Biology-11 are proposed to be revised as follows:

MM Biology-9: Protection of ~~Western~~ Northwestern Pond Turtle Nesting Habitat and Overwintering

Nesting

Any mechanical method of vegetation management (i.e., heavy equipment), vehicle travel, or prescribed (broadcast and pile) burning that could occur where suitable northwestern pond turtle nesting habitat is present shall be reviewed by a qualified biologist to determine if northwestern pond turtle nesting could be present in the area. If the work with heavy equipment were to occur in loose soils in oak woodlands, mixed coniferous forests, broadleaf forests, or grasslands that are within 100 feet of ponds,

during the northwestern pond turtle egg-laying season (May to August) as determined by the qualified biologist, the activity shall either be rescheduled to occur outside of the egg-laying period; or a survey shall be conducted to determine if eggs and nests are present in the work area and any identified eggs or nests and young turtles shall be avoided.

Overwintering of Hatchlings in Nests

Any mechanical method of vegetation management (i.e., heavy equipment) or vehicle travel that could occur where suitable overwintering habitat for hatchlings is present shall be reviewed by a qualified biologist to determine if any hatchlings could be present in the area. If work with heavy equipment were to occur in loose soils in oak woodlands, mixed coniferous forests, broadleaf forests, or grasslands that is within 225 meters of ponds known to be used by the northwestern pond turtle, during the overwintering season (October to April) (Holland, 1994) as determined by the qualified biologist, the activity shall either be rescheduled to occur outside of the overwintering period, or a survey shall be conducted to determine if hatchlings are present in the work area and any identified nests shall be avoided.

MM Biology-11: ~~Marin Elfin~~ Special-Status Butterfly Host Plant Avoidance

Prior to vegetation management activities in the limited areas where ~~stonecrop is known to occur (steep slopes on southeast shore of Lake Lagunitas, north-facing slopes south of Alpine Lake, and north of Kent Lake~~) host plants for special-status butterflies are known to occur, District botanical staff shall be notified. If the activity would occur in an area containing or potentially containing ~~stonecrops~~ host plants for special-status butterflies, then a survey shall be conducted to flag all ~~stonecrop~~ plants within and bordering the work area. Work crews shall be instructed to avoid flagged plants or larger areas, and work crews shall be trained in identification of ~~stonecrop~~ host plants for special-status butterflies

2 Evaluation

2.1 Aesthetics

The 2019 BFFIP PEIR analysis and 2023 addendum concluded that there would be less than significant impacts on scenic vistas and visual character and quality. The Initial Study for the BFFIP in support of the 2019 BFFIP PEIR, determined that the effects of the BFFIP on scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or designated scenic roadway would be less than significant and found that the BFFIP would have no impact with regards to creating a new substantial source of light or glare, therefore these topics were not evaluated further in the 2019 BFFIP PEIR or 2023 addendum, and subsequently are not evaluated as part of the 2026 update.

Similar to the adopted BFFIP, implementation of the 2026 update would involve vegetation management in the field that would cause a visual change through the use of hand tools and mechanical equipment to establish and maintain fuelbreaks and defensible space; to remove invasive plant species; and to improve and restore native ecosystem on watershed lands. Similar to the adopted BFFIP, under the 2026 update, trails and roads that may afford views to management activities may remain open based on on-the-ground personnel expertise and in accordance with the burn-specific Burn Plan and/or Incident Action Plan.

Proposed revisions made to the BFFIP actions that involve a visible change on the District's landscape include an increase of approximately 820 acres of annual broadcast burning treatments. The burning is intended to improve conifer forest, mixed hardwood forest, and intermixed shrub and grassland community stand structures, but could result in visual impacts, as previously analyzed.

The 2019 BFFIP PEIR and 2023 addendum addresses changes to forest stand structures from implementation of MA-23. The analysis found that while the forest density and type may be altered, it would still conform to existing variability across the watershed and would not degrade the visual quality of the watershed. Increasing the acreage treated per year would still represent a less than significant impact because it would not result in significant changes in the landscape given the overall scale of the landscape and changes would remain consistent with existing variability, as discussed in the 2019 PEIR and 2023 addendum. Additionally, consistent with the 2019 BFFIP PEIR and 2023 addendum, the staging of equipment (e.g., water trucks) required for the increased broadcast burning locations may be visible. However, the number of viewers would not be substantial given the localized areas that would be used for staging compared with the overall size of the District's lands and trail system. The areas surrounding the burn sites would be closed to public access for at least 500 feet around the burn, in accordance with MM Hazards-4, and the timeframe of use for staging would be limited to a few

days. Broadcast burns would require control lines (i.e., fire lines, firebreaks), as discussed in the 2019 BFFIP PEIR, which are customarily created to have "feathered" edges, as opposed to straight lines, to attain a more natural border between the broadcast burn, fire line, and unburned areas. The feathering of the edges of the fire line would limit the level of visual change. Broadcast burns would result in visual impacts from the burned area, such as charred ground and reduced ground cover; however, these impacts would last for one growing season followed by extensive bloom of fire-follower wildflowers and other seedlings. Therefore, signs of broadcast burns would be limited in area and would be temporary.

Visual change would remain low due to the localized and limited areas treated compared to the overall watershed, the limited ability for viewers to perceive changes, the natural condition left after treatment, and the benefits for tree health. Visual changes would continue to occur within the BFFIP landscape; however, visual impacts from these activities have already been described within the adopted BFFIP, 2019 BFFIP PEIR, and 2023 addendum. Therefore, the 2026 update would not result in new or substantially more severe impacts to aesthetics than those analyzed in the certified 2019 BFFIP PEIR and 2023 addendum.

2.2 Agriculture and Forestry Resources

The BFFIP Initial Study concluded that there would be no impacts to agriculture and forestry resources. These resource topics were not evaluated further within the 2019 BFFIP PEIR. The 2023 addendum mirrored this approach. The 2019 BFFIP PEIR determined that no lands within the BFFIP contained agricultural uses. The 2019 BFFIP PEIR also determined that although forests within the BFFIP lands met the definition of forest lands per the State Public Resource code Section 12220, as BFFIP lands can support 10 percent native tree cover, no impacts would occur since no rezoning or change in function and use of the forests would occur, nor would any activities occur that would result in the conversion of forest to non-forest lands. Consistent with the BFFIP Initial Study, while the 2026 update could result in the change in composition and density of some vegetation through broadcast burning, vegetation and trees would remain in relatively high levels post-treatment and no forest land would be lost as no deforestation would occur.

Under the 2026 update, no changes to conditions would occur that could result in an impact on agriculture or forestry resources that could result in a conversion of land to a different use (in this case forestry). The 2026 update would not result in new or substantially more severe significant impacts on agriculture or forestry resources than those analyzed in the 2019 BFFIP PEIR.

2.3 Air Quality

2.3.1 2019 PEIR and 2023 Addendum Summary

The 2019 BFFIP PEIR and 2023 addendum analysis concluded that there would be significant and unavoidable impacts from a cumulatively considerable net increase in a criteria pollutants for which the project region was in nonattainment. The 2019 BFFIP PEIR and 2023 addendum analysis also concluded that there would be significant and unavoidable impacts from conflict or obstruction of implementation of an applicable air quality plan. The 2019 BFFIP PEIR and 2023 addendum concluded less than significant impacts with mitigation to exposing sensitive receptors to substantial pollutant concentrations.

2.3.2 Criteria Pollutants

The 2019 BFFIP PEIR and 2023 addendum analysis concluded that there would be significant and unavoidable impacts on air quality from exceedance of the Bay Area Air District (BAAD; formerly known as the Bay Area Air Quality Management District) thresholds for criteria air pollutant particulate matter with a diameter of 10 microns or less (PM_{10}), particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), and nitrogen oxides (NO_x) (a precursor to ozone), which would be emitted primarily from broadcast burning activities. The region remains in nonattainment for PM_{10}, $PM_{2.5}$, and ozone, as analyzed in the 2019 BFFIP PEIR (Bay Area Air District 2025).

The 2026 update would allow for an increase in allowable acreage of annual broadcast burns by 820 acres. Use of vehicles and equipment for broadcast burning (e.g., water trucks) and to allow workers to reach project sites would generate exhaust emissions. Fugitive dust would be generated from equipment and vehicle use on paved and unpaved roads and from broadcast burning itself. A summary of the estimated criteria pollutant emissions generated by the increase in broadcast burning is provided in Table 2.3-1.

Table 2.3-1 Estimated Revised Maximum Criteria Air Pollutant Generation (tons/year)

Pollutant	MA-23 [a]	MA-24 [a]	Revised Total [b]	BAAD Threshold
PM_{10}	202.4	126.0	328.5	15
$PM_{2.5}$	174.7	104.1	278.3	10
NO_X	3.5	3.0	7.4	10
ROG	1.1	4.9	5.9	10
CO	2,295.7	1,347.3	3,639.1	--

Source: (Golden Gate National Parks Conservancy et al. 2021; U.S. Forest Service 2020)

Notes:

[a] Revised emissions associated MA-23 and MA-24 account for the increase in broadcast burning. Manual and mechanical pre-treatment would not increase and is accounted for already in the previously analyzed emissions

included in the 2019 BFFIP PEIR and 2023 addendum. Any increase in equipment and vehicle emissions associated with implementing the increased broadcast burns is assumed to be minimal.

[b] Total value also includes the previously analyzed and unchanged minor increases in criterial air pollutant emissions associated with implementation of MA-20, MA-21, MA-22, MA-25, and MA-27.

While the increase in broadcast burning acreage would contribute considerably to regional particulate matter and ozone emissions that are in state and federal nonattainment, which would be potentially significant, as previously analyzed in the 2019 BFFIP PEIR. Consistent with the 2019 BFFIP PEIR and 2023 addendum, implementation of MM Air-1, which requires the District to minimize air pollutant emissions by requiring implementation of one or more methods, such as focusing these broadcast burns on vegetation types (such as grasslands versus hardwood or evergreen forest) that emit less air pollutants or reducing the area of broadcast burns each year, could minimize emissions but not to levels below the BAAD thresholds. Therefore, the 2026 update has the potential to contribute to air pollutant emissions in nonattainment areas as previously analyzed, and the impact would remain significant and unavoidable with this mitigation.

Although the 2026 update would continue to exceed BAAD emission thresholds for PM_{10} and $PM_{2.5}$, as shown in Table 2.3-1, overall broadcast burning under the plan would reduce the likelihood of future catastrophic fires, as previously analyzed in the 2019 BFFIP PEIR. For instance, "wildland fires result in a greater quantity of carbon lost per acre and higher particulate matter emissions rates compared to prescribed burning and burn an order of magnitude more land than prescribed burning" (Liu et al. 2017; CARB 2017). It is expected that a wildfire on District lands would have many times greater criteria pollutant emissions than the proposed increase in broadcast burning. These benefits are not readily quantifiable in comparison to the emissions calculated in Table 2.3-1 because the likelihood of a catastrophic fire, the location, and the size cannot be estimated.

As discussed in the 2019 BFFIP PEIR, BAAD is the agency responsible for attainment and maintenance of national and California ambient air quality standards. Accordingly, the District must prepare and submit a Smoke Management Plan to BAAD for each individual broadcast burn in accordance with and including all the restrictions required by BAAD's Regulation 5 and California Code of Regulations (CCR) Title 17, Subchapter 2. Implementation and adherence to the Smoke Management Plans would reduce some burn emissions due to adhering to seasonal and daily timing stipulations for optimal weather conditions, as well as fuel moisture. BAAD reviews and must approve each Smoke Management Plan prior to the broadcast burn. Additionally, ignition authorization must be given by the District by the BAAD within 24 hours of a burn, as BAAD authorizes specific burn days during which burn events can occur according to air quality in the region. While the annual maximum broadcast burning acreage would increase under the 2026 update, any individual broadcast burn would require approval by BAAD, which determines authorization with consideration for regional attainment status and air quality conditions.

Based on the calculations, the increase in broadcast burning associated with the 2026 update would result in greater criteria pollutant emissions than were identified in the 2019 BFFIP PEIR. Impacts associated with these emissions are not new, as they were already described as significant and unavoidable in the 2019 BFFIP PEIR and 2023 addendum, and are not substantially more severe. Impacts under the 2026 update would be similar to the 2019 BFFIP, as they would be limited to the day of burning and controlled to a degree through Smoke Management Plans, which include restrictions regarding fuel and weather conditions. Also, as discussed in the 2019 BFFIP PEIR and 2023 addendum, although the impact associated with the 2026 update would still remain significant and unavoidable due to the increase in annual broadcast burning, approved mitigation measure, MM Air-1, would continue to be implemented to reduce impacts from criteria air pollutants under MA-23 and MA-24 by considering vegetation types that emit less air pollutants to meet the desired outcomes of these management actions. As such, the 2026 update would not result in new or substantially more severe impacts to air quality from criteria air pollutants than those analyzed, and disclosed as significant and unavoidable, in the certified 2019 BFFIP PEIR and adopted Statement of Overriding Consideration.

2.3.3 Toxic Air Contaminants and Other Pollutants

The 2019 BFFIP PEIR and 2023 addendum concluded that broadcast burning activities would release smoke, which could expose workers, recreationalists, and the public to TAC emissions, including particulate matter, acrolein, and formaldehyde.

The revised BFFIP would allow an increase in annual broadcast burning by 820 acres under MA-23 and MA-24. Broadcast burn events would not involve the disturbance of ground that could result in exposure to naturally occurring asbestos and in the event that burning occurs in areas where naturally occurring asbestos may be found, the potential for disturbance of soil such that it could become airborne is minimal as discussed in the 2019 BFFIP EIR.

Carbon monoxide (CO) emitted from prescribed burns, including broadcast burns, is rapidly diluted and is generally not a health concern to the general public due to the frequency and distance from active burn areas and sensitive populations, such as the elderly and children, would generally not be exposed to high CO concentrations as a result of broadcast burns, as previously analyzed. Worker health from high CO concentrations would be potentially significant, as discussed in the 2019 BFFIP PEIR, as CO is very dangerous if inhaled; however, MM Air-3 requires use of real-time CO monitors, and rotation of personnel out of heavy smoke, which would continue to reduce impacts to less than significant levels under the 2026 update. Actions implemented under the revised BFFIP would continue to require adherence to MM Air-3 and MM Air-4, which requires the preparation and implementation of a Smoke Management Plan in accordance with the BAAD regulation 5 for any broadcast burn. The 2023 addendum revised MM Air-3 to further clarify that the District would follow the requirements of relevant regional, state, and federal laws pertaining to human health during broadcast burning to minimize risks to worker health. The 2026 update would not result in new or substantially more

severe impacts to workers from CO concentrations generated during broadcast burning actions than those analyzed in the certified 2019 BFFIP PEIR.

Prescribed burns would generate Toxic Air Contaminants (TAC) emissions, including fine particulate matter, acrolein, and formaldehyde, as discussed in the 2019 BFFIP PEIR. Smoke drift to neighboring residential areas or recreating public from broadcast burning can result in eye irritation and can be a threat to lung health, including through exacerbation of asthma and bronchitis, or can even scar lung tissue and reduce lung capacity from long-term exposure. MM Air-3 specifies that the distance requirements between broadcast burns and sensitive receptors would be 1,000 feet *or the distance specified in the Smoke Management Plan*, which must be approved by BAAD prior to any burn. This distance may be greater, or less than 1,000 feet given the particular conditions at the time of the planned broadcast burn. Burns are planned for and conducted under optimal weather conditions to limit air quality and smoke issues for neighboring communities and ensure fire fighters can maintain control. As discussed in the 2023 addendum, in accordance with MM Air-4, a Smoke Management Plan must be prepared and implemented for broadcast burns in accordance with and including all the information and restrictions required by BAAD's Regulation 5 and CCR Title 17, Subchapter 2. For burn events, exposure to TAC emissions would be minimized by ensuring smoke does not drift or blow towards areas with sensitive receptors, in accordance with the Smoke Management Plan. Smoke drift that could cause short-term health effects would, therefore, be minimized. Contingency actions identified in the Smoke Management Plan would be taken if a burn unexpectedly impacts sensitive receptors. Contingency actions would include halting ignition, suppressing fire, and beginning immediate mop up before a significant exposure can occur. It is acknowledged that some short-term effects from smoke may still be experienced in these rare circumstances, such as stinging, watery eyes, coughing, and runny noses as well as shortness of breath, headaches, dizziness, and nausea. The duration of such effects would be very short. Smoke generated by each broadcast burn conducted under the 2026 update could still expose sensitive receptors (including nearby residences) to TAC emissions, but those exposures would be short-term and would generally occur throughout District lands at differing times thus limiting exposure to any one population of sensitive receptors, and would not pose a significant health risk, consistent with the finding in the BFFIP PEIR. The 2026 update would not result in new or substantially more severe impacts to the public from TAC emissions generated during broadcast burning actions than those analyzed in the certified BFFIP PEIR due to implementation of MM Air-3, MM Air-4, and subsequent compliance with BAAD's Regulation 5 and CCR Title 17.

2.3.4 Conflict with or Obstruct Implementation of an Applicable Air Quality Plan

As discussed in the 2019 BFFIP PEIR and 2023 addendum, the 2017 Clean Air Plan includes voluntary programs and incentive measures for transportation and control measures that do not require vehicle upgrades or retrofits, as analyzed under the certified BFFIP PEIR. BAAD is currently developing a New Clean Air Plan; however, at the time of drafting this 2026 addendum, the 2017 Clean Air Plan remains the latest edition. Similar to the analysis in the 2019 BFFIP PEIR and 2023 addendum, the revised BFFIP would not conflict or obstruct

implementation of the control measures identified to achieve the goals of the 2017 Clean Air Plan.

The revised BFFIP would increase broadcast burning acreages by 820 acres annually; however, as previously stated, broadcast burning activities would be temporary, would occur in varying locations within the District lands, would be required to comply with MM Air 1, and would overall reduce the likelihood of future catastrophic fires. Therefore, the 2026 update would not result in new or substantially more severe impacts that conflict with or obstruct the implementation of the 2017 Clean Air Plan than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

The 2001 Ozone Attainment Plan includes control measures for on-road motor vehicles. Similar to the adopted BFFIP, the 2026 update would require on-road vehicles used during operation of the plan to be inspected biennially as part of the current plan. Under the 2026 update, no changes to conditions would occur that could result in a conflict or could obstruct implementation of the 2001 Ozone Attainment Plan.

2.4 Biological Resources

2.4.1 PEIR Summary

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation on biological resources with the incorporation of numerous MMs to generally avoid impacts to listed species through pre-work surveys and modifications to treatments.

2.4.2 Special-Status Plant Species

The 2026 update would increase broadcast burning acreages by 820 acres annually under MA-23 and MA-24. As discussed in the 2019 BFFIP PEIR, broadcast burns could occur in areas where special-status plant species are found, and different species react differently to fire. Some sensitive species are encouraged to grow after low intensity fire, and others experience decreases in germination. The 2026 update would not increase the previously identified management boundary of the adopted BFFIP within which broadcast burning could occur, which were fully assessed in the 2019 BFFIP PEIR. Given this, the increase in broadcast burning under the 2026 update would have the same potential for impacts to special-status plant species as were analyzed in the 2019 BFFIP PEIR and 2023 addendum. Consistent with the 2019 BFFIP PEIR and 2023 addendum, implementation of MM Biology-1, MM Biology-2, and MM Biology-3 as well as BMPs would be implemented to minimize impacts of broadcast burning on native plant species. These measures require worker training programs presented by a qualified biologist prior to any commencement of activities, protection of special-status plants, and measures to prevent and spread invasive species and forest diseases from plan activities.

As discussed in the 2023 addendum, broadcast burning would only be conducted when and where rare plant species would benefit from the broadcast burn, as supported by scientific data,

per the mitigation measure. A qualified professional would identify the species that may benefit from low intensity fire, based on their expert knowledge and/or scientific studies, prior to implementing the treatments in areas of significant resources in accordance with MM Biology-2. The 2026 update would not result in new or substantially more severe impacts to special-status plant species than those analyzed in the 2019 BFFIP PEIR and 2023 addendum, as the same protection protocols would be implemented.

2.4.3 Special-Status Wildlife

As discussed in the 2019 BFFIP PEIR, broadcast burns would occur in or adjacent to areas where several special-status wildlife species have been observed or where appropriate habitat occurs, since work could occur anywhere in the management zones where burning under MA-23 and MA-24 could occur. Broadcast burning could kill special-status amphibians and reptiles in upland areas, cause harm or injury to badgers, result in mortality of special-status butterflies, but would be unlikely to harm special-status mollusks that occur in springs and seeps due to avoidance buffers around wetlands. Smoke from broadcast burning could indirectly impact breeding special-status bird and bat species and the potential for increased erosion and sedimentation could affect special-status fish species. As part of the 2026 update, MM Biology-11 was revised to apply to all special-status butterfly species, rather than only the Marin elfin butterfly, to reflect the listing of additional special-status butterfly species in the plan area since publication of the 2019 BFFIP PEIR and 2023 addendum. This revision is not the result of a newly identified significant impact. MM Biology-11 would continue to provide the same level of protection to butterfly species as originally analyzed in the 2019 BFFIP PEIR, with an expanded scope to cover additionally listed special-status species.

Although the 2026 update would allow for an increase in broadcast burning under MA-23 and MA-24, the update would not change the previously identified plan area boundary, would not increase the overall plan acreage, nor would it allow additional management actions that were not previously analyzed under the adopted BFFIP. The increase in broadcast burning acreage under MA-23 and MA-24 would continue to require adherence to the following mitigation measures for the protection of special-status wildlife species: MM Geology-1 (Erosion Control and Slope Stability Measures), MM Biology-1 (Worker Training), MM Biology-5 (roosting bats), MM Biology-6 (Protection of Badgers), MM Biology-7 (Protection of Nesting Birds), MM Biology-8 (Northern Spotted Owl Avoidance During Nesting Season), MM Biology-9 (Protection of Northwestern Pond Turtle Nesting Habitat), MM Biology-10 (California Red-Legged Frog Avoidance), MM Biology-11 (Special-Status Butterfly Host Plant Avoidance), MM Biology-12 (Protection of Foothill Yellow-Legged Frog), MM Biology-13 (Mollusk Avoidance), MM Biology-14 (Northern Spotted Owl Avoidance of Nesting Season and Habitat), and MM Biology-17 (Protection of California Giant Salamander). The 2026 update would not result in new or substantially more severe impacts to special-status wildlife than those analyzed in the 2019 BFFIP PEIR or 2023 addendum.

2.4.4 Riparian Habitat or Other Sensitive Natural Community

The 2019 BFFIP PEIR and 2023 addendum found that broadcast burning could have a positive overall impact on riparian habitats, such as through burning to remove weeds, which can regenerate soils and promote native plants; however, as noted in the 2019 BFFIP PEIR, the immediate impacts from temporary loss of riparian habitat could be significant. The 2026 update would continue to require implementation of MM Geology-1, which prohibits broadcast burning within perennial and intermittent streams and riparian forests and woodlands, and requires a 50-foot buffer when burning is proposed upslope on slopes exceeding 30 percent. With implementation of this measure, as was concluded in the 2019 BFFIP PEIR, impacts on riparian habitat from broadcast burning would be less than significant. As such, the increase in broadcast burning under the 2026 update would not result in new or substantially more severe impacts to riparian habitat and other sensitive natural communities than those analyzed in the 2019 BFFIP PEIR.

2.4.5 State and Federally Protected Wetlands

The 2019 BFFIP PEIR and 2023 addendum found that broadcast burns provide the opportunity for establishment of native vegetation including wetland-associated species and that impacts from burning in wetland habitat could be beneficial, as long as special-status species are not present, and therefore, less than significant. While the 2026 update would add 820 acres of annual broadcast burning to the BFFIP, the analyzed benefits of broadcast burning on wetlands would remain unchanged and per the BFFIP and adopted MMs, burning would remain prohibited where and when adverse effects could occur to special-status species. Implementation of the 2026 update would not result in new or substantially more severe impacts to state and federally protected wetlands than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.4.6 Wildlife Movement and Nursery Sites

The 2019 BFFIP PEIR and 2023 addendum found that, because watershed lands function as an important wildlife corridor, alteration of certain habitat types could affect wildlife movement. Control lines (approximately 1- to 3-foot-wide bands where vegetation is cleared to expose mineral soil) would be constructed prior to broadcast burn events to contain fires under the 2026 update, as per the approved BFFIP. These control lines could result in minor, temporary disturbances to wildlife movement, such as short-term avoidance or slight alterations in movement patterns during and immediately following burn operations but would not substantially impede species movement. As analyzed in the 2019 BFFIP PEIR and 2023 addendum, smoke or fire could harm nesting birds and roosting bats, or impact breeding, were it directly in the area of a burn or directly adjacent and affected by smoke. As also discussed in the 2019 BFFIP PEIR and 2023 addendum, broadcast burns could harm or kill special-status amphibians crossing upland areas to reach breeding sites or mollusks in springs and riparian habitat undergoing breeding, which could also occur under the 2026 update. Therefore, the effects on wildlife movement and nursery sites would be potentially significant, as found in the 2019 BFFIP PEIR and 2023 addendum. The 2026 update would continue to require

implementation of MM Geology-1 (Erosion Control and Slope Stability Measures), MM Biology-1 (Worker Training), MM Biology-9 (Protection of Western Pond Turtle Nesting Habitat), MM Biology-10 (California Red-Legged Frog Avoidance), MM Biology-12 (Protection of Foothill Yellow-Legged Frog), MM Biology-13 (Mollusk Avoidance), MM Biology-17 (Protection of California Giant Salamander), and MM Hydrology-1 (Water Quality Protection During Waterway Crossing or Work Near Waterbodies) to reduce and effects to less than significant levels. These measures work to minimize ground disturbance, ensure qualified biologists perform the BFFIP activities, require biological surveys prior to commencing work, specify BMPs for District staff and contractors, avoidance of instream crossings, and special-status species protections designed to minimize species impacts during breeding. The 2026 update would not result in new or substantially more severe impacts to wildlife movement than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.5 Cultural Resources

2.5.1 2019 BFFIP PEIR and 2023 Addendum Summary

The 2019 BFFIP PEIR and 2023 addendum analysis concluded the plan would have less than significant impacts, with mitigation, on human remains and historical and archaeological resources.

2.5.2 Cultural Resources

The 2026 update would maintain the same management techniques as described within the adopted BFFIP, although it would increase the acreage of annual broadcast burning treatments by 820 acres under MA-23 and MA-24. The 2026 update would not result in additional disturbance types that have not already been analyzed per the 2019 certified BFFIP PEIR and 2023 addendum. As previously analyzed under the 2019 BFFIP PEIR and 2023 addendum, broadcast burning has some potential to cause adverse changes to significant cultural (historic or archaeological) resources. Specifically, while broadcast burning would not require ground disturbance because ignition is performed by hand, resources located on the surface may be obscured by vegetation or plant litter. Cultural resources could be damaged by scorching, residue buildup, fracturing, or, in some cases, destruction. The 2026 update would continue to require implementation of MM Cultural-1 through MM Cultural-4, which include worker training on archaeological and historic resource identification and sensitivity; review of maps identifying known cultural resource locations by trained District staff prior to activities; cessation of work within 165 feet of any previously undiscovered cultural resource to allow for avoidance or treatment; and, in the event of human remains, halting work within 165 feet and notifying the Marin County Coroner, followed by consultation with the Most Likely Descendant to determine appropriate treatment. With implementation of these measures, the 2026 update would not result in new or substantially more severe impacts to cultural resources than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.5.3 Paleontological Resources

The 2019 BFFIP PEIR and 2023 addendum identified less than significant impacts to paleontological resources. The 2019 BFFIP PEIR and 2023 addendum identified some fossils that have been recorded within the plan area, but none were considered to be unique paleontological resources. The geologic units that underlie the plan area have low or no potential to yield unique paleontological resources. The 2026 update would not change the boundaries of the plan area. Similar to the 2019 BFFIP PEIR and 2023 addendum, the activities under the 2026 update would not disturb soil to depths in excess of shrub or tree roots, as broadcast burns only affect the surface and a few centimeters below the ground surface. Therefore, the potential for the 2026 update to uncover, much less destroy, a unique paleontological resource, continues to be very unlikely. The 2026 update would not result in a new or substantially more severe significant impact related to paleontological resources than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.6 Energy

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts associated with energy use. The 2019 BFFIP PEIR found that the fuel needed to implement the adopted BFFIP was considered beneficial, necessary, and not wasteful given the outcome of the work. The 2019 BFFIP PEIR and 2023 addendum also concluded that the adopted BFFIP would not substantially increase the overall demand for energy in California or substantially affect supply. The activities under the 2026 update would incrementally increase the use of energy as a result of the increase in broadcast burning acreages by 820 acres annually; however, as the work associated with the 2026 update would continue to minimize risks to structures and people from wildfire as well as enhance the natural ecosystem; the energy use would be considered beneficial, necessary, and not wasteful. Therefore, the increase in annual broadcast burning would not create an additional demand for energy in California or substantially affect energy supply. The 2026 update would also not change the conditions that could result in an impact on energy related to a state or local plan because no state or local plans for renewable or energy efficiency apply to the BFFIP. The 2026 update would not result in new or substantially more severe significant impacts related to energy than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.7 Geology and Soils

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation on geology and soils. The 2026 update would not increase the previously identified management boundary of the 2019 BFFIP PEIR or 2023 addendum, nor would it allow additional management actions that were not analyzed under the certified BFFIP PEIR. As discussed in the 2019 BFFIP PEIR, broadcast burning would result in an increased potential for erosion in burned areas and the potential to create water-repellent soils. As such, broadcast burns may result in an increase in stormwater flows over the exposed soils that could pick up

silt and small soil particles, thereby eroding the surface. Groundcover less than 70 percent has been found to result in excessive runoff and erosion. Broadcast burns, particularly in grasslands and on slopes of greater than 30 percent, could be large enough so that the removal of vegetation and resultant exposed, hydrophobic soil, could result in a substantial increase in erosion and loss of topsoil, which would constitute a potentially significant impact. Consistent with the 2019 BFFIP PEIR and 2023 addendum, MM Geology-1 would be implemented to minimize erosion and loss of topsoil in denuded areas by requiring use of erosion control measures.

Consistent with the 2019 BFFIP PEIR and 2023 addendum, MM Geology-2 requires use of existing facilities for fire lines where they are available, or implementing other erosion control measures to minimize impacts from soil loss and slope instability to less than significant levels. The implementation of increased prescribed burning under the 2026 update would not result in new or substantially more severe significant impact related to geology and soils than those analyzed in the 2019 BFFIP PEIR with continued implementation of these MMs.

2.8 Greenhouse Gas Emissions

The 2019 BFFIP PEIR and 2023 addendum analysis concluded that the BFFIP would result in significant and unavoidable impacts related to greenhouse gas emissions (GHG) (e.g., carbon dioxide (CO_2)), water vapor, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) due to conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions. The 2019 BFFIP PEIR and 2023 addendum also concluded that the approved BFFIP would result in significant and unavoidable impacts related to generation of greenhouse gas emissions that may have a significant impact on the environment, largely due to broadcast burning activities. The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts related to substantially decreasing the overall ability of District lands in the plan area to sequester carbon.

The implementation of activities under the 2026 update would continue result in the emission of GHG emissions, as previously analyzed, although due to the increase in annual broadcast burning acreage, emissions would be greater than those analyzed in the 2019 BFFIP PEIR. Total acreage allowed per year of broadcast burning would increase by 820 acres. Additionally, vehicles and equipment used to travel to the sites where broadcast burning would occur would generate GHG emissions. The net GHG emissions would still exceed the significance threshold recommended by BAAD of 1,100 $MTCO_2e$ per year for non-stationary operational emissions under the 2026 update, as shown in Table 2.8-1 (Bay Area Air District 2022).

Table 2.8-1 Estimated Revised Maximum Greenhouse Gas Emissions (metric tons CO_2e/year)

Revised MA-23	Revised MA-24	Revised Total	BAAD Threshold
13,849	9,784	23,978	1,100

Source: (Bay Area Air District 2022; U.S. Forest Service 2020)

Note:

Revised emissions associated MA-23 and MA-24 account for the increase in broadcast burning. Manual and mechanical pre-treatment would not increase and is accounted for already in the previously analyzed emissions included in the 2019 BFFIP PEIR and 2023 addendum. Any increase in equipment and vehicle emissions associated with implementing the increased broadcast burns is assumed to be minimal.

The impact from generation of GHG emissions under the 2026 update would be reduced, but, as was the case with the 2019 BFFIP PEIR and the 2023 addendum, not to below the BAAD significance threshold. Implementation of the 2026 update could still conflict with the 2017 CAP because GHG emissions would exceed the BAAD significant thresholds for GHG as analyzed in the 2019 BFFIP PEIR; however, broadcast burning would reduce the likelihood of a catastrophic fire. Wildland fires have accounted for a generally increasing quantity of GHG emissions over the last 20 years, accounting for a greater quantity of California's overall GHG emissions (Moghaddas et al. 2018). The climate is anticipated to become drier and hotter, which is expected to lead to increased frequency and intensity of large wildland fires and greater fire risks if fuel management activities are not expanded across the state (CNRA 2018). An uncontrolled wildfire on District lands would be expected to have many times greater GHG emissions than BFFIP activities. Consistent with the 2019 BFFIP PEIR and 2023 addendum, the 2026 update would adhere to MM Air-1, which requires the District to minimize emissions by requiring implementation of one or more methods such as reducing the size and number of broadcast burns in any one year, and/or focusing these broadcast burns on vegetation types that emit fewer air pollutants that still meet the desired outcome of the management actions. So, while the impact would remain significant and unavoidable, as disclosed in the certified 2019 BFFIP PEIR and adopted Statement of Overriding Consideration, the 2026 update would not result in new or substantially more severe impacts associated with GHGs than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.9 Hazards and Hazardous Materials

2.9.1 Hazardous Materials

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation to hazards and hazardous materials. Under the 2026 update, no changes to conditions would occur that could result in an impact on hazardous materials related to contaminated sites, as burning would occur in the same management zones as previously assessed. The certified 2019 BFFIP PEIR identified one site as having potential for existing contamination. Implementation under the 2026 update would continue to adhere to MM Hazards-2, which requires avoidance of all former buildings and facilities associated with the contaminated site unless they are remediated and no hazardous materials remain. The 2026 update would allow for an increase in annual broadcast burning activities that involve the use of vehicles and equipment, such as drip torches under MA-23 and MA-24, which could result in the leakage or spilling of fuels. The 2026 update would continue to require adherence to MM Hazards-1, which requires the District to implement spill prevention and response BMPs;

therefore, the 2026 update would not result in new or substantially more severe impacts to hazardous materials than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.9.2 Wildfire Hazards

The 2019 BFFIP PEIR and 2023 addendum analysis found the BFFIP would have a beneficial effect with regard to reducing wildfire risks including the size and spread of potential wildfires. Some increased risks were identified associated with implementation of the BFFIP, related to wildfire ignition and spread during the actual performance of work, which requires the use of vehicles and equipment that could ignite a fire through generation of sparks or heat. The 2026 update would continue to require the District to adhere to MM Hazards-1, MM Air-4, MM Hazards-4, MM Hazards-5, MM Hazards-6, and MM Hazards-7, which include implementation of the Smoke Management Plan and prescribed Burn Plan, establishment of a buffer between structures and the broadcast burn, closure of District-use-only roads, propane flaming training to minimize the risk of fire, and maintaining fire suppression equipment in work vehicles and prohibiting smoking. These measures would minimize risk of activities associated with starting a wildfire. As discussed in the 2019 BFFIP PEIR, the management actions implemented as part of the BFFIP would reduce the wildlife risk in the BFFIP area as well as the size, intensity, and spread of wildfires, were one to break out. The wildfire hazard impact within the BFFIP area would be less than significant with mitigation. Therefore, the revised BFFIP would not result in new or substantially more severe impacts to wildfire hazards than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.10 Hydrology and Water Quality

2.10.1 2019 BFFIP PEIR and 2023 Addendum Summary

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation to hydrology and water quality related to violation of water quality standards or discharge requirements, substantial erosion or siltation as a result of altering existing drainage patterns, and conflict with or obstruction of implementation of a water quality control plan or sustainable groundwater management plan. The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts to substantially increasing the rate or amount of surface runoff in a manner that would result in flooding or exceed capacity of existing or planning stormwater drainage systems. The BFFIP Initial Study concluded no impact and less than significant impacts related to the following topics: flooding from implementation of the plan; impacts from seiches, tsunamis, or mudflows; and groundwater supplies; therefore, these topics were not evaluated further within the 2019 BFFIP PEIR, the 2023 addendum, and are not included in the 2026 update.

2.10.2 Water Quality

The 2026 update would result in an increase in broadcast burning annually under MA-23 and MA-24 that could result in water quality impacts. Water quality impacts from broadcast burns

are related to many factors including location of the burn in proximity to riparian areas, fire severity, burn patchiness, percent of slope, size of burn compared to catchment, and rainfall following the burn. Heating of soils can create hydrophobic conditions that reduce stormwater infiltration and increase runoff rates, potentially mobilizing sediments. However, as discussed in the 2019 BFFIP PEIR, large-scale runoff from broadcast burns is not expected to be substantial due to the presence of existing wettable patches, root channels, and other infiltration pathways. The 2019 BFFIP PEIR determined that, while broadcast burning could increase sedimentation in downstream waterbodies or waterways, it would not substantially affect the chemistry or turbidity of these waterbodies or waterways in such a way as to significantly and negatively impact water quality. While the 2026 update would involve a substantial increase in annual broadcast burning, the 2019 BFFIP PEIR analyzed the potential water quality impacts associated with burns throughout the entire management zones relevant to MA-23 and MA-24, which remain unchanged under the 2026 update, as the BFFIP plan area would not be expanded to accommodate the increased broadcast burning efforts. Additionally, all work performed under the 2026 update would continue to adhere to MM Geology-1, MM Geology-2, and MM Hazards-1. MM Geology-1 and MM Geology-2, which require implementation of several erosion control measures to avoid sedimentation of waterways or waterbodies, steep slopes, and existing erosional features or erodible soils. Specifically, MM Geology-2 requires broadcast burn boundaries to be designed to avoid gullies and erodible soils and use of existing facilities for fire lines where they occur. MM Hazards-1 requires the District to implement spill prevention and response BMPs, such as proper techniques for storage of hazardous materials, daily inspections of equipment, and emergency spill supplies for use should a spill occur. Therefore, implementation of the activities under the 2026 update would not result in new or substantially more severe impacts to water quality standards than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.10.3 Alteration of Existing Drainage Pattern

Under the 2026 update, no changes to conditions would occur that could result in an impact related to the alteration of an existing drainage pattern, including substantially increasing the rate or amount of surface runoff resulting in flooding, exceeding the capacity of exiting or planning stormwater drainage systems, or impeding or redirecting flows. Similar to the adopted BFFIP, the 2026 update does not include the construction of any new roads or culverts, nor would the increase in broadcast burning result in major alterations of a stream or watercourse. The 2026 update would not result in new or substantially more severe significant impacts to hydrology and water quality related to the alteration of an existing drainage pattern than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.10.4 Conflict with a Water Quality Control Plan or Groundwater Management Plan

The 2019 BFFIP PEIR and 2023 addendum found that implementation of the BFFIP could impact water quality of waterbodies on and downstream from District lands that could result in a conflict with the San Francisco Bay Basin (Region 2) Water Quality Control Plan, but the effect

was found to be mitigable. Implementation under the 2026 update would increase the amount of broadcast burning acreages under MA-23 and MA-24 by 820 acres annually, but implementation would continue to abide by MM Geology-1, MM Geology-2 and MM Hazards-1. MM Geology-1 and MM Geology-2, which require implementation of several erosion control measures to avoid minimize erosion including performing broadcast burns shall be performed outside of perennial and intermittent streams, and riparian forest/woodland, utilizing erosion control measures, such as sediment traps, during restoration following broadcast burning, and designing broadcast burn boundaries to avoid gullies and highly erodible soils to the fullest extent possible. MM Hazards-1 requires the District to implement spill prevention and response BMPs, such as proper techniques for storage of hazardous materials, daily inspections of equipment, and emergency spill supplies for use should a spill occur. Therefore, the 2026 update would not result in new or substantially more severe significant impacts to hydrology and water quality related to a conflict with a water quality control plan or groundwater management plan than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.11 Land Use and Planning

The BFFIP Initial Study concluded no impact on land use and planning, and this topic was not evaluated further within the 2019 BFFIP PEIR or 2023 addendum. Under the 2026 update, no changes to conditions would occur that could result in an impact on land use and planning. The 2026 update would not result in new or substantially more severe significant impacts on land use and planning than those analyzed in the 2019 BFFIP PEIR.

2.12 Mineral Resources

The BFFIP Initial Study concluded no impacts to mineral resources and this resource topic was not evaluated further within the 2019 BFFIP PEIR, nor was it included in the 2023 addendum. Similar to the adopted BFFIP, the 2026 update would not involve any activities that would permanently impede mineral recovery. The 2026 update would not result in new or substantially more severe significant impacts on mineral resources than those analyzed in the 2019 BFFIP PEIR.

2.13 Noise

The 2019 BFFIP PEIR and 2023 addendum found that broadcast burning could generate some noise; however, these impacts could be mitigated to less than significant levels. The 2026 update would increase annual broadcast burning by 820 acres. As discussed in the 2019 BFFIP PEIR, while the exact location of each individual broadcast burn within the management zones is not known, it is assumed that work could be as close as 50 to 100 feet from sensitive noise receptors, which remains unchanged. The loudest piece of equipment required for broadcast burning would be the water pump, generating 81 A-weighted decibels (dBA) at a distance of 50 feet, if running. As discussed in the 2019 BFFIP PEIR, equipment used for broadcast burning would be

at any one burn site for fewer than 5 consecutive workdays at any given time and, as such, temporary noise increases would be considered less than significant. Additionally, MM Air-3 requires that broadcast burns not be conducted within 1,000 feet, or the distance specified in the Smoke Management Plan, of sensitive receptors. Per the mitigation, broadcast burns would not occur within 180 feet from a sensitive noise receptor (the distance needed to attenuate the noisiest equipment [water pump] to levels at or below 70 dBA, which is the noise threshold outlined in the 2019 BFFIP PEIR). Therefore, the implementation of the 2026 update would not result in new or substantially more severe impacts to noise associated with broadcast burning than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.14 Population and Housing

The BFFIP Initial Study concluded no impacts to population and housing, and this resource topic was not evaluated further within the 2019 BFFIP PEIR, nor included in the 2023 addendum. Similar to the adopted BFFIP, the 2026 update would not introduce elements that would allow for the addition of homes or businesses, or the infrastructure needed to induce population growth. The 2026 update would also not involve the replacement or removal of existing housing and would not result in the displacement of people. While the increase in burn days would increase worker presence in the plan area, the increase would not induce population growth as the workers are assumed to come from the local community and the overall number of workers required for any one individual burn day would remain relatively the same. Because the 2026 update would not change the conditions that could result in an impact on population and housing, the 2026 update would not result in new or substantially more severe significant impact related to population and housing than those analyzed in the 2019 BFFIP PEIR.

2.15 Public Services

The BFFIP Initial Study concluded no impacts to public services would occur, and this resource topic was not evaluated further within the 2019 BFFIP PEIR. The 2023 addendum considered impacts to public services and found that the changes to the BFFIP under the 2023 addendum would not impact service ratios, or otherwise impact public services or facilities. The 2026 update would not require the provision of new or physically altered fire protection facilities. Similar to the analysis in the 2023 addendum, broadcast burning could require fire protection services if a burn becomes uncontrolled. This potential risk would be addressed through the Burn Plan, in accordance with MM Hazards-4, which specifies the anticipated numbers and types of personnel and equipment required, as well as contingency actions to ensure containment. Although annual broadcast burning acreage would increase under the 2026 update, no additional fire control resources or personnel beyond those provided by existing facilities and local fire protection agencies are anticipated to be required. The 2026 update would not result in a new or substantially more significant impact on public services related to fire protection.

The 2026 update would also not increase service ratios for police services, schools, or other public facilities provided in the area, as the increase in burn days would not induce population growth. The number of workers required would remain relatively the same. The 2026 update would not alter the conditions that could result in new or more severe impacts to police services, schools, or other public facilities. Therefore, it would not result in new or substantially more severe impacts to these services compared to those analyzed in the 2023 addendum.

As discussed in the Initial Study, broadcast burning could impact recreational use by requiring the temporary closure of areas to recreational uses or by adversely affecting the natural quality of the area that attracts recreational users. These temporary impacts may lead to increased use of other recreation areas during the broadcast burns; however, broadcast burns would not result in complete closure of all District lands to recreation, leaving a substantial amount of District land available for recreation use. The 2026 update would continue to adhere to a burn-specific Burn Plan and/or Incident Action Plan, which requires notices of closures to be posted at the trail heads and on the District's website, when needed. Displacement of recreational use during 2026 update activities would thus be negligible. After activities in the 2026 update have been performed, recreation could continue on District lands. No new parks and no alterations to existing parks would be required to accommodate the negligible amount of displaced recreation. Implementation of the 2026 update would not result in new or substantially more severe significant impact related to recreation than those analyzed in the 2019 BFFIP PEIR.

2.16 Recreation

The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation on recreation with mitigation. Implementation of increased annual broadcast burning under the 2026 update would continue to require application of MM Recreation-1, which would include temporary closure of roads or trails when work is occurring for protection and safety of recreationists. The activities under the 2026 update would increase the amount of broadcast burns by 820 acres annually, which could incrementally increase the number of days a particular road or trail may be closed within a year (under MA-23 and/or MA-24); however, this increase would be insignificant considering the 210 miles of trails and roads that are available to recreationalists within the District lands, allowing for recreationalists to choose to traverse alternate trails and roads, and due to the temporary nature of the activities. The 2026 update would continue to adhere to MM Hazards-5, which requires closure of trails and District-use only roads in accordance with a burn-specific Burn Plan and/or Incident Action Plan.

Although the increase in broadcast burning could impact the experience of recreationalists due to the anticipated change in visual character of the area, as discussed in Section 2.1, the result of the potential increase would be similar to existing conditions under the adopted BFFIP as the physical aesthetic change would last for one growing season before bloom of fire-follower wildflowers and other seedlings. Under the 2026 update, management practices of cutting charred skeletons of stems and branches post broadcast burn activities would continue. Signs of

broadcast burns would be temporary in a given area, even if total acreages burned are larger. Therefore, the 2026 update would not result in a new or substantially more severe impact related to recreation than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.17 Transportation

The 2019 BFFIP PEIR and 2023 addendum concluded less than significant impacts with mitigation on transportation related to inadequate emergency access and an increase in hazards due to a design feature or incompatible use. The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts related to CEQA Guidelines Section 15064.3, subdivision (b) for vehicle miles traveled (VMT).

The 2019 BFFIP PEIR discussed that broadcast burning would generally occur away from existing roadways; however, in the event a broadcast burn is conducted near a District-use-only road or public road, worker safely could be significantly impacted. The 2026 update would include an increase in annual broadcast burning acreage; however, any one broadcast burn would continue to be required to be conducted away from existing roadways, as previously analyzed. When working on public roads, the District would continue to follow the California Manual on Uniform Traffic Control Devices under the 2026 update, which requires crew to wear safety equipment, such as high-visibility vests, when operating vehicles or equipment near public roads. Safety vests make crew members more visible on-road shoulders and reduce the hazard of working on the road shoulder. As part of the 2026 update, in accordance with MM Hazards-5, public roads would be closed if feasible, otherwise a Traffic Control Plan would be developed and implemented to ensure the safety of drivers which would further reduce the potential impacts under the 2026 update. Additionally, MM Hazards-5 requires closure of trails and District-use only roads in accordance with a burn-specific Burn Plan and/or Incident Action Plan, as amended in the 2023 addendum.

The District would continue to adhere to MM Transportation-1 under the 2026 update, which requires the District make provisions to be able to create access for emergency responders across any work site, as well as requires the road guards be equipped with two-way radios to inform the crew to cease operations to reopen the road for emergency vehicles should an emergency event occur. Similar to the 2019 BFFIP PEIR and 2023 addendum, the 2026 update does not include any actions to redesign, modify, or maintain any roads or intersections, and it would not change the use of any existing roadways. The 2026 update would also not change the conditions that could result in a new or substantially more severe impact related to incompatible uses of roadways between public motorists, hikers, bicyclists and recreationalists who may travel on the same roads that are being used by heavy equipment and District authorized vehicles. Implementation of activities under the 2026 update would continue to require a Traffic Control Plan in accordance with MM Hazards-5, if required.

In regard to VMT, the increase in broadcast burning would not be anticipated to generate greater than 110 vehicle trips per day, as the maximum amount of workers involved in a given

broadcast burn is not expected to increase compared to the previous analysis. One hundred and ten vehicle trips per day is the Office of Planning and Research's screening threshold identified within the 2019 BFFIP PEIR and 2023 addendum. The 2026 update would not result in new or substantially more severe significant impact related to transportation than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.18 Tribal Cultural Resources

Tribal cultural resources were not analyzed in a separate section within the 2019 BFFIP PEIR, but were assessed within the 2019 BFFIP PEIR Section 3.4: Cultural and Tribal Cultural Resources and was analyzed as part of the 2023 addendum. The 2019 BFFIP PEIR and 2023 addendum analysis concluded less than significant impacts with mitigation on tribal cultural resources.

Similar to the adopted BFFIP, the 2026 update has the potential to significantly impact known and previously undiscovered archaeological resources during broadcast burning, with an increase in likelihood given increases in annual broadcast burning acreage treated under MA-23 and MA-24. Any prehistoric resources eligible for listing in the California Register of Historical Resources, could be considered a tribal cultural resource as well. Implementation of the 2026 update would continue to require adherence to MM Cultural-1 through MM Cultural-4, which include worker training, pre-activity review of known cultural resources, work stoppage and evaluation of previously undiscovered resources, and specific procedures for the treatment of human remains in coordination with the Marin County Coroner and Most Likely Descendant.

The 2019 BFFIP PEIR and 2023 addendum discussed input obtained from the Federal Indians of the Graton Rancheria and the importance of prehistoric trails used by the Federal Indians of the Graton Rancheria ancestors throughout the watershed. Similar to the adopted BFFIP, the 2026 update would not involve major alterations of land or the construction of built structures, as the only change would be increased acreage of broadcast burning within the same plan area. No new management activities have been incorporated into the 2026 update and the previously identified management activities, inclusive of broadcast burning, would be required to comply with the previously identified MMs. The 2026 update would continue to implement MM Cultural-2, which requires the trails that were identified by the Federal Indians of the Graton Rancheria tribe be included within the District's GIS database of cultural resources. Implementation of the 2026 update would not result in new or substantially more severe significant impact related to tribal cultural resources than those analyzed in the 2019 BFFIP PEIR and 2026 update.

2.19 Utilities and Service Systems

The BFFIP Initial Study concluded no impacts to utilities and service systems with the exception of sufficient water supplies, which was determined to be less than significant in the 2019 BFFIP

PEIR and 2023 addendum. Utilities and service systems was not evaluated further within the 2019 BFIP PEIR.

The 2026 update would not generate wastewater nor cause a violation of wastewater treatment requirements. The 2026 update would also not require or result in the construction of new water, wastewater, or stormwater treatment facilities or require the expansion of existing facilities. Water utilized for broadcast burning would be for the creation of control lines and other fire management requirements, such as escaping embers. The water needed to support the increase in broadcast burns each year would be minimal compared to the available supply; therefore, no new or expanded entitlements would be needed. Therefore, the 2026 update would not result in new or substantially more severe significant impact related to utilities and service systems than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.20 Wildfire

2.20.1 2019 BFFIP PEIR and 2023 Addendum Summary

Wildfire was not analyzed under its own section within the 2019 BFFIP PEIR but was incorporated within the 2019 BFFIP PEIR Section 3.7: Hazardous Materials and Fire Hazards. The 2019 BFFIP PEIR Findings of Fact and Statement of Overriding Considerations considered an alternative in which no broadcast burns would occur under the Program and determined that this alternative would not meet the second objective of the BFFIP regarding preservation and enhancement of existing significant biological resources through mimicking lost or diminished ecosystem processes, as broadcast burns have benefits to soils health, plant regeneration, understory growth, and species diversity over time. The 2019 BFFIP PEIR found that broadcast burns would overall have a beneficial effect with regard to reducing wildfire risks or the size and spread of wildfires overtime. The 2023 addendum included analysis of wildfire, which at the time was newly adopted under CEQA, in conformance with the CEQA Guidelines and concluded less than significant impacts with mitigation on wildfire.

2.20.2 Impair or Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan

Under the 2026 update, no changes to conditions would occur that could result in impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. No emergency response or evacuation plans have been adopted for the roads in the BFFIP lands.

2.20.3 Expose Project Occupants to Pollutant Concentrations

The 2026 update would not increase the amount of occupants or other sensitive receptors occupying the plan area, as discussed in Section 2-30. For information regarding worker health during burns, refer to Section 2.3. Therefore, the 2026 update would not result in new or substantially more severe significant impacts to wildfire related to exposing project occupants to pollutant concentrations than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.20.4 Installation or Maintenance of Infrastructure

The 2026 update would not result in new or substantially more severe significant impacts to wildfire related to installation or maintenance of infrastructure than those analyzed in the 2019 BFFIP PEIR, as the 2026 update would not require any installation or maintenance of infrastructure. The 2026 update is likely to increase the amount of control lines, as the update would involve an increase in annual broadcast burning, and control lines are needed around each individual burn unit to assist in containment; however, the impacts associated with creation of control lines were already assessed throughout the 2019 BFFIP PEIR, and would not result in any impacts beyond those analyzed previously.

2.20.5 Exposure to Wildfire Risks

The 2023 addendum concluded that no changes to conditions would occur that could result in an impact to wildfire related risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. Additionally, the 2019 BFFIP PEIR and 2023 addendum analysis found the BFFIP would have a beneficial effect with regard to reducing wildfire risks or the size and spread of wildfires. The 2026 update would allow for an increase in broadcast burning annually by 820 acres under MA-23 and MA-24, which is intended to improve native vegetation community structure and function, as well as to reduce wildfire risks. The 2026 update would not result in new or substantially more severe impacts to people or structures from wildfires than those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.21 Other CEQA Topics

2.21.1 Changes in Land Use that Commit Future Generations

The 2026 update would not result in a change to the zoning or land use designations. The revised BFFIP would not commit future generations to significant changes in land use. All impacts are consistent with those analyzed in the 2019 BFFIP PEIR and 2023 addendum.

2.21.2 Consumption of Non-Renewable Resources

Non-renewable resources include mineral resources, groundwater, and fossil fuels. Similar to the 2019 BFFIP PEIR and 2023 addendum, the 2026 update would not involve any activities that would permanently impede mineral recovery and would not require the use of substantial groundwater from the District area.

The revised BFFIP would require the use of fossil fuels for management activities, including broadcast burns. Use of vehicles and equipment to support the broadcast burns and to reach burn sites would also use fossil fuels. The 2026 update would use fossil fuels intermittently throughout the year, but would not require continued use. In addition, the use of fossil fuels would be considered beneficial, necessary, and not wasteful as discussed under subsection 3.6: Energy.

2.21.3 Irreversible Damage from Environmental Accidents

Action proposed under the 2026 update would involve use of equipment and vehicles, which could result in the accidental spill of hazardous materials such as diesel and gasoline, similar to the 2019 BFFIP PEIR and 2023 addendum. The 2026 update would also increase the annual acres burned under MA-23 and MA-24, which requires the use of drip torches, which could also leak fuel, but would be very small quantities. The 2026 update would not change the types of management activities that were allowed under the adopted BFFIP and would continue to adhere to MM Hazards-1, which requires the District to implement spill prevention and response BMPs; therefore, the 2026 update would not result in irreversible damage from environmental accidents.

2.21.4 Growth-Inducing Impacts

Similar to the adopted BFFIP and as analyzed under the 2019 BFFIP PEIR and 2023 addendum, the 2026 update does not involve the construction of housing and would not directly contribute to population growth in the area. The 2026 update does not involve the expansion of infrastructure, such as roadways or sewer lines and it does not involve the construction of a new facility that would indirectly induce population growth. The 2026 update would not result in new or substantially more severe significant impacts related to growth-inducing impacts than those analyzed in the 2019 BFFIP PEIR.

2.21.5 Cumulative

The 2019 BFFIP PEIR considered cumulative impacts of projects in the vicinity of the plan area where impacts could combine with the BFFIP to result in the same type of impacts on District lands. The 2019 BFFIP PEIR found that construction or implementation of cumulative projects that also involve the use of prescribed burns could result in a significant cumulative impact related to increased risk of starting a fire and accidental wildfires, greater visual impacts, and greater TAC emissions. With implementation of MMs, the 2019 BFFIP PEIR found that the BFFIP's contribution to an overall increased risks related to accidental fires, visual impacts, and TAC emissions would not be incrementally significant. Since implementation of the 2019 BFFIP PEIR, new fuel reduction projects in Marin County and the broader Bay Area region have been approved under the California Vegetation Treatment Program (CalVTP) to reduce regional wildfire risks, thus increasing regional burning in the plan area and making the 2026 update increase in burning consistent with regional efforts (CalVTP, n.d.). The 2026 update would increase broadcast burning in the region, however with BAAD regulation compliance, implementation of MMs, and the overall increase in fuel reduction projects in the area, the 2026 update would not result in an incrementally significant cumulative impact.

3 Determination

No new or substantially more severe significant impacts would occur as a result of the 2026 update. No new substantial changes would occur with respect to the circumstances under which the 2026 update, the 2019 BFFIP PEIR, and 2023 addendum would be undertaken. The MMs and determination of significance for impacts included in the certified 2019 BFFIP PEIR and 2023 addendum would continue to be valid. The 2026 update also would not affect any of the mitigation measures, including their feasibility or implementation, although language in the MM Biology-9 has been revised to refer to the current name for one turtle species and MM Biology-11 has been revised to address multiple special-status butterfly species. These revisions are not a result of newly identified adverse impacts. Impacts related to GHGs and air quality would remain significant and unavoidable as part of the 2026 update, consistent with the 2019 BFFIP PEIR and 2023 addendum. Although the 2026 update would increase annual broadcast burning, it would reduce the overall likelihood of future catastrophic fires and wildfire intensity in the event of ignition, which would have many times greater criteria pollutant emissions than the proposed increase in broadcast burning. Additionally, the increase in broadcast burns would support ecological improvements in the Mount Tamalpais Watershed through native species and vegetation community enhancement and of the potential for reductions in invasive plant species.

None of the conditions described in CEQA Guidelines Section 15162 requiring the preparation of a subsequent EIR or CEQA Guidelines Section 15163 requiring preparation of a supplemental EIR have occurred. This addendum to the adopted BFFIP is the appropriate level of environmental review for the project revisions, as identified in CEQA Guidelines Section 15164. No subsequent or supplemental Mitigated Negative Declaration (MND) or EIR is needed to address the 2026 update to the BFFIP.

4 References

Bay Area Air District. 2022. "Bay Area Air Quality Management District California Environmental Quality Act Air Quality Guidelines." https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en.

Bay Area Air District. 2025. "Air Quality Standards and Attainment Status." December 15. https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status.

CalVTP. n.d. "CalVTP Approved and Completed Projects." Accessed April 3, 2026. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=4a4c99f99ba1407c851d86f37e4c01b5.

CARB. 2017. "Technical Documentation for California's 2001-2010 Forest and Other Natural Lands Carbon and Emission Inventory." https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/pubs/ghg_inventory_folu_tsd.pdf.

CNRA. 2018. "California's Fourth Climate Change Assessment Statewide Summary Report." https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf.

Golden Gate National Parks Conservancy, Tamalpais Lands Collaborative (One Tam, Tukman, and Geospatial LLC, Aerial Information Systems. 2021. "Marin County Fine Scale Vegetation Map Datasheet." September 3.

Liu, Xiaoxi, L. Gregory Huey, Robert J. Yokelson, et al. 2017. "Airborne Measurements of Western U.S. Wildfire Emissions: Comparison with Prescribed Burning and Air Quality Implications." *Journal of Geophysical Research: Atmospheres* 122 (11): 6108–29. https://doi.org/10.1002/2016JD026315.

Moghaddas, J., G. Roller, J. Long, et al. 2018. *Fuel Treatment for Forest Resilience and Climate Mitigation: A Critical Review for Coniferous Forests of California*. August.

U.S. Forest Service. 2020. "First Order Fire Effects Model User Guide." Version 6.7. February 3. https://research.fs.usda.gov/rmrs/understory/first-order-fire-effects-model-fofem-user-guide.

Appendix A: Mitigation Monitoring and Reporting Program

4 Mitigation Monitoring and Reporting Program

4.1 Introduction

When approving projects with mitigation measures that if implemented would avoid or lessen significant impacts, CEQA requires public agencies to adopt monitoring and reporting programs or conditions of project approval to mitigate or avoid the identified significant effects (Public Resources Code Section 21081.6(a)(1)). A public agency adopting measures to mitigate or avoid the significant impacts of a proposed project is required to ensure that the measures are fully enforceable, through permit conditions, agreements, or other means (Public Resources Code Section 21081.6(b)). The mitigation measures required by a public agency to reduce or avoid significant project impacts not incorporated into the design or program for the project may be made conditions of project approval as set forth in a Mitigation Monitoring and Reporting Program (MMRP), detailed in Table 4.3-1. The program must be designed to ensure project compliance with mitigation measures during project implementation. The District will use the Project Environmental Review Checklist, provided in Appendix A of this Final EIR, to evaluate if impacts of individual projects are covered in the Program EIR and to identify best management practices and mitigation measures that are applicable to those individual projects. Individual projects that do not conform to the scope of the Program EIR may require additional environmental analyses.

4.2 Format

This MMRP is organized in a table format, keyed to each significant impact and mitigation measure.. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. The column headings in the tables are defined as follows:

- **Mitigation Measure.** This column presents the significant impact and full mitigation measure.
- **Implementation Responsibility.** This column assigns the party responsible for implementation of the measures.
- **Monitoring Responsibility.** This column assigns the party responsible for monitoring implementation.
- **Timing and Performance Standards:** Identifies at which stage of the project, mitigation must be completed. Performance standards are identified that must occur during the specified stage of project implementation to determine that the objectives of the mitigation are met.

4.3 Enforcement

This MMRP will be incorporated as a condition of project approval. All mitigation measures must be carried out to fulfill the requirements of approval.

Table 4.3-1 Biodiversity, Fire, and Fuels Integrated Plan Mitigation, Monitoring, and Reporting Program

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Air Quality					
Impact Air-1 **MM Air-1: Broadcast Burn Emission Minimization Measures** Methods for reducing air pollutant emissions shall include one or more of the following: • Reducing the broadcast burn areas in each year. • When considering different types of prescribed burning projects, weigh the habitat benefits of burning in a particular fuel type against the emissions. With all other considerations being equal, choose lower emissions fuel types (such as grasslands versus hardwood or evergreen forest) for prescribed burning projects.	Contractor	The District	Where broadcast burns could occur.	**Before Activity:** (1) Reduce the acreage of broadcast burn, (2) Choose habitat types with fewer emissions, when other considerations are equal' (3) Reduce the fuel load in the forest understory **During Activity:** (1) Burn when the fuel has lower moisture, (2) Minimize fire duration **After Activity:** Quickly mop up	
Impact Air-2 **MM Air-2: Asbestos Management** Prior to conducting any activities requiring use of mechanical equipment (e.g., skid steer loader, backhoe) or off-road access of a project site, consult the map created using GIS that shows where serpentine soils and rock formations are located. If the project site or temporary access route passes through an area with serpentine soils or rock formations, implement the asbestos management measures (below). Prior to conducting any activities requiring manual soil-disturbing activities (e.g., pulling of small vegetation, planting seedlings), consult the GIS that shows where serpentine soils are located. If the project site is in an area with serpentine soils, implement the asbestos management measures (below). Asbestos Management Measures: • Areas known to have asbestos shall be watered during ground disturbing activities (e.g., pulling of medium to large vegetation, digging large holes for planting) to ensure that the soil remains moist during the extent of the activity. • Vehicle speeds on unpaved roads shall be limited to 15 miles per hour. • When mowing in serpentine soils, the mower head shall be set at least 6 inches above the ground to minimize asbestos dust generation. If when mowing, dust is seen from the mower pluming more than 4 feet above the ground surface, the mower shall be adjusted to the minimum height needed to avoid generating dust plumes.	Contractor	The District	Areas with serpentine soils or rock formations where work could occur.	**Before Activity:** Water areas with serpentine soils or exposed rock formations **During Activity:** Limit vehicle speeds **After Activity:** N/A	
Impact Air-2 **MM Air-3: Minimization of Air Pollutant Risk** The District shall require that prescribed burns on its lands are conducted a minimum of 1,000 feet away from sensitive receptors, specifically residences, schools, and childcare centers, or the distance specified to avoid smoke impacts to sensitive receptors in the Smoke Management Plan, as required under BAAQMD Regulation 5. The District shall require that prescribed burns on its lands are managed to reduce District worker exposure to CO concentrations and other air pollutants through implementation of the following measures: • Use of realtime CO monitors • Rotate personnel out of heavy smoke areas	Contractor	The District	Where broadcast and pile buns could occur.	**Before Activity:** (1) Purchase realtime CO monitors, (2) Purchase respirators and filters tested and approved by NIOSH **During Activity:** (1) Provide realtime CO monitor to firefighters, (2) Rotate firefighters out of heavy smoke areas, (3) Avoid burning of areas with heavy fuel loads, (4) Provide appropriate respirators and filters to firefighters **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Avoid burning heavy fuel loads on the ground, such as large logs, to avoid additional mop up • Tested and approved by NIOSH full-face and half-face air purifying respirators shall be equipped with filters for CO, formaldehyde, acrolein, and respirable particulate matter and available at all times for District staff or contractors working in the immediate vicinity of broadcast and pile burns, • Or otherwise follows the requirements of relevant regional, state, and federal laws pertaining to human health during prescribed burning.					
Impact Air-2 **MM Air-4: Smoke Management Plan** Key considerations for broadcast and pile burns include, fuel, wind, relative humidity, air temperature, soil moisture, slope of the burn area, smoke management, and neighbouring land owners. A Smoke Management Plan and Prescribed Burn Plan (in accordance with MM Hazards-4) address the specifics related to these key factors. The District shall prepare a Smoke Management Plan in accordance with BAAQMD's Regulation 5 for all prescribed burns. The Smoke Management Plans shall be implemented for each burn. The Smoke Management Plan shall include all conditions and information detailed in Regulation 5, including the following: • Burns shall not be ignited or fueled during calm conditions when winds are less than 5 miles per hour (mph) except for crossfiring, or when the wind direction at the site shall be such that the direction of smoke drift is toward a populated area in order to minimize local nuisances caused by smoke and particulate fallouts. • Burns shall not be ignited or fueled when winds are more than 15 mph (NRCS, 2012). • Burns shall not be ignited or fueled when wind direction blows towards populated areas. • Identify the contingency actions that would be taken if a burn unexpectedly impacts sensitive receptors, identifiable by smoke complaints or presence of smoke in areas with receptors. Contingency actions include: - halting ignition, suppressing fire, and/or beginning immediate mop up.	The District and Contractor	The District	Where broadcast and pile buns could occur.	**Before Activity:** Prepare a Smoke Management Plan including all identified details **During Activity:** Implement the Smoke Management Plan **After Activity:** N/A	
Impact Air-2: Implement Mitigation Measure MM Hazards-5 (see below)					
Impact Air-3: Implement Mitigation Measure MM Air-1 (see above)					
Impact Air-Cumulative: Implement Mitigation Measures MM Air-1, MM Air-2, and MM Air-3 (see above)					
Biological Resources					
Impact Biology-1 **BMP-1: Routine Operations and Project/Activity Implementation** District operations encompass a variety of management activities ranging from day-to-day road maintenance to Incident Command emergency situations. The following measures shall be implemented: • Prior planning may avoid the introduction and/or spread of weed species, such as by: - Implementing a periodic monitoring program for detecting new weed infestations in highly susceptible locations such as pull outs, railheads, picnic areas, parking lots, and concessionaire locations. - Defining "zero tolerance" zones in vulnerable, high-risk areas within the watershed which you commit to keeping weed-free through frequent monitoring and weed control efforts. • Minimize the extent and severity of soil disturbance, by:	The District and Contractor	The District	BFFIP Area	**Before Activity:** N/A **During Activity:** (1) Avoid introduction and/or spread of weed species, (2) Minimize soil disturbance, (3) Maintain facilities **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
- Setting up staging areas and equipment in a way that will minimize soil disturbance and avoid loss of desirable native vegetation. - When working in vegetation types with relatively closed canopies, retaining shade to the extent possible to suppress weeds and prevent their establishment and growth. • Maintain facilities by implementing the following techniques: - Maintain long-term staging areas, such as boneyards, dumps, and quarries in weed-free condition if possible, or contain weeds therein. If necessary, treat sites annually for weeds, and assign this duty to an appropriate, trained staff person. Consider ways of hardening these sites, such as deep mulching or scraping and tamping. - Maintain trailheads, picnic areas, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition. Make high-use recreation areas a high priority for weed detection and eradication if not already heavily infested.					
Impact Biology-1 **BMP-2: Pre-Work Assessments and Planning** Prevention begins with pre-work assessments and planning. The following are guidelines for general construction and maintenance activities: • Inspect all potential and current permitted activity sites. Incorporate invasive plant prevention and containment practices such as mowing, flagging or fencing invasive plant patches, designating invasive plant free travel routes and washing equipment. Where possible, avoid permitting activities that would result in the transfer of weed materials from an infested site to a non-infested site. Consider routes of travel, transport, and equipment use and address pathways and spread concerns with permittees. • Before ground disturbing activities begin, inventory and prioritize weed infestations for treatment in construction sites and along access routes. Identify what weeds are on-site or within the project's vicinity and do a risk assessment accordingly. Control these weed infestations. Ideally, weeds should be managed prior to the planned disturbance to minimize weed seeds in the soil. • Begin project operations in non-infested areas. Restrict movement of equipment or machinery from weed-contaminated areas to non-contaminated areas. • Locate and use weed-free project staging areas. Avoid or minimize travel through weed-infested areas, or restrict travel to those periods when spread of seed or propagules is least likely, such as prior to seed development.	The District and Contractor	The District	BFFIP Area	**Before Activity:** Conduct pre-work assessments and planning for construction and maintenance activities. **During Activity:** N/A **After Activity:** N/A	
Impact Biology-1 **BMP-3: Imports: Fills, Rock, Plant Material** Knowing the sources of imported material is critical to prevent the introduction of invasive plants. If a project involves moving plants or soil, consider the following: • Make sure plants and soil are not contaminated with weed seeds – use a certified weed-free source or sterilize soil prior to use. • When possible, get the plants and soil from the worksite, which is less likely to introduce foreign material. • Inspect materials at the source to ensure that they are weed-free before transport and use. If sources of sand, gravel, and fill are infested, eradicate the weeds, then strip and stockpile the contaminated material for several years, if possible, to further deplete the soil seed bank. Check regularly for weed re-emergence and treat as needed.	Contractor	The District	BFFIP Area	**Before Activity:** Import weed-free plants and soil **During Activity:** (1) Maintain stockpile in weed-free condition, (2) Use native fill material, (3) Train staff to identify weeds and inventory weed infestations and schedule them for treatment **After Activity:** (1) Monitor construction sites with imported material annually for at least 3 years fate project completion, (2) Rehabilitate burn sites with seed and	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Maintain stockpiled, non-infested material in a weed-free condition by preventing weed seed contamination with physical barriers and by frequently monitoring and quickly eradicating new weeds prior to seed production. • Use fill within the project area, or stockpile clean fill on-site for local use. Dispose of excess excavation or spoils in a way that won't spread weeds within the watershed or to neighbors. • Work with the weed specialist to develop guidelines for where earth materials can be moved within the watershed. • For routine purchase of material, such as rock used for drain or road base, work with the weed specialist to evaluate the risk, and if necessary develop a procedure for procuring weed-free material and/or inspecting materials sources. • Maintain stockpiled, non-infested material in a weed-free condition by preventing weed seed contamination with physical barriers (e.g. tarps) and by frequently monitoring and quickly eradicating new weeds prior to seed production. • Survey for, document, and treat weeds on construction sites (or wherever fill/material is brought in) annually for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and eradicated. For ongoing projects, continue to monitor until reasonably certain that weeds will not reappear. Plan for follow-up treatments based on inspection results. • Seed and mulch to be used for burn rehabilitation or slope stabilization (for wattles, straw bales, dams, etc.) all need to be inspected and certified that they are free of weed seed and propagules. Follow-up inspections of straw treated sites should be performed to insure any undetected source seed are treated. • Revegetation may include topsoil replacement, planting, seeding, and weed-free mulching as necessary. Use native material to the greatest extent possible. Consider stockpiling chipped local brush or cut and bale local weed-free grass for mulch – an added benefit is that mature seeds in the grass or brush can help restore local vegetation on the site. • Periodically inspect roads, trails, and rights-of-way for invasive plants. Train staff to recognize weeds and report locations to the local weed specialist. Inventory weed infestations and schedule them for treatment.				mulch, (3) Use native material to revegetate construction sites	
Impact Biology-1 **BMP-4: Prevent Contamination of Clean Nursery Stock or other Clean Plant materials.** Planting stock shall be protected from potential contamination from the point that it leaves the production nursery or collection site until it has been planted. Note that container nursery stock has a high-risk of infection by *Phytophthora* species if exposed to these pathogenic agents. Exclusion of these pathogens provides the only viable option for maintaining nursery plants free of *Phytophthora*. **Maintaining Nursery Stock in a Holding Facility** By definition, nursery stock produced by the District should be free of exotic *Phytophthora* to the maximum degree attainable. If such material is held for a period after delivery and before planting, the following clean nursery practices must be followed to prevent contamination of the nursery stock with *Phytophthora*: Water used for irrigating plants shall comply with standards listed below. • Delivered nursery plants that will be held before planting shall be transferred to cleaned and sanitized raised benches and maintained as described below under Handling and Transporting Nursery Plants BMPs. **Handling and Transporting Nursery Plants**	The District	The District	BFFIP Area	**Before Activity:** N/A **During Activity:** (1) Maintain nursery stock in a holding facility with cleaned and sanitized raised benches, (2) Transport nursery stock with sanitized vehicles or equipment, and place nursery stock clean waterproof surfaces, (3) Use clean water sources for washing, soaking, or irrigation, (4) Use pre-approved materials for mulch, compost, and soil amendment, and inoculants, (5) Use new and uncontaminated irrigation supplies, erosion control fabrics, fencing, stakes, posts, and other planting site inputs **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Nursery plants shall be transported on or in vehicles or equipment that has been sanitized before loading the stock. Truck beds, racks, or other surfaces will be cleaned (swept, blown with compressed air and/or power washed as needed) to be free of soil and plant detritus. Cleaned surfaces shall be sanitized as described below under Procedures for Sanitizing Tools, Surfaces, and Footwear. • Keep plants in sanitized vehicles or on sanitized carts, trailers, etc. until delivered to their planting sites. • At the job site, plants shall be handled to prevent contamination until delivered to each planting site. Nursery stock shall not be staged on the soil or other potentially contaminated surfaces except that plants may be placed on the soil surface at their specific planting sites. • If it is necessary to offload plants at the job site, plants may be placed on clean waterproof plastic tarps or other clean, sanitized surfaces. If tarps are used for holding plants, one surface will be dedicated for contact with nursery stock and will be cleaned and sanitized as needed to maintain phytosanitary conditions. **Other Planting Site Inputs** • Washing, soaking, or irrigation of plant material shall be conducted using clean water sources as specified below under Clean Water Specifications. Untreated surface waters shall not be used for these purposes. • Mulch, compost, soil amendments, inoculants, and other organic products shall be pre-approved for use before delivery to the planting site. Materials shall be free of pathogen contamination due to composition, manufacturing conditions, or through effective heat treatment and subsequently handled and maintained in a manner to prevent contamination. If appropriate, testing may be required as specified by the District. At the job site, delivered materials shall be handled to prevent contamination until delivered to each planting site in the same manner specified above under Handling and Transporting Nursery Plants. • All other materials to be installed at the site shall be of new material that has not been stored in contact with soil, untreated surface waters, or other potentially contaminated materials. This includes irrigation supplies (such as pipe, fittings, valves, drip line, emitters, etc.), erosion control fabrics, fencing, stakes, posts, and other planting site inputs.					
Impact Biology-1 **BMP-5: Cleaning and Sanitation Required Before Entering Planting Area to Prevent Introducing Contamination from Other Locations** *Phytophthora* contamination can be present in agricultural and landscaped areas, in commercial nursery stock, and in some infested native or restored habitat areas. Contamination can be spread via soil, plant material and debris, and water from infested areas. Arriving at the site with clean vehicles, equipment, tools, footwear, and clothing helps prevent unintentional contamination of the planting site from outside sources. **Vehicles, Equipment, and Tools** • Equipment, vehicles and large tools must be free of soil and debris on tires, wheel wells, vehicle undercarriages, and other surfaces before arriving at the planting area. A high pressure washer and/or compressed air may be used to ensure that soil and debris are completely removed. Vehicles that only travel and park on paved roads do not require external cleaning. • Contractors will comply with this provision by demonstrating that the equipment has been cleaned at a commercial vehicle or appropriate truck washing facility. • The interior of equipment (cabs, etc.) must be free of mud, soil, gravel and other debris. Interiors may be vacuumed or washed.	The District and Contractor	The District	BFFIP Area	**Before Activity:** Clean and sanitize vehicles, equipment, tools, footwear, and clothing before entering planting areas **During Activity:** N/A **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Small tools and other small equipment (including hoses, quick couplers, hose nozzles, and irrigation wands) must be washed to be free of soil or other contamination and sanitized as described below in Procedures for Sanitizing Tools, Surfaces, and Footwear. • Hoses shall be new or previously used only for clean water sources as described below in Clean Water Specifications. **Footwear and Clothing** • Soles and uppers of footwear must be free of debris and soil before arriving at the planting area. Clean and sanitize footwear as described in Procedures for Sanitizing Tools, Surfaces, and Footwear. • At the start of work at each new job site, worker clothing shall be free of all mud, soil or detritus. If clothing is not freshly laundered, all debris and adhered soil should be removed by brushing with a stiff brush.					
Impact Biology-1 **BMP-6: Prevent Potential Spread of Contamination within Planting Areas** *Phytophthora* can also be spread within plantings areas if some portions of the site are contaminated. However, it is not possible to identify every portion of a planting area that contains or is free of *Phytophthora*. Because *Phytophthora* contamination is not visible, working practices should minimize the movement of soil within the planting area to minimize the likelihood of spreading contamination. The District may designate specific portions of a planting area as having high or low risk of contamination. Areas with higher risk of contamination typically include areas adjacent to planted landscaping, areas previously planted with *Phytophthora*-infected stock, areas with existing or recently removed woody vegetation, areas directly along watercourses. Areas with low risk of contamination typically include upland sites with only grassy vegetation or sites where surface soils have been removed. **Worker Training and Site Access** • Before entering the job site, field workers and contractors shall receive training that includes information on *Phytophthora* diseases and how to prevent the spread of these and other soil borne pathogens by following approved phytosanitary procedures. • Do not bring more vehicles into the planting area than absolutely necessary. Within the planting area, keep vehicles on surfaced or graveled roads whenever possible to minimize potential for soil movement. • Travel off roads or on unsurfaced roads should be avoided when such roads are wet enough that soil will stick to vehicle tires and undercarriages. **Especially from Higher to Lower Risk Areas** • Brush off substantial soil contamination from tools and gloves when moving between successive planting sites to prevent repeated collection and deposition of soil across multiple sites. • Avoid contaminating clothing with soil during planting operations. Use nonporous knee pads that are cleaned between planting sites if kneeling is necessary. • When possible, plant nursery stock from a given block in the same local area rather than spreading it widely. If a problem is associated with a given block of plants, it will be easier to detect and deal with it if the plants are spatially grouped. • Phase work to minimize movement between areas with high and low risk of contamination. Where possible, complete work in low risk areas before moving to higher risk areas. Alternatively, restrict personnel to working in either high or low risk areas exclusively to reduce the need for decontamination.	The District and Contractor	The District	BFFIP Area	**Before Activity:** (1) Any staff, contractors or volunteers performing any work in planting areas shall receive training about *Phytophthora* diseases and other soil borne pathogens, (2) Designate high and low risk contamination areas **During Activity:** (1) Avoid travelling on wet off roads or unsurfaced roads, (2) Clean and sanitize footwear and clothing when moving from higher to lower risk areas, (3) Keep all non-plant materials free of soil contamination **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Clean soil and plant debris from large equipment and sanitize hand tools, buckets, gloves, and footwear when moving from higher risk to lower risk areas or when moving between widely separated portions of the planting area. • All non-plant materials to be installed at the site (irrigation equipment, erosion control fabric, fencing, etc.) shall be handled to prevent movement of soil within the site, especially movement from higher risk to lower risk areas. Materials should be kept free of soil contamination by maintaining them in sanitized vehicles or on sanitized carts, trailers, etc., or stockpiling in elevated dry areas on clean tarps until used.					
Impact Biology-1 **BMP-7: Procedures for Sanitizing Tools, Surfaces, and Footwear** Surfaces and tools should be clean and sanitized before use. Tools and working surfaces (e.g., potting benches) should be smooth and nonporous to facilitate cleaning and sanitation. Wood handles on tools should be sealed with a waterproof coating to make them easier to sanitize. Before sanitizing, removal all soil and organic material (roots, sap, etc.) from the surface. If necessary, use a detergent solution and brush to scrub off surface contaminants. The sanitizing agent may also be used as a cleaning fluid. Screwdrivers or similar implements may be needed to clean soil out of crevices or shoe treads. Brushes and other implements used to help remove soil must be cleaned and sanitized after use.	The District and Contractor	The District	BFFIP Area	**Before Activity:** Clean and sanitize tools, surfaces, and footwear prior to working in planting areas **During Activity:** N/A **After Activity:** N/A	
Impact Biology-1 **MM Biology-1: Worker Training** An environmental training program shall be developed and presented by a qualified biologist to all vegetation management workers before they are allowed to perform work under the BFFIP. The training shall describe special-status species and sensitive habitats that could occur within vegetation management areas, protection afforded these species and habitats, and the avoidance and minimization measures required to avoid and/or minimize impacts on these species and habitats, including maintaining avoidance areas, identification of species for avoidance, and protocols to follow, including protocols for minimizing the spread of invasive species and forest diseases.	Contractor working with qualified biologist	The District	BFFIP Area	**Before Activity:** (1) This measure would be implemented prior to any staff, contractors or volunteers performing any work under the plan, (2) sign-in sheets for trained staff should be maintained by District staff **During Activity:** N/A **After Activity:** N/A	
Impact Biology-1 **MM Biology-2: Protection of Special-Status Plants** The following measures shall be implemented to protect special-status plants: • Prior to conducting any vegetation management activity (mechanical or manual removal), prescribed (broadcast and pile) burning, propane flaming, and animal grazing the area shall be reviewed by the District's botanist against the most current mapping data of special-status plant species and habitats. If the work is to occur in in serpentine habitat, within 500 feet of known special-status plant populations, near wetlands, or within other habitats with potential to support special-status plant populations, botanical surveys shall be conducted by a qualified botanist ahead of the planned work. The surveys shall be specific to the species of plants that could occur, must be conducted during a period when the special-status species that could occur in that habitat can be most readily detected (e.g. blooming period), and shall include the entire footprint of the proposed work. Any species identified during surveys shall be added to the GIS of current mapping data. If work is to occur again in the same area within 5 years (e.g., new fuelbreaks or retreatment areas for forestry actions), a new survey is not required. • For listed species with known rarity or declining populations that could be adversely impacted by treatments, including CRPR Rank 1B, 2, and some rank 4 species that are known rare), as determined and listed below by the MMWD botanical staff~~,~~ the MMWD's botanical staff shall:	The District's botanist and Contractor	The District	Serpentine habitat, within 500 feet of known special-status plant populations, near wetlands, or within other habitats with potential to support special-status plant populations	**Before Activity:** (1) Check maps for habitat and known occurrences of special-status plants, (2) where applicable, conduct surveys in appropriate season (e.g. blooming season) before work is performed and record in GIS. **During Activity:** (1) Avoid the identified special-status species, (2) Avoid CRPR rank 1B and 2 special-status species or conduct reseeding/replanting **After Activity:** Monitor populations and make adjustment to future maintenance activities, if need.	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification

- Flag or otherwise demarcate the individual or population to ensure workers avoid the species for no loss of individuals.
- Establish a buffer of 100 feet around the individual or population, for species that could be adversely impacted by the treatments.
- Require implementation of BMP-1 through BMP-3 for work conducted adjacent to these species to minimize the spread of invasive species.
  - Brewer's milk vetch (*Astragalus breweri*)
  - Brewer's calandrinia (*Calandrinia breweri*)
  - Johnny-nip (*Castilleja ambigua var. ambigua*)
  - Marin western flax (*Hesperolinon congestum*)
  - Bristly leptosiphon (*Leptosiphon acicularis*)
  - Santa Cruz microseris (*Stebbinsoseris decipiens*) *
  - Coast rockcress (*Arabis blepharophylla*)
  - Pink star-tulip (*Calochortus uniflorus*)
  - Thin-lobed horkelia (*Horkelia tenuiloba*)
  - Small groundcone (*Kopsiopsis hookeri*)
  - Gairdner's yampah (*Perideridia gairdneri ssp. gairdneri*)
  - North coast semaphore grass (*Pleuropogon hooverianus*)
  - Marin manzanita (*Arctostaphylos virgata*)
  - Glory brush (*Ceanothus gloriosus var. exaltatus*)
  - Mason's ceanothus (*Ceanothus masonii*)

* This species is likely extirpated

- For other listed species of CRPR rank 1B or 2 (beyond those identified in part b, above) with the potential to occur on District lands, the following measures shall be implemented for any treatments that could adversely impact the species (per Approaches 2.3 and 2.4 of Chapter 4 of the BFFIP):
- Perennials:
  - Mark populations in the field with distinct flagging. Ensure that worker training is complete per MM Biology-1.
  - Avoid populations. If mowing cannot be safely performed up to the perimeter of the individuals, or timed for when they are senescent, then hand methods (i.e., hand pulling or use of non-powered or powered hand tools) shall be employed to prevent damage or removal of listed species.
  - Where tree or shrub species must be trimmed, such as Mount Tamalpais manzanita, follow any protocols or recommendations available, including the following the *Status and Management Recommendations for Arctostaphylos virgata (Marin Manzanita) in Point Reyes National Seashore* (Parker, 2007) and plant specific pruning tips (Las Pilitas Nursery, 2012) and perform the work by hand.
  - No net loss of a perennial special-status species can occur. The population size shall be determined from the most recent survey data of the species.
  - If an individual or population must be removed, one or two options can be employed (subject to CDFW approval) and monitoring conducted to ensure that no net loss of the species occurs.
    - (1) The individual or population can be dug up and relocated to appropriate habitat outside the work area. (2) A nursery with experience growing special-status plants can be employed to grow seedlings of the species that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. If located outside the work area, appropriate habitat shall be within the same watershed as the impact area, and shall be identified or approved of by MMWD botanical staff.
    - A monitoring plan shall be developed that details the following components. Conduct annual monitoring of seeded or replanted locations for a minimum of 3 years and up to 5 years,

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
dependent upon the MMWD botanical staff recommendation and monitoring results. If the new population is not matching the pre-removal population data, more seeding or planting shall be conducted until pre-removal population is met. ii. Annuals: 1) Flag or otherwise demarcate and ensure workers avoid the species as feasible; or, 2) Time vegetation management activities for when the special-status species occurring in the work area is senescent and/or after the seed has set. 3) Monitor populations between vegetation management activities to ensure that population sizes are not decreasing. If populations are decreasing and a correlation can be made to the maintenance activities, measures shall be identified by MMWD botanical staff and taken to improve the population,-including but not limited to one of the following: avoiding the area in question or altering the management activity frequency. 4) No net loss of an annual special-status species can occur. Due to the variations in population from year to year as a result of weather fluctuations, average population data can be calculated from several years of data collected during the annual census conducted by MMWD or by volunteers as directed by MMWD. 5) If an individual or population must be removed, one or two options can be employed and monitoring conducted to ensure that no net loss of the species occurs. • (1) Seeds of the annuals shall be collected from existing on-site populations or from the same watershed (to maintain local genetic stock) and distributed in appropriate habitat outside the work area (within the same watershed) or in the work area following completion of work. (2) A nursery with experience growing special-status plants can be employed to grow seedlings of the species (from seeds collected locally) that shall be planted in appropriate habitat outside the work area or in the work area following completion of work. It should be noted that seeds derived from plants in the same watershed as the impact area may be available from local nurseries, and local nurseries may also be able to propagate seeds from adults grown from collected seeds. In this case, seeds do not need to be collected from a specific impact area site. Appropriate habitat shall be identified or approved of by MMWD botanical staff. • A monitoring plan shall be developed that details the following components. Conduct annual monitoring of seeded or replanted locations for a minimum of 3 years and up to 5 years, dependent upon the MMWD botanical staff recommendation and monitoring results. If the new population is not matching the average population data, more seeding or planting shall be conducted until pre-removal population levels are met.					
Impact Biology-1 **MM Biology-3: Prevent the Spread of Invasive Species** Precautions shall be taken to minimize the introduction of any invasive weeds or to prevent the spread of existing infestations. Prior to conducting an activity that requires the use of mechanical equipment; the area shall be reviewed by a qualified biologist against the most recent maps of invasive species infestation. The biologist shall direct the work crews as to the need for vehicle cleaning and/or the order in which work should be conducted to minimize the possible spread of invasive species. If work is to commence in an area of known invasive species infestation, the work shall be limited to the area of infestation and no equipment shall move to uninfested areas without being washed first. Alternatively, work shall start in the uninfested areas and progress to the more heavily infested areas last. Areas of broadcast burns shall be monitored annually to ensure that invasive species/weeds are not taking over. Invasive species shall be removed until native vegetation establishes.	Contractor working with qualified biologist	The District	Where activities covering more than 5 acres could occur in areas of invasive species	**Before Activity:** Determine the areas where infestations are located and plan work accordingly to prevent spread **During Activity:** Clean vehicles between locations, if needed **After Activity:** Monitor burn areas for invasive species and weeds	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Impact Biology-1 **MM Biology-4: Prevent the Spread of Forest Diseases from Plan Activities** Forest disease spread shall be evaluated by District biologists when management actions are being performed. An evaluation shall be triggered when a District biologist observes that a native vegetation type within the BFFIP area has been impacted by the disease. The biologists shall determine if mechanical methods of vegetation removal could result in the spread of the disease in a given project area, prior to implementing the project. This evaluation shall be conducted by looking at the location of the disease, the types of species that are being impacted, and the methods by which the disease is spreading. If the disease is spread by soil contact, then the biologist shall prescribe methodologies for reducing spread from mechanical methods of vegetation management. These methods would likely be similar to those identified in BMP-4 through BMP-7 including, but not be limited to, washing equipment after working in infected areas, and planning work to progress from uninfected areas to infected areas.	Contractor working with the District's biologists	The District	Where activities covering more than 5 acres could occur in areas of forest disease	**Before Activity:** Determine the areas where infestations are located and plan work accordingly to prevent spread **During Activity:** Implement measures to prevent spread, such as by cleaning vehicles between work locations, if needed **After Activity:** N/A	
Impact Biology-1 **MM Biology-5: Roosting Bats** **Broadcast Burning** Prior to conducting broadcast burning, a qualified biologist shall review the selected location to determine whether potential roosting bat habitat is present. If adequate roosting trees are present, one of two options may be pursued: (1) A qualified bat biologist shall first conduct a focused assessment of the roosting habitat within 2 days of burning to determine whether bats are present. If bats are present. the bat biologist shall determine whether the broadcast burn poses a threat to the roosting bats based on the location of the bats as compared with the prescribed burn location, wind directions, and type of fuel to be burned. If bats could be within direct line of smoke, a threat would occur If a threat could occur, the broadcast burn must be conducted when ambient temperatures are warmer to allow escape of the bats or the tree(s) avoided. (2) The broadcast burn will be conducted, avoiding the potential roosting trees. **Tree Removal** Prior to the removal of trees with a DBH of greater than 10", a qualified biologist shall conduct a focused tree habitat assessment. Trees containing suitable potential bat roost habitat features shall be clearly marked or identified. If day roosts are found to be potentially present, the biologist shall prepare a site-specific roosting bat protection plan to be implemented. Based on-site-specific conditions, the plan should incorporate the following guidance as appropriate: **Roost Avoidance** When possible, removal of trees identified as providing suitable roosting habitat should be conducted during seasonal periods of bat activity, including: • Between March 1 and April 15, or after evening temperatures rise above 45 degrees Fahrenheit and/or no more than ½ inch of rainfall within 24 hours occurs; or • Between September 1 and about October 15, or before evening temperatures fall below 45 degrees Fahrenheit and/or more than ½ inch of rainfall within 24 hours occurs. If it is determined that a colonial maternity roost is potentially present, the roost shall be avoided and shall not be removed during the breeding season (April 15 to August 31) unless removal is necessary to address an imminent safety hazard. Operation of mechanical equipment producing high noise levels (e.g., chainsaws, heavy equipment) in proximity to buildings/structures supporting or potentially supporting a colonial bat roost shall be restricted to periods of seasonal bat activity (as defined above), when possible.	Contractor working with qualified biologist	The District	Where trees in bat roosting habitat could be impacted by activities (predominantly MA-21, MA-23, and MA-24)	**Before Activity:** (1) Conduct surveys if tree removal could occur in bat roosting areas and work is occurring during roosting, (2) humanely evict bats, if appropriate **During Activity:** Avoid roosting bats **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Assessment If work with loud, mechanical equipment must occur near a known or potential roosting structure/building during the maternity or hibernation roosting periods, then a qualified bat biologist shall first conduct a focused assessment of the structure. The site-specific plan shall be implemented to prevent noise-related impacts on roosting bats. **Roost Removal** If a tree potentially containing a colonial maternity roost must be removed, such as in the event of unsafe conditions requiring treatment, during the breeding season, then the following or other measures recommended by the qualified bat biologist may be implemented: • Acoustic emergence surveys or other appropriate methods shall be conducted/implemented to further evaluate if the roost is an active maternity roost. • If it is determined that the roost is not an active maternity roost, then the roost may be removed in accordance with the other requirements of this measure. • If it is found that an active maternity roost of a colonial roosting species is present, the roost shall not be disturbed during the breeding season. Potential colonial hibernation roosts will only be removed during seasonal periods of bat activity (i.e., non-hibernation periods). Potential non-colonial roosts that cannot be avoided shall be removed on warm days in late morning to afternoon when any bats present are likely to be warm and able to fly. Appropriate methods shall be used to minimize the potential of harm to bats during tree removal. Such methods may include using a two-step tree removal process. This method is conducted over two consecutive days, and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed on Day 2.					
Impact Biology-1 **MM Biology-6: Protection of Badgers** Prior to prescribed (broadcast and pile) burning, or prior to use of heavy equipment to remove and/or masticate vegetation in badger denning habitat, which is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils, a qualified wildlife biologist shall conduct a survey to identify any American badger burrows/dens. These surveys shall be conducted not more than 15 days prior to the start of work. American badger dens determined to be occupied during the breeding season (February 15 through June 30) shall be flagged, and ground disturbing activities avoided within 100 feet to protect adults and nursing young. Buffers may be modified by the qualified biologist, provided the badgers are protected, and shall not be removed until the qualified biologist has determined that the den is no longer in use. If the den is occupied during the non-maternity period (July 1 through February 14) and avoidance is not feasible, a passive badger relocation plan will be prepared and submitted to the CDFW for approval. Any passive relocation of American badgers shall occur only under the direction of a qualified biologist and with CDFW approval.	Contractor working with qualified wildlife biologist	The District	Wherever broadcast burning or use of heavy equipment that could disturb ground (excluding mowers in fuelbreaks or defensible spaces) could be used in badger denning habitat	**Before Activity:** Conduct surveys, as needed **During Activity:** Maintain non-disturbance areas around active dens or evict, as appropriate **After Activity:** N/A	
Impact Biology-1 **MM Biology-7: Protection of Nesting Birds** If mowing with heavy equipment or other vegetation (including tree) removal activities or prescribed (broadcast and pile) burning would commence anytime during the nesting/breeding season of native	Contractor working with qualified biologist	The District	Wherever heavy or noise equipment is used to implement BFFIP management actions	**Before Activity:** (1) Conduct surveys, if appropriate, (2) identify nest buffers as needed	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
bird species (February 1 to September 1), a pre-construction survey for nesting birds shall be conducted by a qualified biologist within seven days of the habitat disturbance. The survey shall include visually surveying all suitable nesting habitat in the survey area, and be conducted during periods of high bird activity (i.e., 1-3 hours after sunrise and 1-3 hours before sunset). When the activity would occur along an existing fuel break or in other areas that are currently maintained such as along roads and in defensible spaces, then the survey area shall include only the disturbance footprint. During the construction of new fuelbreaks or during vegetation removal with heavy equipment in areas that were not previously managed (such as under MA-23 and MA-24), the survey area shall include the disturbance area and a surrounding buffer to be determined by a qualified biologist depending on type of equipment used, vegetation community, topography, resident bird species, and any other relevant factors. If active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are found in areas that could be directly or indirectly disturbed (noise), a no-disturbance buffer zone shall be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zone shall be determined by the biologist, by taking into account factors including but not limited to the following: • Noise and human disturbance levels at the site at the time of the survey and the noise and disturbance expected during the vegetation management activity; • Distance and amount of vegetation or other screening between the site and the nest; and • Sensitivity of individual nesting species and behaviors of the nesting birds.				**During Activity:** Maintain non-disturbance areas around active nests. **After Activity:** N/A	
Impact Biology-1 **MM Biology-8: Northern Spotted Owl Avoidance During Nesting Season** If mowing with heavy equipment, the mechanical removal of vegetation, or prescribed burning, including pile and broadcast burning, is to occur within the northern spotted owl nesting season (February 1 to July 31), the District shall commission two surveys for nesting northern spotted owls during the months of April and May preceding the commencement of these activities. At a minimum, the survey area shall include all suitable nesting habitats within 0.25 mile of any planned activity sites, and then one of the two options listed below shall be implemented: 1. Following a round of protocol-level northern spotted owl surveys in accordance with the USFWS Protocol for Surveying Proposed Management Activities that may Impact Northern Spotted Owls (USFWS, 2012), if it is conclusively determined that there are nesting northern spotted owls, planned activities that generate noise (e.g., mowing, heavy equipment usage) that are within 0.25-mile of an identified active nest shall not begin prior to September 1 unless the young have fledged, at which time work may begin no earlier than July 10. Prescribed burns may only occur within suitable northern spotted owl habitat (as determined by a qualified biologist) during the nesting season if protocol surveys have determined that northern spotted owl nesting is not occurring. 2. Alternatively, the District shall perform a calculation to determine the minimum buffer needed to avoid impacts on this species from noise generation by equipment. The calculation shall be based on the guidance and methodology in the USFWS "Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California," (USFWS, 2006) which takes into consideration the baseline noise levels, the noise and duration of noise generated by the loudest equipment, and the topography of the landscape. The resulting buffer calculated using these methods shall be a minimum buffer, but in no case shall the buffer be less than 500 feet. If the calculation is not performed, a conservative 0.25-mile buffer shall be implemented per (1), above. If nesting northern spotted owls are found, activities shall not occur	Contractor working with qualified biologist	The District	Any areas of the District's lands where northern spotted owls can occur, including the Watershed and the Nicasio administrative unit	**Before Activity:** (1) Conduct surveys, (2) as appropriate calculate buffer distances or conduct work outside of nesting season **During Activity:** Maintain buffers **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
prior to September 1 unless the young have fledged, at which time work may begin no earlier than July 10. Manual methods shall not occur within 131 feet of the line-of-site of a nesting northern spotted owl.					
Impact Biology-1 **MM Biology-9: Protection of ~~Western~~ Northwestern Pond Turtle Nesting Habitat and Overwintering** **Nesting** Any mechanical method of vegetation management (i.e., heavy equipment), vehicle travel, or prescribed (broadcast and pile) burning that could occur where suitable northwestern pond turtle nesting habitat is present shall be reviewed by a qualified biologist to determine if northwestern pond turtle nesting could be present in the area. If the work with heavy equipment were to occur in loose soils in oak woodlands, mixed coniferous forests, broadleaf forests, or grasslands that are within 100 feet of ponds, during the northwestern pond turtle egg-laying season (May to August) as determined by the qualified biologist, the activity shall either be rescheduled to occur outside of the egg-laying period; or a survey shall be conducted to determine if eggs and nests are present in the work area and any identified eggs or nests and young turtles shall be avoided. **Overwintering of Hatchlings in Nests** Any mechanical method of vegetation management (i.e., heavy equipment) or vehicle travel that could occur where suitable overwintering habitat for hatchlings is present shall be reviewed by a qualified biologist to determine if any hatchlings could be present in the area. If work with heavy equipment were to occur in loose soils in oak woodlands, mixed coniferous forests, broadleaf forests, or grasslands that is within 225 meters of ponds known to be used by the northwestern pond turtle, during the overwintering season (October to April) (Holland, 1994) as determined by the qualified biologist, the activity shall either be rescheduled to occur outside of the overwintering period, or a survey shall be conducted to determine if hatchlings are present in the work area and any identified nests shall be avoided.	Contractor working with qualified biologist	The District	Wherever heavy equipment, vehicle travel, or prescribed burning could occur in western pond turtle breeding habitat during their breeding season (May to August) or where heavy equipment and vehicle travel could occur during the overwintering season for hatchlings (October to April)	**Before Activity:** (1) Biologist determines if the work area could support pond turtle breeding or overwintering based on the location of the work and proximity to ponds, (2) if no pond turtle could occur, work can proceed, (3) if pond turtle could be found in an area, the area shall be avoided or work rescheduled, (4) a survey can also be performed to rule out pond turtle eggs or overwintering hatchlings from the work area **During Activity:** Avoid pond turtle nests or overwintering hatchlings, if any had been found in surveys **After Activity:** N/A	
Impact Biology-1 **MM Biology-10: California Red-Legged Frog Avoidance** Prior to implementing any vegetation management activities involving vehicles or equipment (i.e., mowers, graders, skid steer loader) within 0.25 mile of Lagunitas Creek downstream of Kent Lake, or around Soulajule Reservoir (or any location where California red-legged frogs have been found), a qualified biologist shall conduct protocol-level in accordance with the USFWS *Revised Guidance on-Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS, 2015) surveys the areas where activities are to occur to ensure that no California red-legged frogs are present in the activity footprint. The biologist shall also mark the work area and the maintenance crew shall be directed to stay within the marked activity areas. If California red-legged frogs are found, no work shall occur until the frogs have moved on their own from the activity area.	Contractor working with qualified biologist	The District	Locations where California red-legged frog have been observed or within designated critical habitat	**Before Activity:** (1) Conduct a survey for any individuals in the work area, (2) if California red-legged frogs have been observed or if work is to occur within designated critical habitat, prior use of vehicles or equipment **During Activity:** If observed, activities must not occur until the individual(s) leave the area **After Activity:** N/A	
Impact Biology-1 **MM Biology-11: ~~Marin Elfin~~ Butterfly Host Plant Avoidance** Prior to vegetation management activities in the limited areas where ~~stonecrop is known to occur (steep slopes on southeast shore of Lake Lagunitas, north-facing slopes south of Alpine Lake, and north of Kent Lake)~~ host plants for special-status butterflies are known to occur, District botanical staff shall be notified. If the activity would occur in an area containing or potentially containing ~~stonecrop~~ host plants for special-status butterflies, then a survey shall be conducted to flag all ~~stonecrop~~ plants within	Contractor working with the District's botanical staff	The District	Locations where ~~stonecrop is~~ host plants for special-status butterflies are known to occur (steep slopes on southeast share of Lake Lagunitas, north-facing slopes south of Alpine Lake, and north of Kent Lake)	**Before Activity:** (1) Determine if activity could occur in the limited areas where ~~stonecrop~~ host plants for special-status butterflies may also occur, (2) conduct survey for ~~stonecrop~~ host plants for special-status butterflies, if there is overlap.	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
and bordering the work area. Work crews shall be instructed to avoid flagged plants or larger areas, and work crews shall be trained in identification of ~~stonecrop~~ host plants for special-status butterflies.				**During Activity:** Avoid ~~stonecrop~~ host plants for special-status butterflies **After Activity:** N/A	
Impact Biology-1 **MM Biology-12: Protection of Foothill Yellow-Legged Frog** Immediately prior to the use of heavy equipment, any other ground disturbing Plan activities, or prescribed (broadcast and pile) burning within 50 feet of Big Carson Creek, Little Carson Creek, or their tributaries, a clearance survey for foothill yellow-legged frog shall be conducted by an individual trained in the identification of the species. If foothill yellow-legged frogs are found, no work shall occur until the frogs have moved on their own from the activity center.	Contractor working with trained individual and qualified biologist	The District	Activities (not including manual methods or planting) within 50 feet of Big Carson Creek, Little Carson Creek, or their tributaries	**Before Activity:** (1) Survey for the species **During Activity:** If observed, activities must not occur until the individual(s) leave the area **After Activity:** N/A	
Impact Biology-1 **MM Biology-13: Mollusk Avoidance** Only hand methods of removal shall be used when working directly in seeps or springs, unless a survey for Marin Hesperian and robust walker is undertaken. If the species are not found in surveys, the work can proceed. If individuals are found, the area should be avoided or work shall only proceed using hand methods, supervised by a qualified biologist. If the use of equipment other than hand tools are required in Potrero Meadow, then a site-specific protection plan for Marin Hesperian and robust walker shall be prepared by a qualified biologist. The plan may include conducting clearance surveys and having a qualified monitor on-site during construction activities, as well as ensuring that activities in that area would protect and/or enhance habitat in that area in the long-term.	Contractor working with qualified biologist	The District	The locations where treatments could need to occur in habitat suitable for Marin Hesperian and Robust Walker (i.e., springs or seeps)	**Before Activity:** Survey for the species if work could occur in their habitat **During Activity:** Avoid the species or only perform hand work in the immediate vicinity of the species **After Activity:** N/A	
Impact Biology-1 **MM Biology-14: Northern Spotted Owl** **Projects Within 0.25 Mile of an Activity Center** *Determine Type of Habitat Present* Prior to vegetation management within an area the latest GIS data available for northern spotted owl activity centers shall be consulted to determine whether the project is within 0.25 mile of an activity center. Once determined to be within 0.25 mile of an activity center, the habitat shall be reviewed to determine whether the project is proposed to occur within a forest habitat type that provides potential northern spotted owl foraging, roosting, and/or nesting habitat. This may be accomplished as follows: 1. A review of GIS data shall be conducted to determine if the activity is proposed to occur in a forest type potentially used by northern spotted owls (i.e., Douglas-fir, redwood, mixed conifer/hardwood forest, mature broadleaf/evergreen forest types). If the activity would not occur within a forest type potentially used by northern spotted owls, then no further actions is required to protect northern spotted owl habitat. 2. If the project is proposed to occur in a forest type potentially used by northern spotted owls, then a site-specific habitat evaluation shall be conducted within the month of February prior to the activity by a qualified northern spotted owl biologist to determine if the area provides the required habitat characteristics to provide northern spotted owl foraging, roosting, and/or nesting habitat. *Projects Within Appropriate Habitat* For projects which are proposed to occur in potential northern spotted owl foraging, roosting, or nesting habitat, the following action shall be implemented prior to management activities:	Contractor working with qualified northern spotted owl biologist	The District	Areas within 0.25-mile of where northern spotted owls could forage, roost, or next	**Before Activity:** (1) Consult GIS layers to determine if a project would occur in northern spotted owl activity areas, (2) conduct surveys to evaluate habitat if work is to occur in a forest that could support northern spotted owls **During Activity:** Alter habitat as specified in measure, avoid woodrat stick nests **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Habitat alteration within core use areas (nesting and roosting habitat) shall be planned and conducted under the guidance of a qualified northern spotted owl biologist. Opportunities to conduct vegetation management to enhance development of late- successional characteristics or to meet other restoration goals in a manner compatible with retaining resident northern spotted owls shall be evaluated and implemented. Restoration activities conducted near northern spotted owl sites shall first focus on areas of younger forest less likely to be used by northern spotted owls and less likely to develop late-successional forest characteristics without vegetation management. Vegetation management projects shall be designed to include a mix of disturbed and undisturbed areas, retention of woody debris, and development of understory structural diversity to maintain small mammal populations across the landscape. • Presumed active woodrat stick nests (i.e., with visible signs of activity as determined by the qualified biologist) would be temporarily demarcated during surveys by the qualified biologist. Woodrat stick nests and areas around the nests, shall be avoided during vegetation management activities. Any flagging or other markings would be removed following the activity.					
Impact Biology-1 **MM Biology-17: Protection of California Giant Salamander** Immediately prior to the use of heavy equipment, any other ground disturbing Plan activities, or prescribed (pile and broadcast) burning within 50 feet of a stream or within riparian habitat, a clearance survey for California giant salamander shall be conducted by an individual trained in the identification of the species. Any identified California giant salamander shall be relocated (by a qualified biologist in possession of a valid Scientific Collecting Permit, or appropriate permit at the time of work if listing status changes) to a suitable nearby location at least 250 feet from the original location. Alternatively, the activity may be delayed until the salamander has left the area on its own.	Contractor working with trained individual and qualified biologist	The District	Activities (not including manual methods or planting) within 50 feet of a stream or within riparian habitat	**Before Activity:** (1) Survey for the species, (2) move any individuals found in the work footprint prior to conducting activities **During Activity:** N/A **After Activity:** N/A	
Impact Biology-1: Implement Mitigation Measures MM Geology-1, MM Geology-3, and MM Hydrology-1 (see below)					
Impact Biology-2: Implement Mitigation Measures MM Biology-1, MM Biology-2, MM Biology-3, and MM Biology-4 (see above), MM Geology-1 and MM Geology-3 (see below), and Best Management Practices BMP-1 through BMP-7 (see above).					
Impact Biology-2 **MM Biology-15: Protection of Wetlands** All projects involving mowing with heavy equipment or mechanical removal with heavy equipment shall be evaluated by a qualified biologist prior to initiation of the work. If the biologist determines that the project would occur in an area where wetlands are known or potentially present, the following avoidance and minimization measures shall be implemented: • Prior to mowing or mechanical removal, all wetlands in the disturbance area shall be flagged (or otherwise demarcated) and heavy equipment shall not operate within the flagged area(s); or • Heavy equipment may be operated in a seasonal wetland only when the wetland is dry (as determined by the biologist); or • Only heavy equipment designed to operate within wet or saturated soils may be used. The equipment must be able to operate without causing rutting, compaction of soils, or other soil and topography disturbances. If rutting or soil compaction occurs, these areas shall be restored prior to the wet season.	Contractor working with qualified biologist	The District	Areas where wetlands could occur	**Before Activity:** (1) Biologist reviews work areas to determine if work could occur in a wetland, (2) if yes, areas of wetlands shall be flagged for avoidance prior to conducting work **During Activity:** Use only equipment designated for use in wet, saturated soils **After Activity:** Restore any rutting before the wet season	
Impact Biology-2 **MM Biology-16: Protection of Native Grasslands** All projects involving mowing with heavy equipment, mechanical removal with heavy equipment, or grazing shall be evaluated by the District's biologist prior to initiation of the work. For the purposes of this measure, a native grassland community is defined as an area with a relative cover or absolute	Contractor working with the District's biologist	The District	Areas where mowing, heavy equipment, or grazing could be used in sensitive grasslands	**Before Activity:** Biologist reviews work areas to determine if work could occur in a sensitive grassland, (2) if yes, areas sensitive communities	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
cover of native grasses that meets the "Membership Rules" defined in a Manual of California Vegetation (Sawyer, Keeler-Wolf, & Evens, 2009), and that has a minimum stand size of 0.25-acre. If the biologist determines that the project would occur in an area where native grassland communities are known or potentially present, the following avoidance and minimization measures shall be implemented: • Prior to mowing or mechanical removal, all native grassland communities in the disturbance area shall be identified. The District biologist shall then evaluate if the proposed activity may be detrimental to the grassland area. At a minimum, MM Biology-3 shall be implemented to prevent the spread of invasive species. As needed, the District biologist may also require the following: - Flagging the boundaries of the sensitive grassland area and heavy equipment shall not operate within the flagged area(s); or - Heavy equipment may be operated in the area only after the grasses have gone to seed and when soils are dry; or - Monitoring of the grassland area following the disturbance to ensure that the cover of native grasses has not been altered by the activity, and the implementation of restoration activities as needed.				shall be flagged for avoidance prior to conducting work **During Activity:** Avoid flagged areas and only enter the sensitive grasslands after grasses have gone to seed when soils are dry **After Activity:** Monitor the grassland areas following the disturbance for any changes in its size or composition	
Impact Biology-3: Implement Mitigation Measure MM Biology-1 (see above), MM Geology-3 and MM Hydrology-1(see below)					
Impact Biology-4: Implement Mitigation Measures MM Biology-3, MM Biology-5, MM Biology-6, MM Biology-7, MM Biology-8, and MM Biology-9 (see above), MM Geology-1, MM Geology-3, and MM Hydrology-1 (see below)					
Impact Biology-Cumulative: Implement Mitigation Measures MM Biology-1, MM Biology-2, MM Biology-3, MM Biology-4, MM Biology-5, MM Biology-6, MM Biology-7, MM Biology-8, MM Biology-9, and MM Biology-10 (see above), MM Geology-1, MM Geology-3, and MM Hydrology-1 (see below)					
Cultural and Tribal Cultural Resources					
Impact Cultural Resources-1 **MM Cultural-1: Cultural Resources Training** All employees and contractors shall receive cultural resource training conducted by a qualified cultural resources specialist (e.g., an archaeologist or tribal monitor, if appropriate) prior to working on BFFIP projects. For tracking purposes, a list of individuals who have received training shall be maintained at the District headquarters. The training shall address appropriate work practices necessary to effectively implement the mitigation measures (MM Cultural-2, -3, and -4), for historical resources, archaeological resources, tribal cultural resources, and human remains. The training shall address the potential for exposing subsurface resources, recognizing basic signs of a potential resource, understanding required procedures if a potential resource is identified including reporting the resource to a qualified archaeologist or cultural resources specialist, and understanding all procedures required under Health and Safety Code § 7050.5 and PRC §§ 5097.94, 5097.98, and 5097.99 for the discovery of human remains.	Contractor working with qualified cultural resources specialist	The District	BFFIP Area	**Before Activity:** Train employees and contractors how to implement the mitigation measures (MM Cultural-2 through MM Cultural-4) **During Activity:** N/A **After Activity:** N/A	
Impact Cultural Resources-1 **MM Cultural-2: Known Cultural Resources and Pre-Activity Surveys** The District shall maintain a confidential GIS database of all survey areas and discovered historic and archaeological resources in the BFFIP area. In the event that a Native American tribe identifies a prehistoric trail alignment on District land, the alignment shall be added to the confidential GIS database. Prior to conducting any work associated with the BFFIP, the work areas shall be compared against the GIS data to determine if the area has been previously surveyed and if it has been surveyed, if any historic or archaeological resources are found in the work area. Any resources that have not been evaluated shall be assumed eligible for listing in the CRHR and assumed significant.	Contractor working with qualified archaeologist; the District	The District	BFFIP Area	**Before Activity:** Consult the GIS cultural resources layer for the presence of recorded sites **During Activity:** (1) Avoid recorded resources or impacts on resources or use only hand methods in resource areas, (2) Examine area where piles are proposed for resources **After Activity:** Remove resource delineators	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
If the GIS data shows that the areas where soil -disturbance below the surface through use of heavy equipment, or burning is proposed have not been previously surveyed, consultation with the Tribe shall occur. Notification with maps of the location of work shall be provided to a Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site. A pre-activity cultural resources survey shall be conducted by a qualified archaeologist or cultural resources specialist in accordance with industry standards prior to performing work, unless vegetation is too dense making a survey impossible. In the event vegetation is too dense, making a pre-activity survey challenging or impossible, the training conducted under MM Cultural-1, shall be sufficient to permit work to be conducted using only manual techniques accessed on foot. If historical or archaeological resources are located in the work area (either as identified in previous surveys or during pre-activity surveys), the resource, plus a 50-foot buffer, shall be avoided. For resources that are not readily evident in the field, the boundaries around the resource shall be temporarily marked such as with fencing or flagging. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the resource can be evaluated for eligibility for the CRHR and reviewed by a tribal monitor to determine whether it constitutes a tribal cultural resource, if the resource is archaeological. If found ineligible and not a tribal cultural resource, work could proceed as normal. If found eligible or to be a tribal cultural resource, impacts on the resource must be avoided (through total avoidance of the area, or through use of hand methods only in the area of the resource, as described here). After work is completed, all cultural resource delineators (flags, fencing) shall be removed in order to avoid potential vandalism, unauthorized excavation(s), etc. Prior to stashing slash for pile burning, the areas where piles are proposed for location shall be examined by the workers creating the piles to ensure that no resources are located on the ground surface under the piles. All workers shall be trained in the identification of cultural resources. If a potential resource is identified, piles for burning shall be moved to avoid the resource(s) and MM Cultural-3 implemented.					
Impact Cultural Resources-1 **MM Cultural-3: Previously Unidentified Cultural Resources** In the event that a previously unidentified cultural resource is discovered during implementation of an activity all work within 165 feet (50 meters) of the discovery shall be halted. The resource shall be located, identified, and recorded in the District's cultural resources GIS identified in MM Cultural-2. Data regarding archaeological resources shall be shared with Native American tribes identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/ archaeologist shall evaluate the resource and determine whether it is: • Eligible for the CRHR (and a historical resource for purposes of CEQA), • A unique archaeological resource as defined by CEQA, and/or • A potential tribal cultural resource (all archaeological resources could be a tribal cultural resource). If the cultural resources specialist/archaeologist determines that the resource could be a tribal cultural resource, he or she shall, within 48 hours of the discovery, notify each Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site of	Contractor working with qualified archaeologist	The District	BFFIP Area	**Before Activity:** N/A **During Activity:** (1) Cease activity if a cultural resource is uncovered, (2) Avoid resource if possible, (3) Evaluate and determine whether the resource is eligible, unique, or could be a tribal cultural resource, (4) If the resource could be a tribal cultural resource, notify Native American tribe identified by the NAHC to be traditionally and culturally affiliated with the geographic area of the project site, (5) If the resource is not eligible, unique, and/or a tribal cultural resource, work may commence, (6) If the resource is eligible, unique, and/or a tribal cultural resource, work remains halted and a method selected to ensure that adverse change to the resource does not occur, (7) Preserve	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
the discovery. A tribal monitor shall inspect the resource to determine whether it constitutes a tribal cultural resource. If the resource is determined to be neither a unique archaeological, an historical resource, or a potential tribal cultural resource, work may commence in the area. If the resource meets the criteria for either a historical resource, unique archaeological resource, and/or tribal cultural resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the District staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). The responding tribes shall be given an opportunity to participate in determining the appropriate mitigation methods for tribal cultural resources in consultation with the District. Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System (CHRIS). Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archaeologist and tribal monitor, for tribal cultural resources.				in place if possible, (8) If not possible to preserve in place, and as deemed appropriate by the qualified cultural resource specialist/archaeologist and tribal monitor, for tribal cultural resources, recover and record cultural materials. Once recovered and recorded, the activity can commence in this area. **After Activity:** Ensure resource has been appropriately recorded in District's cultural resources GIS.	
Impact Cultural Resources-2 **MM Cultural-4: Human Remains** The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity within the proposed plan area shall comply with applicable State laws. • If human remains are at any time noted during activities around MRN-496/P-21-000445 or in the plan area, work shall be halted within 165 feet (50 meters) of the discovery. The professional archaeologist and the District shall notify the Marin County Coroner's office as prescribed in Public Resources Code §5097.98 and Health and Safety Code §7050.5. • In the event of the coroner's determination that the human remains are Native American, notification of the Native American Heritage Commission is required, who shall appoint a Most Likely Descendant (MLD) (PRC §5097.98). • The human remains shall be protected until a decision is reached on the final disposition of the remains. • The District, the professional archaeologist, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. If the MLD and the other parties do not agree on the disposition of the remains, the reburial method shall follow PRC §5097.98(b) which states that: .. . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.	Contractor, coroner, the District, the professional archaeologist, the MLD	Marin Municipal Water District	BFFIP Area	**Before Activity:** N/A **During Activity:** (1) Avoid known location of human remains, (2) Cease activity if human remains are uncovered, (3) Appoint a Most Likely Descendant, (4) Protect human remains until a decision is reached, (5) If avoidance is not possible, the District, professional archaeologist, and MLD, remove human remains and associated or unassociated funerary objects from the location and move to selected location in accordance to decision reached. Once moved then the activity can commence again in this area. **After Activity:** N/A	
Impact Cultural Resources-3: Implement Mitigation Measures MM Cultural-1, MM Cultural-2, MM Cultural-3, and MM Cultural-4 (see above)					
Impact Cultural Resources-Cumulative: Implement Mitigation Measures MM Cultural-1, MM Cultural-2, MM Cultural-3, and MM Cultural-4 (see above)					

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Geology and Soils					
Impact Geology and Soils-1 **MM Geology-1: Erosion Control and Slope Stability Measures** Best management practices (BMPs) for forestry shall be implemented to ensure vegetation management does not result in erosion, loss of topsoil, or slope instability in areas where work could result in the exposure of bare soils or the loss of root-soil matrix strength. If groundcover is determined to be less than 70 percent[a] following work, then BMPs, as identified here, shall be implemented. Prior to conducting work in any given area under any management action that could result in erosion or slope instability (e.g., broadcast burns, tree removal, weed removal, or forest treatments that could reduce the groundcover and expose soil) the area shall be inspected for existing signs of erosion or slope instability (e.g. rills, slumped soil). Depending on the slope and the downslope resources (roads that could be impacted if a slope failed, waterbodies or habitat that could be impacted from erosion, important habitat, etc.), erosion and slope stabilization measures shall be determined prior to implementation of work, based on the list below. Generally, if an action would expose soils (groundcover less than 70 percent), then measures to protect soils, minimize erosion, and prevent slope instability shall be implemented. The measures to be implemented shall depend on the site's specific characteristics and the type and extent of vegetation management work to be performed. The inspection and determination of appropriate measures shall be made by personnel with knowledge and experience in the application of erosion and slope stabilization BMPs through training or field experience with BMP installation. The personnel shall memorialize in writing their field observations, and corresponding recommendations regarding installation of BMPs. The following measures shall be implemented during work, if the activity would reduce groundcover by 70 percent or more and as applicable: • Minimize areas to be disturbed to the greatest extent feasible • Avoid use of heavy equipment on slopes greater than 30 percent • Shut down use of heavy equipment, skidding, and truck traffic when soils become saturated and unable to support the machines • Sow native grasses and other herbs on denuded areas where natural colonization or other replanting shall not occur rapidly; use slash or chips to prevent erosion on such areas • Use surface mounds, depressions, logs, rocks, trees and stumps, slash and brush, the litter layer, and native herbaceous vegetation downslope of denuded areas to reduce sedimentation and erosion, as necessary to prevent erosion or slope destabilization • Stabilize steep slopes (i.e., greater than 30 percent) with mats or natural materials after tree removal or weed removal and prior to planting, where soils are exposed and could erode • Broadcast burns shall be performed outside of perennial and intermittent streams, and riparian forest/woodland. A 50-foot buffer around perennial and intermittent streams shall be maintained when the broadcast burn is proposed on a slope greater than 30 percent and upslope of the stream • Install approved erosion control measures and non-filament-based geotextiles when: - conducting substantial ground disturbing work (i.e., use of heavy equipment, pulling large vegetation) within 100 feet[b] and upslope of currently flowing or wet wetlands, streams, lakes and riparian areas; - causing soil disturbance on moderate to steep (10 percent slope and greater) slopes; and - following the removal of invasive plants from stream banks to prevent sediment movement into watercourses and to protect bank stability.	Contractor	The District	Any areas where the ground is disturbed and soils are exposed through vegetation management actions	**Before Activity:** Inspect areas for treatment prior to treatment to assess the potential for erosion and soil instability **During Activity:** Implement the protection measures as needed to avoid or minimize erosion and slope instability **After Activity:** Conduct inspections as needed after actions, depending on the size and nature of the work and the site, to ensure that erosion is not occurring and to remove any erosion control devices once they are no longer needed	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Sediment control devices, if installed, shall be certified weed-free, as appropriate. Sediment control devices shall be inspected daily to ensure that they are in good repair and working as needed to prevent sediment transport into the waterbodies (and repaired as needed) • Prior to conducting ground disturbing work the weather forecast shall be consulted; No substantial ground disturbing work (i.e., use of heavy equipment, pulling large vegetation) shall occur during rain events and 48 hours after a rain event, defined as 0.5 inch of rain or greater within a 48-hour period, or until soils are determined to not saturated Once work is completed the areas shall be inspected as needed and as accessible but at least annually until groundcover exceeds 70 percent and it is clear that significant erosion and slope instability are not occurring. At that time, erosion control and slope stability devices shall be removed.					
Impact Geology and Soils-1 **MM Geology-2: Fire Lines During Broadcast Burns** One or more of the following measures shall be implemented during broadcast burns to reduce erosion from fire lines: • Use existing barriers such as roads, trails, or wet lines as fire lines • Restore fire lines upon completion of the burn if they would not be used again (unless they are existing roads, trails, or other permanent elements). Utilize erosion control measures, such as sediment traps, during restoration to reduce sedimentation impacts. Restoration shall occur prior to one month after the fire line was created, assuming the fire line will not be used by another burn in the same year • Design broadcast burn boundaries to avoid gullies and highly erodible soils to the fullest extent possible	Contractor	The District	Broadcast burn areas	**Before Activity:** Determine fire lines **During Activity:** Set up provisions as specified in the measure **After Activity:** Restore fire lines upon completion of work	
Impact Geology and Soils-1 **MM Geology-3: Grazing Land and Trail Control** Methods shall be implemented to reduce the possibility that grazing trails form include the following: • Prohibit grazing within 100 feet of lakes/reservoirs, creeks, streams, riparian corridors, and wetlands. Install fencing 100 feet from streams and riparian areas to exclude livestock • Implement methods, which could include rotating or providing multiple feeding areas, to minimize congregation of animals in any one location • Limit the number of animals spent grazing in a particular sized area, using the stocking rate equation taking into account days assumed to graze, slope, yield of the land, number of animals, weight of animals, and other appropriate factors • Conduct surveys of the grazing area during active grazing, identify if trails or other erosion features are forming • Ensure there are appropriate rest periods between grazing in any one area to allow regrowth of plants • If grazing trails or damaged areas form, the bare area shall be remediated by decompacting the soil and discontinuing grazing in the area until the trails are revegetated • Install off-stream watering tanks • Install fencing to exclude livestock from grazing on steep slopes (generally slopes with more than 30 percent grade), unless accounted for in stocking rate equation • During surveys of active grazing, conduct ongoing surveillance of installed erosion control features around riparian areas and fences around riparian areas • Repair damaged fencing or erosion control features as necessary	Contractor	Marin Municipal Water District	Grazing areas	**Before Activity:** Install fencing as needed **During Activity:** (1) Limit number of animals in an area based on appropriate calculations and minimize congregation of animals in any one location, (2) Repair damaged fencing or erosion control features, and (3) Conduct surveys during grazing to identify problem areas **After Activity:** (1) Permit appropriate rest periods after grazing, and (2) Remediate any bare areas	
Impact Geology and Soils-2: Implement Mitigation Measures MM Geology-1, MM Geology-2, and MM Geology-3 (see above)					

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Impact Geology and Soils-Cumulative: Implement Mitigation Measures MM Geology-1, MM Geology-2, and MM Geology-3 (see above)					
Greenhouse Gas Emissions					
Impact GHG-1: Implement Mitigation Measure MM Air-1					
Impact GHG-2: Implement Mitigation Measure MM Air-1					
Impact GHG-Cumulative: Implement Mitigation Measure MM Air-1					
Hazardous Materials and Fire Hazards					
Impact Hazards-1 **MM Hazards-1: Spill Prevention and Response** The District shall, at a minimum, implement best management practices that address the following procedures related to the use of hazardous materials during construction: • Proper disposal or management of contaminated soils and materials (i.e., clean up materials) • Daily inspection of vehicles and equipment for leaks and spill containment procedures • Emergency response and reporting procedures to address hazardous material releases • Emergency spill supplies and equipment shall be available to respond in a timely manner if an incident should occur • Response materials such as oil-absorbent material, tarps, and storage drums shall be available in the plan area at all times during management activities and shall be used as needed to contain and control any minor releases • The absorbent material shall be removed promptly and disposed of properly • Use of secondary containment and spill rags when fueling • Discourage "topping-off" fuel tanks • All workers shall be trained on the specific procedures for hazardous materials and emergency response as an element of the required worker environmental training prior to working in the plan area	Contractor and the District	The District	BFFIP Area	**Before Activity:** N/A **During Activity:** (1) Implement appropriate best management practices that limit the potential for spills, (2) Cleanup any inadvertent spills appropriately **After Activity:** N/A	
Impact Hazards-2 **MM Hazards-2: Avoidance of MVAFS Hazards** Workers shall avoid all existing and former buildings and facilities within MVAFS or until the site is found to not have contamination in excess of background levels.	Contractor	The District	Projects within MVAFS	**Before Activity:** N/A **During Activity:** Avoid existing and former buildings and facilities when conducting weed removal activities **After Activity:** N/A	
Impact Hazards-4: Implement Mitigation Measures MM Hazards-1 (see above) and MM Hazards-3 (see below) **MM Hazards-3: Fire Risk Reduction for Stockpiling and Pile Burning** Piles shall not be burned during the fire season. Pile burning shall only be allowed on days when fire is less likely to spread (e.g., wind speeds are less than 15 mph). All requirements of the BAAQMD shall be met, including any permit, notification, and reporting requirements. Public notification shall be provided at least 24 hours in advance of a burn to individuals within 1 mile and at trailheads and fire roads leading to the area with piles proposed for burning. The public notification shall include current contact numbers to the appropriate burn coordinator.	Contractor	The District	Wherever stockpiles of slash are made and piles burned	**Before Activity:** Notify public and obtain all permits and make all necessary notifications as required by BAAQMD and MCFD **During Activity:** (1) Ensure that piles are away from highly ignitable areas (2) Ensure proper weather conditions during pile burning (3) Ensure proper fire-fighting equipment is on-hand during pile burning **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Impact Hazards-4 **MM Hazards-4: Prescribed Burn Plan** Prescribed Burn Plans shall be prepared for each broadcast burn project or for a larger area covering several planned projects. The Prescribed Burn Plan shall include the following information, at a minimum: • Project purpose and predicted outcome • Project location • Fuel conditions (discussion of types of plants and trees within and adjacent to project area) • Allowable atmospheric conditions and times to conduct the burn for safety and smoke dispersal (i.e., wind speeds, temperature, humidity, moisture of vegetation). Prescribed Burn Plans shall specify that burns generally occur: - After the morning inversion layer and before the evening inversion layer - When the atmosphere is neutral to unstable - During the day, to avoid nighttime inversion layers - When wind speeds are high enough that the air is not stagnant (i.e., 5 mph) and low enough that the broadcast burn can be managed safely • Avoidance of high fire danger days (e.g., Red Flag Days and Fire Weather Watch) Have fire suppression crews on-site from the start of the fire season determined by CAL FIRE (usually mid-May to early June) to the end of fire season (mid-November) during broadcast and pile burns • The broadcast burn specialist shall determine an appropriate buffer between flammable infrastructure or buildings and the broadcast burn, which is dependent upon the types of vegetation burned, moisture, weather, and topography • Event day logistics (numbers and types of personnel and equipment required, personal protective equipment) • Contingency plans (i.e., location and response time of emergency response, secondary fire lines) • Public notification at least 24 hours in advance of the burn to individuals within 1.5 miles and at trailheads and fire roads leading to the area proposed for burning. The public notification shall include current contact numbers to the appropriate burn coordinator • Agency notification and coordination as required • Requirements of BAAQMD and MCFD	Contractor	The District	Broadcast burn projects	**Before Activity:** (1) Prepare Prescribed Burn Plan including all identified details, (2) Notify the public at least 24 hours prior to broadcast burn and obtain necessary permits form or provide necessary notifications to MCFD and BAAQMD, (3) Arrange for appropriate crew and equipment to be on-site **During Activity:** Implement Prescribed Burn Plan **After Activity:** N/A	
Impact Hazards-4 **MM Hazards-5: Roads and Trails Around Broadcast Burns** **Trails and District-Use-Only Roads** District-use-only roads and trails shall be closed to public recreational access if determined to be necessary in accordance with the burn-specific Burn Plan and/or Incident Action Plan. District-use-only roads and trails shall be posted and blockaded with temporary fencing or the like, if closures are needed. Notices of closures shall be posted at the trail heads and on the District's website, when needed. Additional measures such as staffing trail head closures can be implemented as needed. **Public Roads** If possible, public roads within 500 feet of the outermost edges of a broadcast burn shall be closed in coordination with the appropriate agency (e.g., Caltrans, Marin County). In the event this is not feasible, due to volume of traffic or lack of alternative routes, a Traffic Control Plan shall be prepared and	Contractor	The District	Within 500 feet of the outer edges of a broadcast burn	**Before Activity:** (1) Post notices of closures at trailheads and online, (2) Prepare Traffic Control Plan **During Activity:** (1) Place blockades along District-use-only roads and trails, (2) staff closures of District-use-only roads and trails, if needed, (3) Implement Traffic Control Plan for public roads adjacent to broadcast burns **After Activity:** Remove blockades and signage	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
adopted, in coordination with the appropriate agency. The Traffic Control Plan shall include the following at a minimum: • Requirement to coordinate with local law enforcement (e.g., County Sheriff, California Highway Patrol) • Installation of temporary signage at intervals ahead of and adjacent to the broadcast burn indicating that a broadcast burn is in progress • Use of flaggers to slow traffic during the burn or stop traffic if wind conditions shift, resulting in smoke crossing the road					
Impact Hazards-4 **MM Hazards-6: Propane Flaming Training** Workers shall be trained prior to use of a propane torch. The training shall specify that, at a minimum, areas treated with a propane torch shall be monitored until it is clear that no smoke, smoldering vegetation, or flames are present.	Contractor	The District	In areas treated with a propane torch	**Before Activity:** Train workers for safe use of a propane torch **During Activity:** Monitor areas where propane flaming has been used for potential fires prior to leaving **After Activity:** N/A	
Impact Hazards-4: Implement Mitigation Measures MM Air-4 (see above) and MM Hazards-7 (see below) **MM Hazards-7: Fire Ignition and Spread Reduction** The following provisions shall be implemented during all management actions that involve the use of equipment that can generate sparks or heat: • Maintain fire suppression equipment in work vehicles • Closely monitor for ignited vegetation from equipment and tool use • Observe Red Flag Day and Fire Weather Watch warnings • Train workers to properly handle and store flammable materials, minimize potential ignition sources • Prohibit smoking in any vegetated areas	Contractor	The District	BFFIP Area	**Before Activity:** N/A **During Activity:** Ensure that measures are being implemented **After Activity:** N/A	
Impact Hazards-5: Implement Mitigation Measures MM Hazards-1, MM Hazards-3, MM Hazards-4, MM Hazards-5, MM Hazards-6, MM Hazards-7, and MM Air-4 (see above)					
Impact Hazards-6: Refer to individual analyses of MA-20 and MA-21 for application of mitigation measures pertinent to installation of fuelbreaks.					
Impact Hazards-7: Implement Mitigation Measures MM Geology-1 and MM Geology-2 (see above)					
Impact Hazards-Cumulative: Implement Mitigation Measures MM Geology-1, MM Geology-2, MM Hazards-3, and MM Air-4 (see above)					
Hydrology and Water Quality					
Impact Hydrolgoy-1 **MM Hydrology-1: Water Quality Protection During Waterway Crossing or Work Near Waterbodies** Vehicles and heavy equipment shall avoid instream crossings. If instream (waterway) crossings must occur because no other options for access are reasonably available, the crossing shall be performed when the stream is dry and soils are not saturated. The crossing shall be performed in a way that does not result in any permanent alteration of the stream bank or bed (e.g., choosing areas with stable soils and the least slope or with vegetation to protect the bed and bank). If water is flowing or the stream has flow or saturation, temporary plates or the equivalent shall be installed from bank to bank so for equipment to access across the waterway. If an instream crossing that could impact the bank or bed or riparian vegetation is needed, the crossing shall only be performed after and in accordance with the appropriate 1600 Streambed Alteration permit from CDFW and Section 404 and 401 Clean Water Act	Contractor	The District	Anywhere vehicles and heavy equipment must cross streams or creeks	**Before Activity:** (1) Obtain permits, (2) install plates or record vegetative conditions, as appropriate **During Activity:** Minimize soil or vegetation disturbance, as appropriate **After Activity:** Restore crossing area	

<table>
<tr><th>Best Management Practice and Mitigation Measure</th><th>Implementation Responsibility</th><th>Monitoring Responsibility</th><th>Applicable Locations</th><th>Timing and Performance Standards</th><th>Compliance Verification</th></tr>
<tr><td colspan="6">permits. All soils shall be restored after the instream crossing and banks revegetated after the work is completed, in accordance with permits.</td></tr>
<tr><td colspan="6">Impact Hydrolgoy-1: Implement Mitigation Measures MM Geology-1, MM Geology-2, MM Geology-3, and MM Hazards-1 (see above)</td></tr>
<tr><td colspan="6">Impact Hydrolgoy-3: Implement Mitigation Measures MM Hydrology-1, MM Geology-1, MM Geology-2, MM Geology-3, and MM Hazards-1 (see above)</td></tr>
<tr><td colspan="6">Impact Hydrology-Cumulative: Implement Mitigation Measures MM Hydrology-1, MM Geology-1, MM Geology-2, MM Geology-3, and MM Hazards-1 (see above)</td></tr>
<tr><td colspan="6">Noise</td></tr>
<tr><td>Impact Noise-1: Implement Mitigation Measures MM Air-3 and MM Hazards-5 (see above), and MM Noise-1 (see below)
MM Noise-1: Noise Reduction Measures
Work Timeframe Restrictions Near Sensitive Receptors
Work within 180 feet of a sensitive receptor shall only occur Monday through Friday from 7 am to 6 pm and Saturdays from 9 am to 5 pm, with no work allowed on Sundays or holidays, to follow the requirements of the Marin Countywide Plan (NO-1.i).
Near Residences and Ranger Residences
For activities that occurs in any one location (1,000 square foot area) for longer than 5 days within a 30-day period, the following noise buffers for equipment shall be implemented:
<table><tr><th>Equipment</th><th>Buffer Between Equipment and Sensitive Receptors (feet)</th></tr><tr><td>Backhoe/ Brushcutter</td><td>80</td></tr><tr><td>Chainsaw/ Excavator</td><td>113</td></tr><tr><td>Chipper</td><td>180</td></tr><tr><td>Generator/ Water pump</td><td>127</td></tr><tr><td>Fire engine</td><td>71</td></tr><tr><td>Leaf blower</td><td>64</td></tr><tr><td>Skid steer</td><td>90</td></tr></table>• If these restrictions are not implementable between residences and a given location, the District shall notify the resident or contact at the sensitive receptor within 1 week of conducting the work. Work shall be coordinated to minimize disturbance to the receptor, such as conducting the work when no one is there. Noise barriers or other means could also be used, if necessary, to keep noise levels below 70 dBA. The District shall designate a disturbance coordinator to address any noise complaints under these circumstances.
• If these restrictions are not implementable between ranger residences and a given location, the District shall coordinate work with rangers at ranger residences to conduct work lasting more than 5 days within a 30-day period, to a time when rangers are not in the residences or when they would not be disturbed by the noise.
Near Cushing Memorial Amphitheater
• Coordinate with operators at Cushing Memorial Amphitheater to conduct work outside of event times.
Near Schools</td><td>Contractor and the District</td><td>The District</td><td>BFFIP Area</td><td>Before Activity: (1) Notify affected parties 1 week before, if applicable; (2) Conduct noise study, if desired
During Activity: (1) A designated coordinator shall ensure setbacks or other conditions are implemented: (2) Maintain buffer between receptor and equipment, if needed
After Activity: N/A</td><td></td></tr>
</table>

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
• Coordinate work with Deer Park School and the San Anselmo Children's Center to occur when classes or other instructional activities are not occurring for any work involving mechanical/powered equipment that would last longer than 1 day and could cause noise to exceed 70 dBA at the school or childcare center. **Noise Study** If the District, based on their extensive history of conducting vegetation management activities, questions whether a noise level of 70 dBA may actually be exceeded by equipment at a sensitive receptor per the analysis in this section, the District may undertake a noise study to measure actual noise levels from equipment used during management actions to recalibrate the distances listed here. The noise study would be conducted by a noise consultant to industry standards. Resultant noise levels at sensitive receptors cannot exceed 70 dBA if the work lasts for more than 10 days near residences, ranger residences, and Cushing Memorial Amphitheater, or for more than 1 day near a school.					
Impact Noise-Cumulative: Implement Mitigation Measure MM Noise-1 (see above)					
Recreation					
Impact Recreation-1: Implement Mitigation Measures MM Hazards-5 (see above) and MM Recreation-1 (see below) **MM Recreation-1: Protection of Recreationalists Along Trails and Roads** The following measures shall be implemented when management actions require heavy equipment or generate other hazardous conditions along roads and trails: • Close roads or trails when they are being used regularly by heavy trucks, transporting heavy equipment, or other large equipment that poses a hazard to recreationalists. • Provide a road guard to usher recreationalists around hazards where work could impede on a road or trail, such as for stockpiling removed trees or vegetation. • Provide fencing to protect recreationalists from active work, as necessary. • Provide signage at trailheads at least one week prior to closure indicating that work may be occurring along the trails and for recreationalists to use caution.	Contractor	The District	Anywhere that implementation of management actions could pose a hazard to recreationalists	**Before Activity:** Post notices at least one week prior to trail closure **During Activity:** Use road guards, fences, or implement closures as appropriate as work is being conducted **After Activity:** Remove signage, as appropriate	
Impact Recreation-Cumulative: Implement Mitigation Measure MM Recreation-1 (see above)					
Transportation					
Impact Transportation-2: Implement Mitigation Measures MM Recreation-1 and MM Hazards-5 (see above)					
Impact Transportation-3 **MM Transportation-1: Emergency Access** The District shall ensure emergency access to the plan area along public roads is maintained during work. The following measures shall be implemented to ensure access is maintained: • In the event of an emergency, roads blocked or obstructed for maintenance activities shall be cleared to allow the vehicles to pass. • The District shall use road guards equipped with two-way radios during temporary lane or road closures. During an emergency, road guards will radio to the crew to cease operations and reopen the road to emergency vehicles. • All District authorized vehicles at the treatment site shall be parked so they do not block roads when there is no operator present to move the vehicle. The District shall contact the fire district or other emergency response agency with jurisdiction over the road subject to temporary closure to ensure that the agency is notified of the closure in advance.	Contractor and the District	The District	All locations on district lands where roads or trails may be blocked to perform work	**Before Activity:** N/A **During Activity:** Inform emergency responders of road closures and ensure road guards, and crew are equipped with two-way radios **After Activity:** N/A	

Best Management Practice and Mitigation Measure	Implementation Responsibility	Monitoring Responsibility	Applicable Locations	Timing and Performance Standards	Compliance Verification
Impact Transportation-Cumulative: Implement Mitigation Measure MM Transportation-1 (see above)					

This page is intentionally left blank.

MARIN WATER

UPCOMING MEETINGS

This schedule lists upcoming board and committee meetings as well as upcoming agenda items for the next month, which may include Board interest in adding future meeting items. The schedule is tentative and subject to change pending final publication and posting of each meeting agenda.

Internal Meetings		
Meeting Date	**Meeting Type**	**Key Item(s)**
Thursday, Jun. 18, 2026 5:00 p.m.	Special Meeting of the Board of Directors (Watershed Committee)	Road and Trail Management Plan Update
Thursday, Jun. 25, 2026 9:30 a.m.	Finance & Administration Committee Meeting	
Tuesday, Jun. 30, 2026 9:30 a.m.	Planning Committee Meeting/Special Meeting of the Board of Directors	Valve Actuator Project, and Palm Avenue Pipeline Replacement Project (FFIP)
Tuesday, Jul. 7, 2026 5:00 PM	Board of Directors' Regular Bi-Monthly Meeting	Water Supply Update, and Dam Safety Program Update

External Meetings	
Meeting Date	**Meeting Type**
Wednesday, Jun. 17, 2026 3:00 p.m.	Tomales Bay Foundation Meeting
Monday, Jun. 29, 2026 9:30 a.m.	North Bay Water Reuse Authority Board Meeting
Friday, Jul. 10, 2026 9:30 a.m.	North Bay Watershed Association Board Meeting