

NORTH MARIN WATER DISTRICT

AGENDA – REGULAR MEETING April 20, 2021 – 6:00 p.m. Location: Virtual Meeting Novato, California

Information about and copies of supporting materials on agenda items are available for public review at 999 Rush Creek Place, Novato, at the Reception Desk, or by calling the District Secretary at (415) 897-4133. A fee may be charged for copies. District facilities and meetings comply with the Americans with Disabilities Act. If special accommodations are needed, please contact the District Secretary as soon as possible, but at least two days prior to the meeting.

ATTENTION: This will be a virtual meeting of the Board of Directors pursuant to Executive Order N-29-20 issued by the Governor of the State of California.

There will not be a public location for participating in this meeting, but any interested member of the public can participate telephonically by utilizing the dial-in information printed on this agenda.

Video Zoom Method								
CLICK ON LINK BELC	W:		SIGN IN TO ZOOM:					
Go to: https://us02web.zoom.	us/j/8349174264	OR	Meeting ID: 8349174264					
Password: 466521			Password: 466521					
Call in Method:								
Dial: +1 669 9 +1 253 2 +1 346 2 +1 301 7 +1 312 6 +1 646 5 Meeting Participa Passwor	000 9128 215 8782 248 7799 215 8592 326 6799 358 8656 ID: 834 917 426 ant ID: # d: 466521#	4#						
For clarity of discussion, the Public is requested to MUTE except:								

2. Public comment period on agenda items.

Please note: In the event of technical difficulties during the meeting, the District Secretary will adjourn the meeting and the remainder of the agenda will be rescheduled for a future special meeting which shall be open to the public and noticed pursuant to the Brown Act.

Est. Time	ltem	Subject
6:00 p.m.	nom	CALL TO ORDER
	1.	APPROVE MINUTES FROM REGULAR MEETING, April 6, 2021
	2.	GENERAL MANAGER'S REPORT
	3.	OPEN TIME: (Please observe a three-minute time limit)
		This section of the agenda is provided so that the public may express comments on any issues not listed on the agenda that are of interest to the public and within the jurisdiction of the North Marin Water District. When comments are made about matters not on the agenda, Board members can ask questions for clarification, respond to statements or questions from members of the public, refer a matter to staff, or direct staff to place a matter of business on a future agenda. The public may also express comments on agenda items at the time of Board consideration.
	4.	STAFF/DIRECTORS REPORTS
	5.	MONTHLY PROGRESS REPORT W/Customer Service Questionnaire
		ACTION CALENDAR
	6.	Approve-Adopt: Resolution to Amend Emergency Water Conservation Ordinance 41 in Novato Service Area Resolution
	7.	Approve- Adopt: Enhanced Water Conservation Program Incentives for Drought Year Revised Resolutions 06-01, 06-02
	8.	Approve: Set Public Hearing to Consider Approval of the 2020 Urban Water Management Plan and Water Shortage Contingency Plan for Novato
	9.	Approve: Rate Increase Letter to Novato Water & Recycled Water Customers
	10.	Approve: Rate Increase Letter to West Marin Water and Oceana Marin Sewer Customers
	11.	Approve: Renew Declaration of Local Emergency Related to COViD-19 Pandemic
		INFORMATION ITEMS
	12.	Gallagher Well No. 2 Coastal Permit Appeal (County ID P3010)
	13.	<i>MISCELLANEOUS</i> Disbursements – Dated April 8, 2021 Disbursements – Dated April 15, 2021
		<u>News Articles</u> : Marin IJ – Readers' Forum – North Marin Water must suspend new hookups Marin IJ – MMWD proposes mandatory water rules -LOW RAINFALL IMPACT Marin IJ – Hot race expected for Novato supervisor – 5 th DISTRICT SEAT
		 Point Reyes Light – MALT hires new leader San Francisco Chronicle – Despite second dry year, Newsom resists declaring a drought emergency Marin IJ – Editorial – Awareness key plan for Marin's water Marin IJ – 'ONE DAY AT A TIME'- Marin County ranchers brace for driest year in decades
		<u>Social Media Posts:</u> NMWD Web and Social Media Report – March 2021
7:30 p.m.	14.	ADJOURNMENT



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Item #1

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DRAFT NORTH MARIN WATER DISTRICT MINUTES OF REGULAR MEETING OF THE BOARD OF DIRECTORS April 6, 2021

6 CALL TO ORDER

President Grossi announced that due to the Coronavirus outbreak and pursuant to Executive Order N-29-20 issued by the Governor of the State of California this was a virtual meeting. President Grossi called the regular meeting of the Board of Directors of North Marin Water District to order at 6:03 p.m. and the agenda was accepted as presented. President Grossi added that there was not a public location for participating in this meeting, but any interested members of the public could participate remotely by utilizing the video or phone conference dialin method using information printed on the agenda.

President Grossi welcomed the public to participate in the remote meeting and asked that they mute themselves, except during open time and while making comments on the agenda items. President Grossi noted that due to the virtual nature of the meeting he will request a roll call of the Directors. A roll call was done, those in remote attendance established a quorum. Participating remotely were Directors Jack Baker, Rick Fraites, Jim Grossi, Michael Joly and Stephen Petterle.

President Grossi announced in the event of technical difficulties during the meeting, the District Secretary will adjourn the meeting and the remainder of the agenda will be rescheduled for a future special meeting which shall be open to the public and noticed pursuant to the Brown Act.

Mr. McIntyre performed a roll call of staff, participating remotely were Drew McIntyre 24 (General Manager), Tony Williams (Assistant GM/Chief Engineer), Terrie Kehoe (District 25 Clark (Operations/Maintenance Blue (Auditor-Controller), Robert 26 Julie Secretary), Superintendent), Tony Arendell (Construction/Maintenance Superintendent), and Monica Juarez 27 (Receptionist/Customer Service Assistant). 28

29 President Grossi announced for those joining the virtual meeting from the public to identify 30 themselves. Ken Levin from the Point Reyes Village Association joined remotely at 6:59 p.m.

31 **<u>MINUTES</u>**

32 On motion of Director Baker seconded by Director Joly the Board approved minutes from 33 the March 16, 2021 Regular Board Meeting by the following vote:

34 AYES: Director Baker, Fraites, Grossi, Joly and Petterle

35 NOES: None

NMWD Draft Minutes

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- 6 ABSTAIN: None
- 37 ABSENT: None
- 38 GENERAL MANAGER'S REPORT

39 Dry Year Conditions

Mr. McIntyre reported as of Monday, April 5th, Lake Sonoma was at 63% capacity, Lake 40 Mendocino was at 44% capacity and Stafford Lake was at 47% capacity. He added Stafford Lake 41 was up from 29% capacity in Mid-February due to backfeeding with surplus water from Sonoma 42 County Water Agency (SCWA). Mr. McIntyre stated Lake Mendocino is in critical dry conditions 43 and is projected to be at the lowest level ever recorded this fall. Mr. McIntyre apprised the Board 44 that Lake Sonoma still has two years of storage; however, the current storage level is also very 45 low, but at 154,000 AF it is not near the 100,000 AF threshold that would require mandatory 30% 46 reductions in deliveries. Mr. McIntyre stated SCWA is considering for the first time, filing at 47 Temporary Urgency Change Petition (TCUP) to reduce releases from Lake Sonoma in early May 48 with an effective date of July 1. He added it is expected that a water allocation will be developed 49 setting maximum deliveries for each contractor for four months (July through October). 50

51 Mr. McIntyre summarized, we are in our second dry year and the drought conditions will 52 result in a recommendation by staff to amend our Novato Emergency Water Conservation 53 Ordinance which was approved at the March 16th, 2021 Board Meeting. He reminded the Board 54 that water shortage declarations have occurred five times over the last fifteen years. Mr. McIntyre 55 stated currently we are looking at 20% voluntary conservation from May 1st through the end of 56 June, followed by a 20% mandatory conservation rate from July 1st through the end of October. 57 He noted, the percentages could change based upon updated discussions with the Agency.

58 Director Joly asked if Lake Sonoma drops below 100,000 AF would that be the trigger for 59 the 30% mandatory reductions in deliveries. Mr. McIntyre replied yes. Director Joly noted storage 60 is at 44% capacity at Mendocino Lake and asked if anything eventful happens with the dam if the 61 level drops below a certain level. Mr. McIntyre replied that SCWA has been in discussion with 62 the Army Corps of Engineers regarding this issue.

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Marin County Board of Supervisors Drought Presentation – May 18th

64 Mr. McIntyre apprised the Board that he and the General Manager of Marin Municipal 65 Water District have been asked to update the Marin County Board of Supervisors on current 66 drought conditions as part of their regularly scheduled meeting on May 18th. Mr. McIntyre 67 reminded the Board this request is similar to what was done during the 2014 drought.

68 Gallagher Well No. 2

Mr. McIntyre informed the Board that the Local Coast Permit (LCP) hearing for Gallagher Well No. 2 was held on March 25th and the Deputy Zoning Administrator approved the project. He noted, however, the County notified the District on April 2nd that an appeal had been filed. Mr. McIntyre reported this appeal will delay NMWD from taking any action on constructing the new Gallagher Well No. 2. He stated under normal conditions, the next step in the appeal process will be to have the County Planning Commission consider the appeal. Mr. McIntyre stated a Planning Commission appeal hearing date should be about six to eight weeks out.

Director Fraites asked what was the main reason for the appeal. Mr. McIntyre responded 76 it raised various issues and he will have more to report at a future meeting. Director Joly asked 77 how the appeal will impact our West Marin customers. Mr. McIntyre replied it will increase the 78 likelihood of experiencing a second year of higher salinity levels in West Marin this year. Director 79 Grossi asked if there were any emergency ordinances that we could use to take legal action rather 80 than waiting. Mr. McIntyre replied none that he is aware of, but will again pose the question to 81 District Legal Counsel. Director Joly asked if the salinity affects the health and safety of our West 82 Marin customers. Mr. Clark commented that the District wants to provide the best water for our 83 customers, however high salinity levels are secondary, aesthetic standards. 84

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Kastania Pump Station Acquisition by Marin Municipal Water District (MMWD)

86 Mr. McIntyre reported he will continue to update the Board on continued discussions with 87 MMWD in regards to their potential purchase of Kastania Pump Station from SCWA.

Director Petterle stated NMWD did a CEQA analysis to enlarge the pipeline to reduce 88 energy consumption, however this also increases capacity due to the larger pipeline. Mr. McIntyre 89 replied that our project did not increase delivery capacity since we rely solely on gravity flow rather 90 than on pump station operation. Director Joly asked if it will have an effect on our water supply 91 we receive through the aqueduct. Mr. McIntyre replied that staff will be watching this closely to 92 ensure there is no negative impact on our operation. Director Grossi asked if MMWD is pumping 93 out of Soulajule Reservoir. Mr. McIntyre replied that he believes they will start towards the end 94 95 of the month.

96 **OPEN TIME**

97 President Grossi asked if anyone from the public wished to bring up an item not on the 98 agenda and there was no response.

99 STAFF/DIRECTORS REPORTS

100 President Grossi asked if any Directors or staff wished to bring up an item not on the 101 agenda and there was no response.

102 CONSENT ITEMS

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- 103 On the motion of Director Fraites, and seconded by Director Petterle the Board approved
- 104 the following items on the consent calendar by the following vote:
- 105 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 106 NOES: None
- 107 ABSTAIN: None
- 108 ABSENT: None

109 SPRINGBROOK GREEN HOMES, 1602 VALLEJO AVENUE, APN: 141-221-74 AND -74

110 Springbrook Green Homes is located at 1602 Vallejo Avenue, Novato (APN: 141-221-74 111 and -75). The property was sold along with the drawings, and the new owner has stated he would 112 like to proceed with the current design. As allowed by Section 11 of the Agreement that was 113 approved on April 21, 2020. The assignment to the new owner, Springbrook LLC, from the 114 previous owner, Stonehenge Properties, LLC, was warranted and recommended by staff.

115 SCWA FEDERAL FY22 BUDGET SUPPORT LETTER

Sonoma County Water Agency is requesting all retail water contractors to send a letter to
 Senators and House Members in support of several SCWA federal FY22 budget requests. The
 Board approved the SCWA Federal FY Budget Support Letter that will be submitted by NMWD.

119 RECORDS RETENTION PROGRAM – DESTRUCTION OF RECORDS

- 120 The Board approved the Destruction of Certain Records in the manner consistent with
- 121 District Policy.

122 ACTION ITEMS

123ACCEPT 2021 NOVATO POTABLE WATER AND RECYCLED WATER FINANCIAL PLAN124UPDATE AND DIRECT STAFF TO PREPARE A PROPOSITION 218 NOTICE OF PUBLIC

125 HEARING ON PROPOSED RATE INCREASE

Ms. Blue updated the Board on the fiscal year (FY) 2021/22 financial forecast and summarized the Novato Water System's financial plan for the next five years, through fiscal year 2025/26. She noted one of the primary goals of the financial plan is to maintain sufficient reserves. Ms. Blue discussed the water rate increase, the water sales volume, the Russian River water cost, the operations and maintenance expenses, capital improvement projects, connection fee revenue, Stafford Treatment Plant production, debt service, recycled water, and the budget and rate increase schedule.

Director Joly noted we are currently backfeeding 1,000 AF into Stafford Lake and asked how likely it was to produce 1,500 AF. Mr. McIntyre replied this is for the entire fiscal year including spring and early summer of 2022. Director Joly stated if we only produced 800 AF, that would be a \$2M reduction in cash reserves, which would be a serious change. Ms. Blue replied

it is different, because there are a lot of variables. Director Joly stated he wanted to understand 137 the sensitivity. Ms. Blue replied she can take a closer look at it. Director Joly commended Ms. 138 Blue, stating her sensitivity points are fantastic. Director Joly stated in reference to the building 139 renovation, interest rates are going up and currently it is around 3.5%. He added this is a good 140 rate and asked when Ms. Blue will be going out to shop interest rates. Ms. Blue replied it will be 141 towards the end of the fiscal year when the budget is finalized. Director Joly asked about the 142 \$100,000 earmarked for maintenance of the recycled water system. He asked if this was enough 143 to keep that system in the best condition. Mr. McIntyre reminded the Board that this is a fairly 144 new system and the \$100,000 identified is mainly used to expand the system rather than for 145 146 maintenance.

147 On the motion of Director Petterle, and seconded by Director Fraites the Board accepted 148 the 2021 Novato Potable Water and Recycled Water Financial Plans and directed staff to draft a 149 letter to Novato and Recycled Water customers for Board review noticing a public hearing on 150 June 15th to consider a 6% rate increase by the following vote:

- 151 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 152 NOES: None
- 153 ABSTAIN: None
- 154 ABSENT: None

155 <u>ESA CONSULTING SERVICES AGREEMENT AMENDMENT 1 – ENVIRONMENTAL</u> 156 SUPPORT SERVICES FOR NEW GALLAGHER WELL NO. 2

Mr. McIntyre presented the Board with the ESA Consulting Services Agreement Amendment 1 for environmental support services for the new Gallagher Well No. 2. Mr. McIntyre stated this amendment will cover additional efforts expended by ESA, but added that future additional services such as additional well testing pre and post-project Lagunitas Creek monitoring will be covered under future amendments.

162 Director Grossi said more services may be needed depending on permitting issues. Mr. 163 McIntyre agreed we will know more as the process continues.

On the motion of Director Joly, and seconded by Director Fraites the Board authorized the General Manager to amend the agreement with ESA for ongoing environmental support services related to the New Gallagher Well No. 2 Project for a not to exceed fee of \$45,000 plus a \$5,000 contingency by the following vote:

- 168 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 169 NOES: None
- 170 ABSTAIN: None

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ABSENT: None

172 OLD RANCH ROAD TANK NO 2 PROJECT - APPROVE BID ADVERTISEMENT

Mr. Williams requested approval for bid advertisement for the Old Ranch Road Tank No. 173 2 Project. He reviewed the background of the project, the mitigation and design, the project 174 elements and costs. Mr. Williams also advised the Board that the design is based around the use 175 of a stainless-steel bolted tank, which is a good option to use as a material for long term life cycle 176 costs. He noted some may be concerned the tank will not be green or dark brown. Mr. Williams 177 added that the tank will not be a polished stainless rather a matte finish that over time will become 178 dull gray. He added the District CEQA consultant Amy Skews Cox saw no concerns with the 179 visual impacts, however staff has explored mitigation strategies should that be the case. 180

181 Director Petterle stated he is pretty vocal about esthetics; however, he feels this tank site 182 is a good opportunity to try something like this. He noted if it were a different setting it may not 183 work. A general discussion ensued.

184 On the motion of Director Baker, and seconded by Director Petterle the Board approved 185 bid advertisement of the Old Ranch Road Tank No. 2 Project by the following vote:

- 186 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 187 NOES: None
- 188 ABSTAIN: None
- 189 ABSENT: None

190 KENNEDY/JENKS CONSULTANTS – GENERAL SERVICES AGREEMENT

191 Mr. Williams requested approval for a General Services Agreement with Kennedy/Jenks 192 Consultants. He stated Kennedy/Jenks Consultants will provide hydraulic modeling on an as 193 needed basis.

194 On the motion of Director Baker, and seconded by Director Petterle the Board authorized 195 the General Manager to execute a General Services Agreement with Kennedy/Jenks Consultants 196 to provide hydraulic modeling on an as needed basis in the amount of \$45,000 plus a contingency

- 197 of \$2,000 by the following vote:
- 198 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 199 NOES: None
- 200 ABSTAIN: None
- 201 ABSENT: None

202 <u>AMEND CONTRACTS FOR ON-CALL CONSTRUCTION AND REPAIR SERVICES</u> – 203 <u>GHILOTTI CONSTRUCTION AND TEAM GHILOTTI</u>

204 Mr. Williams reported due to COVID there have been work restrictions and temporary

staffing limitations in the Construction Department. The District has relied more on Ghilotti Construction and Team Ghilotti to help cover standby shifts in case of pipe leaks or other afterhour emergencies. He added the contract may also be used for smaller CIP projects normally performed by the Construction Department. Mr. Williams apprised the Board that the District has a couple of CIP projects that will exceed the general rule threshold of \$100,000. He added that he checked with other water districts and they used the same approach as NMWD, however they have a \$200,00 to \$250,000 threshold.

212 On the motion of Director Fraites , and seconded by Director Baker the Board authorized 213 the General Manger to amend the on-call agreements with Ghilotti Construction and Team Ghilotti 214 in the amount of \$250,000 by the following vote:

215 AYES: Director Baker, Fraites, Grossi, Joly and Petterle

216 NOES: None

217 ABSTAIN: None

218 ABSENT: None

219 ADDITIONAL STAFFORD LAKE BACKFEEDING

Mr. McIntyre reminded the Board that at the February 16, 2021 meeting, the Board 220 221 authorized backfeeding of Russian River water into Stafford Lake immediately with an estimated 600 AF quantity over an eight-week period. He stated since the initial Board approval of 222 backfeeding in mid-February, there has been no appreciable local rainfall. Mr. McIntyre stated 223 224 similar dry year conditions continue in the Russian River watershed. He reported Operations staff have been able to optimize backfeeding into Stafford Lake such that ~650 AF have been backfed 225 226 as of March 30th. Mr. McIntyre noted there is a high degree of likelihood that Russian River 227 diversion will be reduced this summer to address declining storage levels, therefore staff 228 recommended that backfeeding should continue through April with a new target of ~1,000 AF. 229 Mr. McIntyre noted the additional backfeeding cost will still be covered under the projected water 230 treatment fiscal year-end budget.

Director Grossi stated, by backfeeding the additional Russian River water into Stafford Lake it will help us store more water before they cut water delivery and a mandatory conservation is in place. Mr. McIntyre commended the Board for being proactive and prudent, adding we would be looking at Stafford Lake with less than 30% capacity if backfeeding was not approved. Mr. McIntyre stated the District will be in a better position now that Stafford Lake will be filled to at least 50% capacity.

Director Joly asked if we ever heard any more about the chlorination issue in the lake. Mr. Clark responded that staff submitted the reports to the Regional Water Board and answered their

- 239 questions, but the District has not heard anything back.
- 240 On the motion of Director Petterle, and seconded by Director Fraites the Board authorized
- 241 additional backfeeding of Russian River water into Stafford Lake by the following vote:
- 242 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 243 NOES: None
- 244 ABSTAIN: None
- 245 ABSENT: None

246 RENEW DECLARATION OF LOCAL EMERGENCY RELATED TO COVID-19 PANDEMIC

Mr. McIntyre reminded the Board that staff has been operating under partial Emergency Operations Center (EOC) activation. On March 24, 2021, Marin moved from the Red status (Tier2) to Orange status (Tier 3). He stated this move relaxed indoor operation restrictions for a number of sectors. Mr. McIntyre reported non-essential offices may now reopen again. He added if the COVID infection numbers continue to fall, Marin could move to the next less restrictive Yellow status (Tier 4) as soon as April 14th.

- Mr. McIntyre announced the District emergency planning has been aggressively implemented since March 16, 2020. The District still operates with 86% of staff on-site or in the field full time. He added the balance of staff are teleworking from home with most coming into the office at least one day each week. Mr. McIntyre stated walk in services remain suspended. He noted the financial COVID-19 cost impacts through March will be provided at the next meeting.
- Director Joly asked about the vaccine participation level with staff. Mr. McIntyre replied the numbers are increasing and that is good news. Director Joly announced he heard today that Governor Newsome's going is to open everything up by June 15th.
- 261 On the motion of Director Joly, and seconded by Director Baker the Board approved 262 renewal of the Declaration of Local Emergency Related to COVID-19 Pandemic by the following 263 vote:
- 264 AYES: Director Baker, Fraites, Grossi, Joly and Petterle
- 265 NOES: None
- 266 ABSTAIN: None
- 267 ABSENT: None
- 268 INFORMATION ITEMS

269 NMWD HEADQUARTERS UPGRADE DESIGN SERVICES UPDATE

Mr. Williams gave an update on the NMWD headquarters upgrade Master Plan design by Noll & Tam Architects. He provided a design services schedule and indicated that Noll & Tam will prepare a summary report at the conclusion of the Schematic Design phase for the Board's

- review which it tentatively scheduled for the April 20th Board of Directors Meeting. Mr. Williams
 reported the Schematic Design will firm up a floor plan and layout for the buildings. He also noted
 he has been impressed with the Noll and Tam team and interactions have been good.
- Director Petterle noted this was exciting news. Director Grossi acknowledged his experience has been that Noll and Tam Architects are always on top of things.

278 PRE TANK 4A REPLACEMENT – PROJECT UPDATE

Mr. Williams gave an update on the PRE Tank 4A replacement project. He reported on the construction status and project cost variances. He added towards the end of the project the District will add landscape at the site and clean up the road.

282 WAC/TAC MEETING - FEBRUARY 1, 2021

283 Mr. McIntyre summarized the WAC/TAC meeting that was held on February 1st. The 284 meeting covered topics including water supply conditions and an update on the Temporary 285 Urgency Change Order.

286 NBWA MEETING – APRIL 2, 2021

Director Fraites updated the Board on the NBWA Meeting held on April 2nd. Director Fraites reported on various topics on the agenda including the guest presentation on One Water North Bay Communities.

290 <u>MISCELLANEOUS</u>

291 The Board received the following miscellaneous items: Disbursements – March 18, 2021, 292 Disbursements – March 25, 2021, Disbursements – April 1, 2021, Update - Polybutylene Pipe 293 Population, AB 992 – Summary of Public Officials Social Media Use Restrictions, Marshall De-294 Annexation Request - Mr. Johnston, Marin Lafco - Shared Services Workshop, Marin IJ - Legal 295 Notice – NORTH MARIN WATER DISTRICT Declaration of a Water Shortage Emergency Novato 296 Service Area (Ordinance 41), Point Reyes Light - Legal Notice - NORTH MARIN WATER DISTRICT Amendment of Emergency Water Conservation Ordinance No. 39 - West Marin 297 298 Service Area and Annual Aquatic Invasive Species (AIS) Report for Stafford Lake, 2020.

The Board received the following news articles: Marin IJ – Water district prepares for Novato drought measures – EMERGENCY PLAN; Marin IJ – Funding Projects – NMWD considers water rate hikes for West Marin; Marin; IJ – Las Gallinas sewage agency completes recycling system – SAN RAFAEL and Marin IJ – Drought actions mulled – Water suppliers consider mandatory restrictions.

Mr. McIntyre noted the letter from Robert Johnston in regards to de-annexing the Marshall area. He reminded the Board that this was something the District had interest in doing in the past. He added that he anticipates revisiting this issue in about two years when LAFCo performs

307	another NMWD service review.
308	President Grossi adjourned the meeting at 7:30 p.m.
309	Submitted by
310	
311 312 313	Theresa Kehoe District Secretary





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NORTH MARIN WATER DISTRICT MONTHLY PROGRESS REPORT FOR March 2021 April 20, 2021

1.

Novato Potable Water Prod* - RR & STP Combined - in Million Gallons - FYTD

Novalo i olable m				mon oanon	0 1110	
Month	FY20/21	FY19/20	FY18/19	FY17/18	FY16/17	21 vs 20 %
July	341.7	317.7	341.1	331.0	310.3	8%
August	290.1	287.1	300.9	303.0	299.6	1%
September	225.6	280.5	255.0	292.4	302.3	-20%
October	307.8	286.0	265.6	273.7	202.8	8%
November	201.6	226.3	170.1	163.9	143.8	-11%
December	183.0	141.2	157.8	152.1	147.6	30%
January	156.6	111.9	114.7	130.6	120.8	40%
February	110.5	120.3	110.9	134.8	118.6	-8%
March	123.2	151.8	138.8	130.2	145.8	-19%
FYTD Total	1,939.9	1,922.7	1,854.8	1,911.6	1,791.5	1%

*Excludes water backfed into Stafford Lake: FY21=179.9 MG

West Marin Potable Water Production - in Million Gallons - FY to Date

Month	FY20/21	FY19/20	FY18/19	FY17/18	FY16/17	21 vs 20 %
July	8.2	8.9	10.2	9.5	7.9	-8%
August	9.2	8.4	9.9	8.8	7.4	10%
September	7.9	7.8	9.5	8.4	6.4	1%
October	6.7	7.5	8.3	7.9	5.2	-11%
November	5.8	6.7	7.3	5.4	4.2	-15%
December	5.1	4.8	5.7	5.1	3.7	6%
January	4.2	4.1	5.0	4.5	3.6	2%
February	3.8	4.4	3.5	4.5	3.3	-13%
March	5.1	5.2	4.4	5.1	4.4	-1%
FYTD Total	56.0	57.8	63.8	59.2	46.1	-3%

Stafford Treatment Plant Production - in Million Gallons - FY to Date

•••••••						
Month	FY20/21	FY19/20	FY18/19	FY17/18	FY16/17	21 vs 20 %
July	105.8	68.2	78.6	112.6	69.9	55%
August	81.1	103.8	79.3	81.5	90.4	-22%
September	16.1	115.0	60.5	122.7	96.9	-86%
October	7.7	103.4	74.5	102.3	93.9	-93%
November	0.6	102.8	0.0	53.6	63.8	-99%
December	0.0	0.0	0.0	0.0	0.0	-
January	0.0	0.0	0.0	0.0	0.0	-
February	0.0	0.0	0.0	0.0	0.0	-
March	0.0	0.0	19.2	0.0	38.9	-
FYTD Total	211.3	493.0	312.1	472.6	453.8	-57%

Recycled Water Production* - in Million Gallons - FY to Date

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Month	FY20/21	FY19/20	FY18/19	FY17/18	FY16/17	21 vs 20 %			
July	39.0	36.5	30.2	27.7	27.1	7%			
August	43.2	33.3	30.6	26.1	26.0	30%			
September	29.5	29.7	33.5	25.0	23.5	-1%			
October	22.8	26.6	20.1	19.1	8.3	-14%			
November	10.9	10.8	12.7	2.5	1.2	1%			
December	0.2	0.5	1.5	0.8	0.4	-62%			
January	0.3	0.6	0.9	1.0	0.3	-45%			
February	0.5	0.6	0.3	3.3	0.0	-11%			
March	10.6	11.7	0.4	1.7	0.5	-10%			
FYTD Total*	157.0	150.4	130.2	107.2	87.4	4%			

*Excludes potable water input to the RW system: FY21=14.2 MG; FY20=19.4; FY19=20.6 MG; FY18=15.8MG; FY17=1.4MG t:\ac\excel\w tr use\[production.xlsx]mo rpt

2. Stafford Lake Data

	March /	Average	Marcl	h 2021	Ma	rch 2020
Rainfall this month	3.51	Inches	1.69	Inches	1.69	Inches
Rainfall this FY to date	24.51	Inches	8.56	Inches	17.23	Inches
Lake elevation*	193.3	Feet	183.6	Feet	191.2	Feet
Lake storage**	1199	MG	623	MG	1061	MG

* Spillway elevation is 196.0 feet

** Lake storage less 390 MG = quantity available for delivery

Temperature (in degrees)

	Minimum	<u>Maximum</u>	Average
March 2021 (Novato)	38	87	56
March 2020 (Novato)	40	88	56

3. Number of Services

									L	:\ac\excel\wtr u	se\[production	xisx]srvcsmorpt
	Novato Water		Recycled Water			West Marin Water			Oceana Marin Swr			
March 31	FY21	FY20	Incr %	FY21	FY20	Incr %	FY21	FY20	Incr %	FY21	FY20	Incr %
Total meters installed	20,795	20,749	0.2%	98	97	1.0%	792	791	0.1%	-	-	-
Total meters active	20,589	20,546	0.2%	94	92	2.2%	784	783	0.1%	-		-
Active dwelling units	24,089	24,072	0.1%		-	-	834	833	0.1%	235	235	0.0%

4. Oceana Marin Monthly Status Report (March)

Description	March 2021	March 2020
Effluent Flow Volume (MG)	0.551	0.380
Irrigation Field Discharge (MG)	0.805	0.603
Treatment Pond Freeboard (ft)	6.4	6.9
Storage Pond Freeboard (ft)	9.4	8.5

5. Developer Projects Status Report (March)

Job No.	Project	% Complete	% This month
1.2820.00	Bahia Heights	95	2
1.2837.00	McPhails Phase 2A	99	4
1.2831.00	Landsea Homes	90	5
1.2844.00	Novato Library	99	4
1.2845.00	Marin Biologic Fire Service	95	5

District Projects Status Report - Const. Dept. (March)

Job No.	Project	% Complete	% This month
2.6263.20	Replace PRE Tank 4A	99	4
1.7193.23	PB Replacement - Blackpoint	90	40
1.7186	Grant Avenue CI Main Replacement	15	5

Employee Hours to Date, FY 20/21

As of Pay Period Ending March 31, 2021 Percent of Fiscal Year Passed = 75%

Torodik of Thoodi, Todi Tudobed Trow										
Developer			% YTD		District			% YTD		
Projects	Actual	Budget	Budget		Projects	Actual	Budget	Budget		
Construction	1,210	1,400	86%		Construction	2,209	3,460	64%		
Engineering	1,409	1,504	94%		Engineering	2,309	2,722	85%		

6. Safety/Liability

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	Ind	ustrial Injury \	Liability Claims Paid			
	Lost Days	OH Cost of Lost Days (\$)	No. of Emp. Involved	No. of Incidents	Incurred (FYTD)	Paid (FYTD) (\$)
FY 21 through March	23	\$10,120	3	3	2	\$11,092
FY 20 through March	25	\$10,584	3	3	0	\$0
Dava almost lost time assident through	March 21 2	0021	13/	Dave		

Days since lost time accident through March 31, 2021

_____134_Days

* (1) Vehicle accident on October 4, 2019 involving District vehicle and unoccupied parked vehicle during oncall event. Costs related to parked vehicle. (2) Vehicle accident on September 8, 2020 involving District vehicle and unoccupied parked vehicle. Costs related to parked vehicle.

7. Energy Cost

			March		Fiscal Year-to	-Date thru	March
FYE		kWh	¢/kWh	Cost/Day	kWh	¢/kWh	Cost/Day
2021	Stafford TP	25,873	26.3¢	\$219	370,862	21.6¢	\$293
	Pumping	198,039	26.0¢	\$1,778	1,286,611	25.3¢	\$1,195
	Other*	43,619 🏼	26.0¢	\$391	446,667 🏼	26.8¢	\$438
		267,532 🖡	26.1¢	\$2,388	2,104,140	25.0¢	\$1,925
2020	Stafford TP	23,977	17.9¢	\$138	574,678	20.4¢	\$428
	Pumping	88,608	23.0¢	\$702	1,077,271	23.4¢	\$912
	Other*	52,057	21.4¢	\$384	432,251	25.1¢	\$393
		164,642	21.7¢	\$1,224	2,084,200	22.9¢	\$1,733
2019	Stafford TP	43 108	24 O¢	\$334	446 564	20.7¢	\$338
2010	Pumping	57 965	20.9¢	\$418	1 051 534	20.7¢	\$786
	Other*	49.016	20.2¢	\$341	424,275	23.8¢	\$365
		150,089	21.6¢	\$1,093	1,922,372	21.4¢	\$1,488

*Other includes West Marin Facilities

T:\AC\Board Reports\PGE\PG&E Usage\FY 20.21\[PGE Usage 03.2021xlsx.xlsx]mo rpt

8. <u>Water Conservation Update</u>

	Month of	Fiscal Year to	Program Total
	March 2021	Date	to Date
High Efficiency Toilet (HET) Rebates	10	83	4,249
Retrofit Certificates Filed	12	171	6,577
Cash for Grass Rebates Paid Out	1	12	943
Washing Machine Rebates	0	16	6,820
Water Smart Home Survey	0	0	3,899

9. Utility Performance Metric

SERVICE DISRUPTIONS	March 2021	March 2020	Fiscal Year to	Fiscal Year to
(No. of Customers Impacted)		물 승규는 것을 가 같은 것을 수 있다.	Date 2021	Date 2020
PLANNED				
Duration Between 0.5 and 4 hours	11	4	89	36
Duration Between 4 and 12 hours				96
Duration Greater than 12 hours				
UNPLANNED				
Duration Between 0.5 and 4 hours	2	2	3.5	55
Duration Between 4 and 12 hours			29	12
Duration Greater than 12 hours			1	
SERVICE LINES REPLACED				
Polybutylene	3	5	62	46
Copper (Replaced or Repaired)	8	0	12	8

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders March 2021

			4/14/2021
Туре	Mar-21	Mar-20	Action Taken March 2021
Consumers' System Problem			
Service Line Leaks	15	32	Notified Consumer
House Dlumbing	15	1	Notified Consumer
Noisy Plumbing	0	1	
House Valve / Motor Off	7	5	Notified Consumer
Nothing Found	3	7	Notified Consumer
	2	, 1	20-25 PSI-Referred to Brad Stompe to investigate
Eow Pressure	2	I.	40 PSI reported-No PRV installed. Advised a test pump
High Pressure	0	3	
Total	27 -	50	
Service Repair Reports			
Meter Replacement	3	1	Notified Consumer
Box and Lids	1	0	Replaced
Water Off/On Due To Repairs	6	9	Notified Consumer
Misc. Field Investigation	3	7	Notified Consumer
Total	13	17	
Look NMWD Excilitios			
Mains-Nothing Found	1	0	Notified Consumer
Service-Leak	3	6	Renaired
Services-Nothing Found	0	1	Notified Consumer
Fire Hydrants-Nothing Found	1	Ó	Notified Consumer
Fire Hydrants-Damaged	1	0	Repaired
Meter Leak	, O	1	
Washer Leaks	5	2	Repaired
Total	11	10	
High Bill Complaints			
Excessive Irrigation	0	1	Notified Consumer
Total	0	1	Notified Consumer
	-		
Low Bill Reports			
Total	0	0	
Water Quality Complaints			
Total	0	0	
=			
TOTAL FOR MONTH:	51	78	-35%
FISCALY ID Summary	050	C 4 4	Change Primarily Due To
Consumer's System Problems	356	644	-45% Decrease in Service Line Leaks.
Service Repair Report	148	203	-21% Decrease In Misc. Field Investigation.
	130	143	-970 Decrease in Fire Hydrant Leaks.
	40	((-40% Decrease in Excessive irrigation.
LOW BIIIS	U	0	070 NO Unange.
Total		1 097	
10(a) =		1,007	-30 /0

NORTH MARIN WATER DISTRICT

Summary of Complaints & Service Orders March 2021

				4/14/2021
Туре	Mar-21	Mar-20	Action Taken March 2021	
"In House" Generated and				
Completed Work Orders				
Check Meter: possible	83	100		
consumer/District leak, high				
bill, flooded, need read, etc.				
Change Meter: leaks,	9	8		
hard to read				
Possible Stuck Meter	0	2		
Repair Meter: registers.	0	1		
shut offs				
Replace Boxes/Lids	1	8		
Trims	1	0		
Dig Outs	0	1		
	94	120		
Bill Adjustments Under Board	d Policy:			
March 21 vc. March 20				
Mar-21	14	\$8.460		
Mar-20	17	\$2,978		
Mar 20	12	Ψ2,070		
Fiscal Year vs Prior FY				
20/21 FY	175	\$76,905		
19/20 FY	229	\$68,126		
			t:\cons srvc\complaint report\[compl	ain 21.xlsx]mar21

Customer Service Que	stionnaire	Quarterly	/ Report					
Quarter Ending 03/31/2021			· · · · · · · · · · · ·					
				NMWD		Response		
		Respons	e		Agroo	Neutrol	Disagree	
Water Quality	Agree	Neutral	Disagree		Agree		n	
Courteous & Helpful	0	0	0			0		
Accurate Information	0	0	0	Accurate Information		0	0	
Prompt Service	0	0	0	Prompt Service		0	0	
Satisfactorily Resolved	0	0	0	Satisfactorily Resolved		0	0	
Overall Experience	0	0	0	Overall Experience		0		
	0	0	0		5	UU		
						N 1 J C		
Leak	Agree	Neutral	Disagree	Noisy Pipes	Agree	Neutral	Disagree	
Courteous & Helpful	27	0	0	Courteous & Helpful	0	0	<u> </u>	
Accurate Information	27	0	0	Accurate Information	0	0	0	
Prompt Service	27	0	0	Prompt Service	0	0	0	
Satisfactorily Resolved	25	1	0	Satisfactorily Resolved	0	0	0	
Overall Experience	28	0	0	Overall Experience	0	0	0	
	134	1	0		0	0	0	
	·			· · · · · · · · · · · · · · · · · · ·				
Billing	Aaree	Neutral	Disagree	Other	Agree	Neutral	Disagree	
Courteous & Helpful	1	0	õ	Courteous & Helpful	7	0	0	
Accurate Information	. 1	0	0	Accurate Information	7	0	0	
Prompt Service	. 1	0	Ō	Prompt Service	6	1	0	
Satisfactorily Resolved	· 1	0	Ō	Satisfactorily Resolved	6	0	0	
	1	0	Ō	Overall Experience	7	0	0	
		0	0		33	1	0	
			r •					
				Grand Total	177	2	0	
	· .				99%	1%	0%	
		-		· · · · · · · · · · · · · · · · · · ·				
			1					
				Questionnaires Sent Out	102	100%		
				Questionnaires Returned	37	36%		

Customer Service Questionnaire Quarterly Report		
Quarter Ending 03/31/2021		
		Issues NMWD Should Address
Customer Comments	Staff Response to Negative Comments	In The Future
LEAK		
AMAZING! Huge thanks to Chris R. & Ryan. Extremely valuable		
service, so grateful.		
Chris was very nice & informative.		
Excellent service!		
Jeff was very kind & took care of the problem-thank you!		
I don't remember his name but he was good & easy to work with.		
Very helpful.		
Corey was amazing & very patient.		
Chris was fantastic-he should be rewarded-an outstanding worker.		
Appreciate the email follow ups-very responsive.		
I love the alerts.		
Staff was efficient, fast & friendly!		
Thank you Rich for helping me understand everything.		
Very pleasant and helpful-prompt service-thank you!		
Darrell was great!		
As has always been my experience, NMWD is very helpful.		
Darrell is a real asset to your department.		
They said they would be back in a couple of days to do a permanent	Crew returned later with material to fix leak.	
fix-haven't seen them since.		
Thank you for being such a responsive organization!		
Darrell was very helpful & gave me some blue dye tabs to check for		
toilet leak.		
OTHER		
Fabulous response. Great service!		
Work crew was very good.		
Hats off to Darrell-prompt, courteous & helpful.		
Rich has photos-any explanation?	Went back out to investigate meter.	
BILLING		
Happy with the service.		
PRESSURE		
Chris was EXCELLENT! He quickly resolved the issue.		
The woman who answered the phone was very rude & told me to call a		
plumber-I had to argue to get a rep to come out.		

MEMORANDUM

To: Board of Directors

From: Julie Blue, Auditor-Controller

Subj: Auditor-Controller's Monthly Report of Investments for March 2021

RECOMMENDED ACTION: Information

FINANCIAL IMPACT: None

At month end the District's Investment Portfolio had an amortized cost value (i.e., cash balance) of \$26,898,693 and a market value of \$26,948,660. During March the cash balance increased by \$2,355,972. The market value of securities held increased \$49,967 during the month. The ratio of total cash to budgeted annual operating expense stood at 151%, up 13% from the prior month.

At March 31, 2021, 82% of the District's Portfolio was invested in California's Local Agency Investment Fund (LAIF), 13% in Time Certificates of Deposit, 4% in the Marin County Treasury, and 1% retained locally for operating purposes. The weighted average maturity of the portfolio was 39 days, compared to 47 days at the end of February. The LAIF interest rate for the month was 0.36%, compared to 0.41% the previous month. The weighted average Portfolio rate was 0.54%, compared to 0.59% the previous month.

 	A second s	and the second sec			
 3/3/2021	US Bank	LAIF	\$300,000.00	Trsf to LAIF account	
3/4/2021	LAIF	US Bank	\$60,000.00	Trsf from LAIF account	
3/11/2021	US Bank	LAIF	\$250,000.00	Trsf to LAIF account	
3/15/2021	Eaglebank	US Bank	\$249,496.64	TCD Matured	
3/17/2021	US Bank	LAIF	\$200,000.00	Trsf to LAIF account	
3/19/2021	US Bank	LAIF	\$1,800,000.00	Trsf to LAIF account	

Investment Transactions for the month of March are listed below:

April 16, 2021

NORTH MARIN WATER DISTRICT AUDITOR-CONTROLLER'S MONTHLY REPORT OF INVESTMENTS March 31, 2021

		S&P	Purchase	Maturity	Cost	3/31/2021		% of
Туре	Description	Rating	Date	Date	Basis ¹	Market Value	Yield ²	Portfolio
LAIF	State of CA Treasury	AA-	Various	Open	\$21,999,053	\$22,049,020	0.36% 3	82%
Time	Certificate of Deposit							
TCD	Central Bank	n/a	4/18/19	4/19/21	249,000	249,000	2.40%	1%
TCD	Morgan Stanley Private Ban	k n∕a	5/23/19	5/24/21	247,000	247,000	2.40%	1%
TCD	TIAA Bank	n/a	1/18/19	7/19/21	246,000	246,000	2.75%	1%
TCD	Capital One Bank NA	n/a	8/21/19	8/23/21	247,000	247,000	1.85%	1%
TCD	Capital One Bank USA	n/a	9/6/19	9/7/21	247,000	247,000	1.75%	1%
TCD	Goldman Sachs Bank USA	n/a	10/11/19	10/12/21	247,000	247,000	1.70%	1%
TCD	Flagstar Bank	n/a	11/15/19	11/15/21	247,000	247,000	1.75%	1%
TCD	Synovus Bank	n/a	12/9/19	12/9/21	247,000	247,000	1.65%	1%
TCD	Morgan Stanley Bank	n/a	1/16/20	1/18/22	247,000	247,000	1.75%	1%
TCD	Wells Fargo National Bank	n/a	3/6/20	3/7/22	248,000	248,000	1.35%	1%
TCD	American Express Natl Bank	n/a	4/7/20	4/7/22	248,000	248,000	1.35%	1%
TCD	Synchrony Bank	n/a	4/17/20	4/18/22	248,000	248,000	1.20%	1%
TCD	Pinnacle Bank	n/a	5/7/20	5/9/22	248,000	248,000	0.90%	1%
TCD	Enerbank	n/a	9/25/20	9/25/24	249,000	249,000	0.45%	1%
					\$3,465,000	\$3,465,000	1.66%	13%
Other								
Agenc	y Marin Co Treasury	AAA	Various	Open	\$1,047,064	\$1,047,064	0.71%	4%
Other	Various	n/a	Various	Open	387,575	387,575	0.41%	1%
		тс	OTAL IN PO	ORTFOLIO	\$26,898,693	\$26,948,660	0.54%	100%

LAIF: State of California Local Agency Investment Fund. TCD: Time Certificate of Deposit.

Weighted Average Maturity =

Agency: STP State Revolving Fund Loan Reserve.

Other: Comprised of 5 accounts used for operating purposes. US Bank Operating Account, US Bank STP SRF Loan Account, US Bank FSA Payments Account, Bank of Marin AEEP Checking Account & NMWD Petty Cash Fund. 1 Original cost less repayment of principal and amortization of premium or discount

39 Days

2 Yield defined to be annualized interest earnings to maturity as a percentage of invested funds

3 Earnings are calculated daily - this represents the average yield for the month ending March 31, 2021

	Loan	Maturity	Original	Principal	Interest
Interest Bearing Loans	Date	Date	Loan Amount	Outstanding	Rate
Marin Country Club Loan	1/1/18	11/1/47	\$1,265,295	\$1,142,696	1.00%
Marin Municipal Water - AEEP	7/1/14	7/1/32	\$3,600,000	\$2,224,108	2.71%
Employee Housing Loans (2)	Various	Various	525,000	525,000	Contingent
TOTAL INTERE	ST BEARIN	IG LOANS	\$5,390,295	\$3,891,804	

The District has the ability to meet the next six months of cash flow requirements.

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MEMORANDUM

April 16, 2021 **Board of Directors** To: Drew McIntyre, General Manager From: Ryan Grisso, Water Conservation Coordinator Resolution to Amend Emergency Water Conservation Ordinance 41 in the Novato Subject: Service Area v:\resolutions\emergency ordinance no. 41 final 4.2021.doc Amending Emergency Water 21-XX RECOMMENDED ACTION: Adopt Resolution Conservation Ordinance No. 41 for the Novato Service Area FINANCIAL IMPACT: None at this time

At the February 2, 2021 Regular Board Meeting, the Board received information on dry year conditions to-date in Novato and staff indicated local conditions are similar to those occurring in 2014. As evidenced in the updated dry year rainfall table provided in Attachment 1, there has been very little rainfall since February. At the February 16, 2021 meeting, the Board approved "backfeeding" Stafford Lake with Russian River water while it's available. The Board was also alerted that NMWD staff was reviewing the Novato Service Area Water Shortage Contingency Plan and consulting with legal counsel to determine the best course of action for 2021 given the continued dry year conditions. The resulting recommended action was to consider adoption of an Emergency Water Conservation Ordinance for the Novato Service Area that would declare a water shortage emergency, include prohibitions on water waste and non-essential use and reserve the option to subsequently approve detailed conservation measures by future resolution once the rainfall total ending April 1st was tallied and Sonoma County Water Agency (SCWA) water supply assessments had been determined in mid-April.

At the March 16, 2021 meeting, the Board held a public hearing and adopted Emergency Water Conservation Ordinance No. 41 (Attachment 2). Emergency Water Conservation Ordinance No. 41 (Ordinance 41) includes a declaration that a water shortage emergency conditions exists within the Novato Service Area, authorizes future suspension of new or enlarged connections to the system via resolution, prohibits waste of water, prohibits non-essential uses of water as determined by subsequent resolution, authorizes the imposition of administrative fines and penalties for violations of the Ordinance, and authorizes the Board of Directors to make subsequent modifications to Ordinance 41 by resolution.

Since the adoption of Ordinance 41, SCWA has indicated it will file a second Temporary Urgency Change Petition with the State Water Resources Control Board to continue reduction Resolution to Amend Emergency Water Conservation Ordinance 41 in the Novato Service Area April 16, 2021 Page 2

of releases from Lake Mendocino, seek approval to reduce releases from Lake Sonoma, and which will also include a reduction in diversions from SCWA's Russian River water supply pumping facilities. This will likely result in a 20% reduction in Russian River deliveries compared to deliveries in 2020. To adequately respond to the continued, and worsening, water shortage emergency conditions, staff recommends amending Section 4 of Ordinance 41 to suspend new connections to the system as of July 1, 2021. Staff also recommends amending Section 6 of Ordinance 41 to include a "Stage 1" 20% voluntary reduction in water use from May 1 to June 30, a "Stage 2" mandatory 20% reduction in water use from July 1 to November 1, and add specific types of non-essential water use at Stage 2. The proposed amendments to Ordinance 41 are included in Resolution 21-XX (Attachment 3).

As in past drought years, staff will be taking a proactive approach and actively working with customers to help meet conservation goals and avoid violating the prohibitions on water waste and non-essential use. The District will be communicating the water shortage situation and prohibitions to the customers through the Spring Waterline newsletter, the website and through a social media campaign. Lawn signs will also be developed to identify those customers using well water and recycled water. Staff is developing a new online website form, which will enable customers to report activities that violate the prohibitions on water waste and non-essential use. Additionally, the District's new AMI system will help to better track and manage conservation levels and compliance with the prohibitions on water waste and non-essential use. Staff will also be patrolling, as time allows, and responding to observed prohibited water waste.

Recommendation

Adopt Resolution 21-XX Amending Emergency Water Conservation Ordinance No. 41 for the Novato Service Area.

Dry Year Rainfall

													Oct-Dec	Water Year
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Total	Total
1976	3.16	0.35	0.68	0.26	2.29	1.06	2.06	0.00	0.00	0.00	0.54	0.28	4.19	10.68
1977	0.43	1.45	1.25	2.17	1.33	2.69	0.15	1.04	0.00	0.00	0.08	0.70	3.13	11.29
1991	0.28	0.46	1.63	0.51	4.22	9.39	0.87	0.13	0.31	0.00	0.28	0.00	2.37	18.08
2007	0.53	2.91	4.66	0.58	4.87	0.13	1.14	0.38	0.02	0.01	0.02	0.06	8.10	15.31
2012	2.04	2.53	0.10	3.40	2.08	5.69	0.47	0.00	0.00	0.00	0.01	0.00	4.67	16.32
2013	2.06	6.47	8.02	0.67	0.57	0.71	1.10	0.05	0.40	0.00	0.00	0.33	16.55	20.38
2014	0.00	1.21	0.92	0.03	7.84	2.56	1.00	0.01	0.00	0.00	0.00	0.30	2.13	13.87
2018	0.29	3.40	0.04	6.20	0.61	5.51	3.13	0.06	0.00	0.00	0.01	0.00	3.73	19.25
2020	0.00	2.39	11.13	1.89	0.00	1.69	1.08	0.64	0.00	0.00	0.07	0.00	13.52	18.89
2021	0.00	0.47	1.62	3.98	0.79	1.69							2.09	8.55

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NORTH MARIN WATER DISTRICT NOVATO SERVICE AREA EMERGENCY WATER CONSERVATION ORDINANCE NO. 41

Adopted March 16, 2021

Section 1.	Declaration of a Water Shortage Emergency2
Section 2.	Purpose and Authority2
Section 3.	Effect of Ordinance
Section 4.	Suspension of New Connections to the District's Water System
Section 5.	Waste of Water Prohibited3
Section 6.	Prohibition of Non-Essential Use of Water4
Section 7.	Variances4
Section 8.	Violations4
Section 9.	Signs on Lands Supplied from Private Wells or Recycled Water5
Section 10	Drought Surcharge5

EMERGENCY WATER CONSERVATION ORDINANCE

ORDINANCE NO. 41

AN ORDINANCE OF NORTH MARIN WATER DISTRICT DECLARING THE EXISTENCE OF A WATER SHORTAGE EMERGENCY CONDITION WITHIN THE NOVATO SERVICE AREA OF THE DISTRICT, PROHIBITING THE WASTE AND NON-ESSENTIAL USE OF WATER, AND PROVIDING FOR THE CONSERVATION OF THE WATER SUPPLY OF THE DISTRICT

BE IT ORDAINED by the Board of Directors of North Marin Water District as follows:

Section 1. Declaration of a Water Shortage Emergency

This Board of Directors does hereby find and declare as follows:

(a) A public hearing was held on March 16, 2021, on the matter of whether this Board of Directors should declare a water shortage emergency condition exists within the Novato water service area of this District which is served by Stafford Lake and the North Marin Aqueduct.

(b) Notice of said hearing was published in the Marin Independent Journal, newspaper of general circulation printed and published within said water service area of the District.

(c) At said hearing all persons present were given an opportunity to be heard and all persons desiring to be heard were heard.

(d) Said hearing was called, noticed, and held in all respects as required by law.

(e) This Board heard and has considered each protest against the declaration and all evidence presented at said hearing.

(f) A water shortage emergency condition exists and prevails within the portion of the territory of this District served by Stafford Lake and the North Marin Aqueduct. Said portion of this District is hereinafter referred to as the Novato Service Area and consists in all the territory of this District except the portions hereof in the western part of Marin County denominated Annexations 2, 3, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15 and 16 generally known as Point Reyes Station, Inverness Park, Olema, Oceana Marin, and territories on the east shore of Tomales Bay. Said water shortage exists by reason of the fact that the ordinary demands and requirements of the water consumers in the Novato Service Area cannot be met and satisfied by the water supplies available to this District in the Novato Service Area without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation and fire protection.

(g) On April 19, 2016 the Board of Directors enacted the North Marin Water District Water Shortage Contingency Plan for the Greater Novato Area (Plan) and said Plan defines specific triggers for stages of action applicable to District customers. The specific triggers for stages of action vary and are determined based on advice and action of Sonoma County Water Agency regarding water supply conditions on the Russian River and in Lake Sonoma from which approximately eighty percent of the District's water supply for the Novato Service Area is delivered through the North Marin Aqueduct.

Section 2. Purpose and Authority

The purpose of this ordinance is to conserve the water supply of the District for the greatest public benefit with particular regard to public health, fire protection and domestic use, to conserve water by reducing waste, and to the extent necessary by reason of the existing water shortage emergency condition to reduce water use fairly and equitably. This ordinance is adopted pursuant

to Water Code Section 350 to and including 358, Section 375 to and including 378, and Section 31026 to and including 31029.

Section 3. Effect of Ordinance

This ordinance shall take effect on April 1, 2021, shall be effective only in the Novato Service Area, shall supersede and control over any other ordinance or regulation of the District in conflict herewith, and shall remain in effect until the Board of Directors declares by resolution that the water shortage emergency condition has ended. This ordinance, and all provisions contained herein, may be modified by resolution of the Board of Directors. If any provision of this ordinance, including the rules and regulations attached hereto and incorporated herein, or any part thereof, is for any reason held to be ultra vires, invalid, or unconstitutional, the remaining provisions of this ordinance shall not be affected, but shall remain in full force and effect, and to this end the provisions of this ordinance are severable.

Section 4. Suspension of New Connections to the District's Water System

(a) Until the Board of Directors declares by resolution that the water shortage emergency condition has ended, the Board of Directors may determine by resolution that no new or enlarged connection shall be made to the District's water system except under certain conditions.

Section 5. Waste of Water Prohibited

No water furnished by the District shall be wasted. Waste of water includes, but is not limited to, the following:

(a) The washing of sidewalks, walkways, driveways, parking lots and other hard surfaced areas by direct hosing when runoff water directly flows to a gutter or storm drain, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to prevent or eliminate materials dangerous to the public health and safety;

(b) The escape of water through breaks or leaks within the customers' 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 seventy-two (72) hours after the customer discovers such a break or leak or receives notice from the District, is a reasonable time within which to correct such break or leak, or, as a minimum, to stop the flow of water from such break or leak;

(c) Irrigation in a manner or to an extent which allows excessive run-off of water or unreasonable over-spray of the areas being watered. Every customer is deemed to have his/her water system under control at all times, to know the manner and extent of his/her water use and any run-off, and to employ available alternatives to apply irrigation water in a reasonably efficient manner;

(d) Washing cars, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle;

- (e) Water for non-recycling decorative water fountains;
- (f) Water for new non-recirculating conveyor car wash systems;
- (g) Water for new non-recirculating industrial clothes wash systems;
- (h) Water for single pass coolant systems:
- (i) Potable water for outdoor landscaping during or within 48 hours of measurable rainfall;

- (j) Potable water on ornamental turf in public street medians;
- (k) Drinking water other than on request in eating or dining establishments; and

(I) Water for the daily laundering of towels and linens in hotels and motels without offering guests the option of choosing not to have daily laundering.

Section 6. Prohibition of Non-Essential Use of Water

(a) No water furnished by the District shall be used for any purpose declared to be non-essential by resolution of the Board of Directors and in accordance with the Water Shortage Contingency Plan for the Greater Novato Service Area.

Section 7. Variances

Applications for a variance from the provisions of Section 6 of this ordinance may be made to the General Manager. The General Manager may grant a variance to permit a use of water otherwise prohibited by Section 6 if the General Manager determines that the variance is reasonably necessary to protect the public health and safety and/or economic viability of commercial operation. Any decision of the General Manager under this section may be appealed to the Board of Directors.

Section 8. Violations

(a) After the publication or posting of this ordinance as provided in Water Code Section 31027, it is a misdemeanor for any person to use or apply water received from the District contrary to or in violation of Section 5 or Section 6 of this ordinance. Pursuant to the authority provided in in Government Code section 53069.4, the District may impose administrative fines and penalties against any person found to be in violation of this ordinance. The purpose of the administrative fines and penalties assessed pursuant to this ordinance is to assure future compliance by customers through the imposition of increasingly significant fines and penalties so as to create a meaningful disincentive to commit future violations of the rules and regulations contained and referenced herein.

(b) If and when the District becomes aware of any violation of any provision of Section 5 or 6 of this ordinance, a verbal warning will be given, then if the violation continues or is repeated, a written notice shall be placed on the property where the violation occurred and mailed to the person who is regularly billed for the service where the violation occurs and to any other person known to the District who is responsible for the violation or its correction. Said notice shall describe the violation and order that it be corrected, cured and abated immediately or within such specified time as the General Manager determines is reasonable under the circumstances. If said order is not complied with, the District shall impose an administrative fine of not more than two hundred fifty dollars (\$250) for a first offense, and five hundred dollars (\$500) for a second offense, and may disconnect the service where the violation occurs.

(c) A fee of \$35 during normal business hours and \$60 during after-hours and weekends shall be paid for the first reconnection of any service disconnected pursuant to this ordinance during the suspension period. For each subsequent disconnection, the fee for reconnection shall be \$35 during normal business hours and \$60 during after-hours and weekends.

(d) No service which is disconnected twice because of a violation of Section 5 or 6 of this ordinance during the suspension period, shall be reconnected unless a device supplied by the District which will restrict the flow of water to said service is installed. Furthermore, the fee for installation of such a flow restriction device during the suspension period shall be \$100 in addition to the fee required by subsection (c) hereof.
Section 9. Signs on Lands Supplied from Private Wells or Recycled Water

The owner or occupant of any land within the Novato water service area that is supplied with water from a private well or with recycled water shall post and maintain in a conspicuous place thereon a sign furnished by the District giving public notice of such supply.

Section 10. Drought Surcharge

In the event a mandatory reduction in water use is triggered (Stage 2 or Stage 3 herein), a Drought Surcharge will be implemented simultaneous with enactment of the mandatory stage. The Drought Surcharge will serve to mitigate the revenue loss resulting from a reduction in water use, as well as the liquidated damages assessed by the Sonoma County Water Agency pursuant to the water shortage and apportionment provisions of the Restructured Agreement for Water Supply. The Drought Surcharge shall be a quantity charge for each 1,000 gallons as specified in District Regulation 54.

* * * * *

I hereby certify that the foregoing is a true and complete copy of an ordinance duly and regularly adopted by the Board of Directors of North Marin Water District at a regular meeting thereof held on March 16, 2021 by the following vote:

AYES:	Directors Baker, Fraites, Grossi, Joly, Petterle
NOES:	None
ABSENT:	None
ABSTAINED:	None

(SEAL)

Theresa Telace

Theresa Kehoe District Secretary North Marin Water District

RESOLUTION 21-XX

RESOLUTION OF THE BOARD OF DIRECTORS OF NORTH MARIN WATER DISTRICT AMENDING ORDINANCE NO. 41

WHEREAS, pursuant to Sections 350-358, 375-378, and 31026-31029 of the California Water Code, the Board of Directors ("Board") of the North Marin Water District ("District"), following a properly noticed and duly held public hearing at its meeting on March 16, 2021, adopted Ordinance No. 41, thereby declaring a water shortage emergency condition within the Novato Service Area of the District, prohibiting the waste and non-essential use of water, and providing for the conservation of the water supply of the District; and

WHEREAS, in adopting Ordinance No. 41, the Board reserved for itself the authority to modify Ordinance No. 41 and all provisions contained therein by resolution; and

WHEREAS, annual rainfall within the Novato Service Area is significantly below average to date and forecasts for the region indicate the Novato Service Area will receive very little rainfall for the foreseeable future; and

WHEREAS, the declared water shortage emergency condition within the Novato Service Area continues to exist.

NOW, THEREFORE, BE IT RESOLVED:

- 1. The Board of Directors of the North Marin Water District finds and determines that the foregoing Recitals are true and correct, and incorporates the Recitals herein.
- Section 4 and Section 6 of Ordinance No. 41 are hereby amended as indicated in EXHIBIT A, attached hereto and incorporated by this reference.
- 3. This Resolution shall be effective immediately upon adoption and shall remain in effect until such time as modified, repealed, or superseded by further resolution of the Board.

* * * * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the 20th of April 2021, by the following vote:

AYES: NOES: ABSENT: ABSTAINED:

> Theresa Kehoe, District Secretary North Marin Water District

Section 4. Suspension of New Connections to the Novato Service Area

- (a) Until the Board of Directors declares by resolution that the water shortage emergency condition has ended, the Board of Directors may determine by resolution that no new or enlarged connection shall be made to the District's water system except under certain conditions.
- (b) As provided for in Section 4(a) above, from July 1, 2021 until the Board of Directors by resolution declares that the water shortage has ended, which period is hereinafter referred to as the suspension period, no new or enlarged connection shall be made to the Greater Novato Service Area except the following:
 - (1) connection pursuant to the terms of connection agreements which prior to July 1, 2021, had been executed or had been authorized by the Board of Directors to be executed;
 - (2) connections of fire hydrants;
 - (3) connections of property previously supplied with water from a well which runs dry.
 - (4) connection of property for which the Applicant agrees to defer potable water irrigated landscape installation until after the suspension period.

(c) During the suspension period applications for water service will be processed only if the Applicant acknowledges in writing that such processing shall be at the risk and expense of the Applicant and that if the application is approved in accordance with the District's regulations, such approval shall confer no right upon the Applicant or anyone else until the suspension period has expired, and that the Applicant releases the District from all claims of damage arising out of or in any manner connected with the suspension of connections.

(d) Upon the expiration of the suspension period, the District will make connections to its water system in accordance with its regulations and the terms of connection agreements for all said applications approved during the suspension period. The water supply then available to the District will be apportioned equitably among all the customers then being served by the District without discrimination against services approved during the suspension period.

(e) Nothing herein shall prohibit or restrict any modification, relocation or replacement of a connection to the District's system if the General Manager determines that the demand upon the District's water supply will not be increased thereby.

Section 6. Prohibition of Non-Essential Use of Water

(a) No water furnished by the District shall be used for any purpose declared to be nonessential by resolution of the Board of Directors and in accordance with the Water Shortage Contingency Plan for the Greater Novato Service Area.

Stage 1 - Voluntary Stage (20% reduction). May 1 through June 30: Achieve 20% reduction in water usage compared to the corresponding billing period in 2020 by encouraging voluntary rationing, enforcement of water wasting regulations and water conservation Regulation 15, requesting customers to make conscious efforts to conserve water, encourage private sector to use alternate sources, and encourage night irrigation.

(b) As provided for in Section 6(a) above, the following uses are declared to be non-essential from and after July 1 through November 1:

Stage 2: Mandatory Stage (20% reduction)

EXHIBIT A

(1) Refilling a completely drained swimming pool and/or initial filling of any swimming pool for which application for a building permit was made after July 1, 2021;

(2) Non-commercial washing of privately-owned motor vehicles, trailers and boats except from a bucket and except that a hose equipped with a shut off nozzle may be used for a quick rinse;

(3) Any use of potable water from a fire hydrant except for fighting fire, human consumption, essential construction needs or use in connection with animals;

(4) Watering of any potable water irrigated lawn, garden landscaped area, tree, shrub or other plant except from:

a. A handheld hose equipped with an automatic shut-off nozzle;

b. A container;

c. A drip irrigation system; or

d. An overhead sprinkler irrigation system used more than three (3) days per week.

i. Odd numbered street addresses are authorized to irrigate using an overhead sprinkler irrigation system on Monday, Wednesday and Friday and even numbered street addresses are authorized to irrigate using an overhead sprinkler irrigation system on Tuesday, Thursday and Saturday provided that the customer maintains an overall 20% reduction in water use compared to the corresponding billing period in 2020and properly operates the irrigation system in a non-wasteful manner between the hours of 7:00 p.m. and 9:00 a.m. the next day.

ii. Exemptions may be granted for irrigation of commercial or government owned recreational landscape areas provided a 20% reduction in water use compared to the corresponding billing period in 2020 is maintained.

iii. Customers using less than 300 gallons per day are permitted to water their landscapes without the required 20% reduction).

(5) Use of potable water for dust control at construction sites or other locations; and

(6) Watering any portion of a golf course with potable or raw water except the tees and greens unless the customer can maintain a 25% reduction in water use as compared to 2020.

y:\resolutions\nmwd - exhibit a to draft resolution amending ordinance no. 41 4.2021.docx



MEMORANDUM

To: Board of Directors

April 16, 2021

From: Ryan Grisso, Water Conservation Coordinator (6)

Subject: Enhanced Water Conservation Program Incentives for Drought Year V:Wemos to Board\Enhanced Water Conservation Program Resolution April 2021.doc

RECOMMENDED ACTION:Adopt Revised Resolution 06-01 and 06-02FINANCIAL IMPACT:\$40,000 (included in the FY20/21 and FY 21/22 Water Conservation Budget)

At the March 16, 2021 Board meeting the Board was presented with some options for enhancing the District's water conservation program incentives in an effort to further increase customer participation in water conservation programs during this dry year period. After receiving Board feedback and continued research into other regional and Bay Area utility offerings, staff revised Resolution 06-01 and 06-02 (which set rebate amounts for the Novato and West Marin Service Areas, respectively) to reflect the recommended incentive amounts for the current dry year period.

A draft updated Resolution 06-01 and 06-02 which include the current incentives and recommended enhanced incentives is included for your review (Attachments 1 and 2). The recommended enhanced incentive options are summarized in Table 1 below.

Program	Current Incentive	Recommended Enhanced
		Incentive
Residential High-Efficiency Toilet Rebate	\$100	\$125
Residential Ultra High-Efficient Toilet Rebate	\$150	\$200
Commercial High-Efficiency Toilet Rebate	\$100	\$125
Commercial Ultra High-Efficiency Toilet Rebate	\$150	\$200
High-Efficiency Clothes Washer Rebate	\$50	\$100
Weather-Based Irrigation Controller Rebate	\$30/Station up to \$1,200	No Increase
Water Smart Landscape Rebate	50% up to \$100	75% up to \$200
Cash for Grass Rebate	\$50/100 Square-Feet	\$100/100 Square-Feet
Swimming Pool Cover Rebate	25% up to \$50	50% up to \$75
Hot Water Recirculation Rebate	\$75	\$100

Table 1: Current and Recommended Enhanced Increased Water Conservation Incentive Levels

Most of the enhanced incentive options are a 25-100% increase in either the rebate amount or the maximum rebate level, with the exception of the Weather-Based Irrigation Controller which is recommended to remain the same as the current rebate level meets or exceeds the cost of the product for most participants. The Lawn be Gone Sheet Mulching Program was not included in the Resolution drafts as this is a materials delivery program to properly sheet mulch a given area of lawn

Item #7

Enhanced Water Conservation Program Incentives for Drought Year April 16, 2021 Page 2

and consequently there is no incentive level to increase. It is also important to note that the programs recommended for enhanced options were previously increased in 2014 in response to the previous drought period and have not been reduced since.

With an estimated increase in participation along with the increase in the incentive amounts, staff estimates a \$40,000 increase in rebate expenditures during the period (remaining FY21 and FY21/22) for which the rebates may be increased, however, this should still remain below the yearly Water Conservation and Public Information budget due to the more recent historically low levels of participation. If participation is projected to increase the expenditure level above the yearly budget-ed amount, staff will return to the Board to request consideration of a budget augmentation or request that the incentive levels be decreased to the previous or other appropriately determined amount.

RECOMMENDATION

Board adopt revised Resolution 06-01 and 06-02 to increase water conservation program incentives.

DRAFT REVISED RESOLUTION 06-01 OF THE NORTH MARIN WATER DISTRICT BOARD OF DIRECTORS SETTING WATER CONSERVATION REBATE AMOUNTS FOR NOVATO SERVICE AREA

BE IT RESOLVED by the Board of Directors of North Marin Water District that following rebate amounts are available to customers of the Novato Service Area of the North Marin Water District effective-<u>May 1, 2021July 1, 2014</u>:

- Residential High Efficiency Toilet (HET) rebate amount to be set at up to \$12500 for District approved HETs (1.28gpf or less) and <u>up to</u> \$200450 for District approved Ultra High Efficiency Toilets (1.1gpf or less).
- Commercial High Efficiency Toilet (HET) rebate amount to be set at up to \$100125 for District approved HETs (1.28gpf or less) and up to \$200150 for District approved Ultra High Efficiency Toilets (1.1gpf or less).
- High Efficiency washing machine rebate set at up to \$10050.
- Residential and Commercial Weather-Based Irrigation Controller (Smart Control) rebate amount to be set at \$100 or \$30 per active station up to \$1,200 on qualified controller purchase. Rebate amount not-to-exceed cost of controller.
- Landscape Water Efficient Rebates shall cover up to <u>7550</u>% of the actual cost of District specified items up to a maximum of <u>\$200400</u>_for residential customers and up to a maximum of \$1,000 for non-residential customers.
- Cash for Grass Rebates (in accordance with Regulation 15, Section H)-are available at the rate of up to \$10050 per 100 square feet of formal lawn area(s) removed and replaced with eligible replacement plant materials but shall not exceed the following values:
 - Singe family detached residences and duplexes, each dwelling unit \$400800
 - Townhouses, condominiums, triplexes and fourplexes, each dwelling unit \$100200
 - Apartments (5 unites or more), each dwelling unit \$10050
 - Senior citizen unit or second unit with kitchen, each unit \$40
- Pool Cover Rebate shall cover <u>50</u>25% of the actual cost of a District qualified covers up to \$7550.
- Hot-Water Recirculation Rebate shall be up to \$100 for District qualified device.

Date Approved: January 17, 2006 Date of Revision: June 20, 2006 Date of Revision: July 15, 2008

c:\users\tkehoe\appdata\local\microsoft\windows\inetcache\content.outlook\5g5wkng9\06-01 tollet rebate novato rev 2021 draft.docv-\resolutions\06-01 tollet rebate novato rev 2021-draft.doc Date of Revision: December 1, 2009 Date of Revision: June 21, 2011 Date of Revision: June 19, 2012 Date of Revision: June 3, 2014

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the <u>20th day of April 2021</u>3rd day of June, 2014, by the following vote:

AYES:	Directors Baker, Fraites, Petterle, Rodoni, Schoonover
NOES:	None
ABSENT:	None
ABSTAINED:	None

(SEAL)

Katie YoungTerrie Kehoe, District Secretary North Marin Water District

DRAFT REVISED RESOLUTION 06- 02 OF THE NORTH MARIN WATER DISTRICT BOARD OF DIRECTORS SETTING WATER CONSERVATION REBATE AMOUNTS FOR WEST MARIN SERVICE AREA

BE IT RESOLVED by the Board of Directors of North Marin Water District that following rebate amounts are available to customers of the West Marin Service Area of the North Marin Water District effective July 1,2014May 1, 2021:

- Residential High Efficiency Toilet (HET) rebate amount to be set at up to \$100-125 for District approved HETs(1.28gpf or less) and \$150-200 for District approved Ultra High Efficiency Toilets (1.1gpf or less).
- Commercial High Efficiency Toilet (HET) rebate amount to be set at up to \$12500 for District approved HETs(1.28gpf or less) and \$200450 for District approved Ultra High Efficiency Toilets (1.1gpf or less)..
- High Efficiency washing machine rebate set at up to \$10050.
- Residential and Commercial Weather-Based Irrigation Controller (Smart Control) rebate amount to be set at \$100 or \$30 per active station up to \$1,200 on qualified controller purchase. Rebate amount not-to-exceed cost of controller.
- Landscape Water Efficient Rebates shall cover up to <u>50-75</u>50% of the actual cost of District specified items up to a maximum of \$200400 for residential customers and up to a maximum of \$500 for non-residential customers.
- Cash for Grass Rebates (in accordance with Regulation 175, Section H) are available at the rate of up to \$10050 per 100 square feet of formal lawn area(s) removed and replaced with eligible replacement plant materials but shall not exceed the following values:
 - Singe family detached residences and duplexes, each dwelling unit \$800400
 - Townhouses, condominiums, triplexes and fourplexes, each dwelling unit \$200,100
 - Apartments (5 unites or more), each dwelling unit \$10050
 - Senior citizen unit or second unit with kitchen, each unit \$40
- Pool Cover Rebate shall cover <u>50</u>25% of the actual cost of a District qualified covers up to \$7550.
- Hot-Water Recirculation Rebate shall be up to \$100 for District qualified device.

Date Approved: January 17, 2006 Date of Revision: July 27, 2006 Date of Revision: July 15, 2008 Date of Revision: December 1, 2009 Date of Revision: June 21, 2011 Date of Revision: June 19, 2012 Date of Revision; June 3, 2014

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of NORTH MARIN WATER DISTRICT at a regular meeting of said Board held on the 20th day of April 2021, 3rd day of June 2014 by the following vote:

AYES:	Director Baker, Fraites, Petterle, Rodoni, Schoonover
NOES:	None
ABSENT:	None
ABSTAINED:	None

Katie YoungTerrie Kehoe, District Secretary North Marin Water District

(SEAL)

* * * * *



MEMORANDUM

To: Board of Directors

April 16, 2021

From: Ryan Grisso, Water Conservation Coordinator \mathcal{RG}

Subject: Set Public Hearing to Consider Approval of the 2020 Urban Water Management Plan and Water Shortage Contingency Plan for Novato R:Folders by Job No\4000 jobs\4050.01 2020 UWMP\BOD Memos\UWMP Set Public Hearing 4-20-21.doc

RECOMMENDED ACTION: Set a Public Hearing for the June 15, 2021 Board Meeting to Consider Approval of the 2020 Urban Water Management Plan and Updated Water Shortage Contingency Plan for Novato

FINANCIAL IMPACT: None at this time

Urban water suppliers are required to prepare Urban Water Management Plans (UWMP) to support their long-term water resource planning and to ensure that adequate water supplies are available to meet existing and future water demands. The District is defined as an urban water supplier due to the fact that we provide more than 3,000 acre-feet of water per year to our customers and have more than 3,000 connections (This only applies to the Novato Service area). This update is required every five years and the next UWMP update is due for submittal to the Department of Water Resources by June 30, 2021.

In November 2019, the Board authorized a letter agreement with the City of Santa Rosa to hire EKI Environment and Water, Inc. (EKI), to update the demand analysis and water conservation measures for the 2020 UWMP for all water contractors in the Sonoma Marin Saving Water Partnership. EKI staff from their Burlingame, CA office completed this work on behalf of the District and the final report will be included in the UWMP. The gross water demand estimates are now projected at the year 2045 to total 10,284 acre feet per year (AFY) (versus 10,280 AFY projected by the 2040 in the 2015 UWMP). The District was able to incorporate a 12.6% growth rate in population which includes the projected increase in housing units thought to be imposed on the City of Novato in the near future. The Demand and Conservation Analysis Report is attached (Attachment 1) for reference and EKI will be present to do a short presentation on the key findings of the report in regards to future demand projections.

Leveraging the demand analysis and conservation work that EKI was performing on behalf of the District, along with their involvement in the UWMP Guidebook development, staff recommended and the Board approved a contract with EKI to assist in writing all components of the District's 2020 UWMP, including the final submittal to the California State Department of Water Resources (DWR). Currently the 2020 UWMP is nearing an initial draft completion. The 2020 Set Public Hearing for UWMP and WSCP April 16, 2021 Page 2

UWMP will include all of the information and analysis required by DWR. The following outlines the various sections of the Plan:

- Section 1 Introduction
- Section 2 Plan Preparation
- Section 3 Novato Service Area and System Description
- Section 4 System Water Demands
- Section 5 Baseline Water Use and Water Conservation Targets (SBX7-7)
- Section 6 Water System Supplies
- Section 7 Water Supply Reliability
- Section 8 Water Shortage Contingency Planning
- Section 9 Water Demand Management Measures
- Section 10 Plan Adoption and Submittal to DWR
- Section 11 References

The Water Shortage Contingency Planning (WSCP) will result in a stand-alone Shortage Contingency Plan, which requires separate but simultaneous adoption by the Board, along with the 2020 UWMP adoption. The WSCP is being coordinated with the Sonoma County Water Agency in regards to triggers and associated actions.

The Plan is currently on schedule for all of the specified deadlines for review and adoption. The 2020 UWMP must be submitted to DWR by July 1, 2021 and a public hearing must be held prior to its adoption. We have properly noticed (as required) other water suppliers, wastewater agencies and planning agencies to provide the 60-day notification prior to hearing. Staff is requesting that a public hearing be set for June 15, 2021 Board meeting to consider approval of the Urban Water Management Plan and updated Water Shortage Contingency Plan. The 2020UWMP and WSCP will be released to the public for review 2 weeks prior and is scheduled to be presented to the Board as an information item at the June 1, 2021 Board meeting.

Recommendation

Board set the June 15, 2021 regular Board meeting as the date and time to hold a public hearing to consider approval of the 2020 Urban Water Management Plan and Updated Water Shortage Contingency Plan for Novato.



December 2020 (EKI C00004.00)

Prepared by: EKI Environment & Water, Inc. 2001 Junipero Serra Boulevard, Suite 300 Daly City, California 94014 (650) 292-9100

ATTACHMENT 1



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ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AFY	acre-feet per year
AMI	advanced metering infrastructure
AWE	Alliance for Water Efficiency
CA	California
CEQA	California Environmental Quality Act
CII	commercial, industrial, and institutional
CWC	California Water Code
DMM	Demand management measure
DOF	Department of Finance
DRA	drought risk assessment
d.u.	Dwelling unit
DWR	Department of Water Resources
GPCD	gallons per capita day
GPD	gallons per day
HECW	high efficiency clothes washer
HET	high efficiency toilet
Irrig.	irrigation
MFR	multi-family residential
MWELO	Model Water Efficient Landscape Ordinance
NMWD	North Marin Water District
QWEL	Qualified Water Efficient Landscaper
RHNA	Required Housing Needs Allocation
SB	Senate Bill
SCWA	Sonoma County Water Agency
SFR	single-family residential
SMSWP	Sonoma-Marin Saving Water Partnership
sq ft	square feet
SWRCB	State Water Resources Control Board
UHET	ultra high-efficiency toilet
UWMP	Urban Water Management Plan
WBIC	Weather-Based Irrigation Controller
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan



1. INTRODUCTION

In preparation for development of their 2020 Urban Water Management Plan (UWMP) updates, nine members of the Sonoma-Marin Saving Water Partnership (SMSWP or Water Contractors) coordinated to conduct a joint update of their water demand projections and water conservation planning efforts (i.e., the *2020 Water Demand and Conservation Project*). The participating SMSWP members include: 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 agencies are shown on **Figure 1-1**.

The goals of the *2020 Water Demand and Conservation Project* were 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;
- Estimate projected water demands for the years 2025 through 2045 to support both the 2020 UWMP update and coordination and planning efforts with Sonoma County Water Agency (SCWA);
- 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 2020 Water Demand and Conservation report presents the results for the North Marin Water District (District), which is located in Marin County and serves a population of approximately 61,637 people (**Figure 1-2**). The District's water supplies include surface water purchased from the Sonoma County Water Agency (SCWA), local surface water from Safford Lake, and recycled water produced both inside and outside of the District (NMWD, 2016). Potable water is supplied to urban customers, and recycled water is served primarily for golf course and urban landscape irrigation customers, as well as three local drive-through automatic car washes. Over the years, the District has worked to increase water efficiency (conservation) among itself and its customers in response to both the SB X7-7 UWMP requirements and as part of the regional SMSWP. This conservation has been achieved through the implementation of water conservation programs, including some administered by the District and some administered through the regional SMSWP.

This 2020 Water Demand and Conservation report is organized as follows:

- Section 1 identifies the goals and objectives of this report;
- Section 2 provides the regulatory context for the demand projections described in this report as well as new requirements related to UWMPs and long-term demand planning that agencies will need to consider in development of their 2020 UWMPs;
- Section 3 describes historical water use patterns and characteristics within the District;



- Section 4 describes the projected water demands through 2045, including the assumptions and methodology used;
- Section 5 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 five select conservation programs;
- Section 6 documents the water conservation measure screening process, identifies individual programs and program scenarios for potential future implementation by the District, and presents the results of a benefit-cost analysis and an estimate of the potential water savings associated with these conservation programs;
- Section 7 provides conclusions regarding the main findings of the report; and
- Section 8 provides key references and sources.

Small tables are provided within text throughout the document. Figures and large tables and charts are provided at the end of each section.







2. REGULATORY CONTEXT

This section is provided both as regulatory background for the requirements to project future demand in the 2020 UWMP, and for elements of the District's 2020 UWMP that are beyond the scope of the 2020 Water Demand and Conservation Project, such as consideration of supply reliability, water shortage contingency planning, and the annual urban water use objectives retailers will be required to report on in 2023 and meet by 2027.

2.1. 2020 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. As described further in Section 4, water demand projections 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 2020 UWMP.

CWC § 10631

A plan shall be adopted in accordance with this chapter that shall do all of 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 be noted of that fact.

2.2. New Requirements for 2020 UWMPs and Future Demand Planning

Through the recent *Making Water Conservation a California Way of Life* (Assembly Bill [AB]-1668/Senate Bill [SB]-606) and other legislation, the State has made numerous changes to the requirements for UWMPs and related water conservation planning efforts. In many cases, the updated regulations reference details and methodologies to be developed by the California Department of Water Resources (DWR), and/or are somewhat vague and will benefit from the development of guidelines/further clarification by DWR. DWR is currently developing an updated guidebook to support the development of the 2020 UWMPs, which is expected to be complete by late 2020. This new guidebook is anticipated to provide direction to retailers with respect to many elements of the new legislation.

A summary of key changes to various elements of 2020 UWMP and related planning efforts is provided below. Copies of the revisions to relevant sections of the California Water Code per AB-1668, SB-606, and SB-664 are provided in **Appendix A**.

2.2.1. <u>Annual Urban Water Use Objectives</u>

Beginning in 2023,¹ retailers will be required to report on "annual water use objectives" by November 1 of each year, per CWC § 10609. The specific standards that will be used to determine a retailer's annual urban water use objectives are currently under development and are the source of a great deal of uncertainty with respect to the long-term water conservation and demand planning as part of the 2020 UWMP. Although the 2020 UWMP will not identify or calculate these new annual urban water use objectives, the new standards will become effective within the UWMP planning horizon. Per CWC § 10609.25, retailers will be required to "provide a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027." Details regarding the annual urban water use objectives and other requirements are expected to evolve significantly over the next two years.

• Residential outdoor water use: Per CWC § 10609.6, DWR and California State Water Resources Control Board (SWRCB) "shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use" which "incorporate the principles of the model water efficient landscape" and "apply to irrigable lands." DWR is currently working with a contractor to measure all of the single- and multi-family landscape (irrigable) area within urban water suppliers' service areas across the state based on aerial imagery. The result of these measurements will become the basis for each retailer's residential landscape water use component of the annual water use objectives. In order to accurately calculate and compare against this metric, retailers will be responsible for identifying what dedicated irrigation accounts are associated with residential water use (including multi-family residential), and what dedicated irrigation accounts are associated with commercial, industrial and institutional (CII) use. The

¹ DWR acknowledged publicly on 5 December 2019 that this and other related deadlines are likely to slip. DWR indicated that compliance with these objectives will most likely begin in 2024.



landscape area measurement process is being lead through a stakeholder workgroup process with periodic public meetings.

- Residential indoor water use: Per CWC § 10609.4.(a), "(1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily. (2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b). (3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b). (3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b)." While the legislation appears to be clear on the method to calculate the indoor residential water use component, the SWRCB has begun the California Environmental Quality Act (CEQA) process for the new water use objective requirements and has expressed concern that using the 55 gallons per capita per day (GPCD) number in the legislation will constitute "backsliding" and thus will need to be ratcheted down.
- Water loss: Per CWC § 10608.34.(i), "No earlier than January 1, 2019, and no later than July 1, 2020, the board shall adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses. In adopting these rules, the board shall employ full life-cycle cost accounting to evaluate the costs of meeting the performance standards. The board may consider establishing a minimum allowable water loss threshold that, if reached and maintained by an urban water supplier, would exempt the urban water supplier from further water loss reduction requirements." The SWRCB is developing a complicated cost-benefit analysis methodology that would need to be conducted by retailers in order to determine what water loss controls are deemed cost-effective and thus required to be implemented. Water retailers, the Association of California Water Agencies, the California Municipal Utilities Association, and others are advocating for an alternative methodology. The implementation of these requirements has been delayed beyond the 1 July 2020 deadline.
- **CII:** Rather than developing a water volume-based standard for the CII sector, DWR was tasked with developing a set of performance standards through a workgroup process to increase water efficiency, per CWC § 10609.10, with adoption of these performance measures by 30 June 2022. Based on this process, DWR has determined that it is impossible to set such standards today, but retailers will be required to report on progress towards key actions related to potential future standards, such as conversion of mixed CII meters to dedicated irrigation meters, performance of water audits for CII accounts, development of water management plans for CII accounts, detailed classification of CII accounts by industry, etc. The specific actions that retailers will be required to report are not yet known.
- Recycled Water Use: In previous UWMPs, calculations of SB X7-7 baselines, targets, and gross water use for compliance were based only on potable water use, and thus the use of recycled water to offset potable water use was an effective method to help retailers conserve potable water and meet their SB X7-7 targets. However, under CWC § 10609.(b)(2)(F), the benefit of recycled water for compliance with annual water use objectives is much more limited: "Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year's water use with the urban water use objective, of up to 10 percent of the urban water use objective." Thus, adoption and expansion of recycled water use only provides a compliance benefit if it constitutes direct potable reuse, indirect potable reuse, or reservoir augmentation (CWC § 10608.12.(o)).



2.2.2. Supply Reliability

 Retailers will be required to develop procedures to conduct annual water supply and demand assessments to determine its water supply reliability for the current year and one dry year and to conduct these assessments annually beginning in 2022 (CWC § 10632(a)(2)). These procedures are required to include the following (emphasis added):

(A) The <u>written decision making process</u> that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, <u>considering weather, growth, and other influencing</u> <u>factors</u>, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering <u>hydrological and regulatory conditions in the</u> <u>current year and one dry year</u>. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) <u>A defined set of locally applicable evaluation criteria</u> that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and **<u>quantification of each source</u>** of water supply.

In addition, the requirement to analyze supply reliability for a period of multiple consecutive drought years has been extended from a 3-year period to a 5-year period, per CWC §10631(f) and §10635(a). Specifically, retailers are now required to "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."

2.2.3. <u>Water Shortage Contingency Plans</u>

The new regulations also add new requirements related to drought planning and Water Shortage Contingency Plans (WSCPs):

Retailers will now be required to conduct a drought risk assessment (DRA) as part of their UWMPs to assess water supply reliability (or vulnerability) for a period of drought lasting <u>five consecutive</u> <u>water years</u>,² starting from the year following that of the UWMP, and to compare water supplies (assessing each source of supply separately) with total projected water use (CWC § 10635(b)) during that period. The DRA five-year period for this 2020 UWMP is 2021-2025. During the 10 March 2020 workshop, DWR indicated that retailers will be expected to identify supply and demand on a monthly basis for this purpose, although it is noted that this does not appear to be an explicit requirement of the regulations.

² While the corresponding Water Supply Assessment (WSA) regulations have not been updated to require analysis of a five-year period, retailers should consider including a five-year drought period in their supply reliability assessment in any new WSAs.



- Per CWC § 10632.5 retailers' WSCPs "shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities" and a water supplier may submit "a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk."
- WSCPs will be required to use "Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage," or to provide a "cross-reference relating its existing categories to the six standard water shortage levels."



3. WATER USE CHARACTERISTICS

This section describes historical water use by customers within the District, including changes in use observed during and after the historic 2014 - 2016 drought, changes in average per account water use over time, and estimates of indoor and outdoor water use, based on data provided by the District. This information is used to provide context and background to support the projections of future demands (Section 4) and estimates of potential conservation program benefits (Section 6).

3.1. Historical Total and Per Capita Water Use

Table 3-1 summarizes the District's historical water use, service area population, and per capita water use for the years 2004 through 2019 (NMWD, 2020). Water use is described both in terms of total water produced and average per capita water use. It should be noted that the 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 a retailer's compliance population and total water use. SB X7-7 compliance will need to be separately addressed by the District's 2020 UWMP.

Total water use, including both potable and recycled water³, ranged from 7,429 acre-feet per year (AFY) to 11,705 AFY over this period. Total per capita water use (i.e., including both potable and recycled water use) ranged from 108 GPCD to 183 GPCD. Potable water use ranged from 6,977 AFY to 11,705 AFY over this period. Per capita potable water use ranged from 101 GPCD to 183 GPCD.

Both the potable and per capita potable water use declined following 2008, corresponding with the economic downturn, and from 2013 through 2015, likely influenced by the historic drought conditions, mandatory state-wide restrictions in urban water use imposed by the SWRCB, and local drought response. Potable and per capita potable water use has remained lower than pre-drought conditions, with an increase from 2016 through 2019, indicating a degree of rebound following the drought.

Historical water use by customer sector is provided in **Table 3-2**. The single family residential (SFR) sector comprises the largest proportion of the District's total water use (i.e., 51% in 2019). By comparison, in 2019, dedicated irrigation accounts, including recycled water, collectively comprised 18% of total water use; the combined commercial and government sectors comprised 13% of total water use; and the combined multi-family residential (MFR) sectors (including apartment, townhouse/condo and mobile homes) comprised 13% of total water use. In 2019, non-revenue water was estimated to be 4.9% of the potable water demand based on the District's water loss audit data.⁴

3.2. Historical Average Water Use Per Account

The total number of accounts varies over time due to growth and development within the District and shifts in land use.

³ The recycled water system is supplemented with potable water to meet demands, as necessary. Recycled water use discussed herein reflects all water served through the recycled water system.

⁴ Given that non-revenue water data was unavailable for 2019, the average percent water loss from 2016-2018 DWR Water Loss Audit Reports was used, per DWR (2020).



The total number of accounts by customer sector for the 2004 to 2019 period is shown in **Table 3-3**, including a pie chart illustrating the relative proportion of accounts (NMWD, 2020). The SFR sector comprised the highest proportion of accounts in 2019 (72%), followed by the townhouse/condo sector (15%), commercial sector (3.9%), apartment sector (2.9%), and irrigation sector (1.7%). From 2010 to 2019, the SFR and apartment sectors had minimal net growth (0.74%) in the number of accounts. Government had a 5.3% net increase in accounts (from 94 accounts in 2010 to 99 accounts in 2019). Irrigation accounts (potable water) decreased by 17% over the same time period, largely due to the increase of recycled water accounts being used for irrigation, and commercial accounts decreased by 2.3%. Recycled water increased from one account in 2007 to 92 accounts in 2019.

Average water use per account is presented in **Table 3-4a**. For most sectors, per account water usage has followed the same general trends over time as total water use in the District (per **Table 3-1**). However, governmental water use has actually increased to pre-drought levels in 2018 and 2019.

Table 3-4b presents average water use for the residential sectors normalized by number of dwelling units. SFR accounts, on average, use approximately 80% to 200% more water per dwelling unit than apartment, townhouse/condo, and mobile home accounts. It should be noted that many larger MFR developments have dedicated irrigation meters.

3.3. Change in Residential Water Use Pre- and Post-Drought

Over time, customer water use becomes more efficient due to participation in conservation programs, passive savings,⁵ and other behavioral or cultural changes. The more efficient customers become, the less opportunity there is for customers to save more water, which is referred to as "demand hardening." The SFR sector comprises the largest proportion of the District's total water use (approximately 51% in 2019). Therefore, in order to observe demand hardening over time, histograms illustrating the distribution of water use by SFR customers for three separate years (2004, 2013, and 2019) are shown in **Figure 3-1**.

The median SFR account water use has shifted from 369 GPD to 303 GPD between 2004 and 2013, reflecting a 22% reduction in water use. Following the drought, water use was reduced even further with a median of 235 GPD in 2019, reflecting a 29% reduction from 2013 water use. In 2004, the middle 50% of accounts used 254 GPD to 510 GPD. In 2019, this range has shrunk considerably, with the middle 50% of accounts using between 151 GPD and 345 GPD. Based on this (and taken with the **Table 3-5** results discussed below), it appears that a high degree of customer savings/increased efficiency has occurred, which are expected to be a combination of both passive and active savings, as well as effects of the drought. Water savings achieved during drought conditions are typically driven by behavioral changes, rather than device changeouts (AWE, 2015). Given the limited rebound observed since the drought (**Table 3-4a**), it may be that behavioral changes during the drought have resulted in permanent changes in customers' water use.

⁵ Passive savings refers to 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.



3.4. Residential Water Use by Dwelling Unit and Age of Construction

It is commonly assumed that new residential construction is inherently more water efficient than older construction due to changes in plumbing codes and the increased efficiency of water using devices available on the market today. However, in some areas it has been observed that newer construction can actually have higher rates of water use, which is an important consideration when evaluating future water demands associated with new development. In order to evaluate water use relative to the age of residential construction within the District, water use by SFR and MFR accounts is summarized in **Table 3-5** by units constructed: (1) prior to 1994, (2) from 1994 through 2009, and (3) 2010 and later.

Water use by new (2010 and later) SFR units appears to be generally consistent with 1994-2009 units through 2015, but used up to 9% less water than 1994-2009 units by 2019, on a per dwelling unit basis. Water use by 1994-2009 SFR units is on average about 30% higher than pre-1994 units on a per dwelling unit basis. Given this, as discussed in Section 4.3.1, a water demand factor representative of newer construction (1994 and later) is used as the basis for demand projections for new SFR accounts.

For MFR units, there appears to be less difference in water use between pre-1994 units and newer units than observed in SFR units. Newer (post 1994) MFR units appear to use roughly 5% less water than older units on a per dwelling unit basis. It should be noted that some of the effect observed could be due to increasing household size, with multiple families sometimes sharing one apartment. Given this, the demand projections for new MFR accounts discussed in Section 4.3.1 are conservatively based on all MFR units regardless of construction age.

3.5. Estimated Indoor and Outdoor Water Use

When designing and estimating the benefits of potential water conservation programs, it is important to understand the relative proportion of water use that is used indoors versus outdoors.

As shown in the first chart in **Table 3-6**, potable water use within the District varies seasonally, and water use in the summer is two to three times greater than water use during the winter. This seasonality is typically driven by increased irrigation needs in the summer, as compared to the more limited irrigation water use during the wetter and cooler winter months. The second chart in **Table 3-6** shows the seasonality of recycled water use, which is limited to use for irrigation. Based on the recycled water use patterns, irrigation rates appear to be nearly zero during winter months, confirming that it is reasonable and conservative to assume that minimal irrigation with potable water occurs during winter months. It is noted that this is a high-level estimate of indoor and outdoor water use, which errs on the side of estimating higher indoor water use.

Given the water use patterns presented in **Table 3-6**, the minimum average daily water use during winter months (November – April due to bi-monthly billing data) was used to estimate the indoor water use for all non-irrigation customer sectors. From this, outdoor water use was calculated as the difference between indoor water use and total water use for each potable water use sector. The results of this estimate are shown in **Table 3-7**. Approximately 53% of all potable water use within the District is estimated to be indoor use, and 47% to be outdoor water use. Total water use (including recycled water) is approximately 50% indoor water use and 50% outdoor use.



Aside from the dedicated "pool", "other", irrigation, and recycled water sectors (presumed 100% outdoor water use), the governmental sector is estimated to have the highest proportion of outdoor water use at 76%, followed by SFR at 46%, mobile homes at 31%, and commercial at 26%. The apartment sector has an estimated 13% outdoor water use and townhouse/condo sector has an estimated 9.0% water use. It should be noted that landscape areas for larger multi-family developments tend to have dedicated irrigation accounts. Further, some industries within the CII sector, such as restaurants and manufacturing, may also experience some degree of seasonality in indoor use, with increased business and production during summer months. Thus, these should be considered high-level estimates of indoor and outdoor use proportions.



received at least six water bills in the specified year.



Figure 3-1

Table 3-1 Water Use and Population

North Marin Water District, Sonoma-Marin Saving Water Partnership

Year (a) (AFY) (b) Potable Water Use (AFY) (b) (c) (d)		Potable Non- Revenue Water (AFY) (c) (d)	Recycled Water Use (AFY) (e)	Total Water Use (AFY)	Service Area Population (f)	Per Capita Potable Water Use (GPCD) (g)	Per Capita Total Water Use (GPCD) (g)	
2004	11,233	473		11,705	57,180	183	183	
2005	10,210	-254		9,955	57,848	154	154	
2006	10,604	738		11,342	58,363	173	173	
2007	10,214	324	160	10,698	58,878	160	162	
2008	10,505	588	242	11,335	59,393	167	170	
2009	9,273	-114	214	9,373	59,908	136	140	
2010	8,479	-231	159	8,407	59,861	123	125	
2011	8,275	519	159	8,952	60,119	130	133	
2012	9,083	796	184	10,063	60,377	146	149	
2013	9,398	670	420	10,489	60,635	148	154	
2014	8,064	279	453	8,796	60,893	122	129	
2015	6,923	54	452	7,429	61,381	101	108	
2016	7,085	242	415	7,743	61,386	106	113	
2017	7,666	193	458	8,317	61,470	114	121	
2018	7,774	124	592	8,491	61,616	114	123	
2019	7,864	407	578	8,849	61,637	120	128	



Table 3-1 Water Use and Population

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

AFY = acre-feet per year

GPCD = gallons per capita per day

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Water use data per Reference 2. Potable water totals include a small percentage (roughly 2%) of raw water delivered to irrigation customers.
- (c) Estimated non-revenue water per Table 3-2.
- (d) Estimates of non-revenue water are based on the potable water system and include both real and apparent losses. The recycled water system would be expected to have a degree of water loss, but this loss has not been quantified.
- (e) Recycled water use data per Reference 2. The recycled water system is supplemented with potable water to meet demands, as necessary. Recycled water use shown here reflects all water served through the recycled water system.
- (f) Population data for 2015 per Reference 1 and all other years per Reference 3.
- (g) Per capita water use is calculated by dividing the annual water use by service area population and the number of days in a year.

References:

- 1. North Marin Water District, 2016. 2015 Urban Water Management Plan, prepared by North Marin Water District, dated June 2016.
- North Marin Water District, 2020a. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.
- 3. North Marin Water District, 2020b. NMWD Historical Population.xlsx, provided by North Marin Water District on 6 April 2020.

Table 3-2

Water Use by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Use Sector	Water Use (AFY) (a) (b)															
water use sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	6,868	6,231	6,418	6,280	6,381	5,666	5,126	4,995	5 <i>,</i> 528	5,810	4,883	4,090	4,232	4,631	4,677	4,553
Apartment	687	663	673	683	685	666	648	653	650	659	615	566	559	555	577	572
Townhouse/Condo	538	548	565	555	548	546	513	517	526	541	496	455	453	462	459	458
Mobile Home	120	116	113	118	114	105	102	99	103	107	90	83	83	89	88	95
Commercial (c)	1,225	1,178	1,191	1,089	1,085	986	919	896	960	921	857	797	801	853	871	844
Government	291	227	246	251	287	252	233	201	230	271	233	184	174	193	300	269
Irrigation	1,330	1,123	1,284	1,117	1,272	960	850	811	981	965	782	678	712	796	716	987
Pool	94	87	86	91	88	75	72	76	81	84	74	61	65	71	68	71
Other (d)	79	36	27	28	45	16	15	26	24	41	33	9	6	15	17	16
Recycled Water (e)				160	242	214	159	159	184	420	453	452	415	458	592	578
Total Water Consumption	11,233	10,210	10,604	10,374	10,747	9,487	8,638	8,433	9,267	9,819	8,517	7,375	7,501	8,124	8,366	8,442
	4.0%	-2.6%	6.5%	3.1%	5.3%	-1.2%	-2.8%	5.9%	8.1%	6.7%	3.3%	0.77%	3.3%	2.5%	1.6%	4.9%
Non-revenue water (I) (g)	473	-254	738	324	588	-114	-231	519	796	670	279	54	242	193	124	407
Total Water Use	11,705	9,955	11,342	10,698	11,335	9,373	8,407	8,952	10,063	10,489	8,796	7,429	7,743	8,317	8,491	8,849


Water Use by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

AFY = acre-feet per year

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Water use by sector per Reference 2.
- (c) Commercial includes combined commercial/residential accounts.
- (d) Other includes livestock, hydrants, other fire services.
- (e) The recycled water system is supplemented with potable water to meet demands, as necessary. Recycled water use shown here reflects all water served through the recycled water system.
- (f) Non-revenue water for 2004-2018 per Reference 3. For 2019 where non-revenue water data was unavailable, the average percent water loss from 2016-2018 DWR Water Loss Audit Reports was used, per Reference 1. Non-revenue water for years 2004-2017 are calculated on a fiscal year basis, and the actual water loss in the calendar year shown here are likely to be slightly different.
- (g) Estimates of non-revenue water are based on the potable water system and include both real and apparent losses. The recycled water systems would be expected to have a degree of water loss, but this loss has not been quantified.

References:

- 1. DWR, 2020. WUEdata Water Audit Report Data website, accessed 13 June 2020, (https://wuedata.water.ca.gov/awwa_plans).
- 2. North Marin Water District, 2020a. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.
- 3. North Marin Water District, 2020b. NMWD Copy of WTRLOSS% dladd2018.xlsx, provided by North Marin Water District on 15 April 2020.

Number of Accounts by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Use Sector							Nur	nber of Ao	counts (a) (b)						
Water Use Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	14,206	14,571	14,661	14,714	14,723	14,746	14,754	14,769	14,779	14,789	14,811	14,821	14,825	14,849	14,856	14,863
Apartment	562	572	587	589	588	588	589	588	589	588	588	589	589	591	593	593
Townhouse/Condo	2,745	2,952	3,112	3,111	3,110	3,111	3,112	3,112	3,114	3,113	3,115	3,113	3,114	3,113	3,114	3,111
Mobile Home	103	103	103	103	103	103	102	102	102	103	103	103	102	102	102	102
Commercial (c)	810	806	815	815	826	822	829	825	821	821	818	811	818	811	810	810
Government	91	91	92	92	92	94	94	95	97	101	99	100	100	100	100	99
Irrigation	350	377	403	405	415	422	431	444	428	421	407	406	412	397	400	356
Pool	92	91	91	91	91	91	91	94	93	93	93	93	93	93	93	92
Other (d)	368	389	409	412	428	420	428	425	435	440	434	428	435	450	462	469
Recycled Water				1	1	3	4	3	6	44	44	44	46	53	92	92
Total Accounts	19,327	19,952	20,273	20,333	20,377	20,400	20,434	20,457	20,464	20,513	20,512	20,508	20,534	20,559	20,622	20,587



Abbreviations:

-- = not available

Number of Accounts by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Number of accounts by sector per Reference 1.
- (c) Commercial includes combined commercial/residential accounts.
- (d) Other includes livestock, hydrants, other fire services.

References:

1. North Marin Water District, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.

Table 3-4a Per Account Water Use by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Lise Sector	Water Use per Account (GPD) (a) (b)															
water use sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	431	382	391	381	387	343	310	302	334	351	294	246	255	278	281	273
Apartment	1,091	1,035	1,023	1,034	1,040	1,011	982	990	984	999	933	857	847	838	868	860
Townhouse/Condo	175	166	162	159	157	157	147	148	151	155	142	130	130	132	132	131
Mobile Home	1,039	1,006	982	1,025	985	908	889	866	898	923	782	717	727	775	765	827
Commercial (c)	1,349	1,304	1,304	1,192	1,172	1,070	989	969	1,043	1,000	935	877	874	938	959	929
Government	2,857	2,221	2,383	2,438	2,786	2,392	2,215	1,892	2,116	2,397	2,104	1,643	1,548	1,726	2,680	2,427
Irrigation	3,389	2,658	2,843	2,461	2,735	2,030	1,760	1,630	2,046	2,045	1,714	1,490	1,541	1,789	1,598	2,473
Pool	913	857	847	891	859	737	707	726	776	802	712	584	627	680	653	684
Other (d)	192	83	59	61	93	34	32	54	49	82	67	19	13	31	32	30
Recycled Water				142,479	215,700	63,598	35,433	47,177	27,362	8,525	9,182	9,164	8,058	7,709	5,743	5,600







 Water Use (GPD) 1,200



Water Use (GPD)

Water Use (GPD)

2016

Mobile Home



Table 3-4a

Per Account Water Use by Customer Sector

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

GPD = gallons per day

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Water use and number of accounts by sector per Tables 3-2 and 3-3.
- (c) Commercial includes combined commercial/residential accounts.
- (d) Other includes livestock, hydrants, other fire services.

References:

1. North Marin Water District, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.

EKI Environment & Water, Inc. December 2020

Table 3-4b Per Dwelling Unit Water Use for Residential Sectors

North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Use Sector		Water Use per Dwelling Unit (GPD/DU) (a) (b)														
Water Ose Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family Residential	414	368	377	368	373	333	302	294	325	340	288	242	250	272	274	267
Apartment	169	164	165	160	159	158	154	153	148	147	137	132	133	130	132	137
Townhouse/Condo	136	130	127	125	122	122	115	115	116	119	110	100	100	101	102	102
Mobile Home	148	138	134	146	137	138	133	139	144	135	129	124	122	125	114	113









Table 3-4b

Per Dwelling Unit Water Use for Residential Sectors

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

- -- = not available
- DU = dwelling unit
- GPD = gallons per day

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Per dwelling unit water use is calculated based on the number of residential dwelling units per account provided in customer billing data.

References:

1. North Marin Water District, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.

Residential Water Use by Age of Construction

North Marin Water District, Sonoma-Marin Saving Water Partnership

Construction Are						Average	Water L	Jse (GPD	per Dwe	elling Un	it) (a) (b)						Number of
Construction Age	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Accounts, 2019
Single Family Residential																	
Pre-1994	408	362	367	356	361	321	290	281	309	323	271	228	235	255	257	253	10,188
1994-2009	487	434	441	439	446	406	368	362	403	425	369	309	320	345	351	337	2,530
2010 and Later							362	382	502	482	352	280	285	300	291	275	112
Multi-Family Residential (Inclusive	of Apar	tments, [•]	Townhou	use/Con	do, and N	Aobile H	omes)									
Pre-1994	145	137	137	131	130	128	122	122	121	122	112	103	104	105	107	108	2,093
1994-2009	145	126	123	115	114	117	112	111	115	119	113	100	98	99	96	97	536
2010 and Later							110	130	103	114	79	56	94	105	90	96	2
Apartment																	
Pre-1994	186	183	185	173	175	176	172	171	163	163	150	146	153	144	148	157	286
1994-2009	265	228	312	225	267	205	195	174	175	214	153	139	138	194	190	232	1
2010 and Later																	
Townhouse/Condo																	
Pre-1994	139	130	130	125	123	120	114	113	115	116	106	96	96	98	100	100	1,807
1994-2009	144	125	123	115	114	117	112	111	115	119	113	100	98	98	96	96	535
2010 and Later							110	130	103	114	79	56	94	105	90	96	2
Mobile Home																	
Pre-1994																	
1994-2009	140	137	130	142	131	133	136	139	143	133	129	129	122	128	111	106	80
2010 and Later																	





 Table 3-5

 Residential Water Use by Age of Construction

 North Marin Water District, Sonoma-Marin Saving Water Partnership







Table 3-5 Residential Water Use by Age of Construction

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

- -- = not available
- AFY = acre-feet per year
- GPD = gallons per day
- DU = dwelling unit

Notes:

- (a) Data are presented on a calendar year basis.
- (b) Average water use per dwelling unit is shown for residential sectors based on billing data, per Reference 2. Accounts included in this analysis are limited to that for which construction year is available, based on Marin County Assessor data, and that received 6 bills in the specified year per Reference 1.

References:

- 1. Marin County, 2020. County Wide Parcel Data ConservationJan2020.gdb, provided by Marin Municipal Water District on 13 February 2020.
- 2. North Marin Water District, 2020. 2010-2019 MonthlyWaterByService2004_2019RawData.xlsx, provided by North Marin Water District on 14 May 2020.

Monthly Water Use

North Marin Wate	r District, Sonoma-N	Marin Saving W	Vater Partnership
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Month		Monthly Water Use (AF) (a)														
wonth	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Potable Wate	er Use															
January	597	544	633	564	620	624	532	494	571	502	584	412	461	450	515	514
February	447	457	453	430	411	421	389	375	432	381	491	366	329	330	352	334
March	469	469	452	537	508	481	413	419	470	525	519	481	375	342	417	414
April	516	453	439	504	456	400	332	381	410	441	352	386	345	335	363	286
May	957	666	592	817	810	629	575	630	599	724	535	669	533	500	546	539
June	1,057	675	672	841	848	692	552	566	686	812	655	538	489	483	602	543
July	1,306	1,206	1,412	1,316	1,338	1,143	934	1,047	1,259	1,278	1,040	715	923	1,018	1,042	909
August	1,305	1,227	1,322	1,077	1,154	949	967	885	898	835	826	617	704	803	733	701
September	1,582	1,397	1,661	1,423	1,439	1,395	1,355	1,128	1,352	1,297	1,094	890	958	1,126	1,166	1,179
October	1,267	1,183	1,225	1,011	1,025	904	923	891	964	930	667	572	733	836	759	766
November	1,174	1,256	1,079	1,096	1,203	1,046	1,032	960	892	1,028	809	794	823	916	750	1,087
December	556	678	665	598	692	590	473	498	549	645	493	483	412	527	530	592
Recycled Wat	ter Use															
January					0	0	0	0.092	0.38	1.5	3.3	4.4	4.5	3.8	3.7	14
February					0	0	0	0	0	0.42	15	1.8	0.46	0.71	0.49	2.5
March					0	0	0	0.27	0.15	0.86	10	4.3	1.9	-0.63	4.5	1.6
April					0.083	0	0	0	0	13	3.7	19	1.3	1.8	5.5	1.9
May					0	0	0.24	0.15	0.23	8.2	14	23	20	14	15	19
June					63	60	21	37	45	67	68	85	59	50	67	57
July					0	0	0.34	0.45	1.1	26	50	35	44	47	72	80
August				75	83	73	68	55	62	77	100	88	101	109	116	105
September				0	0	0	0.40	0.057	0.56	60	50	43	41	53	84	90
October				75	74	70	63	65	67	88	83	86	97	108	112	89
November				0	0	0	0.44	0.23	0.47	43	29	31	32	34	78	70
December				10	21	10	5.3	0	8.1	34	26	32	14	37	35	47

 Table 3-6

 Monthly Water Use

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Monthly Water Use

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not available

AF = acre-feet

Notes:

(a) Monthly potable and recycled water use per Reference 1. Customers are billed on a bimonthy basis. Data are shown without adjustment.

References:

1. North Marin Water District, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.

Table 3-7 Estimated Indoor and Outdoor Water Use

North Marin Water District, Sonoma-Marin Saving Water Partnership

	2017					20	18			20	19		Average Pct.	
Water Use Sector	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Water Use (AFY)	Outdoor Water Use (AFY)	Pct. Indoor	Pct. Outdoor	Indoor Use	Outdoor Use
Single Family Residential	2,339	2,293	50%	50%	2,787	1,890	60%	40%	2,318	2,236	51%	49%	54%	46%
Apartment	486	69	88%	12%	484	93	84%	16%	514	57	90%	10%	87%	13%
Townhouse/Condo	406	56	88%	12%	411	48	90%	10%	438	20	96%	4%	91%	9%
Mobile Home	57	32	64%	36%	62	26	70%	30%	67	27	71%	29%	69%	31%
Commercial	609	244	71%	29%	656	215	75%	25%	646	198	77%	23%	74%	26%
Government	52	142	27%	73%	60	241	20%	80%	67	203	25%	75%	24%	76%
Irrigation	0	796	0%	100%	0	716	0%	100%	0	987	0%	100%	0%	100%
Pool	0	71	0%	100%	0	68	0%	100%	0	71	0%	100%	0%	100%
Other	0	15	0%	100%	0	17	0%	100%	0	16	0%	100%	0%	100%
Total (Potable)	3,948	3,718	51%	49%	4,460	3,314	57%	43%	4,050	3,814	52%	48%	53%	47%
Recycled Water	0	458	0%	100%	0	592	0%	100%	0	578	0%	100%	0%	100%
Total (Potable & Recycled)	3,948	4,176	49%	51%	4,460	3,906	53%	47%	4,050	4,392	48%	52%	50%	50%



Table 3-7 Estimated Indoor and Outdoor Water Use

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

AFY = acre-feet per year Pct. = Percentage

Notes:

(a) The minimum average daily water use from November through April was used to estimate indoor water use for all non-irrigation and non-pool customer sectors. This method is used to assess relative proportion of indoor and outdoor use, and conservatively errs on the side of estimating more indoor water use, so that the potential for outdoor water savings is not over-estimated.

References:

1. North Marin Water District, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.



4. WATER DEMAND PROJECTIONS

The purpose of this section is to document the basis, methodology, and resulting projected demands for the District through 2045. 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. Identifying known planned developments within the District to verify that account growth projections consider all anticipated growth,
- 3. Evaluating and selecting water demand factors for each water use sector based on review of recent average per account water use representing three scenarios,
- 4. Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and
- 5. 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.

4.1. Basis for Account Growth Projections

Water demand increases as new accounts are added to the system, among other 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 4-1 presents historical population and 2018 Association of Bay Area Governments (ABAG) Plan Bay Area Projections 2040 population and employment growth projections for the District, in context with recent historical population estimates.⁶ In addition, an updated Required Housing Needs Allocation (RHNA) for the City of Novato has been developed through ABAG 2020 (ABAG, 2020). Based on the current RHNA methodology, the City of Novato is required to provide 2,107 new housing units by 2035.

⁶ Several growth projections were evaluated as potential bases for growth assumptions, including previous 2013 ABAG Plan Bay Area Projections (ABAG, 2013), ABAG Plan Bay Area Projections 2040 (ABAG, 2018), and 2020 Department of Finance (DOF) Total Estimated and Projected Population for California and Counties (DOF, 2020). The DOF (2020) projections are only available at the County-wide level and show a decline in population over the planning horizon and given the recent historical growth observed in the District, are not considered appropriately conservative for planning purposes. Although anticipated to be released in 2020, updated ABAG projections are not yet available. Therefore ABAG (2018) projections (adjusted for the RHNA) were selected as the basis for growth assumptions for the District.



Assuming 2.57 persons per household, this amounts to an increase in population greater than that projected by ABAG (2018). Population growth adjusted for the City of Novato RHNA is shown as a separate line in **Table 4-1**, and is used as the basis for estimated account growth in all residential sectors.

Table 4-2, identifies which growth projection was applied to each potable water use sector (population or employment) at the District's direction, identifies the average annual growth rate in accounts observed within the District (based on data presented in **Table 3-3**), and the associated average annual growth rate projected by ABAG (2018) and adjusted for the RHNA. With the exception of government accounts, recent historical growth rates have been lower than the projected growth rates by ABAG (2018). At the District's direction, ABAG (2018) projected growth rates adjusted for the new RHNA were used and are considered to be reasonably conservative for planning purposes. The population projections are greater than included in the City of Novato's General Plan 2035, which has yet to be updated to account for the RHNA (City of Novato, 2020).

The planning horizon for the 2020 UWMP is 2045; however, the ABAG (2018) projections extend only through 2040. For purposes of demand projections, it is therefore assumed that the projected growth rates from 2035 through 2040 extend through 2045.

	Pacis for	Average Ann	ual Growth (a)
Water Use Sector	Account Growth	Historic (2010-2019)	ABAG (2018), adjusted for RHNA (2020-2045)
Single Family Residential			
Existing Accounts	population	0.082%	0.50%
New Accounts			
Apartment	population	0.075%	0.50%
Townhouse/Condo	population	-0.0036%	0.50%
Mobile Home	population	0%	0.50%
Commercial	employment	-0.25%	0.27%
Government	employment	0.59%	0.27%
Irrigation	employment	-1.9%	0.27%
Pool	population	0.12%	0.50%
Other	employment	1.1%	0.27%

Table 4-2Historical and Projected Account Growth Rate by Customer Sector

Abbreviations:

ABAG = Association of Bay Area Governments

Notes:

(a) Growth 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, per ABAG (2018) was applied.
(b) ABAG (2018) projections were adjusted to account for the increased population expected based on the RHNA requirement for the City of Novato to provide 2,100 housing units by 2035 (ABAG, 2020). Population growth rate beyond 2035 is assumed to be the same as projected by ABAG (2018).



4.2. Planned Development Within the Service Area

Future demand projections should account for all growth within the District. In order to verify that the ABAG (2018) growth assumptions (adjusted for the RHNA) appropriately include new developments, known planned developments were inventoried. Based on information contained in the 2018 Novato Water System Master Plan Update, there are currently 51 new development projects in various stages of planning within the District totaling 627 SFR units, 391 MFR units, 21 townhouse/condos, and 1,223,291 sq ft of commercial, industrial, and office floor space (NMWD, 2019). Buildout of these projects ranges from 2025 to 2035. The number of new accounts associated with these planned developments is presented in **Table 4-3**, along with the projected increase in accounts over the planning horizon based on the growth projections described in Section 4.1 and taking into account the planned development described under Section 4.2.

4.3. Water Demand Factors

Water use is influenced by a variety of factors, including weather, economic recession, and state and local regulations, among other drivers. Given this, selecting a "representative" baseline year 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.

Water demand factors based on historical use within the District were used as the basis of future demand projections for potable water accounts, considering in particular the range of water use associated with pre-drought conditions, post-drought conditions, and a midpoint scenario that assumes water use partially rebounds to pre-drought conditions. **Table 3-2** provides historical water use by sector within the District. To more fully capture total water use within the District, non-revenue water is estimated as a percentage of potable water production as discussed in 4.3.2.

4.3.1. Potable Water

As shown in **Table 4-4**, the District evaluated a range of potable water demand factors for each potable water use sector using three water use scenarios, based primarily on recent historical average per account water use for selected time periods⁷, representing pre-drought water use rates, post-drought water use rates, and a partial rebound to pre-drought water use rates. Specifically:

- 1. *Pre-drought demand factors* based on the maximum per account water use by sector for 2011 through 2013 (**Table 3-4a**), generally representing higher water use before drought restrictions were put in place.
- 2. *Post-drought demand factors* based on the maximum per account water use by sector for 2017 through 2019 (**Table 3-4a**), generally representing lower water use than pre-drought conditions but with some amount of rebound.
- 3. *Partial rebound demand factors* estimated as the midpoint of the pre-drought and post-drought demand factors, representing an average of the two scenarios.

⁷ Given the results discussed in Section 3.4, water demand factors for new SFR accounts are based on water use for homes constructed in 1994 and later.



As shown in **Table 4-5**, below, for purposes of developing the District's 2045 demand projections, the District directed EKI to apply pre-drought demand factors to all potable water sectors except for government and irrigation.

	Water Dei	mand Factor (GPD	D/account)
Water Use Sector	Pre-Drought (2011-2013)	Partial Rebound	Post-Drought (2017-2019)
Single Family Residential			
Existing Accounts	351	316	281
New Accounts (a)	426	388	349
Apartment	999	934	868
Townhouse/Condo	155	144	132
Mobile Home	923	875	827
Commercial	1,043	1,001	959
Government	2,397	2,539	2,680
Irrigation	2,046	2,260	2,473
Pool	802	743	684
Other	82	57	32

Table 4-4
Potential Potable Water Demand Factors Considered

Abbreviations:

GPD = gallons per day

Notes:

(a) Water demand factors for new single family residential accounts are based on water use per dwelling unit for buildings constructed in 1994 and later, as described in Section 3.4.

Table 4-5
Selected Water Demand Factors

Water Use Sector	Water Demand Factor (GPD/account)	Basis for Demand Factor
Single Family Residential		
Existing Accounts	351	Pre-drought
New Accounts (a)	426	Pre-drought
Apartment	999	Pre-drought
Townhouse/Condo	155	Pre-drought
Mobile Home	923	Pre-drought
Commercial	1,043	Pre-drought
Government	2,680	Post-drought
Irrigation	2,473	Post-drought
Pool	802	Pre-drought
Other	82	Pre-drought

Abbreviations:

GPD = gallons per day

Notes:

(a) Water demand factors for new single family residential accounts are based on water use per dwelling unit for buildings constructed in 1994 and later, as described in Section 3.4.



4.3.2. Non-Revenue Water (Potable Water System)

Non-revenue water is water that has been produced but not billed, and thus does not generate revenue for the supplier. Non-revenue water includes unbilled authorized uses (such as water for fighting fires and flushing mains) and water losses (including real losses due to distribution system leaks and apparent losses due to metering inaccuracies). Urban water retailers are required to perform an annual audit of water loss of their potable water distribution system, which is used as the basis for estimating future water use associated with non-revenue water (DWR, 2020). As shown in **Table 4-6**, potable non-revenue water is projected to range from 301 AFY to 329 AFY through 2045, based on the average percentage of water loss reported from 2017 to 2019 (3.0%, see **Table 3-2**).

4.3.3. <u>Recycled Water</u>

The recycled water system is entirely separate from the potable water system and has a more limited footprint within the District. Expansion of recycled water use is generally dependent on (1) location and proximity to recycled water distribution system, (2) the presence of substantial enough opportunities for use of non-potable water (i.e., irrigation and some small commercial uses such as automatic, drive through car washes) to warrant connection to the recycled water distribution system, and (3) the capacity of the recycled water treatment facility and distribution system to meet the available demand. Due to these factors, while some recycled water use may be expected to increase relative to population or employment growth within the District, system infrastructure is a more significant driver in projecting future recycled water use.

Therefore, projections for recycled water are based on projections developed for the 2015 UWMP and as directed by the District, which consider the current capacity and distribution network for the recycled water system. The projected recycled water demand is 650 AFY.

4.4. Passive Water Savings Estimates

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, 2016). The AWE model takes into account estimates of historical population, residential building stock, number of accounts, and projected population and account growth to estimate future passive savings are presented in **Table 4-6** and are subtracted from the water demand projected based on the water demand factors described in Section 4.3 above. Passive savings are only applied to potable water use.

4.5. Projected Water Demand Through 2045

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 4-6**. Recycled water demand, also shown in **Table 4-6**, was projected based on system capacity. Potable water demand is projected to increase to 10,284 AFY in 2045, which is a 24% increase over 2019 water demand. Recycled water demand is projected to increase to 650 AFY, which is



a 12% increase over 2019 water demand. Potable water demand projections are lower than the District's 2015 UWMP demand projections by 26 AFY or 0.25% in 2040.

Table 4-1 Population and Employment Growth Projections

	Growth Projections								Total	Average			
Category	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045 (e)	Growth Rate 2020-2045	Annual Growth Rate 2020-2045
Population		•							•				
Historical Population Estimates (a)	61,381	61,386	61,470	61,616	61,857	61,658							
District Population Projection, 2018 ABAG (b)							62,352	63,485	64,341	65,092	65,852	6.8%	0.27%
District Population Projections Adjusted for RHNA (c)							63,389	65,440	67,838	68,631	69,432	12.6%	0.50%
Employment													
2018 ABAG Employment Projections (d)						26,910	27,290	27,915	28,225	28,290	28,355	5.4%	0.27%



Table 4-1 Population and Employment Growth Projections

North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations:

-- = not availableABAG = Association of Bay Area GovernmentsRHNA = Required Housing Needs Allocation

Notes:

- (a) Historical population estimates for 2015 per Reference 3, 2020 per Reference 5, and all other years per Reference 4.
- (b) District population projections are calculated by applying the City of Novato 2018 ABAG growth rates to the current 2020 population estimate of 61,658 per Reference 5.
- (c) The City of Novato is required to provide 2,107 housing units by 2035 based on the RHNA (Reference 2), which is higher than the growth anticipated in the General Plan 2035 and by ABAG 2018. Assuming 2.57 persons per household and a linear increase in future housing units, the population growth from 2025 to 2035 is adjusted by adding the customers of the new housing units to the District population projection (2018 ABAG). Population growth rate beyond 2035 is assumed to be the same as the ABAG 2018 projection.
- (d) 2018 ABAG population and employment projections per Reference 1. Projections shown reflect the City of Novato, and not the entirety of the District service area. The growth rate reflected by this projection was applied to the current estimated 2020 population of 61,658 to extrapolate growth for the District service area.
- (e) ABAG 2018 includes projections through 2040. 2045 employment projections are calculated based on the 2035-2040 growth rate (0.23%).

References:

- 1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
- 2. ABAG, 2020. Association of Bay Area Governments, Regional Housing Needs Allocation Proposed Methodology: San Francisco Bay Area, 2023-2031, released on October 2020.
- 3. North Marin Water District, 2016. 2015 Urban Water Management Plan, prepared by North Marin Water District, dated June 2016.
- 4. North Marin Water District, 2020a. NMWD Historical Population.xlsx, provided by North Marin Water District on 6 April 2020.
- 5. North Marin Water District, 2020b. Information provided by North Marin Water District via email, received 22 July 2020.

Table 4-3Change in Number of Accounts based on Projected Growth

North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Use Sector	Number of Accounts (a)					
Water Ose Sector	2025	2030	2035	2040	2045 (b)	
Single Family Residential	15,280	15,775	16,353	16,544	16,737	
Apartment	612	632	655	663	671	
Townhouse/Condo	3,198	3,302	3,423	3,463	3,503	
Mobile Home	105	108	112	114	115	
Commercial (c)	821	840	850	852	853	
Government	100	103	104	104	104	
Irrigation	361	369	373	374	375	
Pool	95	98	101	102	104	
Other (d)	476	487	492	493	494	
Total Accounts	21,049	21,713	22,463	22,708	22,956	

Projected Number of Accounts

Incremental Increase in Accounts from 2019

Water Lise Sector	Number of Accounts					
Water Ose Sector	2025	2030	2035	2040	2045	
Single Family Residential	417	912	1,490	1,681	1,874	
Apartment	19	39	62	70	78	
Townhouse/Condo	87	191	312	352	392	
Mobile Home	3	6	10	12	13	
Commercial (c)	11	30	40	42	43	
Government	1	4	5	5	5	
Irrigation	5	13	17	18	19	
Pool	3	6	9	10	12	
Other (d)	7	18	23	24	25	
Total New Accounts	554	1,218	1,968	2,213	2,461	

Table 4-3 Change in Number of Accounts based on Projected Growth North Marin Water District, Sonoma-Marin Saving Water Partnership

Water Use Sector	Number of Accounts; Cumulative (e)					
	2025	2030	2035	2040	2045	
Single Family Residential	11	615	627	627	627	
Apartment	19	33	33	33	33	
Townhouse/Condo		21	21	21	21	
Mobile Home						
Commercial (c)	11	27	32	32	32	
Government						
Irrigation						
Pool						
Other (d)						
Total New Accounts	41	696	713	713	713	

Estimate of Known Planned Development

Abbreviations:

-- = not available

ABAG = Association of Bay Area Governments

CII = commercial, industrial and governmental/institutional

RHNA = Required Housing Needs Allocation

Notes:

- (a) Growth in number of accounts is estimated based on ABAG 2018 projected growth rates for population and employment, adjusted for updated RHNA requirements. Residential and "pool" sectors are estimated relative to population growth, while CII, irrigation, "other" and recycled water accounts are estimated relative to employment growth. Growth associated with known planned developments are within the RHNA adjusted ABAG growth rate projections except apartment accounts, which are adjusted for known planned development beyond that anticipated by ABAG 2018 growth rates.
- (b) ABAG 2018 includes projections through 2040. For the purposes of demand and account projections, It is assumed that the growth rate remains constant from 2036 through 2045.
- (c) Commercial includes combined commercial/residential accounts.
- (d) Other includes livestock, hydrants, other fire services.
- (e) Known planned development is discussed in Section 3.1 and based on Reference 3.

References:

- 1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
- 2. North Marin Water District, 2016. 2015 Urban Water Management Plan, prepared by North Marin Water District, dated June 2016.
- 3. North Marin Water District, 2019. 2018 Novato Water System Master Plan Update, prepared by North Marin Water District, dated September 2019.

Table 4-6 Projected Water Demand

Water Lice Sector		Project	ted Demand (AFY) (a)	
water use sector	2025	2030	2035	2040	2045
Potable Water		-			
Single Family Residential					
Existing Accounts	5,839	5,839	5,839	5,839	5,839
New Accounts (b)	199	435	711	803	895
Apartment	686	708	734	743	751
Townhouse/Condo	556	574	595	602	609
Mobile Home	108	112	116	117	119
Commercial	961	983	993	996	998
Government	302	309	312	313	313
Irrigation	1,001	1,024	1,035	1,038	1,040
Pool	85	88	91	92	93
Other	44	45	45	46	46
Non royonuo Water (c)	3.0%	3.0%	3.0%	3.0%	3.0%
	301	311	322	325	329
Estimated Passive Savings (d)	-216	-396	-550	-659	-749
Total Potable Demand	9,866	10,031	10,245	10,254	10,284
Recycled Water					
Recycled Water (e)	595	608	622	636	650
Total Recycled Water Demand	595	608	622	636	650



 Table 4-6

 Projected Water Demand

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:

ABAG = Association of Bay Area Governments

- AFY = acre-feet per year
- AWE = Alliance for Water Efficiency

UWMP = Urban Water Management Plan

Notes:

- (a) Water demand projections are estimated based on pre-drought demand factors, based on recent historical use. Growth in accounts is based on ABAG 2018 projections, as identified in Table 4-1.
- (b) Water demand factors for new single family residential accounts are based on water use per dwelling unit for buildings constructed in 1994 and later.
- (c) Estimates of non-revenue water are based on the average percentage of water loss reported for 2017 through 2019, per Table 3-2.
- (d) Passive water savings are based on the AWE Conservation Tracking Tool.
- (e) Recycled water projections per Reference 2.
- (f) 2015 UWMP projections per Reference 2.
- (g) 2018 Master Plan projections per Reference 3.

Table 4-6

Projected Water Demand

North Marin Water District, Sonoma-Marin Saving Water Partnership

References:

- 1. ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
- 2. North Marin Water District, 2016. 2015 Urban Water Management Plan, prepared by North Marin Water District, dated June 2016.
- 3. North Marin Water District, 2019. 2018 Novato Water System Master Plan Update, prepared by North Marin Water District, dated September 2019.



5. CONSERVATION PROGRAM PARTICIPATION

The following section evaluates historical participation in water conservation programs by District customers and the estimated water savings associated with that participation. This information is used to inform future program selection and implementation assumptions, and to support the demand management measure (DMM) reporting required in UWMPs under CWC § 10631.(e).⁸

For five water conservation programs selected by the District, additional analyses have been conducted, including: (1) a refined estimate of the actual water conservation savings achieved by District customers based on customer billing data (Section 5.3.2), and (2) program participation trends in relation to spatial distribution (Section 5.4), property characteristics (Section 5.5), and customer demographics (Section 5.6). The following five programs were included in the detailed analyses:

- 1. Cash for Grass Rebate Program
- 2. High efficiency clothes washer (HECW) Rebate Program
- 3. High efficiency toilet (HET) Rebate Program
- 4. Water Smart Survey Program
- 5. Weather-Based Irrigation Controller (WBIC) Rebate Program

The goals of these more detailed analyses are to identify participation drivers and to help the District better understand which customers are participating in which programs. The District can accordingly use this information to inform the strategic design, selection, and marketing of future conservation programs and services.

5.1. Conservation Programs

The District currently provides a broad variety of water conservation programs directly to customers. These programs are described in **Table 5-1** below.

⁸ 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 5-1Description of Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
Water Smart Home	In-depth analysis of the residential customer's indoor and	SFR	2008 - 2019
Surveys Program	outdoor water use with water efficient recommendations to		
Water Smart Commercial	implement.	CII	2008 - 2019
Surveys Program			
Residential HET Rebates	Incentive available for qualifying customers who replace	SFR	2008 - 2019
Program	toilet(s) that use more than 1.6 gallons per flush and replaces		
Commercial HET Rebates	same with a District approved HET or UHET.	CII	2008 - 2019
Program			
UHET Distribution		SFR	2008 - 2019
Program			
Retrofit on Resale	All existing plumbing fixtures in existing structures receiving	SFR	2008 - 2019
(Dwellings Certified)	water from the District's water system shall, at the time of		
Program	change of ownership, be retrofitted, if not already done,		
	exclusively with water conserving plumbing fixtures per		
	Regulation 15 Section M.		
HECW Rebates Program	District customers are eligible for rebate as available from	SFR	2008 - 2019
	time to time for District approved high-efficiency washing		
	machines in existing residences.		
Cash for Grass Rebates	Incentive available for customers who remove regularly	SFR, Irrig	2008 - 2019
Program	maintained and irrigated lawn areas and replace with		
	District-approved low water use plantings on drip irrigation.		
Lawn Be Gone (Sheet	Sheet mulching materials (Cardboard, Compost and Mulch) in	SFR	2015 -
Mulching) Program	available to customers who wish to cover their regularly		Current
	maintained and irrigated lawn areas.	655	2000
Water Smart Landscape	Landscape water efficient repates are available to customers	SFR	2009 -
Rebates Program	who install District qualified water efficient landscape		Current
	equipment.		
Residential WBIC Rebates	Incentive available, on a per irrigation valve basis, for the	SFR	2008 -
Program	installation of District approved weather based irrigation		Current
Commercial WBIC	controllers.	CII	2008 -
Rebates Program			Current
Swimming Pool Cover	District customers are eligible for rebates for purchasing	SFR	2008 -
Rebates Program	District approved swimming pool covers.		Current
Residential New	New and applicable rehabilitated existing development	SFR	2009 -
Development Water Use	projects are subject to the water use efficiency requirements		Current
Efficiency Requirements	of Regulation 15, Sections E. and F. The requirements specify		
Commorcial Now	both indoor fixtures and appliances (Section E) and	CII	2000
	landscaping requirements (Section F) equivalent to and	CII	2009 -
Efficiency Requirements	greater than the State MWELO.		Current
Large Landscape Audits	Detailed irrigation audits are available to all large landscape	Irrig	2008 -
Program	dedicated irrigation and mixed-use metered customers. Audit		Current



Table 5-1Description of Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
	includes (but is not limited to) review of existing practices and provides recommendations for improved water use efficiency.		
Hot Water Recirculation Rebate Program	Incentive available to customers who install District qualified hot water recirculation systems.	SFR	2015 - Current

Abbreviations:

- CII = commercial, industrial and institutional
- d.u. = dwelling unit

HECW = high-efficiency clothes washer

HET = high-efficiency toilet

Irrig. = irrigation

MWELO = Model Water Efficient Landscape Ordinance

SFR = single family residential

UHET = ultra high efficiency toilet

In addition to programs offered by the District, several regional water conservation programs are offered through the SMSWP, including: (1) education and outreach to schools, (2) public outreach and educational workshops, (3) Qualified Water Efficient Landscaper (QWEL) Training, and (4) garden tours.

5.2. Historical Conservation Program Participation

As shown in **Table 5-2**, the District has implemented 17 different conservation programs that were offered directly to customers during the 2008 through 2019 time period. Of the programs implemented by the District, the Residential HET Rebates Program, Water Smart Home Surveys Program, and Retrofit on Resale (Dwellings Certified) Program had the highest participation, with 4,040, 3,538, and 3,260 participants, respectively. Through the Cash for Grass Rebates Program, Lawn Be Gone (Sheet Mulching) Program, and Cash for Grass Rebates Program for Irrigation Accounts, nearly 735,000 square feet of turf has been removed.

Table 5-3 summarizes District participation in the regional SMSWP water conservation school education and outreach programs during the 2015-2016 through 2019-2020 school years. Over this period, over 3,600 students were reached by direct instruction and nearly 10,300 students were reached through indirect instruction such as assemblies, video and poster contests, and distribution of other educational materials.

5.3. Estimated Savings from Past Conservation Programs

5.3.1. Estimated Water Savings Based on AWE Model

The AWE model was used to estimate water savings associated with the implementation of all device or turf replacement and audit programs identified in **Table 5-2** for the period of 2010 to 2020 (AWE, 2016). Water savings estimates were based on District-specific values calculated per Section 5.3.2, AWE model default values, values developed for the District in 2015, 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 5-4**.

Based on the record of water conservation program participation within the District and application of the AWE Model, it is estimated that the District conservation programs included in this assessment resulted in a savings of between 831 AFY to 1,493 AFY between 2010 and 2020.⁹ In addition, over this period, it is estimated that the District saved 2,481 AFY through passive savings. Thus, the total active and passive savings achieved by the District between 2010 and 2020 is estimated to be between 3,143 AFY and 3,974 AFY.

5.3.2. Estimated Water Savings for Five Selected Programs Based on Customer Billing Data

Water use savings associated with implementation of specific water conservation programs are typically estimated based on literature values, which may or may not accurately capture the specific ways customers in a specific area (i.e., the District) use water. Therefore, District customer billing data were analyzed using a modified *Difference in Difference Estimation Method* (Columbia Public Health, 2013) to assess the amount of water typically saved through implementation of the five selected programs. As described further in **Appendix C**, a version of this method is used to compare the water use patterns in a participant group to that of a cohort group to isolate the impact (in terms of water savings) of participation in a specific water conservation program.

Table 5-5 summarizes the average estimated water savings for each selected conservation program from 2010-2017.¹⁰ The WBIC Rebate Program demonstrated the most savings at 18,469 gallons per account per year (gal/acct/yr), followed by the Water Smart Survey Program at 12,826 gal/acct/yr, and the Cash for Grass Rebate Program at 11,446 gal/acct/yr. It should be noted that the WBIC Rebate Program analysis includes only 30 program participants with highly variable results among these participants (as shown in Table **5-6d**), and is therefore considered less robust than the other analyses. It should also be noted that in many cases, the results indicate a negative savings value, suggesting that this program does not result in water savings among all customers. These results are consistent with those found in other water agencies and suggest that newly installed WBICs may often not be configured properly, and that customers may benefit from an education or WBIC-setup support program in order to realize water savings.

⁹ Free ridership refers to customers who participate in a conservation program, but who would have taken the water saving action (e.g., replace a toilet) regardless of whether the conservation program incentive was available. The amount of free ridership is unknown, and thus a range of savings is shown, assuming 0% to 100% free ridership for programs, as appropriate.

¹⁰ This time period was selected so that at least two full years of water use billing data could be analyzed following the program participation year.



Table 5-5

Average Estimated Water Savings Achieved by Selected Conservation Programs from 2010-2017

Conservation Program	Number of Participants in Analysis (a)	Estimated Savings due to Program (b) (gal/acct/yr)	Estimated NMWD- Specific Unit Savings	Default AWE Model Unit Savings Factors
Cash for Grass Rebate	268	11,446	12 gal/sq ft/yr	14.3 gal/sq ft/yr
Program				
HECW Rebate Program	1,232	5,189	5,189 gal/unit/yr	5,000 gal/unit/yr
HET Rebate Program	804	5,984	3,429 gal/unit/yr	9,667 gal/unit/yr
Water Smart Survey	489	12,826	12,826 gal/survey/yr	12,373 gal/survey/yr
Program				
WBIC Rebate Program	30	18,469	18,469 gal/WBIC/yr	7,985 gal/acct/yr (c)

Abbreviations:

acct = account gal = gallon HECW = high efficiency clothes washer HET = high efficiency toilet sq ft = square feet WBIC = Weather-Based Irrigation Controller yr = year

Notes:

(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods.

(b) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts, as shown in **Tables 5-6a** through **5-6e**. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.

(c) Default value not available in the AWE model. Water savings factor shown is per NMWD's 2015 DSS Model, and represents estimated savings per SFR account (NMWD, 2015).

Tables 5-6a through **Table 5-6e** summarize the detailed results of these analyses, including the number of participants included in the analysis for each year, the total amounts rebated, the change in water use by participants and their comparison cohort groups, and the estimated savings values by year and in total.

Table 5-5 also shows the default water savings factors included in the AWE model, which are based on available literature values and other assumptions. Water savings based on customer billing data for the Cash for Grass Rebate, HECW Rebate, and Water Smart Survey Programs are consistent with AWE model default values. However, water savings for the HET Rebate Program are lower than the default values, and therefore evaluation of potential savings for future programs would be significantly overestimated for District customers if default values are used. Conversely, savings from the WBIC Rebate Program are higher when comparing customer billing data to model default values, resulting in a potential for underestimation of program savings.



5.4. Spatial Trends in Program Participation

Given the large amount of program participation data, it can be difficult to ascertain whether participation in these programs has been evenly distributed across the service area, or if participation tends to be clustered in certain regions. In order to identify program participation density for conservation programs in the District service area, a geostatistical spatial analysis was performed.¹¹ This analysis identifies participation "hot spots," which are areas where a higher density of participation is observed than would be expected by randomly distributed participation. Similarly, "cold spots," or areas of lower than expected participation, are identified. Ineligible parcels (i.e., parcels with no sector use relevant to each respective conservation program) were excluded from each analysis, as well as very large rural SFR parcels (e.g., greater than 10 acres), to reduce skewing of density mapping. High density participation areas are identified in red and low density participation areas are identified in blue on **Figures 5-1a** through **5-1e**.

Figures 5-1a and **5-1b** show the results of the participation destiny analysis for the HECW and HET Rebate Programs, both of which target indoor water use. While participation for these programs are similar (1,971 participants and 2,291 participants respectively), the spatial distribution is somewhat different. Both programs show areas of high participation in the central portion of the service area, however the HET Rebate Program appears to have more significant distinct areas of high and low participation.

As shown in **Figure 5-1c**, the Water Smart Survey Program, which targets both indoor and outdoor water use, shows higher participation in the central and southeastern portions of the service area, as well as some smaller clusters of lower participation in southern, western and eastern regions.

The Cash for Grass Rebate Program, shown in **Figure 5-1d**, showed a similar spatial distribution to that of the Water Smart Survey Program. By contrast, the WBIC Rebate Program, shown in **Figure 5-1e**, showed one cluster of higher participation in the south-central portion of the service area. This program only included 128 participants and therefore produced less robust results than the other programs that were assessed.

Based on this information, the District could consider targeting outreach to the portions of its service area located in areas with historically lower program participation.

5.5. Building Stock Characteristics

Certain characteristics related to building age can influence, or at least be correlated with, water use. In general, older homes and businesses tend to have higher water using fixtures that were installed prior to passage of key changes to the Federal and California Plumbing, Energy, and Building Codes; these accounts present an opportunity for increasing water conservation. Homes and businesses with larger landscaped areas tend to use more water than those with smaller landscaped areas. Similarly, larger homes may have more occupants and therefore more water use.

¹¹ The ESRI ArcGIS 10.8 Optimized Hot Spot Analysis tool was used for spatial hot spot analysis of program participation. The hot spot analysis calculates a Getis Ord GI* statistic for each cell. This statistical z-score evaluates how the event (in this case, participation in the program) clusters spatially, by looking at the cell in the context of the neighboring cells. For the purposes of this study, hot and cold spots are identified as cells with a 90% or greater level of statistical confidence.



In order to assess the distribution of housing stock and other key water use characteristics, service areawide data were evaluated based on Marin County Assessor parcel data. These data included lot sizes and building construction date for residential program participants. Building construction date for parcels within the District based on Marin County Assessor data is shown on **Figure 5-2**. This figure shows parcels for all land use types for which building construction date is available (e.g., residential, commercial, open space, etc.).

Building stock characteristics of conservation program participants for each of the five selected programs are summarized in **Table 5-7**.¹² The first chart shows the total number of participants by program by age of building construction, while the second chart shows the results after controlling for the relative number of parcels within each age category.

The average year of building construction for each program ranged from 1977 to 1988. The vast majority of program participants are in homes built prior to 1994, for all programs. When the results are normalized based on total building stock, homes constructed from 1994-2009 had the highest rates of participation in the WBIC Rebate and Water Smart Survey Programs.

Based on this analysis, the District appears to be successfully reaching older homes, particularly with the HET Rebate Program. SFR customers with homes in all age ranges are participating in the Cash for Grass Rebate and HECW Rebate Programs at generally consistent rates. However, there does appear to be opportunity to increase participation in: (1) the HECW Rebate Program among MFR customers with pre-1994 homes, and (2) the Water Smart Survey Program among MFR customers with 1994-2009 homes. There is also opportunity to increase participation in the WBIC Rebate Program in older homes, however, as noted in Section 5.3.2, above, this program may also benefit from the addition of a customer education or WBIC-setup support component in order to realize consistent savings among customers.

5.6. Demographic Characteristics of Residential Conservation Program Participation

Residential conservation programs are generally open to all residents in the District service area. Although the programs are available to all residents, those with certain demographic characteristics can tend to participate at higher rates than others in some programs. The analyses described in the following sections were performed for the five selected programs in order to better understand trends in customer demographics among residential conservation program participants in the District – specifically, income, whether the home occupants rent or own the property, and household age.

5.6.1. Household Income Trends

Household income data were based on the estimated 2017 median household income by Census Block Group (Census, 2019).¹³ The following sections discuss the breakdown of program participation in residential programs by income classification. These income levels are defined as follows: low income (<\$94,850/year), moderate income (\$94,850-\$124,500), and high income (>\$124,500), based on Marin County income designations for a three-person household (HCD, 2017). Given that these classifications

¹² Results for SFR and MFR participants are shown separately, given the diversity of building stock.

¹³ Census Block Group is the smallest geographical unit for which the United States Census Bureau publishes income data.



reflect the median of all households in a given Census Block Group, this reflects the predominant income for that area (neighborhood), but does not mean that every participant or household in that area falls within the same income group.

Figure 5-3a shows the distribution of income groups across the service area and **Table 5-8a** shows the distribution of residential program participants by income level. The first chart in **Table 5-8a** shows the percentage of participants in each program that live in areas of each income level grouping. Participation in all conservation programs by median household income was relatively evenly dispersed across income groups.

The second chart on **Table 5-8a** shows participation rates controlled for the number of parcels within the service area within each income group. For every program except the HET Rebate Program, there were proportionally more moderate and high income group participants than low income group participants. For the HET Rebate Program, there was little difference among all income groups relative to the overall percentage of customers.

These results suggest that there are opportunities to increase program participation by lower income households in the Cash for Grass Rebate, HECW Rebate, Water Smart Survey, and WBIC Rebate Programs.¹⁴

5.6.2. <u>Homeownership Trends</u>

In order to evaluate whether home ownership appears to be a driving factor in program participation, residential program participation was compared to the proportion of the population that live in renteroccupied homes, based on Census data. Rentership status was based on 2017 Census estimates of the population within a Census Block Group that live in a renter-occupied home versus an owner-occupied home (Census, 2019). Rentership is thus presented as the proportion of the population within a Census Block Group that lives in a renter-occupied home. A Census Block Group with a rentership of less than 25% indicates that the area consists primarily of owner-occupied homes, while a rentership population of greater than 75% indicates that the area is predominantly made up of those who rent their homes.

Figure 5-3b shows the distribution of renter-occupancy rate across the District. **Table 5-8b** shows the distribution of residential program participation by the percentage of the population that live in renter-occupied homes ("rentership").

The first chart in **Table 5-8b** shows the percentage of participants in each program that live in areas of each percent rentership grouping. Participation in conservation programs was higher in Census Block Groups with a lower percentage of rentership (high home ownership). Between 69% and 81% of participants across all conservation programs were in Census Block Groups that had less than or equal to 25% rentership, compared to 0%-3% of participants in the high rentership category (\geq 75% rentership).

The second chart in **Table 5-8b** shows participation rates controlled for the number of customers within the District that fall within each rentership classification. When the relative proportion of number of

¹⁴ As noted in Section 5.3.2, above, the WBIC Rebate Program may also benefit from the addition of a customer education or WBIC-setup support component in order to realize consistent savings among customers.


customers within each rentership group is controlled for, participants in the low rentership (high home ownership) category are 6.2%-18% higher than the overall percentage of customers in the same category. Conversely, participants in the low to moderate rentership groups (≤25%-50% rentership) were underrepresented by 2.8% to 9.7%.

These results suggest that the highest participation is by customers who own their own home, and thus there are opportunities to increase program participation for all five programs by targeting areas of high rentership.

5.6.3. Household Age Trends

Median household age is based on 2017 Census estimates of the median age of household members by Census Block Group (Census, 2019). Median age is broken up as follows: <35 years old, 35-45 years old, 45-55 years old, and >55 years old. Given that these classifications reflect the median age of all household members in a given Census Block Group, this reflects the predominant age for that area but does not mean that every participant or household in that area falls within the same age group.

Figure 5-3c shows the distribution of median household age by Census Block Group across the service area and **Table 5-8c** shows the distribution of residential program participants by age group. The first chart in **Table 5-8c** shows the percentage of participants in each program that live in areas of each household age grouping. Participation was highest for households whose median household member age was between 45-55 years, ranging from 57%-61%. The lowest participation was in households with a median age of less than 35 years, comprising 1.6%-4.7% of all participants.

The second chart in **Table 5-8c** shows participation rates controlled for the number of parcels within the service area within each median household age group. Compared to the overall distribution of customers, there was little difference among age groups for most conservation programs, with the exception of the WBIC Rebate Program, which had a higher proportion of participants from households with a median age older than 55 years (12% higher) and a lower proportion of participants 35-45 years (12% lower).

These results suggest that the District has been successful at reaching customers of all age groups in all programs, with the exception of the WBIC Rebate Program. It should be noted that due to the smaller sample size for the WBIC Program, these results may be less robust than for other programs, however the results do suggest that there may be opportunities to increase participation in the WBIC Program by targeting younger customers.¹⁵

5.7. Summary

Sections 5.4 through 5.6 above identify opportunities for the District to increase customer participation in each of the five programs through targeted outreach to certain customer classes. The results of these analyses can be combined to identify specific customers by overlaying these results spatially. For example, one may identify SFR customers to target with the Cash for Grass Program by overlaying customers in areas: (1) outside of high participation as identified on **Figure 5-1d**, (2) within the low income areas

¹⁵ As noted in Section 5.3.2, above, the WBIC Rebate Program may also benefit from the addition of a customer education or WBIC-setup support component in order to realize consistent savings among customers.



identified on **Figure 5-3a**, and (3) in areas of with greater than 25% rentership as shown on **Figure 5-3b**. As show on **Figure 5-4**, by overlaying these key metrics, approximately 1,400 SFR customers are identified for potential targeting of Cash for Grass Program outreach materials.

Table 5-2 Summary of Conservation Program Participation

North Marin Water District, Sonoma-Marin Saving Water Partnership

	End	Use					Num	ber of P	rogram P	articipan	ts (b)					Pct. of
Program Name	Sector (a)	Indoor/ Outdoor	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	Accounts (c)
Water Smart Home Surveys Program	SFR	Both	213	305	330	345	283	177	366	364	224	385	301	245	3,538	24%
Water Smart Commercial Surveys Program	CII	Both	28	22	39	20	5	4	5	7	5	10	4	2	151	17%
Residential HET Rebates Program	SFR	Indoor	368	511	541	568	230	238	348	352	354	211	147	172	4,040	27%
Commercial HET Rebates Program	CII	Indoor	32	137	13	64	5	9	1	17	4	3	3	3	291	32%
UHET Distribution Program	SFR	Indoor	502	764	0	0	0	0	497	85	10	0	0	0	1,858	13%
Retrofit on Resale (Dwellings Certified) Program	SFR	Indoor	248	303	322	280	274	315	293	288	236	278	249	174	3,260	22%
HECW Rebates Program	SFR	Indoor	415	543	476	468	312	252	308	155	103	55	24	16	3,127	21%
Cash for Grass Rebates Program	SFR, Irrig	Outdoor	25	57	99	50	39	33	52	133	132	59	18	18	715	4.7%
Water Smart Landscape Rebates Program	SFR	Outdoor		21	23	15	8	3	9	8	7	8	4	8	114	0.77%
Residential WBIC Rebates Program	SFR	Outdoor	10	10	5	0	2	22	18	8	7	11	15	19	127	0.85%
Commercial WBIC Rebates Program	CII	Outdoor	4	4	20	1	1	0	0	0	0	0	0	0	30	3.3%
Swimming Pool Cover Rebates Program	SFR	Outdoor	69	20	2	2	0	0	0	25	27	3	5	5	158	1.1%
Residential New Development Sign- offs Program	SFR	Both		82	85	19	16	17	18	27	28	36	24	19	371	2.5%
Commercial New Development Sign- offs Program	CII	Both		41	24	22	16	20	14	22	21	23	16	22	241	27%
Large Landscape Audits Program	Irrig.	Outdoor	20	12	19	6	0	16	5	0	8	0	9	10	105	29%
Lawn Be Gone (Sheet Mulching) Program	SFR	Outdoor								15	5	2	3	3	28	0.19%
Hot Water Recirculation Rebate Program	SFR	Indoor								15	5	1	4	2	27	0.18%
								Total Tu	rf Remov	ed (sq ft)						
Cash for Grass Rebates Program	SFR	Outdoor	17,525	49,028	104,288	42,654	27,935	27,207	46,485	114,341	132,226	51,432	14,227	33,392	660,740	
Lawn Be Gone (Sheet Mulching) Program	SFR	Outdoor								10,000	3,500	1,600	2,400	2,400	19,900	
Cash for Grass Rebates Program for Irrigation Accounts (d)	Irrig.	Outdoor		L			L	53,	,553		·			·	53,553	
	Т	otal (sq ft)	71,078	49,028	104,288	42,654	27,935	27,207	46,485	124,341	135,726	53,032	16,627	35,792	734,193	

Table 5-2 Summary of Conservation Program Participation North Marin Water District, Sonoma-Marin Saving Water Partnership

Abbreviations

CII = Commercial, Industrial, Institutional HET = High Efficiency Toilet HECW = High Efficiency Clothes Washer Irrig. = Irrigation Accounts SFR = Single-family residential sq ft = Square feet UHET = Ultra High Efficiency Toilet

Notes

(a) Sector indicates predominant customer category for program participants.

(b) Participation is summarized by fiscal year.

(c) Participation is calculated as a percentage of total accounts of the predominant sector indicated.

(d) Annual breakdown of turf removal square footage is not available for the Cash for Grass Rebates Program for irrigation accounts.

(e) Colored shading is added for visualization purposes. Green shading represents higher participation values.

Table 5-3Summary of Conservation School Education Program ParticipationNorth Marin Water District, Sonoma-Marin Saving Water Partnership

	Nu	umber of S	Students R	eached by	School Ye	ear
Program Name	2015- 2016	2016- 2017	2017- 2018	2018- 2019	2019- 2020	Total
Direct Instruction						
Kindergarten	161	143	142	224	249	919
3rd Grade	161	143	75	263	178	820
5th Grade	335	534	422	310	0	1,601
Middle/High School	90	204	0	0	0	294
Total	747	1,024	639	797	427	3,634
Indirect Instruction						
ZunZun Assembly	406	327	0	1,097	680	2,510
Video Contest	1	4	0	1	0	6
WA Poster Contest	176	0	307	0	109	592
Materials	1,605	1,639	1,047	1,002	1,882	7,175
Total	2,188	1,970	1,354	2,100	2,671	10,283

Abbreviations

SMSWP = Sonoma-Marin Saving Water Partnership WA = Water Awareness

<u>Notes</u>

(a) School education program participation is presented by number of students reached, per SMSWP, 2020.(b) Colored shading is added for visualization purposes. Green shading represents higher participation values.

<u>Source</u>

SMSWP, 2020. Water Conservation School Education Participation 2015 - 2020, provided by SMSWP on 8 June 2020.

Table 5-4

Estimated Water Savings Achieved by Conservation Programs and Passive Savings

North Marin Water District, Sonoma-Marin Saving Water Partnership

	End	Use			Estir	nated C	umulat	ive Wat	er Savir	ngs (AFY	') (b)		
Water Saving Type	Sector (a)	Indoor/ Outdoor	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Conservation Programs (c)	-												
Water Smart Home Surveys Program	SFR	Both	13	37	67	98	138	179	217	259	302	341	367
Water Smart Commercial Surveys Program	CII	Both	14	32	49	64	77	86	92	101	108	114	118
HET Rebates Program (d)(e)	SFR,CII	Indoor	10	30	53	78	106	138	173	208	242	274	302
UHET Distribution Program (e)	SFR	Indoor	0	0	0	0	20	43	66	88	108	128	148
HECW Rebates Program	SFR	Indoor	8	22	41	63	89	116	144	171	198	224	248
Cash for Grass Rebates Program (f)	SFR	Outdoor	4	0	16	1 2	วา	46	۶E	OE	107	120	140
Lawn Be Gone (Sheet Mulching) Program (f)	SFR	Outdoor	4	3	10	23	32	40	co	δD	107	129	140
Cash for Grass Rebates Program for Irrigation Accounts (g)	Irrig.	Outdoor	0	0	1	2	2	3	5	6	7	9	11
Water Smart Landscape Rebates Program	SFR	Outdoor	1	2	3	4	6	8	10	12	15	17	19
Residential WBIC Rebates Program	SFR	Outdoor	0	1	1	3	5	8	12	16	21	27	33
Commercial WBIC Rebates Program	CII	Outdoor	1	2	4	5	6	7	9	10	11	12	12
Swimming Pool Cover Rebates Program	SFR	Outdoor	0	0	0	0	0	1	2	3	4	5	6
Large Landscape Audits Program	Irrig.	Outdoor	7	14	21	31	42	48	54	60	66	74	80
Hot Water Recirculation Rebate Program	SFR	Indoor	0	0	0	0	0	0	0	0	0	1	1
Total Pro	er Savings	57	151	255	371	525	685	849	1,019	1,189	1,356	1,493	
Pass	avings (h)	0	39	115	227	392	615	891	1,216	1,591	2,014	2,481	
Total Water Savings (10	lership) (i)	36	130	266	442	680	969	1,307	1,699	2,141	2,627	3,143	
Total Water Savings (lership) (i)	57	190	370	598	917	1,300	1,740	2,235	2,780	3,369	3,974	

 Table 5-4

 Estimated Water Savings Achieved by Conservation Programs and Passive Savings

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations

CII = Commercial, Industrial, Institutional HET = High Efficiency Toilet HECW = High Efficiency Clothes Washer Irrig. = Irrigation Accounts SFR = Single-family residential UHET = Ultra High Efficiency Toilet

Table 5-4

Estimated Water Savings Achieved by Conservation Programs and Passive Savings

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes

- (a) Predominant sector for program participants.
- (b) Water savings are estimated per the AWE model.
- (c) The water savings associated with the retrofit on resale (dwellings certified) program, the residential new development sign-offs program, and the commercial new development sign-offs program are estimated as passive savings.
- (d) The HET rebate program includes the residential sector and the CII sector.
- (e) The total number of toilets distributed is not available. Therefore, for water savings estimation purposes, it is assumed that each participant received 1.7 toilets on average, which is based on the average number of toilets replaced per HET rebate participant.
- (f) The water savings for the cash for grass rebates program and the lawn be gone (sheet mulching) program are combined for purposes of this assessment.
- (g) Annual breakdown of turf removal square footage is not available for the cash for grass rebates program for irrigation accounts. Thus, it is assumed that the annual turf area removed was the same.
- (h) 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.
- (i) Free ridership refers to customers who participate in a conservation program, but who would have taken the water saving action (e.g., replace a toilet) regardless of whether the conservation program incentive was available. The amount of free ridership is unknown, and thus a range is shown. Free ridership is applied to device, hot water recirculation systems, and turf replacement programs only.

Sources

1. North Marin Water District, 2020. Program Participation Data, provided by North Marin Water District on 8 April 2020 and 28 April 2020.

Table 5-6aEstimated Water Savings Achieved by the HECW Rebate ProgramNorth Marin Water District, Sonoma-Marin Saving Water Partnership

				Average Water Use			
			Total	Reduction (b)		Estimated	
	Number of	Total HECW	Rebate	Participant	Cohort	Savings due to	Estimated
	Participants	Rebated	Amount	Group	Group (c)	Program (d)	Unit Savings
Year	(a)	(unit)	(\$)	(gal/yr)	(gal/yr)	(gal/acct/yr)	(gal/yr/unit)
2010	325	325	\$24,499	19,113	14,250	4,863	4,863
2011	251	251	\$16,024	13,082	7,465	5,617	5,617
2012	164	164	\$8,200	14,914	5,970	8,944	8,944
2013	222	222	\$11,100	18,339	16,996	1,344	1,344
2014	130	130	\$6 <i>,</i> 500	28,071	25,434	2,636	2,636
2015	79	79	\$3 <i>,</i> 950	28,046	19,018	9,029	9,029
2016	46	46	\$2 <i>,</i> 300	14,578	5,914	8,664	8,664
2017	15	15	\$750	-3,683	-15,869	12,186	12,186
Total	1,232	1,232	\$73,323				
Avg (e)				16,558	9,897	5,189	5,189

Abbreviations:

avg = average gal/acct/yr = gallons per account per year gal/yr/unit = gallons per year per unit device rebated gal/yr = gallons per year HECW = high efficiency clothes washer -- = not applicable

Notes:

- (a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods.
- (b) A negative value indicates that average water use increased following program participation.
- (c) Customers included in the comparison cohort groups are limited to those that: (1) have not participated in any water efficiency program based on available data and (2) have sufficient water use data within the study periods.
- (d) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.
- (e) The estimated savings are the weighted averages based on the number of participants. Water use reduction averages are not weighted.

Sources:

Table 5-6b

Estimated Water Savings Achieved by the HET Rebate Program

North Marin Water District, Sonoma-Marin Saving Water Partnership

				Average	Water Use		
			Total	Reduction (b)		Estimated	
	Number of	Total HET	Rebate	Participant	Cohort	Savings due to	Estimated
	Participants	Rebated	Amount	Group	Group (c)	Program (d)	Unit Savings
Year	(a)	(unit)	(\$)	(gal/yr)	(gal/yr)	(gal/acct/yr)	(gal/yr/unit)
2010	150	257	\$37,371	17,036	11,439	5,598	3,267
2011	118	191	\$23,372	8,078	5,936	2,142	1,323
2012	76	145	\$12,201	16,861	5,072	11,789	6,179
2013	90	158	\$15,595	22,540	14,917	7,623	4,342
2014	124	204	\$20,279	25,076	20,905	4,171	2,536
2015	111	193	\$18,982	23,613	17,438	6,176	3,552
2016	79	141	\$13,838	17,323	7,502	9,821	5,503
2017	56	83	\$8,273	-11,469	-14,293	2,824	1,906
Total	804	1,372	\$149,911				
Avg (e)				14,882	8,614	5,984	3,429

Abbreviations:

avg = average gal/acct/yr = gallons per account per year gal/yr/unit = gallons per year per unit device rebated gal/yr = gallons per year HET = high efficiency toilet -- = not applicable

Notes:

- (a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods.
- (b) A negative value indicates that average water use increased following program participation.
- (c) Customers included in the comparison cohort groups are limited to those that: (1) have not participated in any water efficiency program based on available data and (2) have sufficient water use data within the study periods.
- (d) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.
- (e) The estimated savings are the weighted averages based on the number of participants. Water use reduction averages are not weighted.

Sources:

Table 5-6c Estimated Water Savings Achieved by the Cash for Grass Rebate Program North Marin Water District, Sonoma-Marin Saving Water Partnership

				Average W	/ater Use		
			Total	Reduction (b)		Estimated	
	Number of	Total Turf	Rebate	Participant	Cohort	Savings due to	Estimated
	Participants	Removed	Amount	Group	Group (c)	Program (d)	Unit Savings
Year	(a)	(sq ft)	(\$)	(gal/yr)	(gal/yr)	(gal/acct/yr)	(gal/sq ft/yr)
2010	23	20,306	\$12,081	18,288	13,339	4,949	5.6
2011	25	20,101	\$10,314	18,565	6,434	12,132	15
2012	11	6,990	\$3,501	14,960	9,260	5,700	9.0
2013	22	19,430	\$7,049	25,324	14,875	10,449	12
2014	54	48,976	\$17,234	45,096	26,267	18,829	21
2015	78	86,858	\$32,601	30,457	17,152	13,305	12
2016	39	30,753	\$13,137	9,382	3,893	5,490	7.0
2017	16	14,513	\$5 <i>,</i> 373	-11,418	-16,987	5,570	6.1
Total	268	247,927	\$101,289				
Avg (e)				18,832	9,279	11,446	12

Abbreviations:

avg = average	gal/yr = gallons per year
gal/acct/yr = gallons per account per year	sq ft = square foot
gal/sq ft/yr = gallons per square foot per year	= not applicable

Notes:

- (a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods.
- (b) A negative value indicates that average water use increased following program participation.
- (c) Customers included in the comparison cohort groups are limited to those that: (1) have not participated in any water efficiency program based on available data and (2) have sufficient water use data within the study periods.
- (d) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.
- (e) The estimated savings are the weighted averages based on the number of participants. Water use reduction averages are not weighted.

Sources:

Table 5-6dEstimated Water Savings Achieved by the WBIC Rebate ProgramNorth Marin Water District, Sonoma-Marin Saving Water Partnership

				Average	Water Use		
			Total	Reduct	tion (b)	Estimated	
	Number of	Total WBIC	Rebate	Participant	Cohort	Savings due to	Estimated
	Participants	Rebated	Amount	Group	Group (c)	Program (d)	Unit Savings
Year	(a)	(unit)	(\$)	(gal/yr)	(gal/yr)	(gal/acct/yr)	(gal/yr/WBIC)
2010	2	2	\$400	62,084	-78,501	140,585	140,585
2011	2	2	\$1,090	45,316	237,309	-191,993	-191,993
2012	3	3	\$1,780	-224,525	-97,834	-126,691	-126,691
2013	10	10	\$2 <i>,</i> 035	45,429	-43,575	89,004	89,004
2014	2	2	\$862	89,012	22,112	66,900	66,900
2015	4	4	\$930	12,109	22,547	-10,438	-10,438
2016	3	3	\$620	-9,419	6,018	-15,437	-15,437
2017	4	4	\$842	10,225	-15,073	25,298	25,298
Total	30	30	\$8,558				
Avg (e)				3,779	6,625	18,469	18,469

Abbreviations:

avg = average gal/acct/yr = gallons per account per year gal/yr/WBIC= gallons per year per WBIC rebated gal/yr = gallons per year WBIC = weather-based irrigation controller -- = not applicable

Notes:

- (a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods.
- (b) A negative value indicates that average water use increased following program participation.
- (c) Customers included in the comparison cohort groups are limited to those that: (1) have not participated in any water efficiency program based on available data and (2) have sufficient water use data within the study periods.
- (d) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.
- (e) The estimated savings are the weighted averages based on the number of participants. Water use reduction averages are not weighted.

Sources:

Table 5-6e Estimated Water Savings Achieved by the Water Smart Survey Program North Marin Water District, Sonoma-Marin Saving Water Partnership

	Number of	Average Water l	Estimated Savings	
	Participants	Participant Group	Cohort Group (c)	due to Program (d)
Year	(a)	(gal/yr)	(gal/yr)	(gal/acct/yr)
2010	208	26,065	14,032	12,033
2011	141	18,712	4,683	14,030
2012	122	3,903	-6,498	10,401
2013	1	-9,724	22,188	-31,912
2017	17	18,216	-14,377	32,592
Total	489			
Avg (e)		11,434	4,006	12,826

Abbreviations:

avg = average

gal/acct/yr = gallons per account per year

gal/yr = gallons per year -- = not applicable

Notes:

- (a) Program participants included in this analysis are limited to those that: (1) have only
 participated in the specified program, (2) have only participated in the program in the specified
 year, and (3) have sufficient water use data within the study periods.
- (b) A negative value indicates that average water use increased following program participation.
- (c) Customers included in the comparison cohort groups are limited to those that: (1) have not participated in any water efficiency program based on available data and (2) have sufficient water use data within the study periods.
- (d) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts. Water savings comparison cohorts for all customers are stratified geographically based on Census Block Groups.
- (e) The estimated savings are the weighted average based on the number of participants. Water use reduction averages are not weighted.

Sources:

Table 5-7Building Stock Characteristics by Program Participants

North Marin Water District, Sonoma-Marin Saving Water Partnership

			Ave Let Cize		Ye	ar of Constructi	on
Water Efficiency Program (a)	Sector	Avg Year Built	(sq ft)	(ac)	pre-1994	1994-2009	2010 and Later
Cash for Grass Rebate Program	SFR	1980	15,176	0.35	82%	18%	0.12%
HECW Robata Drogram	SFR	1981	16,852	0.39	80%	20%	0.32%
HECW Rebate Program	MFR	1988	2,269	0.05	75%	24%	0.60%
HET Pobato Program	SFR	1977	18,103	0.42	92%	8.1%	0.06%
	MFR	1984	18,298	0.42	92%	8.4%	0%
WBIC Rebate Program	SFR	1986	18,372	0.42	70%	28%	1.2%
Water Smart Survey Program	SFR	1983	23,298	0.53	75%	25%	0.17%
Water Smart Survey Program	MFR	1984	2,192	0.05	86%	14%	0%



 Table 5-7

 Building Stock Characteristics by Program Participants

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:

ac = acre avg = average HECW = high efficiency clothes washer MFR = multi-family residential

HET = high efficiency toilet SFR = single family residential sq ft = square feet

Table 5-7

Building Stock Characteristics by Program Participants

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes:

- (a) Program participants included in this analysis are limited to those for which relevant parcel data are available. The analysis is also limited to sectors with more than 50 participants in a given program.
- (b) Relative difference is calculated as the percentage of program participation by year of construction minus the overall percentage of residential customers by year of construction within the service area.

Sources:

1. Marin County, 2020. Sonoma county Assessor Parcel Data, provided via Marin Municipal Water District, 13 February 2020.

Table 5-8a Residential Customer Program Participation by Median Household Income

North Marin Water District, Sonoma-Marin Saving Water Partnership

		Percentage of		Percentage of Participating Residential Customers (b)							
Median House	hold Income (a)	Residential Customers in NMWD (b)	Cash for Grass Rebate Program	HECW Rebate Program	HET Rebate Program	Water Smart Survey Program	WBIC Rebate Program				
Low Income	<\$94,850	40%	28%	34%	39%	31%	33%				
Moderate Income	\$94,850 - \$124,500	28%	34%	31%	29%	32%	28%				
High Income	>\$124,500	32%	38%	36%	31%	37%	40%				



 Table 5-8a

 Residential Customer Program Participation by Median Household Income

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:

HECW = high efficiency clothes washer

HET = high efficiency toilet

HUD = United States Department of Housing and Urban Development

NMWD = North Marin Water District WBIC = weather-based irrigation controller

Table 5-8a

Residential Customer Program Participation by Median Household Income

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes:

- (a) Household income is based on estimated 2017 median household income by Census Block Group, per Census (2019). Income level groupings are based on California Department of Housing and Community Development ("HCD") income levels for Marin County for a 3-person household in 2017 (HCD, 2017). The average persons per household is 2.4 for Marin County, based on Census data.
- (b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those for which location data are available.
- (c) Relative difference is calculated as the percentage of program participation by income group minus the overall percentage of residential customers by income group within the service area.

References:

- 1. Census, 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau, downloaded on 14 January 2020.
- 2. HCD, 2017. Memorandum: State Income Limits for 2017, California Department of Housing and Community Development, dated June 9, 2017.

Table 5-8b Residential Customer Program Participation by Percentage of Renters

North Marin Water District, Sonoma-Marin Saving Water Partnership

		Percentage of		Percentage of Par	ticipating Resider	itial Customers (b)	
Percentage of Renters (a)		(a) Residential Customers in (HECW Rebate	HET Rebate	Water Smart	WBIC Rebate
		NMWD (b)	Rebate Program	Program	Program	Survey Program	Program
Low Rentership	≤25%	63%	81%	70%	69%	75%	77%
Low to Moderate Rentership	25.1%-50%	23%	14%	21%	16%	17%	17%
Moderate to High Rentership	50.1%-75%	11%	4.6%	7.3%	12%	6.3%	5.8%
High Rentership	≥75%	3.0%	0.44%	1.8%	3.0%	1.4%	0%



 Table 5-8b

 Residential Customer Program Participation by Percentage of Renters

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:

HECW = high efficiency clothes washer HET = high efficiency toilet NMWD = North Marin Water District WBIC = weather-based irrigation controller

Table 5-8b

Residential Customer Program Participation by Percentage of Renters

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes:

- (a) Percent rentership reflects the proportion of population within a given Census Block Group that lives in renter-occupied homes. Low rentership indicates an area consists predominantly of owner-occupied homes; high rentership indicates an area consists predominantly of renter-occupied homes. Rentership is based on estimated percentage of rentership by Census Block Group, per Census (2019).
- (b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those for which location data are available.
- (c) Relative difference is calculated as the percentage of program participation by percent of renters group minus the overall percentage of residential customers by percent of renters group within the service area.

References:

1. Census, 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau, downloaded on 14 January 2020.

Table 5-8c Residential Customer Program Participation by Median Household Age North Marin Water District, Sonoma-Marin Saving Water Partnership

Median Household Age (a)	Percentage of Residential Customers in NMWD	Percentage of Participating Residential Customers (b)				
		Cash for Grass	HECW Rebate		Water Smart Survey	WBIC Rebate
	(b)	Rebate Program	Program	HET Rebate Program	Program	Program
<35 Years	4.1%	1.6%	3.3%	4.3%	2.8%	4.7%
35-45 Years	28%	26%	29%	24%	23%	16%
45-55 Years	58%	61%	57%	59%	61%	57%
>55 Years	9.8%	12%	9.8%	13%	13%	22%



 Table 5-8c

 Residential Customer Program Participation by Median Household Age

 North Marin Water District, Sonoma-Marin Saving Water Partnership



Abbreviations:

HECW = high efficiency clothes washer HET = high efficiency toilet

NMWD = North Marin Water District WBIC = weather-based irrigation controller

Table 5-8c

Residential Customer Program Participation by Median Household Age

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes:

- (a) Median household age is based on the estimated median age of household members by Census Block Group, per Census (2019).
- (b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those for which location data are available.
- (c) Relative difference is calculated as the percentage of program participation by household age group minus the overall percentage of residential customers by household age group within the service area.

References:

1. Census, 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau, downloaded on 14 January 2020.



Participation Hot and Cold Spots

Cold Spot - 99% Confidence Cold Spot - 95% Confidence Cold Spot - 90% Confidence

Not Significant

Hot Spot - 90% Confidence Hot Spot - 95% Confidence

Hot Spot - 99% Confidence

Program Participation

• HECW Rebate Program

Service Area Boundary

Abbreviation

HECW = high efficiency clothes washer

<u>Notes</u>

- 1. All locations are approximate.
- 2. Program participation hot and cold spots were evaluated using the Esri ArcGIS 10.8.0 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord GI* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
- 3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

- 1. Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



Participation Density for HECW Rebate Program



North Marin Water District, CA December 2020 C00004.00 Figure 5-1a



Participation Hot and Cold Spots

Cold Spot - 99% Confidence Cold Spot - 95% Confidence

Cold Spot - 90% Confidence

Not Significant

Hot Spot - 90% Confidence Hot Spot - 95% Confidence

Hot Spot - 99% Confidence

Program Participation

• HET Rebate Program

Service Area Boundary

<u>Abbreviation</u> HET = high efficiency toilet

<u>Notes</u>

- 1. All locations are approximate.
- 2. Program participation hot and cold spots were evaluated using the Esri ArcGIS 10.8.0 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord GI* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
- 3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

- 1. Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



Participation Density for HET Rebate Program



North Marin Water District, CA December 2020 C00004.00

Figure 5-1b



Participation Hot and Cold Spots

Cold Spot - 99% Confidence

- Cold Spot 95% Confidence
- Cold Spot 90% Confidence

Not Significant

Hot Spot - 90% Confidence Hot Spot - 95% Confidence

Hot Spot - 99% Confidence

Program Participation

• Water Smart Survey Program

Service Area Boundary

<u>Notes</u>

1. All locations are approximate.

- 2. Program participation hot and cold spots were evaluated using the Esri ArcGIS 10.8.0 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord GI* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
- 3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

- Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



Participation Density for Water Smart Survey Program



North Marin Water District, CA December 2020 C00004.00 Figure 5-1c



Participation Hot and Cold Spots

rath: X:\C00004 SonomaMarin\Map/2020(12)Fig5-1d HotSpot NMWD CashforGrass 20200902.mxc

Cold Spot - 99% Confidence

- Cold Spot 95% Confidence
- Cold Spot 90% Confidence

Not Significant

Hot Spot - 90% Confidence Hot Spot - 95% Confidence

Hot Spot - 99% Confidence

Program Participation

• Cash for Grass Rebate Program

Service Area Boundary

<u>Notes</u>

- 1. All locations are approximate.
- 2. Program participation hot and cold spots were evaluated using the Esri ArcGIS 10.8.0 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord GI* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
- 3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

- Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



Participation Density for Cash for Grass Rebate Program



North Marin Water District, CA December 2020 C00004.00 **Figure 5-1d**



Participation Hot and Cold Spots

Cold Spot - 99% Confidence Cold Spot - 95% Confidence

Cold Spot - 90% Confidence



Hot Spot - 90% Confidence Hot Spot - 95% Confidence Hot Spot - 99% Confidence

_ _ . . .

Program Participation

• WBIC Rebate Program

Service Area Boundary

Abbreviation

WBIC = Weather-Based Irrigation Controller

<u>Notes</u>

- 1. All locations are approximate.
- 2. Program participation hot and cold spots were evaluated using the Esri ArcGIS 10.8.0 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord GI* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
- 3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

- 1. Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



Participation Density for WBIC Rebate Program



North Marin Water District, CA December 2020 C00004.00 **Figure 5-1e**



Sonoma/Marin County Boundary

Service Area Boundary

Year Built

<1994 (16,420 parcels)

1994 - 2009 (2,902 parcels)

2010 and newer (151 parcels)

Notes 1. All locations are approximate.

2. Construction date for Sonoma County parcels is based on year the primary building was constructed, per Reference 1.

3. Construction date for Marin County parcels is based on year the primary building was constructed, per Reference 2.

Ν 1.5 3 Miles

Age of Building Stock

Sources

1. Sonoma County, 2020. County Wide Parcel Data CDR_PARCEL_20200111.zip, provided by City of Santa Rosa, 12 February 2020.

2. Marin County, 2020. County Wide Parcel Data ConservationJan2020.gdb, provided by Marin Municipal Water District, 13 February 2020.

3. Basemap provided by ESRI.



North Marin Water District, CA December 2020 C00004.00 Figure 5-2



Sonoma County Median Household Income

<\$63,450 (Low)

\$63,450 - \$90,650 (Medium) >\$90,650 (High)

Marin County Median Household Income

<\$94,850 (Low)
\$94,850 - \$124,500 (Medium)</pre>

>\$124,500 (High)

<u>Abbreviations</u> HUD = Housing and Community Development

Notes

1. All locations are approximate.

2. Household income is based on estimated 2017 median household income by Census Block Group, per Census (2019). Income level groupings are based on California Department of Housing and Community Development (HCD) income levels for Sonoma and Marin County for a 3-person household in 2017 (HCD, 2017). The average persons per household is 2.6 for Sonoma County and 2.4 for Marin County.

Sources

Service Area Boundary

Residential Customers

1. Census, 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau.

2. HCD, 2017. Memorandum: State Income Limits for 2017, California Department of Housing and Community Development, dated June 9, 2017.
3. Basemap provided by ESRI.

> North Marin Water District, CA December 2020 C00004.00 Figure 5-3a





≥75%

Notes 1. All locations are approximate. 2. Percentage of renter-occupied housing units is based on the estimated 2017 number of renter-occupied housing units by Census Block Group, per Census (2019).

Sources 1. Census 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau.

N 1.5 3 0 A Miles

Percentage of Renters



North Marin Water District, CA December 2020 C00004.00 Figure 5-3b

2. Basemap provided by ESRI.



SonomaMarin/Map/2020/12/Fig5-3c_NMWD_HouseholdAge_20200916.r



- All SFR Customers
- SFR Customers to Potentially Target with Outreach (1,399 customers)

<u>Abbreviations</u> SFR = single family residential

<u>Notes</u>

- 1. All locations are approximate.
- 2. SFR customers to potentially target with outreach for the Cash for Grass Program are identified as those (1) outside areas of high participation, (2) within low income household areas, and (3) within areas of at least 25% rentership.

<u>Sources</u>

- 1. Water use efficiency program data provided by North Marin Water District on April 2020.
- 2. Basemaps provided by ESRI and Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.



SFR Customers to Potentially Target with Cash For Grass Program Outreach



North Marin Water District, CA December 2020 C00004.00

Figure 5-4



6. CONSERVATION PROGRAM UPDATE

The following section evaluates current and potential conservation programs for both the District and the SMSWP. The purpose of this section is to compile programs that are prioritized by both the District and by all Water Contractors in the SMSWP collectively in order to calculate the potential water savings and economic feasibility of those programs. Section 6.1 discusses the methodology used to prioritize conservation programs. Section 6.2 describes the programs given high priority for implementation by all nine Water Contractors collectively, and Section 6.3 describes programs given high priority by the District. Section 6.4 analyzes the potential water savings and cost-benefit for those programs selected by the District as both individual programs and in three implementation scenarios. 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 Programs

In order to evaluate the potential for new conservation programs, a comprehensive list of over 100 conservation programs was developed (**Appendix D**). Each of the nine Water Contractors were first asked to review and identify any additional programs to add to this list. Following receipt of feedback from the Water Contractors, each Water Contractor was asked to review the list and identify:

- Priority (on a scale of 1 to 5, with 5 being the highest priority) as a program to be implemented regionally through the SMSWP;
- Priority (on a scale of 1 to 5, with 5 being the highest priority) as a program to be implemented locally through their organization;
- Preference for the program to be implemented either regionally or locally; and
- Whether each program is currently or has previously been implemented by their organization.

The list of water conservation programs is organized into four categories, specifically: (1) retailer actions and water rates, (2) public outreach and education, (3) device-based and financial incentive programs, and (4) policies and regulations. The results of the water conservation program prioritization and screening are summarized for all Water Contractors combined, representing overall regional priorities and preferences (**Table 6-1**), and for each individual Water Contractor, representing each retailer's local priorities and preferences. **Table 6-1** shows the average prioritization ranking for all Water Contractors for each program for regional and local implementation as well as the percentage of Water Contractors that prefer each program to be implemented at the local level or the regional level.¹⁶ The results presented in **Table 6-1** are discussed below for each water conservation program category. **Table 6-2** provides the results of this screening for the North Marin Water District, including priorities and preferences for each water conservation program, and identifies the target sector, whether the program addresses indoor or outdoor water use, and the primary end use.

¹⁶ Water Contractors were asked to provide a preference for local or regional implementation for all programs they ranked a priority score of 3 or above. Thus, the percentages of Water Contractors shown in **Table 6-1** does not sum to 100%.


6.2. Screening of Regional Conservation Measures

6.2.1. Retailer Actions and Water Rate Based Conservation Programs

Of the 15 retailer action and water rate based conservation programs included in the screening list, the Water Contractors identified the following eleven programs as high priority (average score of three or higher) to implement at the local level:

- 1. Install Advanced Metering Infrastructure (AMI) for High Water Users and Large Landscape Accounts
- 2. Install AMI in New Development
- 3. Customer Water Loss Reduction (AMI Leak Detection)
- 4. Install AMI for Existing Accounts
- 5. Tiered Water Rates (Conservation Pricing)
- 6. Water Budgeting/Monitoring for Large Landscape Accounts
- 7. Water Budget Based Billing for Only Irrigation Customers
- 8. Modification to or Implementation of Tiered Rate Conservation Pricing
- 9. Establish Separate Pricing Structure for Irrigation Accounts
- 10. Rate Structure Evaluation
- 11. Increase Enforcement of State Water Waste Regulations

By their nature as water retailer actions, these programs do not lend themselves to regional implementation. However, in some cases, such as the "Increase Enforcement of State Water Waste Regulations" program, there may be an opportunity to coordinate across the region at a policy or education level. For example, SB-407¹⁷ requires older plumbing fixtures to be replaced with new, more efficient fixtures that meet current water efficiency standards; this requirement is supposed to be enforced at time of sale. If this or similar policies are being enforced differently across Water Contractor jurisdictions, it could result in confusion among customers. Thus, even for retailer action-based programs, there may be opportunity for the Water Contractors to coordinate these efforts and share staff education resources.

6.2.2. Public Outreach and Education Based Conservation Programs

Of the 11 public outreach and education-based water conservation programs included in the screening, the Water Contractors identified the following six programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP:

- 1. Qualified Water Efficient Landscaper (QWEL) Training
- 2. Public Outreach through Print & Electronic Media Focused on Outdoor Irrigation
- 3. Educational Workshops
- 4. School Education Programs
- 5. Public Outreach through Print & Electronic Media Focused on Indoor Conservation
- 6. Garden tour

¹⁷ SB 407: <u>https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200920100SB407</u>



All of these programs are currently being implemented by the SMWSP. In addition to these programs, the Water Contractors also indicated that water use surveys or audits for single-family residential and CII customers were a high priority; however, the Water Contractors generally expressed a preference for these programs to be implemented locally.

6.2.3. <u>Device and Financial Incentive Based Conservation Programs</u>

Of the 61 device- and financial incentive- based water conservation programs included in the screening list, the Water Contractors identified the following 11 programs as high priority (average score of three or higher) to implement at either the regional or local level:

- 1. Landscape Conversion or Turf Removal multi-family residential (MFR) and CII
- 2. Landscape Conversion or Turf Removal single family residential (SFR)
- 3. High Efficiency Faucet Aerator / Showerhead Giveaway Residential Customers
- 4. Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates Large Landscape
- 5. Drip Irrigation Incentive for SFR
- 6. High Efficiency Faucet Aerator / Showerhead Giveaway CII Customers
- 7. Drip Irrigation Incentive for MFR and CII
- 8. High Efficiency Clothes Washer Rebate Residential
- 9. Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates SFR
- 10. Restaurant Spray Nozzle Rebates
- 11. Incentivize Irrigation Equipment Upgrades SFR

The above list includes four programs that focus on indoor water use ("High Efficiency Faucet Aerator / Showerhead Giveaway – Residential Customers", "High Efficiency Faucet Aerator / Showerhead Giveaway – CII Customers", "High Efficiency Clothes Washer Rebate – Residential," and "Restaurant Spray Nozzle Rebates"). The remaining preferred programs all focus on outdoor water use, including turf removal and methods to increase irrigation efficiency.

Of these preferred programs, the Water Contractors expressed a preference for two of the programs to be administered at a regional level rather than local level, specifically the "High Efficiency Clothes Washer Rebate – Residential" and the "Restaurant Spray Nozzle Rebates".

6.2.4. Policy and Regulation Based Conservation Programs

Of the 29 policy- and regulation- based water conservation programs included in the screening list, the Water Contractors identified the following six programs as high priority (average score of three or higher) to implement at the local level:

- 1. Water Waste Ordinance
- 2. Require Submetering of Landscaping for New MFR and Commercial Developments
- 3. Require Water Efficiency Plan Reviews for New CII Development
- 4. Require High Efficiency Clothes Washers in New Development
- 5. Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development
- 6. Demand Offset/Water Neutral Policy for Large New Developments



Nearly all of the highest priority programs focus on ensuring efficiency in new developments, and target both indoor and outdoor water use. The Water Contractors expressed that the program "Require Irrigation Designers / Installers be Certified (QWEL)" is a high priority at the local level but were split equally as to whether they would prefer this program to be implemented at a local or regional level. Further, given the shift in state policy regarding recycled water use (i.e., that non-potable use of recycled water use will no longer be counted towards water conservation), some Water Contractors were conflicted as to how recycled water should be considered in policies regarding new development, in particular with respect to the program "Demand Offset/Water Neutral Policy for Large New Development."

6.2.5. <u>Regional Program Screening Findings</u>

With some exceptions, the Water Contractors expressed a strong preference for water conservation programs to be implemented locally rather than regionally through the SMSWP, with the exception of programs that are already implemented regionally by the SMSWP. However, as listed above, there was general consensus among Water Contractors about which water conservation programs are a high priority, and thus important for the region. Given this consensus, while there is not an apparent desire to implement programs regionally, there may be opportunity for further coordination and collaboration on these programs, such as sharing of educational resources, training of staff (e.g., building permit and plan review staff), and collaboration on creating similar program structure and requirements (such as for financial incentive-based programs) across the region.

6.3. Screening of Local Conservation Measures

Table 6-2 shows the results of this screening for the North Marin Water District, and lists the programs considered by the District to be medium or high priority to consider for the future. **Table 6-2** also identifies the target sector, whether the program addresses indoor or outdoor water use, and the primary targeted end use.

- Retailer Actions and Water Rate Based Conservation Programs. Twelve retailer action and water rate based conservation programs were identified for potential future implementation. Of these, nine are existing programs or actions currently implemented by the District, and three are potential new programs for consideration (i.e., "Water Budget Based Billing for Only Irrigation Customers", "Regional ultra high efficiency toilets (UHET) and/or Urinal Bulk Purchase Program", and "Water Budget Based Billing for All Customers"). With the exception of "Regional UHET and/or Urinal Bulk Purchase Program", all programs were given a preference for local implementation. Two programs target indoor end uses, three target outdoor end uses, and seven target both.
- Public Outreach and Education Based Conservation Programs. The District ranked seven public outreach and education-based water conservation programs as medium to high priority for potential future implementation, with Water Use Surveys/Audits SFR as the highest priority. Only two of the seven selected programs are currently implemented by the district, most of which were given no preference for implementation scale. Two programs target indoor water end uses, three target outdoor end uses, and two target both. The SMWSP currently implements a variety of public education and outreach programs that are available to school age children, adults, and landscape professionals. The only additional program identified as high priority by the District is



expanding the Water Use Surveys/Audits to CII customers. The potential new programs identified are as follows, in general order of priority:

- Water Use Surveys/Audits CII
- Public Outreach through Print & Electronic Media Focused on Outdoor Irrigation
- Educational Workshops
- Public Outreach through Print & Electronic Media Focused on Indoor Conservation
- Provide Support with Smart Irrigation Controller Setup
- **Device and Financial Incentive Based Conservation Programs.** Twenty-two device and financial incentive based programs were ranked as medium to high priority for potential future implementation, including seven that would target indoor water end uses and fifteen that would target outdoor water end uses. Three of these programs are not currently implemented by the District, identified are as follows in general order of priority:
 - Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway Large Landscape
 - Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway SFR
 - Plumber Initiated UHET and / or Urinal Retrofit Program
- Policy and Regulation Based Conservation Programs. Thirteen policy and regulation based programs were identified as highest priority for potential future implementation, eight of which are currently implemented by the District and five of which would be new programs. Seven programs target indoor water end uses and six target outdoor end uses. All programs were given a preference for local implantation. The potential new programs identified are as follows, in general order of priority:
 - Require Submetering for New Mobile Home Park Developments
 - o Require Submetering for New MFR Developments
 - Require Irrigation Designers / Installers be Certified (QWEL)
 - Require Hot Water on Demand / Structured Plumbing in New Residential Development
 - Require <1.0 gal/flush Toilets in New Development

6.4. Evaluation of Future Water Conservation Programs

Based on the conservation screening process described in Sections 6.2 and 6.3 above, a suite of conservation programs to be considered for future implementation were evaluated. These programs were evaluated both individually and as components in three water conservation program scenarios, as shown in **Table 6-3a**. The three program scenarios represent three potential approaches or strategies for the District's future conservation programs, specifically:

- Scenario A represents a focus on programs that target outdoor water savings,
- Scenario B represents a more "business as usual" approach based on programs ranked most highly by the District, and
- Scenario C represents a focus on the programs that all nine Water Contractors collectively identified as highest priority.



Table 6-3a 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**.¹⁸ Key assumptions and considerations related to the methodology used by the AWE model and in this analysis are provided below:

- Financial assumptions related to both costs to the utility and 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, 2020; PG&E and Marin Clean Energy, 2020).
- Water savings assumptions were based on a combination of District-specific water savings estimates per Section 5.3.2, AWE model default assumptions, assumptions developed for the District as a part of the 2015 conservation modeling per NMWD (2015), and water savings factors developed based on other published literature sources.
- 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 2021 through 2025; water savings projections beyond this period reflect cumulative savings achieved over time from implementation during this five-year period.
- Benefit-costs ratios are particularly sensitive to the assumed nominal rate of increase of the utility water cost.
- 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 6-3b presents a comparison of individual water conservation measures, and identifies the followinginformation for each program:

- Net present value of costs and benefits represents the present value over the 25-year period discounted to current 2020 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 Water Contractor'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.

¹⁸ Alliance for Water Efficiency, Water Conservation Tracking Tool Version 3, released in July 2016.



- **Total Water Utility Costs** includes costs to the District for program implementation from 2021-2025.
- Water Savings in 2025 one-year estimated water savings in 2025.
- 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 the individual programs by the cumulative water savings through 2045.

This 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 0.31 to 17.

Table 6-3c presents the results of the analysis of the three conservation program scenarios identified in **Table 6-3a**, and includes a summary of costs and benefits to the District and customers, estimated cumulative water savings through 2045 (based on assumed program implementation from 2021-2025), and the estimated cost of water saved to the District. Based on this, the approach of focusing water conservation measures on those ranked highest by the District (i.e., Scenario B) has a greater benefit to cost ratio than that of Scenarios A or C.

The projected water savings associated with implementation of Scenario B is 288 AF by 2025 and 798 by 2045, at a cost of approximately \$1,222/AF.

	Prioriti	zation (a)	Prefere	Current		
Conservation Measure/Program	Regional	Local	Regional Program	Regional Program		WP gram
RETAILER ACTIONS AND WATER RATES						
Install AMI for High Water Users and Large Landscape Accounts	2.5	4.7	11%	67%	No	×
Install AMI in New Development	2.4	4.7	0%	67%	No	×
Customer Water Loss Reduction (AMI Leak Detection)	2.4	4.4	0%	89%	No	×
Install AMI for Existing Accounts	2.4	4.0	0%	86%	No	×
Tiered Water Rates (Conservation Pricing)	2.0	3.6	0%	88%	No	×
Water Budgeting/Monitoring for Large Landscape Accounts	2.5	3.4	0%	83%	No	×
Water Budget Based Billing for Only Irrigation Customers	2.1	3.4	0%	86%	No	×
Modification to or Implementation of Tiered Rate Conservation Pricing	2.0	3.4	0%	88%	No	×
Establish Separate Pricing Structure for Irrigation Accounts	2.0	3.2	0%	83%	No	×
Rate Structure Evaluation	2.4	3.1	0%	78%	No	×
Increase Enforcement of State Water Waste Regulations	2.6	3.0	0%	86%	No	×
Water Budget Based Billing for All Customers	2.3	2.4	0%	50%	No	×
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	1.9	2.2	17%	67%	No	×
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	1.6	1.9	0%	40%	No	×
Regional UHET and/or Urinal Bulk Purchase Program	1.9	1.7	75%	0%	No	×
Average by Program Type	2.2	3.3			I	
PUBLIC OUTREACH AND EDUCATION						
QWEL Training (Qualified Water Efficient Landscaper)	4.3	2.0	89%	0%	Yes	✓
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.0	3.9	67%	0%	Yes	✓
Educational Workshops	4.0	3.2	63%	0%	Yes	✓
School Education Programs	4.0	3.1	78%	0%	Yes	~

	Prio	ritization (a)		Prefere	Current		
Conservation Measure/Program	Regional	gional Local		Regional Program	Local Program	SMS Prog	WP ;ram
Water Use Surveys/Audits - SFR	3.5	3.9		22%	44%	No	×
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.6	3.3		57%	0%	Yes	~
Garden tour	3.6	1.9		86%	0%	Yes	~
Water Use Surveys/Audits - CII	3.0	3.4		38%	38%	No	×
Water Use Surveys/Audits - MFR	2.8	3.3		29%	43%	No	×
Promote Green Building and Certification	3.1	2.2		33%	17%	No	×
Provide Support with Smart Irrigation Controller Setup	2.9	2.3		60%	0%	No	×
Average by Program Type	3.5	3.0					
DEVICE-BASED AND FINANCIAL INCENTIVE PF	OGRAMS						
Landscape Conversion or Turf Removal - MFR and CII	3.9	4.6		11%	78%	No	×
Landscape Conversion or Turf Removal -SFR	3.9	4.6		22%	67%	No	×
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	3.0	3.9		11%	44%	No	×
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	3.1	3.6		38%	38%	No	×
Drip Irrigation Incentive for SFR	2.4	3.6		25%	50%	No	×
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	2.9	3.4		14%	57%	No	×
Drip Irrigation Incentive for MFR and CII	2.4	3.4		25%	50%	No	×
High Efficiency Clothes Washer Rebate - Residential	3.3	3.3		44%	11%	Yes	~
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	2.9	3.2		14%	57%	No	×
Restaurant Spray Nozzle Rebates	3.1	2.8		50%	0%	No	×
Incentivize Irrigation Equipment Upgrades - SFR	2.1	3.0		17%	50%	No	×
Indoor Fixture Program For Schools	2.9	2.9		14%	71%	No	×
Rotating Sprinkler Nozzle Rebate	2.9	2.9		40%	20%	No	×

		Prioritizatio	on (a)		Prefere	Current		
Conservation Measure/Program	Regio	onal	Loc	cal	Regional Program		SMSWP Program	
High Efficiency Clothes Washer Rebate Program - CII	2.8	2.8	3		29%	29%	No	×
Direct Install of Efficient Indoor Fixtures - Low Income Residential	2.8	2.6	5		60%	0%	No	×
Indoor Fixture Program For Hotels & Motels	2.8	2.2	2		29%	43%	No	×
Mulch rebate	2.6	2.7	/		33%	50%	No	×
Rain Sensor Rebate	2.5	2.6	5		33%	50%	No	×
Incentivize Submetering for Existing Customers - CII	2.4	2.6	5		25%	25%	No	×
Incentivize Submetering for Existing Customers - MFR	2.4	2.6	5		25%	25%	No	×
Incentivize Gray Water Retrofit for Existing SFR Customers	2.3	2.6	5		20%	60%	No	×
Toilet Flapper Giveaway - SFR customers	2.1	2.6	5		40%	40%	No	×
Rotating Sprinkler Nozzle Giveaway	2.5	2.1	L		60%	0%	No	×
Incentivize Replacement of Inefficient Commercial and Industrial Equipment	2.4	2.4	l I		33%	33%	No	×
Soil Moisture Sensor Rebate	2.4	2.4	1		60%	20%	No	×
High Efficiency Urinal (<0.25 gal/flush) Rebates - CII	2.4	2.4	ļ		25%	0%	No	×
Incentivize Gray Water Systems for New CII Development	2.3	2.4	1		50%	25%	No	×
Incentivize Irrigation Equipment Upgrades - Large Landscapes	1.9	2.4	L.		20%	40%	No	×
Direct Install of Efficient Indoor Fixtures - Residential	2.4	2.2	2		50%	0%	No	×
High Efficiency Clothes Washer Install - Low Income Residential Customers	2.4	2.2	2		50%	0%	No	×
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	2.4	2.0)		80%	0%	No	×
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	2.4	2.0)		60%	20%	No	×
Incentivize Artificial Turf for Sports Fields	2.3	2.3	3		75%	0%	No	×
UHET <1.0 gal/flush Rebate - Residential	2.1	2.3	3		50%	17%	No	×
Water Savings Incentive Program for CII	2.1	2.2	2		40%	40%	No	×

	Priorit	tization (a)	Prefer	Current		
Conservation Measure/Program	Regional	Local	Regional Program	Local Program	SMS Prog	;WP gram
Hot Water on Demand Pump System Rebate	2.0	2.2	60%	20%	No	×
UHET Direct Installation - CII	2.1	1.8	40%	0%	No	×
Plumber Initiated UHET and / or Urinal Retrofit Program	2.1	1.8	67%	0%	No	×
Direct Install of Efficient Indoor Fixtures - Government Buildings	2.1	1.6	50%	0%	No	×
Rain Barrel Rebate	1.9	2.1	40%	40%	No	×
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	2.0	2.0	33%	33%	No	×
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	2.0	1.9	50%	0%	No	×
Dipper Well Rebates	2.0	1.8	50%	0%	No	×
Rain Sensor Giveaway	2.0	1.7	75%	0%	No	×
Rebates for Conductivity Controllers on Cooling Towers	2.0	1.6	75%	0%	No	×
Rainwater Catchment System Rebate for Large Landscapes	1.9	2.0	50%	25%	No	×
Nonresidential Incentive for Self-closing or Metering Faucets	1.9	1.9	33%	33%	No	×
Efficient (EnergyStar) Dishwasher Rebates	1.9	1.8	50%	0%	No	×
Rain Barrel Giveaway	1.9	1.7	75%	0%	No	×
UHET Direct Installation - Residential	1.9	1.7	50%	0%	No	×
Autoclave (Steam-Sterilizer) Retrofit Rebates	1.9	1.7	67%	0%	No	×
Connectionless Food Steamer Rebates	1.9	1.7	67%	0%	No	×
Dry Vacuum Pumps	1.9	1.6	33%	0%	No	×
Incentivize Cooling Tower Upgrades	1.9	1.6	50%	0%	No	×
UHET <1.0 gal/flush Rebate - CII	1.8	1.8	60%	20%	No	×
Soil Moisture Sensor Giveaway	1.8	1.7	67%	0%	No	×
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	1.8	1.7	67%	0%	No	×

	Priorit	ization (a)	Prefere	Current		
Conservation Measure/Program	Regional	Local	Regional Program	Local Program	SMS Prog	SWP gram
Swimming Pool and Hot Tub Cover Rebates	1.3	1.7	50%	25%	No	×
Urinal Direct Installation - CII	1.5	1.4	50%	0%	No	×
Tier 4 Exemption	1.3	1.4	25%	25%	No	×
Incentivize Submetering of Cooling Towers for Existing Customers	1.3	1.4	50%	0%	No	×
Average by Program Type	2.3	2.3				
POLICIES AND REGULATIONS						
Water Waste Ordinance	2.9	4.3	0%	63%	No	×
Require Submetering of Landscaping for New MFR and Commercial Developments	2.8	4.0	0%	63%	No	×
Require Water Efficiency Plan Reviews for New Cll Development	2.5	3.7	14%	57%	No	×
Require High Efficiency Clothes Washers in New Development	2.8	3.3	17%	67%	No	×
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	2.4	3.1	0%	80%	No	×
Require Irrigation Designers / Installers be Certified (QWEL)	3.0	2.9	40%	40%	No	×
Demand Offset/Water Neutral Policy for Large New Developments	2.4	3.0	0%	83%	No	×
Require Efficient (EnergyStar) Dishwashers in New Development	2.8	2.9	20%	60%	No	×
Require <0.25 gal/flush Urinals in New Development	2.3	2.8	0%	67%	No	×
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	1.6	2.8	0%	67%	No	×
Require Swimming Pool and Hot Tub Covers	2.0	2.7	40%	20%	No	×
Require Submetering by Unit for New Commercial Developments	2.3	2.6	0%	50%	No	×
Require Submetering of Landscaping for Existing MFR and Commercial Customers	2.4	2.4	0%	67%	No	×
Require Hot Water on Demand / Structured Plumbing in New Residential Development	2.3	2.4	25%	50%	No	×
Require Submetering by Unit for Existing Commercial Customers	2.1	2.4	0%	25%	No	×

	Prioriti	zation (a)	Prefere	Current	
Conservation Measure/Program	Regional Local		Regional Program	Local Program	SMSWP Program
Require Submetering for New MFR Developments	1.9	2.4	0%	50%	No 🗙
Require Plumbing for Recycled Water in New MFR Development	2.0	2.3	0%	60%	No 🗙
Require <1.0 gal/flush Toilets in New Development	2.0	2.3	0%	80%	No 🗙
Require Submetering for New Mobile Home Park Developments	2.0	2.3	0%	40%	No 🗙
Prohibit Once through Cooling Systems	2.0	2.2	0%	50%	No 🗙
Require Plumbing for Recycled Water in New CII Development	1.9	2.2	0%	60%	No 🗙
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1.8	2.1	25%	50%	No 🗙
Require Plumbing for Gray Water in New SFR Development	1.6	2.1	0%	75%	No 🗙
Require Submetering of Cooling Towers for New Development	2.0	1.9	0%	33%	No 🗙
Require Submetering of Existing MFR (and Mobile Home Park) Customers	1.9	1.9	0%	50%	No 🗙
Restrict Landscape Irrigation to Designated Days/Times	1.6	1.8	33%	0%	No 🗙
Require Rain Barrels in New Development	1.5	1.8	0%	67%	No 🗙
Require Submetering of Cooling Towers for Existing Customers	1.8	1.6	0%	50%	No 🗙
Require Cooling Tower Retrofits	1.5	1.4	0%	33%	No 🗙
Average by Program Type	2.1	2.5			

Abbreviations:

AMI = advanced metering infrastructure CII = commercial, industrial, institutional 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 locallyadministered 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) For each program a Water Contractor ranked as "3" or above, the Water Contractor was asked to indicate whether they would prefer the program to be administered regionally or locally. The results are presented as a percentage of the number of Water Contractors. Results of contractors who expressed "no preference" are not shown, and thus the total may not sum to 100% for a given measure.

Table 6-2
Prioritization of Conservation Measures and Programs
North Marin Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program				
RETAILER ACTIONS AND WATER RATES											
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	5	All	x		Toilet, Urinal, Faucet, Showerhead	Locally	Yes, currently				
Install AMI for Existing Accounts	5	All	х	x	Water Loss	Locally	Yes, currently				
Install AMI in New Development	5	All	х	х	Water Loss	Locally	Yes, currently				
Customer Water Loss Reduction (AMI Leak Detection)	4	All	х	х	Water Loss	Locally	Yes, currently				
Install AMI for High Water Users and Large Landscape Accounts	4	All		х	Water Loss	Locally	Yes, currently				
Water Budget Based Billing for Only Irrigation Customers	4	CII, IRR		х	Irrigation	Locally	No				
Increase Enforcement of State Water Waste Regulations	3	All		х	Irrigation	Locally	Yes, currently				
Modification to or Implementation of Tiered Rate Conservation Pricing	3	All	х	х	All	Locally	Yes, currently				
Rate Structure Evaluation	3	All	х	х	All	Locally	Yes, currently				
Regional UHET and/or Urinal Bulk Purchase Program	3	All	х		Toilet / Urinal	Regionally	No				
Tiered Water Rates (Conservation Pricing)	3	All	х	х	All	Locally	Yes, currently				
Water Budget Based Billing for All Customers	3	All	х	х	All	Locally	No				
PUBLIC OUTREACH AND EDUCATION											
Water Use Surveys/Audits - SFR	5	SFR	x	х	All	No preference	Yes, currently				
Water Use Surveys/Audits - CII	4	CII	х	х	All	No preference	No				
Water Use Surveys/Audits - MFR	4	MFR	x		All Indoor	No preference	Yes, currently				
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	3	All	х		Irrigation	No preference	No				
Educational Workshops	3	SFR		х	All Outdoor	Regionally	No				
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3	All		х	All Indoor	No preference	No				
Provide Support with Smart Irrigation Controller Setup	3	All		х	Irrigation	No preference	No				
DEVICE-BASED AND FINANCIAL INCENTIVE PRO	GRAMS			•	-						
Landscape Conversion or Turf Removal - MFR and CII	5	MFR, CII		x	Irrigation	Locally	Yes, currently				
Landscape Conversion or Turf Removal -SFR	5	SFR		x	Irrigation	Locally	Yes, currently				
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	5	MFR, CII		х	Irrigation	Locally	Yes, currently				

Table 6-2
Prioritization of Conservation Measures and Programs
North Marin Water District, Sonoma-Marin Saving Water Partnership

r			1	1			
Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	5	SFR		х	Irrigation	Locally	Yes, currently
Drip Irrigation Incentive for MFR and CII	5	MFR, CII		х	Irrigation	Locally	Yes, currently
Drip Irrigation Incentive for SFR	5	SFR		x	Irrigation	Locally	Yes, currently
Incentivize Irrigation Equipment Upgrades - SFR	5	SFR		х	Irrigation	Locally	Yes, currently
Mulch rebate	5	SFR		х	Irrigation	Locally	Yes, currently
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	4	CII	х		Faucet, Showerhead	Locally	Yes, currently
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	4	SFR, MFR	х		Faucet, Showerhead	Locally	Yes, currently
High Efficiency Clothes Washer Rebate - Residential	4	SFR, MFR	х		Clothes Washer	Locally	Yes, currently
Incentivize Irrigation Equipment Upgrades - Large Landscapes	4	MFR, CII, IRR		x	Irrigation	Locally	Yes, currently
UHET <1.0 gal/flush Rebate - CII	4	CII	х		Toilet	Locally	Yes, currently
UHET <1.0 gal/flush Rebate - Residential	4	SFR, MFR	х		Toilet	Locally	Yes, currently
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	4	MFR, CII		х	Irrigation	Regionally	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	4	SFR		х	Irrigation	Regionally	No
Rain Sensor Rebate	3	All		х	Irrigation	Locally	Yes, currently
Toilet Flapper Giveaway - SFR customers	3	SFR, MFR	х		Toilet	Locally	Yes, currently
Incentivize Gray Water Retrofit for Existing SFR Customers	3	SFR		х	Irrigation / Gray Water	Locally	Yes, currently
Rain Barrel Rebate	3	SFR		х	Irrigation	Locally	Yes, currently
Plumber Initiated UHET and / or Urinal Retrofit Program	3	All	х		Toilet	Regionally	No
Swimming Pool and Hot Tub Cover Rebates	3	SFR, MFR		х	Pool/Hot Tub	Locally	Yes, currently
POLICIES AND REGULATIONS	-		-				
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	5	All		x	Irrigation	Locally	Yes, currently
Water Waste Ordinance	4	All		x	All Outdoor	Locally	Yes, currently
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	4	All		х	Irrigation	Locally	Yes, currently
Require High Efficiency Clothes Washers in New Development	4	SFR, MFR	х		Clothes Washer	Locally	Yes, currently

Table 6-2
Prioritization of Conservation Measures and Programs
North Marin Water District, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritizat (a)	ion	Sector	Indoor	Outdoor	Primary End Use	Preference (b)	Local Program
Require Plumbing for Recycled Water in New MFR Development	4		MFR		х	Irrigation / Recycled Water	Locally	Yes, currently
Require Plumbing for Recycled Water in New CII Development	4		CII		х	Irrigation / Recycled Water	Locally	Yes, currently
Require Submetering for New Mobile Home Park Developments	3		MFR	x		All Indoor	Locally	No
Require Submetering for New MFR Developments	3		MFR	x		All Indoor	Locally	No
Require Efficient (EnergyStar) Dishwashers in New Development	3		SFR, MFR	x		Dishwashers	Locally	Yes, currently
Require <0.25 gal/flush Urinals in New Development	3		CII	x		Urinal	Locally	Yes, currently
Require Irrigation Designers / Installers be Certified (QWEL)	3		All		x	Irrigation	Locally	No
Require Hot Water on Demand / Structured Plumbing in New Residential Development	3		SFR, MFR	x		Shower/Sink	Locally	No
Require <1.0 gal/flush Toilets in New Development	3		All	x		Toilet	Locally	No

Abbreviations:

- AMI = advanced metering infrastructure
- CII = commercial, industrial, institutional
- COM = commercial
- IRR = irrigation account
- 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 locally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority. N/A Indicates no rank given.

(b) For each program a Water Contractor ranked as "3" or above, the Water Contractor was asked to indicate whether they would prefer the program to be administered regionally or locally. N/A indicates no preference given for programs given a ranking lower than three for both local and regional priority.

Table 6-3a Conservation Program Scenarios

North Marin Water District, Sonoma-Marin Saving Water Partnership

			Program Scenario (a)					
Program	Sector	Indoor/ Outdoor	A) Outdoor Programs B) Highly- Ranked Local Programs		C) Highly- Ranked Regional Programs			
Drip Irrigation Incentive for MFR and CII	MFR, CII	Outdoor	Х	х				
Drip Irrigation Incentive for SFR	SFR	Outdoor	х	Х				
High Efficiency Clothes Washer Rebate - Residential	SFR, MFR	Indoor			х			
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	SFR, MFR	Indoor			х			
Incentivize Irrigation Equipment Upgrades - SFR	SFR	Outdoor	Х	Х				
Landscape Conversion or Turf Removal - MFR and CII	MFR, CII	Outdoor	х	Х	х			
Landscape Conversion or Turf Removal -SFR	SFR	Outdoor	х	Х	х			
Mulch rebate	SFR	Outdoor	х	Х				
Restaurant Spray Nozzle Rebates	CII	Indoor			х			
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	MFR, CII	Outdoor	х	x	х			
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	SFR	Outdoor	x	x				
UHET <1.0 gal/flush Rebate - Residential	SFR, MFR	Indoor		х				
Water Use Surveys/Audits - CII	CII	Both	х		x			
Water Use Surveys/Audits - SFR	SFR	Both	Х	x	x			

Abbreviations

CII = Commercial, Industrial, and Institutional MFR = multi-family residential SFR = Single-family residential

Notes

(a) Program scenarios represent three potential approaches to program selection. Scenario A represents a focus on outdoor water savings, Scenario B represents a more "business as usual" approach based on programs ranked most highly by North Marin Water District, and Scenario C represents a focus on the programs all nine Water Contractors collectively identified as highest priority.

Table 6-3b Costs and Savings of Potential Conservation Programs

North Marin Water District, Sonoma-Marin Saving Water Partnership

Program (a)	Sector	Indoor/ Outdoor	Note	Net Present Value of Benefits		Net Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2021-2025	Water Savings in	Water Utility Cost of Water
				Water Utility	Customers	Water Utility	Customers	Water Utility	Customers	(b)	2025 (AFY)	Saved (\$/AF)
Drip Irrigation Incentive for MFR and CII	MFR, CII	Outdoor	(c)	\$16,703	\$28,405	\$22,225	\$17,096	0.75	1.7	\$20,313	0.68	\$2,404
Drip Irrigation Incentive for SFR	SFR	Outdoor	(c)	\$10,898	\$18,532	\$35,559	\$27,353	0.31	0.68	\$32,500	0.44	\$5,897
High Efficiency Clothes Washer Rebate - Residential	SFR, MFR	Indoor	(d)	\$491,606	\$1,535,631	\$92,810	\$1,070,881	5.3	1.4	\$84,825	19	\$348
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	SFR, MFR	Indoor		\$61,640	\$102,693	\$34,137	\$54,707	1.8	1.9	\$31,200	6.7	\$916
Incentivize Irrigation Equipment Upgrades - SFR	SFR	Outdoor		\$27,849	\$47,075	\$17,780	\$13,677	1.6	3.4	\$16,250	1.4	\$1,124
Landscape Conversion or Turf Removal - MFR and CII	MFR, CII	Outdoor	(d)	\$16,338	\$31,375	\$15,869	\$36,621	1.0	0.86	\$14,504	0.82	\$1,711
Landscape Conversion or Turf Removal -SFR	SFR	Outdoor	(d)	\$201,579	\$340,741	\$195,796	\$451,838	1.0	0.75	\$178,952	10	\$1,711
Mulch rebate	SFR	Outdoor	(d)	\$92,987	\$154,919	\$97,898	\$30,123	0.95	5.1	\$89,476	10	\$1,741
Restaurant Spray Nozzle Rebates	CII	Indoor		\$123,364	\$396,386	\$7,112	\$5,471	17	72	\$6,500	13	\$95
Smart Irrigation Controller (Weather- Based Irrigation Controller) Rebates - Large Landscape	MFR, CII	Outdoor	(d)(e)	\$33,807	\$64,922	\$17,256	\$85,198	2.0	0.76	\$15,772	1.7	\$899
Smart Irrigation Controller (Weather- Based Irrigation Controller) Rebates - SFR	SFR	Outdoor	(d)(e)	\$61,980	\$104,768	\$19,558	\$15,044	3.2	6.96	\$17,875	3.1	\$556
UHET <1.0 gal/flush Rebate - Residential	SFR, MFR	Indoor		\$1,569,711	\$1,495,055	\$213,356	\$109,413	7.4	14	\$195,000	22	\$338
Water Use Surveys/Audits - CII	CII	Both		\$142,216	\$268,543	\$142,237	\$177,796	1.0	1.5	\$130,000	16	\$1,636
Water Use Surveys/Audits - SFR	SFR	Both	(d)	\$353,154	\$721,840	\$339,876	\$80,692	1.0	8.9	\$310,635	39	\$1,574

Abbreviations

AFY = acre-feet per year CII = Commercial, Industrial, and Institutional MFR = multi-family residential NMWD = North Marin Water District SFR = Single-family residential sq ft = square feet WBIC = weather-based irrigation controller \$/AF = dollars per acre-foot

Table 6-3b

Costs and Savings of Potential Conservation Programs

North Marin Water District, Sonoma-Marin Saving Water Partnership

Notes

- (a) Estimated water savings, benefits, and costs are calculated using the AWE model. Assumptions used are presented in Appendix B.
- (b) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2021 through 2025.
- (c) The benefit-cost results of the drip irrigation programs are strongly influenced by the lawn size. As lawn size goes up, the unit cost goes down, and the benefit-cost ratio goes up. NMWD customers average lawn size is estimated based on the past participants of the turf replacement program.
- (d) Program savings are based on NMWD-specific estimates, which are derived from participant water savings based on their water bills.
- (e) Program savings are based on the past savings of the WBIC rebate program. The program participation sample size was limited, and thus conservation savings estimates may not be as robust as they would be with a larger sample size.

Table 6-3c Comparison of Program Scenarios – Costs and Savings

North Marin Water District, Sonoma-Marin Saving Water Partnership

Scenario (a)	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Cumulative Water Savings (AF)				Water Utility Cost of Water	
	Water Utility	Customers	Water Utility	Customers	Water Utility	Customers	2025	2030	2035	2040	2045	Saved (\$/AF) (b)
A) Outdoor Programs	\$957,512	\$1,781,120	\$904,054	\$935,438	1.1	1.9	273	471	509	510	510	\$1,774
B) Highly-Ranked Local Programs	\$2,385,007	\$3,007,632	\$975,172	\$867,055	2.4	3.5	288	560	679	744	798	\$1,222
C) Highly-Ranked Regional Programs	\$1,423,705	\$3,462,132	\$845,093	\$1,963,204	1.7	1.8	345	617	710	734	734	\$1,151

Abbreviations

AF = acre-feet

\$/AF = dollars per acre-foot

<u>Notes</u>

(a) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2021 through 2025. Cumulative water savings achieved beyond 2025 reflect the ongoing benefit of program implementation.

(b) The water utility cost is based on the cumulative savings achieved through 2045 cumulative water savings.



7. CONCLUSION

This report presents the results of demand analysis and projections, 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 the District's community planning, using the best available information. 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 significant 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.¹⁹ California experienced a historic drought between 2011-2017. In 2014, Governor Brown issued Executive Order B-26-14 declaring a Drought State of Emergency and requested all Californians to voluntarily reduce water use by 20%. In 2015, the State Water Resources Control Board implemented emergency conservation regulations that, among other things, required water agencies to reduce their water use and prohibited certain types of water uses. As a result, the District experienced an overall decrease in demands during the historic drought, most significantly during 2014. The demand factors evaluated herein consider the 2011-2013 period in which customers increased their water use, in part due to the drought conditions prior to the imposed restrictions. Thus, the periods used to develop the demand projections reflect conditions representative of the hotter, drier weather expected as a result of climate change.

¹⁹ 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.



8. REFERENCES

- ABAG, 2013. Association of Bay Area Governments, Plan Bay Area Projections 2013, adopted on 18 July 2013.
- ABAG, 2018. Association of Bay Area Governments, Plan Bay Area Projections 2040, released on November 2018.
- ABAG, 2020. Association of Bay Area Governments, Regional Housing Needs Allocation Proposed Methodology: San Francisco Bay Area, 2023-2031, released on October 2020.
- AWE, 2015. An Assessment of Increasing Water-Use Efficiency on Demand Hardening, Alliance for Water Efficiency, dated July 2015, https://www.allianceforwaterefficiency.org/impact/ourwork/research-report-water-use-efficiency-and-demand-hardening.
- AWE, 2016. Water Conservation Tracking Tool Version 3, Alliance for Water Efficiency, released in July 2016.
- Census, 2019. 2013-2017 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geo/maps-data/data/tiger-data.html, United States Census Bureau, downloaded on 14 January 2020.
- City of Novato, 2020. City of Novato General Plan 2035, https://www.novato.org/home/showpublisheddocument?id=30461, dated February 2020.
- Columbia Public Health, 2013. Difference in Difference Estimation. Columbia Public Health, <u>https://www.publichealth.columbia.edu/research/population-health-methods/difference-</u> difference-estimation#Overview, accessed 28 September 2020.
- DOF, 2020. California Department of Finance Demographic Research Unit, Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year Increments, Report P-1, released on 10 January 2020.
- DWR, 2020. WUEdata Water Audit Report Data website, accessed 13 June 2020, (https://wuedata.water.ca.gov/awwa_plans).
- HCD, 2017. Memorandum: State Income Limits for 2017, California Department of Housing and Community Development, dated 9 June 2017.
- NMWD, 2015. 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, prepared by Maddaus water Management Inc., dated 1 July 2015.
- NMWD, 2016. 2015 Urban Water Management Plan, prepared by North Marin Water District, dated June 2016.
- NMWD, 2019. 2018 Novato Water System Master Plan Update, prepared by North Marin Water District, dated September 2019.
- NMWD, 2020. Billing history data: 2010-2019 MonthlyWaterByService2004_2019.xlsx, provided by North Marin Water District on 13 April 2020.



- PG&E, 2020. Gas Rate Finder, Volume 48-G, No.3, dated in March 2020 (https://www.pge.com/tariffs/GRF0320.pdf).
- PG&E and Marin Clean Energy, 2020. Joint Rate Comparisons, dated May 2020 (<u>https://www.pge.com/pge_global/common/pdfs/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/mce_rateclasscomparison.pdf</u>).



Appendix A

California Water Code Revisions per AB-1668, SB-606, and SB-664, Redlines prepared by DWR



SB-664 Water: urban water management planning. (2015-2016)

As Amends the Law Today	As Amends the Law on Nov 20, 2015
SECTION 1. Section 10632.5 is added to the Water Code, to read.	
10632.5. (a) In addition to the requirements of paragraph (3) of January 1, 2020, the plan shall include a seismic risk assessment of each of the various facilities of a water system and mitigate the	f subdivision (a) of Section 10632, beginning and mitigation plan to assess the vulnerability se vulnerabilities.
(b) An urban water supplier shall update the seismic risk asses urban water management plan as required by Section 10621.	sment and mitigation plan when updating its
(c) An urban water supplier may comply with this section by sub the most recent adopted local hazard mitigation plan or multihaz Mitigation Act of 2000 (Public Law 106-390) if the local hazard i addresses seismic risk.	mitting, pursuant to Section 10644, a copy of ard mitigation plan under the federal Disaster mitigation plan or multihazard mitigation plan



AB-1668 Water management planning. (2017-2018)

As Amends the Law Today

As Amends the Law on Nov 08, 2018

SECTION 1. Section 531.10 of the Water Code is amended to read:

531.10. (a) (1) An agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bimonthly basis, using best professional practices. The annual report for the prior year shall be submitted to the department by April 1 of each year. The annual report shall be organized by basin, as defined in Section 10721, within the service area of the agricultural water supplier, if applicable.

(2) The report, and any amendments to the report, submitted to the department pursuant to this subdivision shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(3) The department shall post all reports on its Internet Web site in a manner that allows for comparisons across water suppliers. The department shall make the reports available for public viewing in a timely manner after it receives them.

(b) Nothing in this article shall be construed to require the implementation of water measurement programs or practices that are not locally cost effective.

(c) It is the intent of the Legislature that the requirements of this section shall complement and not affect the scope of authority granted to the department or the board by provisions of law other than this article.

SEC. 2. Section 1120 of the Water Code is amended to read:

1120. This chapter applies to any decision or order issued under this part or Section 275, Part 2 (commencing with Section 1200), Part 2 (commencing with Section 10500) of Division 6, Part 2.55 (commencing with Section 10608) of Division 6, or Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6, Article 7 (commencing with Section 13550) of Chapter 7 of Division 7, or the public trust doctrine.

SEC. 3. Section 1846.5 is added to the Water Code, to read:

1846.5. (*a*) An urban retail water supplier who commits any of the violations identified in subdivision (b) may be liable in an amount not to exceed the following, as applicable:

(1) If the violation occurs in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years or during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, ten thousand dollars (\$10,000) for each day in which the violation occurs.

(2) For all violations other than those described in paragraph (1), one thousand dollars (\$1,000) for each day in which the violation occurs.

(b) Liability pursuant to this section may be imposed for any of the following violations:

(1) Violation of an order issued under Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6.

(2) Violation of a regulation issued under Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6, if the violation occurs after November 1, 2027.

(c) Civil liability may be imposed by the superior court. The Attorney General, upon the request of the board, shall petition the superior court to impose, assess, and recover those sums.

(d) Civil liability may be imposed administratively by the board pursuant to Section 1055.

SEC. 4. Section 10608.12 of the Water Code is amended to read:

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.

(e) "Commercial water user" means a water user that provides or distributes a product or service.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(i) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(j) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(I) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.

(m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.

(o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.

(p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

(q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.

(r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(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.

(u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

(v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(w) "Urban wholesale water supplier" 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.

SEC. 5. Section 10608.20 of the Water Code is amended to read:

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's $\frac{2017}{2016}$ report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its internet website, Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

SEC. 6. Section 10608.48 of the Water Code is amended to read:

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement both of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The department shall require information about the implementation of efficient water management practices to be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

SEC. 7. Chapter 9 (commencing with Section 10609) is added to Part 2.55 of Division 6 of the Water Code, to read:

CHAPTER 9. Urban Water Use Objectives and Water Use Reporting

10609. (a) The Legislature finds and declares that this chapter establishes a method to estimate the aggregate amount of water that would have been delivered the previous year by an urban retail water supplier if all that water had been used efficiently. This estimated aggregate water use is the urban retail water supplier's urban water use objective. The method is based on water use efficiency standards and local service area characteristics for that year. By comparing the amount of water actually used in the previous year with the urban water use objective, local urban water suppliers will be in a better position to help eliminate unnecessary use of water; that is, water used in excess of that needed to accomplish the intended beneficial use.

- (b) The Legislature further finds and declares all of the following:
- (1) This chapter establishes standards and practices for the following water uses:
- (A) Indoor residential use.
- (B) Outdoor residential use.
- (C) CII water use.
- (D) Water losses.

(E) Other unique local uses and situations that can have a material effect on an urban water supplier's total water use.

(2) This chapter further does all of the following:

- (A) Establishes a method to calculate each urban water use objective.
- (B) Considers recycled water quality in establishing efficient irrigation standards.

(C) Requires the department to provide or otherwise identify data regarding the unique local conditions to support the calculation of an urban water use objective.

(D) Provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the department.

(E) Requires annual reporting of the previous year's water use with the urban water use objective.

(F) Provides a bonus incentive for the amount of potable recycled water used the previous year when comparing the previous year's water use with the urban water use objective, of up to 10 percent of the urban water use objective.

(3) This chapter requires the department and the board to solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter.

(4) This chapter preserves the Legislature's authority over long-term water use efficiency target setting and ensures appropriate legislative oversight of the implementation of this chapter by doing all of the following:

(A) Requiring the Legislative Analyst to conduct a review of the implementation of this act, including compliance with the adopted standards and regulations, accuracy of the data, use of alternate data, and other issues the Legislative Analyst deems appropriate.

(*B*) Stating legislative intent that the director of the department and the chairperson of the board appear before the appropriate Senate and Assembly policy committees to report on progress in implementing this chapter.

(C) Providing one-time-only authority to the department and board to adopt water use efficiency standards, except as explicitly provided in this chapter. Authorization to update the standards shall require separate legislation.

(c) It is the intent of the Legislature that the following principles apply to the development and implementation of long-term standards and urban water use objectives:

(1) Local urban retail water suppliers should have primary responsibility for meeting standards-based water use targets, and they shall retain the flexibility to develop their water supply portfolios, design and implement water conservation strategies, educate their customers, and enforce their rules.

(2) Long-term standards and urban water use objectives should advance the state's goals to mitigate and adapt to climate change.

(3) Long-term standards and urban water use objectives should acknowledge the shade, air quality, and heatisland reduction benefits provided to communities by trees through the support of water-efficient irrigation practices that keep trees healthy.

(4) The state should identify opportunities for streamlined reporting, eliminate redundant data submissions, and incentivize open access to data collected by urban and agricultural water suppliers.

10609.2. (a) The board, in coordination with the department, shall adopt long-term standards for the efficient use of water pursuant to this chapter on or before June 30, 2022.

(b) Standards shall be adopted for all of the following:

(1) Outdoor residential water use.

(2) Outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

(3) A volume for water loss.

(c) When adopting the standards under this section, the board shall consider the policies of this chapter and the proposed efficiency standards' effects on local wastewater management, developed and natural parklands, and urban tree health. The standards and potential effects shall be identified by May 30, 2022. The board shall allow for public comment on potential effects identified by the board under this subdivision.

(d) The long-term standards shall be set at a level designed so that the water use objectives, together with other demands excluded from the long-term standards such as CII indoor water use and CII outdoor water use not connected to a dedicated landscape meter, would exceed the statewide conservation targets required pursuant to Chapter 3 (commencing with Section 10608.16).

(e) The board, in coordination with the department, shall adopt by regulation variances recommended by the department pursuant to Section 10609.14 and guidelines and methodologies pertaining to the calculation of an urban retail water supplier's urban water use objective recommended by the department pursuant to Section 10609.16.

10609.4. (a) (1) Until January 1, 2025, the standard for indoor residential water use shall be 55 gallons per capita daily.

(2) Beginning January 1, 2025, and until January 1, 2030, the standard for indoor residential water use shall be the greater of 52.5 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(3) Beginning January 1, 2030, the standard for indoor residential water use shall be the greater of 50 gallons per capita daily or a standard recommended pursuant to subdivision (b).

(b) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and may jointly recommend to the Legislature a standard for indoor residential water use that more appropriately reflects best practices for indoor residential water use than the standard described in subdivision (a). A report on the results of the studies and investigations shall be made to the chairpersons of the relevant policy committees of each house of the Legislature by January 1, 2021, and shall include information necessary to support the recommended standard, if there is one. The studies and investigations shall also include an analysis of the benefits and impacts of how the changing standard for indoor residential water use will impact water and wastewater management, including potable water usage, wastewater, recycling and reuse systems, infrastructure, operations, and supplies.

(2) The studies, investigations, and report described in paragraph (1) shall include collaboration with, and input from, a broad group of stakeholders, including, but not limited to, environmental groups, experts in indoor plumbing, and water, wastewater, and recycled water agencies.

10609.6. (a) (1) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor residential use for adoption by the board in accordance with this chapter.

(2) (A) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(B) The standards shall apply to irrigable lands.

(C) The standards shall include provisions for swimming pools, spas, and other water features. Ornamental water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, shall be analyzed separately from swimming pools and spas.

(b) The department shall, by January 1, 2021, provide each urban retail water supplier with data regarding the area of residential irrigable lands in a manner that can reasonably be applied to the standards adopted pursuant to this section.

(c) The department shall not recommend standards pursuant to this section until it has conducted pilot projects or studies, or some combination of the two, to ensure that the data provided to local agencies are reasonably accurate for the data's intended uses, taking into consideration California's diverse landscapes and community characteristics.

10609.8. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, standards for outdoor irrigation of landscape areas with dedicated irrigation meters or other means of calculating outdoor irrigation use in connection with CII water use for adoption by the board in accordance with this chapter.

(b) The standards shall incorporate the principles of the model water efficient landscape ordinance adopted by the department pursuant to the Water Conservation in Landscaping Act (Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code).

(c) The standards shall include an exclusion for water for commercial agricultural use meeting the definition of subdivision (b) of Section 51201 of the Government Code.

10609.9. For purposes of Sections 10609.6 and 10609.8, "principles of the model water efficient landscape ordinance" means those provisions of the model water efficient landscape ordinance applicable to the establishment or determination of the amount of water necessary to efficiently irrigate both new and existing landscapes. These provisions include, but are not limited to, all of the following:

(a) Evapotranspiration adjustment factors, as applicable.

- (b) Landscape area.
- (c) Maximum applied water allowance.
- (d) Reference evapotranspiration.

(e) Special landscape areas, including provisions governing evapotranspiration adjustment factors for different types of water used for irrigating the landscape.

10609.10. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, performance measures for CII water use for adoption by the board in accordance with this chapter.

(b) Prior to recommending performance measures for CII water use, the department shall solicit broad public participation from stakeholders and other interested persons relating to all of the following:

(1) Recommendations for a CII water use classification system for California that address significant uses of water.

(2) Recommendations for setting minimum size thresholds for converting mixed CII meters to dedicated irrigation meters, and evaluation of, and recommendations for, technologies that could be used in lieu of requiring dedicated irrigation meters.

(3) Recommendations for CII water use best management practices, which may include, but are not limited to, water audits and water management plans for those CII customers that exceed a recommended size, volume of water use, or other threshold.

(c) Recommendations of appropriate performance measures for CII water use shall be consistent with the October 21, 2013, report to the Legislature by the Commercial, Industrial, and Institutional Task Force entitled "Water Use Best Management Practices," including the technical and financial feasibility recommendations provided in that report, and shall support the economic productivity of California's commercial, industrial, and institutional sectors.

(*d*) (1) The board, in coordination with the department, shall adopt performance measures for CII water use on or before June 30, 2022.

(2) Each urban retail water supplier shall implement the performance measures adopted by the board pursuant to paragraph (1).

10609.12. The standards for water loss for urban retail water suppliers shall be the standards adopted by the board pursuant to subdivision (i) of Section 10608.34.

10609.14. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and, no later than October 1, 2021, recommend for adoption by the board in accordance with this chapter appropriate variances for unique uses that can have a material effect on an urban retail water supplier's urban water use objective.

(b) Appropriate variances may include, but are not limited to, allowances for the following:

(1) Significant use of evaporative coolers.

(2) Significant populations of horses and other livestock.

(3) Significant fluctuations in seasonal populations.

(4) Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids.

(5) Significant use of water for soil compaction and dust control.

(6) Significant use of water to supplement ponds and lakes to sustain wildlife.

(7) Significant use of water to irrigate vegetation for fire protection.

(8) Significant use of water for commercial or noncommercial agricultural use.

(c) The department, in recommending variances for adoption by the board, shall also recommend a threshold of significance for each recommended variance.

(*d*) Before including any specific variance in calculating an urban retail water supplier's water use objective, the urban retail water supplier shall request and receive approval by the board for the inclusion of that variance.

(e) The board shall post on its Internet Web site all of the following:

(1) A list of all urban retail water suppliers with approved variances.

(2) The specific variance or variances approved for each urban retail water supplier.

(3) The data supporting approval of each variance.

10609.15. To help streamline water data reporting, the department and the board shall do all of the following:

(a) Identify urban water reporting requirements shared by both agencies, and post on each agency's Internet Web site how the data is used for planning, regulatory, or other purposes.

(b) Analyze opportunities for more efficient publication of urban water reporting requirements within each agency, and analyze how each agency can integrate various data sets in a publicly accessible location, identify priority actions, and implement priority actions identified in the analysis.

(c) Make appropriate data pertaining to the urban water reporting requirements that are collected by either agency available to the public according to the principles and requirements of the Open and Transparent Water Data Act (Part 4.9 (commencing with Section 12400)).

10609.16. The department, in coordination with the board, shall conduct necessary studies and investigations and recommend, no later than October 1, 2021, guidelines and methodologies for the board to adopt that identify how an urban retail water supplier calculates its urban water use objective. The guidelines and methodologies shall address, as necessary, all of the following:

(a) Determining the irrigable lands within the urban retail water supplier's service area.

(b) Updating and revising methodologies described pursuant to subparagraph (A) of paragraph (1) of subdivision (h) of Section 10608.20, as appropriate, including methodologies for calculating the population in an urban retail water supplier's service area.

(c) Using landscape area data provided by the department or alternative data.

(d) Incorporating precipitation data and climate data into estimates of a urban retail water supplier's outdoor irrigation budget for its urban water use objective.

(e) Estimating changes in outdoor landscape area and population, and calculating the urban water use objective, for years when updated landscape imagery is not available from the department.

(f) Determining acceptable levels of accuracy for the supporting data, the urban water use objective, and compliance with the urban water use objective.

10609.18. The department and the board shall solicit broad public participation from stakeholders and other interested persons in the development of the standards and the adoption of regulations pursuant to this chapter. The board shall hold at least one public meeting before taking any action on any standard or variance recommended by the department.

SEC. 8. Chapter 10 (commencing with Section 10609.40) is added to Part 2.55 of Division 6 of the Water Code, to read:

CHAPTER 10. Countywide Drought and Water Shortage Contingency Plans 10609.40. The Legislature finds and declares both of the following:

(a) Small water suppliers and rural communities are often not covered by established water shortage planning requirements. Currently, most counties do not address water shortages or do so minimally in their general plan or the local hazard mitigation plan.

(b) The state should provide guidance to improve drought planning for small water suppliers and rural communities.

10609.42. (a) No later than January 1, 2020, the department, in consultation with the board and other relevant state and local agencies and stakeholders, shall use available data to identify small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability. The department shall notify counties and groundwater sustainability agencies of those suppliers or communities that may be at risk within its jurisdiction, and may make the information publicly accessible on its Internet Web site.

(b) The department shall, in consultation with the board, by January 1, 2020, propose to the Governor and the Legislature recommendations and guidance relating to the development and implementation of countywide drought and water shortage contingency plans to address the planning needs of small water suppliers and rural communities. The department shall recommend how these plans can be included in county local hazard
mitigation plans or otherwise integrated with complementary existing planning processes. The guidance from the department shall outline goals of the countywide drought and water shortage contingency plans and recommend components including, but not limited to, all of the following:

(1) Assessment of drought vulnerability.

(2) Actions to reduce drought vulnerability.

(3) Response, financing, and local communication and outreach planning efforts that may be implemented in times of drought.

(4) Data needs and reporting.

(5) Roles and responsibilities of interested parties and coordination with other relevant water management planning efforts.

(c) In formulating the proposal, the department shall utilize a public process involving state agencies, cities, counties, small communities, small water suppliers, and other stakeholders.

SEC. 9. Section 10801 of the Water Code is amended to read:

10801. The Legislature finds and declares all of the following:

(a) The waters of the state are a limited and renewable resource.

(b) The California Constitution requires that water in the state be used in a reasonable and beneficial manner.

(c) The efficient use of agricultural water supplies is of great statewide concern.

(d) There is a great amount of reuse of delivered water, both inside and outside the water service areas of agricultural water suppliers.

(e) Significant noncrop beneficial uses are associated with agricultural water use, including the preservation and enhancement of fish and wildlife resources.

(f) Significant opportunities exist in some areas, through improved irrigation water management, to conserve water or to reduce the quantity of highly saline or toxic drainage water.

(g) Changes in water management practices should be carefully planned and implemented to minimize adverse effects on other beneficial uses currently being served.

(h) Agricultural water suppliers that receive water from the federal Central Valley Project are required by federal law to prepare and implement water conservation plans.

(i) Agricultural water users applying for a permit to appropriate water from the board are required to prepare and implement water conservation plans.

SEC. 10. Section 10802 of the Water Code is amended to read:

10802. The Legislature finds and declares that all of the following are the policies of the state:

(a) The efficient use of water shall be pursued actively to protect both the people of the state and the state's water resources.

(b) The efficient use of agricultural water supplies shall be an important criterion in public decisions with regard to water.

(c) Agricultural water suppliers shall be required to prepare water management plans to achieve greater efficiency in the use of water.

SEC. 11. Section 10814 of the Water Code is amended to read:

10814. "Person" has the same meaning as defined in Section 10614.

SEC. 12. Section 10817 of the Water Code is amended to read:

10817. "Water use efficiency" means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

SEC. 13. Section 10820 of the Water Code is amended to read:

10820. (a) (1) Except as provided in paragraph (2), an agricultural water supplier shall prepare and adopt an agricultural water management plan in the manner set forth in this chapter on or before December 31, 2012, and shall update that plan on December 31, 2015.

(2) (A) The agricultural water management plan shall be updated on or before April 1, 2021, and thereafter on or before April 1 in the years ending in six and one. The plan shall satisfy the requirements of Section 10826.

(B) An agricultural water supplier shall submit its plan to the department no later than 30 days after the adoption of the plan. The plan shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) The department shall review each plan that is due pursuant to paragraph (2) of subdivision (a). The department may coordinate its review with the Department of Food and Agriculture and the board.

(2) The department shall notify an agricultural water supplier that it is not in compliance with this part if the department determines that actions are required to comply with the requirements of this part or if a supplier fails to update a plan as provided in paragraph (2) of subdivision (a). The department shall identify the specific deficiencies and the supplier shall have 120 days to remedy an identified deficiency. The department may provide additional time to remedy a deficiency if it finds that a supplier is making substantial progress toward remedying the deficiency. An agricultural water supplier that fails to submit corrective actions or a completed plan shall not be in compliance with this part.

(3) If the department has not received a plan or the department has determined that the plan submitted does not comply with the requirements of this part, and a revised plan has not been submitted, the department may undertake the following actions:

(A) Contract with a state academic institution or qualified entity to prepare or complete an agricultural water management plan on behalf of the supplier. The costs and expenses related to preparation or completion of a plan, including the costs of the contract and contract administration, shall be recoverable by the department from the supplier.

(B) If a supplier does not provide data necessary for the preparation or completion of a plan to the department or the contracting entity as determined by the department in accordance with subparagraph (A), the department may assess a fine of one thousand dollars (\$1,000) per day, not to exceed twenty-five thousand dollars (\$25,000), until data is made available.

(4) (A) A plan prepared or completed pursuant to paragraph (3) shall be deemed the adopted plan for the supplier.

(B) Any action to challenge or invalidate the adequacy of the plan prepared or completed pursuant to paragraph(3) shall be brought against the supplier for whom the plan was prepared.

(c) Every supplier that becomes an agricultural water supplier after December 31, 2012, shall prepare and adopt an agricultural water management plan within one year after the date it has become an agricultural water supplier.

(d) A water supplier that indirectly provides water to customers for agricultural purposes shall not prepare a plan pursuant to this part without the consent of each agricultural water supplier that directly provides that water to its customers.

SEC. 14. Section 10825 of the Water Code is amended to read:

10825. (a) It is the intent of the Legislature in enacting this part to allow levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

(b) This part does not require the implementation of water use efficiency programs or practices that are not locally cost effective.

SEC. 15. Section 10826 of the Water Code is amended to read:

10826. An agricultural water management plan shall be adopted in accordance with this chapter. The plan shall do all of the following:

(a) Describe the agricultural water supplier and the service area, including all of the following:

- (1) Size of the service area.
- (2) Location of the service area and its water management facilities.
- (3) Terrain and soils.
- (4) Climate.
- (5) Operating rules and regulations.
- (6) Water delivery measurements or calculations.
- (7) Water rate schedules and billing.
- (8) Water shortage allocation policies.

(b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:

- (1) Surface water supply.
- (2) Groundwater supply.
- (3) Other water supplies, including recycled water.
- (4) Source water quality monitoring practices.
- (5) Water uses within the agricultural water supplier's service area, including all of the following:
- (A) Agricultural.
- (B) Environmental.
- (C) Recreational.
- (D) Municipal and industrial.

(E) Groundwater recharge, including estimated flows from deep percolation from irrigation and seepage.

(c) Include an annual water budget based on the quantification of all inflow and outflow components for the service area of the agricultural water supplier. Components of inflow shall include surface inflow, groundwater pumping in the service area, and effective precipitation. Components of outflow shall include surface outflow, deep percolation, and evapotranspiration. An agricultural water supplier shall report the annual water budget on a water-year basis. The department shall provide tools and resources to assist agricultural water suppliers in developing and quantifying components necessary to develop a water budget.

(d) Include an analysis, based on available information, of the effect of climate change on future water supplies.

(e) Describe previous water management activities.

(f) Identify water management objectives based on the water budget to improve water system efficiency or to meet other water management objectives. The agricultural water supplier shall identify, prioritize, and implement actions to reduce water loss, improve water system management, and meet other water management objectives identified in the plan.

(g) Include in the plan information regarding efficient water management practices required pursuant to Section 10608.48.

(h) Quantify the efficiency of agricultural water use within the service area of the agricultural water supplier using the appropriate method or methods from among the four water use efficiency quantification methods developed by the department in the May 8, 2012, report to the Legislature entitled "A Proposed Methodology for

Quantifying the Efficiency of Agricultural Water Use." The agricultural water supplier shall account for all water uses, including crop water use, agronomic water use, environmental water use, and recoverable surface flows.

SEC. 16. Section 10826.2 is added to the Water Code, to read:

10826.2. As part of its agricultural water management plan, each agricultural water supplier shall develop a drought plan for periods of limited water supply describing the actions of the agricultural water supplier for drought preparedness and management of water supplies and allocations during drought conditions. The drought plan shall contain both of the following:

(a) Resilience planning, including all of the following:

(1) Data, indicators, and information needed to determine the water supply availability and levels of drought severity.

(2) Analyses and identification of potential vulnerability to drought.

(3) A description of the opportunities and constraints for improving drought resilience planning, including all of the following:

(A) The availability of new technology or information.

(B) The ability of the agricultural water supplier to obtain or use additional water supplies during drought conditions.

(C) A description of other actions planned for implementation to improve drought resilience.

(b) Drought response planning, including all of the following:

(1) Policies and a process for declaring a water shortage and for implementing water shortage allocations and related response actions.

(2) Methods and procedures for the enforcement or appeal of, or exemption from, triggered shortage response actions.

(3) Methods and procedures for monitoring and evaluation of the effectiveness of the drought plan.

(4) Communication protocols and procedures to inform and coordinate customers, the public, interested parties, and local, regional, and state government.

(5) A description of the potential impacts on the revenues, financial condition, and planned expenditures of the agricultural water supplier during drought conditions that reduce water allocations, and proposed measures to overcome those impacts, including reserve-level policies.

SEC. 17. Section 10843 of the Water Code is amended to read:

10843. (a) An agricultural water supplier shall submit to the entities identified in subdivision (b) a copy of its plan no later than 30 days after review of the plan pursuant to subdivision (b) of Section 10820.

(b) An agricultural water supplier shall submit a copy of its plan to each of the following entities:

(1) The department.

(2) Any city, county, or city and county within which the agricultural water supplier provides water supplies.

(3) Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.

(4) The California State Library.

SEC. 18. Section 10845 of the Water Code is amended to read:

10845. (a) The department shall prepare and submit to the Legislature, on or before April 30, 2022, and thereafter in the years ending in seven and years ending in two, a report summarizing the status of the plans adopted pursuant to this part.

(b) The report prepared by the department shall identify the outstanding elements of any plan adopted pursuant to this part. The report shall include an evaluation of the effectiveness of this part in promoting efficient agricultural water management practices and recommendations relating to proposed changes to this part, as appropriate.

(c) The department shall provide a copy of the report to each agricultural water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearing designed to consider the effectiveness of plans submitted pursuant to this part.

(d) This section does not authorize the department, in preparing the report, to approve, disapprove, or critique individual plans submitted pursuant to this part.

SEC. 19. Section 10910 of the Water Code is amended to read:

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system whose service area includes the project site and any water system adjacent to the project site that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which 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 public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system

determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by subparagraph (D) of paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared.

(i) For the purposes of this section, hauled water is not considered as a source of water.

SEC. 20. This act shall become operative only if Senate Bill 606 of the 2017–18 Regular Session is enacted and becomes effective.



SB-606 Water management planning. (2017-2018)

As Amends the Law Today

As Amends the Law on Nov 08, 2018

SECTION 1. Section 350 of the Water Code is amended to read:

350. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

SEC. 2. Section 377 of the Water Code is amended to read:

377. (a) From and after the publication or posting of any ordinance or resolution pursuant to Section 376, a violation of a requirement of a water conservation program adopted pursuant to Section 376 is a misdemeanor. A person convicted under this subdivision shall be punished by imprisonment in the county jail for not more than 30 days, or by a fine not exceeding one thousand dollars (\$1,000), or by both.

(b) A court or public entity may hold a person civilly liable in an amount not to exceed ten thousand dollars (\$10,000) for a violation of any of the following:

(1) An ordinance or resolution adopted pursuant to Section 376.

(2) A regulation adopted by the board under Section 1058.5 or Chapter 9 (commencing with Section 10609) of Part 2.55 of Division 6, unless the board regulation provides that it cannot be enforced under this section or provides for a lesser applicable maximum penalty.

(c) Commencing on the 31st day after the public entity notified a person of a violation described in subdivision (b), the person additionally may be civilly liable in an amount not to exceed ten thousand dollars (\$10,000) plus five hundred dollars (\$500) for each additional day on which the violation continues.

(d) Remedies prescribed in this section are cumulative and not alternative, except that no liability shall be recoverable under this section for any violation of paragraph (2) of subdivision (b) if the board has filed a complaint pursuant to Section 1846 alleging the same violation.

(e) A public entity may administratively impose the civil liability described in subdivisions (b) and (c) after providing notice and an opportunity for a hearing. The public entity shall initiate a proceeding under this subdivision by a complaint issued pursuant to Section 377.5. The public entity shall issue the complaint at least 30 days before the hearing on the complaint and the complaint shall state the basis for the proposed civil liability order.

(f) (1) In determining the amount of civil liability to assess, a court or public entity shall take into consideration all relevant circumstances, including, but not limited to, the nature and persistence of the violation, the extent of the harm caused by the violation, the length of time over which the violation occurs, and any corrective action taken by the violator.

(2) The civil liability calculated pursuant to paragraph (1) for the first violation of subdivision (b) by a residential water user shall not exceed one thousand dollars (\$1,000) except in extraordinary situations where the court or public entity finds all of the following:

(A) The residential user had actual notice of the requirement found to be violated.

(B) The conduct was intentional.

(C) The amount of water involved was substantial.

(g) Civil liability imposed pursuant to this section shall be paid to the public entity and expended solely for the purposes of this chapter.

(h) An order setting administrative civil liability shall become effective and final upon issuance of the order and payment shall be made. Judicial review of any final order shall be pursuant to Section 1094.5 of the Code of Civil Procedure.

(i) In addition to the remedies prescribed in this section, a public entity may enforce water use limitations established by an ordinance or resolution adopted pursuant to this chapter, or as otherwise authorized by law, by a volumetric penalty in an amount established by the public entity.

SEC. 3. Section 1058.5 of the Water Code is amended to read:

1058.5. (a) This section applies to any emergency regulation adopted by the board for which the board makes both of the following findings:

(1) The emergency regulation is adopted to prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports.

(2) The emergency regulation is adopted in response to conditions which exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years or during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions.

(b) Notwithstanding Sections 11346.1 and 11349.6 of the Government Code, any findings of emergency adopted by the board, in connection with the adoption of an emergency regulation under this section, are not subject to review by the Office of Administrative Law.

(c) An emergency regulation adopted by the board under this section may remain in effect for up to one year, as determined by the board, and is deemed repealed immediately upon a finding by the board that due to changed conditions it is no longer necessary for the regulation to remain in effect. An emergency regulation adopted by the board under this section may be renewed if the board determines that the conditions specified in paragraph (2) of subdivision (a) are still in effect.

(d) In addition to any other applicable civil or criminal penalties, any person or entity that who violates a regulation adopted by the board pursuant to this section is guilty of an infraction punishable by a fine of up to five hundred dollars (\$500) for each day in which the violation occurs.

(e) (1) Notwithstanding subdivision (b) of Section 1551 or subdivision (e) of Section 1848, a civil liability imposed under Chapter 12 (commencing with Section 1825) of Part 2 of Division 2 by the board or a court for a violation of an emergency conservation regulation adopted pursuant to this section shall be deposited, and separately accounted for, in the Water Rights Fund. Funds deposited in accordance with this subdivision shall be available, upon appropriation, for water conservation activities and programs.

(2) For purposes of this subdivision, an "emergency conservation regulation" means an emergency regulation that requires an end user of water, a water retailer, or a water wholesaler to conserve water or report to the board on water conservation. Water conservation includes restrictions or limitations on particular uses of water or a reduction in the amount of water used or served, but does not include curtailment of diversions when water is not available under the diverter's priority of right or reporting requirements related to curtailments.

SEC. 4. Section 1120 of the Water Code is amended to read:

1120. This chapter applies to any decision or order issued under this part or Section 275, Part 2 (commencing with Section 1200), Part 2 (commencing with Section 10500) of Division 6, Part 2.55 (commencing with Section 10608) of Division 6, or Chapter 11 (commencing with Section 10735) of Part 2.74 of Division 6, Article 7 (commencing with Section 13550) of Chapter 7 of Division 7, or the public trust doctrine.

SEC. 5. Section 10608.12 of the Water Code is amended to read:

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "CII water use" means water used by commercial water users, industrial water users, institutional water users, and large landscape water users.

(e) "Commercial water user" means a water user that provides or distributes a product or service.

(f) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(g) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(h) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(i) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(j) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(k) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(I) "Large landscape" means a nonresidential landscape as described in the performance measures for CII water use adopted pursuant to Section 10609.10.

(m) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(n) "Performance measures" means actions to be taken by urban retail water suppliers that will result in increased water use efficiency by CII water users. Performance measures may include, but are not limited to, educating CII water users on best management practices, conducting water use audits, and preparing water management plans. Performance measures do not include process water.

(o) "Potable reuse" means direct potable reuse, indirect potable reuse for groundwater recharge, and reservoir water augmentation as those terms are defined in Section 13561.

(p) "Process water" means water used by industrial water users for producing a product or product content or water used for research and development. Process water includes, but is not limited to, continuous manufacturing processes, and water used for testing, cleaning, and maintaining equipment. Water used to cool machinery or buildings used in the manufacturing process or necessary to maintain product quality or chemical characteristics for product manufacturing or control rooms, data centers, laboratories, clean rooms, and other industrial facility units that are integral to the manufacturing or research and development process is process water. Water used in the manufacturing process that is necessary for complying with local, state, and federal health and safety laws, and is not incidental water, is process water. Process water does not mean incidental water uses.

(q) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050.

(r) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(s) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(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.

(u) "Urban water use objective" means an estimate of aggregate efficient water use for the previous year based on adopted water use efficiency standards and local service area characteristics for that year, as described in Section 10609.20.

(v) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(w) "Urban wholesale water supplier" 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.

SEC. 6. Section 10608.20 of the Water Code is amended to read:

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's $\frac{2017}{2016}$ report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its internet website, Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

SEC. 7. Section 10608.35 is added to the Water Code, to read:

10608.35. (a) The department, in coordination with the board, shall conduct necessary studies and investigations and make a recommendation to the Legislature, by January 1, 2020, on the feasibility of developing and enacting water loss reporting requirements for urban wholesale water suppliers.

(b) The studies and investigations shall include an evaluation of the suitability of applying the processes and requirements of Section 10608.34 to urban wholesale water suppliers.

(c) In conducting necessary studies and investigations and developing its recommendation, the department shall solicit broad public participation from stakeholders and other interested persons.

SEC. 8. Section 10609.20 is added to the Water Code, immediately following Section 10609.18, to read:

10609.20. (a) Each urban retail water supplier shall calculate its urban water use objective no later than November 1, 2023, and by November 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.

(c) Each urban water supplier's urban water use objective shall be composed of the sum of the following:

(1) Aggregate estimated efficient indoor residential water use.

(2) Aggregate estimated efficient outdoor residential water use.

(3) Aggregate estimated efficient outdoor irrigation of landscape areas with dedicated irrigation meters or equivalent technology in connection with CII water use.

(4) Aggregate estimated efficient water losses.

(5) Aggregate estimated water use in accordance with variances, as appropriate.

(d) (1) An urban retail water supplier that delivers water from a groundwater basin, reservoir, or other source that is augmented by potable reuse water may adjust its urban water use objective by a bonus incentive calculated pursuant to this subdivision.

(2) The water use objective bonus incentive shall be the volume of its potable reuse delivered to residential water users and to landscape areas with dedicated irrigation meters in connection with CII water use, on an acre-foot basis.

(3) The bonus incentive pursuant to paragraph (1) shall be limited in accordance with one of the following:

(A) The bonus incentive shall not exceed 15 percent of the urban water supplier's water use objective for any potable reuse water produced at an existing facility.

(B) The bonus incentive shall not exceed 10 percent of the urban water supplier's water use objective for any potable reuse water produced at any facility that is not an existing facility.

(4) For purposes of this subdivision, "existing facility" means a facility that meets all of the following:

(A) The facility has a certified environmental impact report, mitigated negative declaration, or negative declaration on or before January 1, 2019.

(B) The facility begins producing and delivering potable reuse water on or before January 1, 2022.

(C) The facility uses microfiltration and reverse osmosis technologies to produce the potable reuse water.

(e) (1) The calculation of the urban water use objective shall be made using landscape area and other data provided by the department and pursuant to the standards, guidelines, and methodologies adopted by the board. The department shall provide data to the urban water supplier at a level of detail sufficient to allow the urban water supplier to verify its accuracy at the parcel level.

(2) Notwithstanding paragraph (1), an urban retail water supplier may use alternative data in calculating the urban water use objective if the supplier demonstrates to the department that the alternative data are equivalent, or superior, in quality and accuracy to the data provided by the department. The department may provide technical assistance to an urban retail water supplier in evaluating whether the alternative data are appropriate for use in calculating the supplier's urban water use objective.

SEC. 9. Section 10609.22 is added to the Water Code, to read:

10609.22. (a) An urban retail water supplier shall calculate its actual urban water use no later than November 1, 2023, and by November 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.

(c) Each urban water supplier's urban water use shall be composed of the sum of the following:

(1) Aggregate residential water use.

(2) Aggregate outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use.

(3) Aggregate water losses.

SEC. 10. Section 10609.24 is added to the Water Code, to read:

10609.24. (a) An urban retail water supplier shall submit a report to the department no later than November 1, 2023, and by November 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.

(b) The department shall post the reports and information on its Internet Web site.

(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.

SEC. 11. Section 10609.26 is added to the Water Code, to read:

10609.26. (a) (1) On and after November 1, 2023, the board may issue informational orders pertaining to water production, water use, and water conservation to an urban retail water supplier that does not meet its urban water use objective required by this chapter. Informational orders are intended to obtain information on supplier activities, water production, and conservation efforts in order to identify technical assistance needs and assist urban water suppliers in meeting their urban water use objectives.

(2) In determining whether to issue an informational order, the board shall consider the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet the urban water use objective.

(3) The board shall share information received pursuant to this subdivision with the department.

(4) An urban water supplier may request technical assistance from the department. The technical assistance may, to the extent available, include guidance documents, tools, and data.

(b) On and after November 1, 2024, the board may issue a written notice to an urban retail water supplier that does not meet its urban water use objective required by this chapter. The written notice may warn the urban retail water supplier that it is not meeting its urban water use objective described in Section 10609.20 and is not making adequate progress in meeting the urban water use objective, and may request that the urban retail water supplier address areas of concern in its next annual report required by Section 10609.24. In deciding whether to issue a written notice, the board may consider whether the urban retail water supplier has received an informational order, the degree to which the urban retail water supplier is not meeting its urban water use objective, information provided in the report required by Section 10609.24, and actions the urban retail water supplier has implemented or will implement in order to help meet its urban water use objective.

(c) (1) On and after November 1, 2025, the board may issue a conservation order to an urban retail water supplier that does not meet its urban water use objective. A conservation order may consist of, but is not limited to, referral to the department for technical assistance, requirements for education and outreach, requirements for local enforcement, and other efforts to assist urban retail water suppliers in meeting their urban water use objective.

(2) In issuing a conservation order, the board shall identify specific deficiencies in an urban retail water supplier's progress towards meeting its urban water use objective, and identify specific actions to address the deficiencies.

(3) The board may request that the department provide an urban retail water supplier with technical assistance to support the urban retail water supplier's actions to remedy the deficiencies.

(d) A conservation order issued in accordance with this chapter may include requiring actions intended to increase water-use efficiency, but shall not curtail or otherwise limit the exercise of a water right, nor shall it require the imposition of civil liability pursuant to Section 377.

SEC. 12. Section 10609.28 is added to the Water Code, to read:

10609.28. The board may issue a regulation or informational order requiring a wholesale water supplier, an urban retail water supplier, or a distributor of a public water supply, as that term is used in Section 350, to provide a monthly report relating to water production, water use, or water conservation.

SEC. 13. Section 10609.30 is added to the Water Code, to read:

10609.30. On or before January 10, 2024, the Legislative Analyst shall provide to the appropriate policy committees of both houses of the Legislature and the public a report evaluating the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. The board and the department shall provide the Legislative Analyst with the available data to complete this report.

(a) The report shall describe all of the following:

(1) The rate at which urban retail water users are complying with the standards, and factors that might facilitate or impede their compliance.

(2) The accuracy of the data and estimates being used to calculate urban water use objectives.

(3) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(4) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(5) The early indications of how implementing this chapter might impact the efficiency of statewide urban water use.

(6) Recommendations, if any, for improving statewide urban water use efficiency and the standards and practices described in this chapter.

(7) Any other issues the Legislative Analyst deems appropriate.

SEC. 14. Section 10609.32 is added to the Water Code, to read:

10609.32. It is the intent of the Legislature that the chairperson of the board and the director of the department appear before the appropriate policy committees of both houses of the Legislature on or around January 1, 2026, and report on the implementation of the water use efficiency standards and water use reporting pursuant to this chapter. It is the intent of the Legislature that the topics to be covered include all of the following:

(a) The rate at which urban retail water suppliers are complying with the standards, and factors that might facilitate or impede their compliance.

(b) What enforcement actions have been taken, if any.

(c) The accuracy of the data and estimates being used to calculate urban water use objectives.

(*d*) Indications of the economic impacts, if any, of the implementation of this chapter on urban water suppliers and urban water users, including CII water users.

(e) The frequency of use of the bonus incentive, the volume of water associated with the bonus incentive, value to urban water suppliers of the bonus incentive, and any implications of the use of the bonus incentive on water use efficiency.

(f) An assessment of how implementing this chapter is affecting the efficiency of statewide urban water use.

SEC. 15. Section 10609.34 is added to the Water Code, to read:

10609.34. Notwithstanding Section 15300.2 of Title 14 of the California Code of Regulations, an action of the board taken under this chapter shall be deemed to be a Class 8 action, within the meaning of Section 15308 of Title 14 of the California Code of Regulations, provided that the action does not involve relaxation of existing water conservation or water use standards.

SEC. 16. Section 10609.36 is added to the Water Code, to read:

10609.36. (a) Nothing in this chapter shall be construed to determine or alter water rights. Sections 1010 and 1011 apply to water conserved through implementation of this chapter.

(b) Nothing in this chapter shall be construed to authorize the board to update or revise water use efficiency standards authorized by this chapter except as explicitly provided in this chapter. Authorization to update the standards beyond that explicitly provided in this chapter shall require separate legislation.

(c) Nothing in this chapter shall be construed to limit or otherwise affect the use of recycled water as seawater barriers for groundwater salinity management.

SEC. 17. Section 10609.38 is added to the Water Code, to read:

10609.38. The board may waive the requirements of this chapter for a period of up to five years for any urban retail water supplier whose water deliveries are significantly affected by changes in water use as a result of damage from a disaster such as an earthquake or fire. In establishing the period of a waiver, the board shall take into consideration the breadth of the damage and the time necessary for the damaged areas to recover from the disaster.

SEC. 18. Section 10610.2 of the Water Code is amended to read:

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

SEC. 19. Section 10610.4 of the Water Code is amended to read:

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to achieve the efficient use of available supplies and strengthen local drought planning.

SEC. 20. Section 10612 of the Water Code is amended and renumbered to read:

10612. 10611.3. "Drought risk assessment" "Customer" means a method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635. purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

SEC. 21. Section 10612 is added to the Water Code, to read:

10612. "Drought risk assessment" means a method that examines water shortage risks based on the driest fiveyear historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.

SEC. 22. Section 10617.5 is added to the Water Code, to read:

10617.5. "Water shortage contingency plan" means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.

SEC. 23. Section 10618 is added to the Water Code, to read:

10618. "Water supply and demand assessment" means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.

SEC. 24. Section 10620 of the Water Code is amended to read:

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(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.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation, efficient water use, and improved local drought resilience.

(2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.

(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.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(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.

SEC. 25. Section 10621 of the Water Code is amended to read:

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.

(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.

(c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

(e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

(f) (1) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

(2) By January 1, 2024, each urban retail water supplier shall adopt and submit to the department a supplement to the adopted 2020 plan that includes information required pursuant to subparagraph (B) of paragraph (1) of subdivision (e) of Section 10631. This supplement is not an update or an amendment to the plan and, therefore, an urban water supplier is not required to comply with the public notice, hearing, and adoption requirements of Section 10642 before submitting the information to the department.

SEC. 26. Section 10630 of the Water Code is amended to read:

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

SEC. 27. Section 10630.5 is added to the Water Code, to read:

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.

SEC. 28. Section 10631 of the Water Code is amended to read:

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and 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. 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, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

(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:

(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.

(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.

(3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(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.

(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.

(c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(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).

(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.

(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.

(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) For the supplement required of urban retail water suppliers by paragraph (2) of subdivision (f) of Section 10621, a narrative that describes the water demand management measures that the supplier plans to implement to achieve its urban water use objective by January 1, 2027, pursuant to Chapter 9 (commencing with Section 10609) of Part 2.55.

(B) (C) 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.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) (C) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(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.

(g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(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).

SEC. 29. Section 10631.2 of the Water Code is amended to read:

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.

SEC. 30. Section 10631.7 of the Water Code is repealed.

SEC. 31. Section 10632 of the Water Code is repealed.

10632. (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:

(1) The analysis of water supply reliability conducted pursuant to Section 10635.

(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decisionmaking process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

(3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(B) Locally appropriate demand reduction actions to adequately respond to shortages.

(C) Locally appropriate operational changes.

(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state mandated prohibitions and appropriate to the local conditions.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

(5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.

(C) Any other relevant communications.

(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.

(7) (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

(9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

(10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

(b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes,

waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

(c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

SEC. 32. Section 10632 is added to the Water Code, to read:

10632. (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:

(1) The analysis of water supply reliability conducted pursuant to Section 10635.

(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decisionmaking process that an urban water supplier will use each year to determine its water supply reliability.

(*B*) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(*i*) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(*iv*) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

(3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(B) Locally appropriate demand reduction actions to adequately respond to shortages.

(C) Locally appropriate operational changes.

(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

(5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.

(C) Any other relevant communications.

(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.

(7) (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(*B*) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

(9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.

(10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

(b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

(c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.

SEC. 33. Section 10632.1 is added to the Water Code, to read:

10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before June 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by June 1 of each year, whichever is later.

SEC. 34. Section 10632.2 is added to the Water Code, to read:

10632.2. An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative

actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

SEC. 35. Section 10632.3 is added to the Water Code, to read:

10632.3. It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

SEC. 36. Section 10635 of the Water Code is amended to read:

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.

(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.

(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.

(d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(e) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

SEC. 37. Section 10640 of the Water Code is amended to read:

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.

SEC. 38. Section 10641 of the Water Code is amended to read:

10641. An urban water supplier required to prepare a plan or a water shortage contingency plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

SEC. 39. Section 10642 of the Water Code is amended to read:

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.

SEC. 40. Section 10644 of the Water Code is amended to read:

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 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.

(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.

(c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.

(B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.

(C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.

(2) A report to be submitted pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(d) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

SEC. 41. Section 10645 of the Water Code is amended to read:

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.

SEC. 42. Section 10650 of the Water Code is amended to read:

10650. Any actions or proceedings, other than actions by the board, to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan or a water shortage contingency plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan or water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either pursuant to Section 10644 or the taking of that action.

SEC. 43. Section 10651 of the Water Code is amended to read:

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan or a water shortage contingency plan, or an action taken pursuant to either by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

SEC. 44. Section 10653 of the Water Code is amended to read:

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan that complies with analogous federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part.

SEC. 45. Section 10654 of the Water Code is amended to read:

10654. An urban water supplier may recover in its rates the costs incurred in preparing its urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.

SEC. 46. Section 10656 of the Water Code is amended to read:

10656. An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

SEC. 47. Section 10657 is added to the Water Code, to read:

10657. The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.

SEC. 48. This act shall become operative only if Assembly Bill 1668 of the 2017–18 Regular Session is enacted and becomes effective.



Appendix B

AWE Model Assumptions

AWE CONSERVATION TRACKING TOOL: COMMON ASSUMPTIONS WORKSHEET

2010

Getting Started: On this worksheet you enter information the tracking tool needs to operate. This includes specifying whether to use English or Metric units, setting up customer classes, specifying the first year for forecasts, entering forecasted population, housing, and customer accounts, setting financial assumptions, providing information needed to calculate water and energy savings due to appliance and plumbing standards for toilets, clothes washers, and dishwashers, and providing information needed to calculate water savings for landscape conservation measures included in the conservation measure library. It sounds like a lot, but you probably have developed much of this data for other planning purposes.

Scenario "'Empty" loaded into model on 7/27/2016 5:44:04 PM

State	CA		Model will use CA plumbing	g standards
Volume Units	Acre-Feet (AF)	-	Flow Units Will Be:	MGD

Population, Housing, and Account Forecasts

Population Estimate with ABAG Growth Rate per NMWD adjusted for RHNA requirements Sector growth per pop and empl, and 2020 Sector per Pop only

Population & Housing	2010	2015	2020	2025	2030	2035	2040	2045
Population	59,861	61,381	61,658	63,389	65,440	67,838	68,631	69,432
Single Family Dwelling Units	15,888	16,103	16,176	16,630	17,168	17,797	18,005	18,215
Multi Family Dwelling Units	8,240	8,360	8,398	8,633	8,913	9,239	9,347	9,457

Number of Accounts

Enter Starting Year for Forecasts

Single Family	14,754	14,821	14,888	15,280	15,775	16,353	16,544	16,737
Multi Family	3,701	3,702	3,719	3,811	3,934	4,078	4,126	4,174
Commercial	829	811	815	821	840	850	852	853
Institutional	94	100	100	100	103	104	104	104
Irrigation	434	450	452	361	369	373	374	375
Mobile Home	102	103	103	105	108	112	114	115
Pool	91	93	93	95	98	101	102	104
Other	428	428	430	476	487	492	493	494
Not in use								

Financial Assumptions

These inputs are used by the tracking tool to standardize costs and benefits, calculate present values, and estimate utility and customer benefits of conservation.

Dollar Base Year Annual Inflation Rate Nominal Interest Rate

2020	
3.0%	
2.3%	

Utility Rates in 2010

	A	verage Class R	ate (2020 Dolla	rs)		Annual Rate	e of Increase	
W	/ater	Sewer	Electricity	Gas	Water	Sewer	Electricity	Gas

Customer Class	(\$/Thou Gal)	(\$/Thou Gal)	(\$/KWh)	(\$/Therm)	(%/Yr)	(%/Yr)	(%/Yr)	(%/Yr)
Single Family	\$5.42		\$0.28	\$2.00	6.0%		3.0%	3.0%
Multi Family	\$5.42		\$0.28	\$2.00	6.0%		3.0%	3.0%
Commercial	\$6.16		\$0.27	\$0.80	6.0%		3.0%	3.0%
Institutional	\$6.16		\$0.20	\$0.76	6.0%		3.0%	3.0%
Irrigation	\$6.16		\$0.31		6.0%		3.0%	3.0%
Mobile Home	\$5.42		\$0.28	\$2.00	6.0%		3.0%	3.0%
Pool	\$6.16		\$0.28	\$2.00	6.0%		3.0%	3.0%
Other	\$6.16				6.0%		3.0%	3.0%
Not in use								

Information Needed to Calculate Water/Energy Savings from Plumbing/Appliance Standards

These inputs are used by the tracking tool to estimate water and energy savings for national toilet and showerhead standards, which first took effect in 1994, and clothes washer and dishwasher appliance standards, which first included maximum allowable water factors in 2011 and 2010, respectively. Toilet standards took effect in 1992 in California and Texas.

	Single Family	Multi Family
Persons per household	2.57	2.57
Full Baths/Dwelling Unit	2.01	1.68
Half Baths/Dwelling Unit	0.24	0.59
Dwellling Units in 1992	15,986	4,951

Population in 1990

Information Needed to Calculate Water Savings for Landscape Measures in Library

Average landscape water use for residential and non-residential sites is used by the model to calculate water savings for various landscape conservation measures included in the program library. Average landscape water use is calculated using the following equation. Alternatively, you can use your own landscape water use estimate by selecting the "Use My Own Estimate" option.

use per site =
$$\left(\frac{1}{irr.eff.}\right) \times (ET_0 \times K_L - R_e) \times Area \times C_v$$
, where

irr.eff. = *typical irrigation efficiency*

54,603

 $ET_0 = reference \ evapotranspiration$

 $K_L = landscape \ coefficient \ (\% \ of ET_0 \ needed \ by \ crop)$

 $R_e = effective rainfall (\% of annual rainfall contributing to plant water requirement)$

 $C_v = coefficient$ that converts water use to appropriate volume units (gal for english units, M^3 for metric units)

O Use my own landscape water use estimates

Use model's landscape water use calculator

Reference ET

in/yr 43.00

Ava Annual Rainfall	in/vr	29.63		
	0/2	25%		
	70	2370		
Landscape Water Requirement C	oefficient (K_L)			
Turf	% of ET_0	80%		
Other than turf	% of ET_0	40%		
			Non	
		Residential	Residential	
Ava Landscape Area Per Site	ft^2	Residential	Residential	1
Avg Lanuscape Area Fer Sile	0/			4
	70	750/	0.4.0/	
Avg Irrigation Efficiency (%)	%	/5%	81%	Drip Irrigation Saving Estimates
			Non	
Irrigation Requirement		Residential	Residential	Drip Irrigation Saving Estimates
Turf Area	in/ft^2/yr	36	33	2.665925926 in/ft ² /yr
Other	in/ft^2/yr	13	12	í í
	-			-
			Non	
Avg Landscape Water Use Per Si	te	Residential	Residential	
Turf Area	Gal/Yr	0	0	
Other	Gal/Yr	0	0	
Total	Gal/Yr	0	0	

AWE CONSERVATION TRACKING TOOL: ENTER UTILITY AVOIDED COSTS WORKSHEET

Enter utility avoided costs: The primary benefit of conservation to the utility and its ratepayers is avoiding future water supply and wastewater costs. A utility avoids cost by not having to purchase (or otherwise acquire), transport, treat and distribute water supply, and by not having to collect, treat, and dispose of wastewater. The variable costs of these activities are major components of avoided cost. Conservation, if done at sufficient scale, may also allow the utility to defer or even entirely avoid future expansion of system capacity. This can be a major source of benefit in some cases.

The tracking tool comes with a calculator you can use to estimate your avoided costs. Alternatively, you can enter you own avoided cost estimates by selecting

Use my own avoided cost estimates

• Use model's avoided cost calculator

Tracking Tool Utility Avoided Cost Calculator

Water and Wastewater System Variable Costs (2020 Dollars)

	Wa	iter	Waste	ewater
		Nominal		Nominal
	\$/AF	Increase	\$/AF	Increase
Water purchase	\$937	6.0%	NA	NA
Energy	\$58	3.0%		
Chemicals				
Other variable cost	\$153	3.0%		
Total	\$1,148	5.5%	\$0	0.0%

Variable Cost Forecast

Variable Cost	Units	2010	2015	2020	2025	2030	2035	2040	2045	2040-2045	Ann Grw
Water Supply	\$/AF	\$1,148	\$1,295	\$1,461	\$1,648	\$1,860	\$2,098	\$2,367	\$2,670	2.4%	
Wastewater	\$/AF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.0%	

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Download CUWCC Avoided Cost & Environmental Benefits Models

th %

Define conservation activities: Click the Define/Edit/Delete button to setup and edit conservation activities. You can use the form to define your own activities or import activities from the tracking tool's library. Once imported, library activities can be customized. Conservation activity specifications are stored in a table on this worksheet. This table is hidden by default. You can unhide the table by clicking the "Show Activities Table" button. You can edit activities directly in the table if you find this easier than using the form. HOWEVER, DO NOT DELETE TABLE ROWS. ONLY USE THE FORM TO DELETE CONSERVATION ACTIVITIES.

Scenario "'Empty" loaded into model on 7/27/2016 5:44:04 PM

NOTE: You can define activities in the table rather than using the form. BUT ONLY USE THE FORM TO DELETE ACTIVITIES.

				Savings,			Savings,				Utility Costs,		Utility Costs,							Participant			Plumbing Code,
				Annual	Savings, Peak	Savings,	Participant Free	Utility Costs,	Utility Costs,	Utility Costs,	Years of	Utility Costs,	Follow-up	Participant	Participant	Participant	Participant	Participant	Participant	Savings,	Plumbing	Plumbing Code,	Natural
Activity			Savings, Per	Rate of	Period (% of	Useful Life	Riders (% of	Year	Initial Fixed	Initial Variable	Follow-up	Follow-up	Variable	Costs, Year	Costs, Initial	Costs, Years of	Costs, On-	Savings,	Savings, Gas	Electricity	Code, Year	Unit Savings	Replacement
ID	Activity Name	Class	Unit (gpy)	Decay (%)	Annual Savings)	(yrs)	Participants)	Denominated	(\$)	(\$/unit)	(yrs)	Fixed (\$/yr)	(\$/unit/yr)	Denominated	(\$)	On-going (yrs)	going (\$/Yr)	Sewer (gpy)	(Therms/Gal)	(KWh/Gal)	Effective	(gpy)	Rate NRR (%)
1	Water Use Surveys/Audits - SFR	Single Family	12,826	20%	68%	5	0%	2020		\$210.60				2020	\$50.00			4,949.20	0.0010	0.0000	0	0	0.00%
2	Water Use Surveys/Audits - CII	Commercial	117,207	20%		5	0%	2020		\$2,000.00				2020	\$2,500.00								
3	Mulch rebate	Single Family	12	0%	80%	5	0%	2020		\$0.33				2020	\$0.10			0.00	0.0000	0.0000	0	0	0.00%
4	High Efficiency Clothes Washer Rebate - Residentia	Single Family	5,189	0%	0%	15	0%	2020		\$65.00				2020	\$750.00			5,000.00	0.0035	0.0036	2011	3500	7.14%
5	Landscape Conversion or Turf Removal -SFR	Single Family	12	0%	80%	10	0%	2020		\$0.65				2020	\$1.50			0.00	0.0000	0.0000	0	0	0.00%
6	Smart Irrigation Controller (Weather-Based Irrigation	Single Family	18,469	0%	70%	10	0%	2020		\$325.00				2020	\$250.00			0.00	0.0000	0.0000	0	0	0.00%
7	Smart Irrigation Controller (Weather-Based Irrigation	Commercial	18,469	0%	70%	10	0%	2020		\$525.72				2020	\$2,595.60			0.00	0.0000	0.0000	0	0	0.00%
8	Landscape Conversion or Turf Removal - MFR and	Irrigation	12	0%	80%	10	0%	2020		\$0.65				2020	\$1.50			0.00	0.0000	0.0000	0	0	0.00%
9	UHET <1.0 gal/flush Rebate - Residential	Single Family	7,860	0%	0%		0%	2020		\$195.00				2020	\$100.00			7,859.55	0.0000	0.0000	1994	7859.551534	4.00%
10	Drip Irrigation Incentive for MFR and CII	Multi Family	4,415	0%		12	0%	2020		\$406.25				2020	\$312.50								
11	Drip Irrigation Incentive for SFR	Single Family	1,440	0%		12	0%	2020		\$325.00				2020	\$250.00								
12	Incentivize Irrigation Equipment Upgrades - SFR	Single Family	9,128	0%		10	0%	2020		\$325.00				2020	\$250.00								
13	High Efficiency Faucet Aerator / Showerhead Giveav	Single Family	2,190	0%		5	0%	2020		\$31.20				2020	\$50.00								
14	Restaurant Spray Nozzle Rebates	Commercial	43,830	0%		5	0%	2020		\$65.00				2020	\$50.00			43,830.00	0.0083				
15																							
16																							
17																							

AWE CONSERVATION TRACKING

Enter annual conservation activity: Use this worksheet to enter the annual activity levels for the conservation activities you defined on the 4. Define Activities worksheet. You can enter activity through the end of your forecast period, but this is not required. It is okay to enter activity for shorter periods. You also can start an activity in

Enter A	nnual Conse	rvation Activity																									
Activity II	D Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	295	295	295	295	295																				
2	Commercial	Water Use Surveys/Audits - CII	13	13	13	13	13																				
3	Single Family	Mulch rebate	55062	55062	55062	55062	55062																				
4	Single Family	High Efficiency Clothes Washer Rebate - Res	261	261	261	261	261																				
5	Single Family	Landscape Conversion or Turf Removal -SFF	55062	55062	55062	55062	55062																				
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	11	11	11	11	11																				
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	6	6	6	6	6																				
8	Irrigation	Landscape Conversion or Turf Removal - MF	4462.75	4462.75	4462.75	4462.75	4462.75																				
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	200	200	200	200	200																				
10	Multi Family	Drip Irrigation Incentive for MFR and CII	10	10	10	10	10																				
11	Single Family	Drip Irrigation Incentive for SFR	20	20	20	20	20																				
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	10	10	10	10	10																				
13	Single Family	High Efficiency Faucet Aerator / Showerhead	200	200	200	200	200																				
14	Commercial	Restaurant Spray Nozzle Rebates	20	20	20	20	20																				
Annual	Program Ove	erhead Cost (2020 dollars)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Enter addi	itional program c	cost not included in activity definitions																									

Model calculation tables below this line. Do not delete or modify.

Effective Conservation Activity

Activity ID) Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	295	531	720	871	992	697	461	272	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Commercial	Water Use Surveys/Audits - CII	13	23	32	38	44	31	20	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Single Family	Mulch rebate	55,062	110,124	165,186	220,248	275,310	220,248	165,186	110,124	55,062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	261	522	783	1,044	1,305	1,305	1,305	1,305	1,305	1,305	1,305	1,305	1,305	1,305	1,305	1,044	783	522	261	0	0	0	0	0	0
5	Single Family	Landscape Conversion or Turf Removal -SFF	55,062	110,124	165,186	220,248	275,310	275,310	275,310	275,310	275,310	275,310	220,248	165,186	110,124	55,062	0	0	0	0	0	0	0	0	0	0	0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	11	22	33	44	55	55	55	55	55	55	44	33	22	11	0	0	0	0	0	0	0	0	0	0	0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	6	12	18	24	30	30	30	30	30	30	24	18	12	6	0	0	0	0	0	0	0	0	0	0	0
8	Irrigation	Landscape Conversion or Turf Removal - MF	4,463	8,926	13,388	17,851	22,314	22,314	22,314	22,314	22,314	22,314	17,851	13,388	8,926	4,463	0	0	0	0	0	0	0	0	0	0	0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	200	400	600	800	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
10	Multi Family	Drip Irrigation Incentive for MFR and CII	10	20	30	40	50	50	50	50	50	50	50	50	40	30	20	10	0	0	0	0	0	0	0	0	0
11	Single Family	Drip Irrigation Incentive for SFR	20	40	60	80	100	100	100	100	100	100	100	100	80	60	40	20	0	0	0	0	0	0	0	0	0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	10	20	30	40	50	50	50	50	50	50	40	30	20	10	0	0	0	0	0	0	0	0	0	0	0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	200	400	600	800	1000	800	600	400	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Commercial	Restaurant Spray Nozzle Rebates	20	40	60	80	100	80	60	40	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Gross Water Savings (AF)

Activity II	O Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	11.6	20.9	28.3	34.3	39.0	27.4	18.1	10.7	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	4.7	8.4	11.4	13.8	15.7	11.0	7.3	4.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	2.0	4.1	6.1	8.1	10.1	8.1	6.1	4.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4.2	8.3	12.5	16.6	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	16.6	12.5	8.3	4.2	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	2.0	4.1	6.1	8.1	10.1	10.1	10.1	10.1	10.1	10.1	8.1	6.1	4.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.6	1.2	1.9	2.5	3.1	3.1	3.1	3.1	3.1	3.1	2.5	1.9	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.3	0.7	1.0	1.4	1.7	1.7	1.7	1.7	1.7	1.7	1.4	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.2	0.3	0.5	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	4.8	9.6	14.5	19.3	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.3	0.6	0.8	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.1	0.8	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	1.3	2.7	4.0	5.4	6.7	5.4	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	2.7	5.4	8.1	10.8	13.5	10.8	8.1	5.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross V	Vater Savings	35.0	66.7	95.8	122.9	148.3	125.9	106.8	90.3	75.9	63.2	59.8	56.3	52.7	49.0	45.3	41.0	36.6	32.4	28.3	24.1	24.1	24.1	24.1	24.1	24.1

Peak Gross Water Savings (AF)

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Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	7.9	14.2	19.3	23.3	26.5	18.6	12.3	7.3	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	1.6	3.2	4.9	6.5	8.1	6.5	4.9	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

4	Single Family High Efficiency Clothes Washer Rebate - Res	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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5	Single Family Landscape Conversion or Turf Removal -SFF	1.6	3.2	4.9	6.5	8.1	8.1	8.1	8.1	8.1	8.1	6.5	4.9	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family Smart Irrigation Controller (Weather-Based Ir	0.4	0.9	1.3	1.7	2.2	2.2	2.2	2.2	2.2	2.2	1.7	1.3	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial Smart Irrigation Controller (Weather-Based Ir	0.2	0.5	0.7	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.0	0.7	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation Landscape Conversion or Turf Removal - MF	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family UHET <1.0 gal/flush Rebate - Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Multi Family Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross Water Savings	11.9	22.3	31.4	39.5	46.8	37.3	29.3	22.7	17.0	12.1	9.7	7.3	4.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Off Peak Gross Water Savings (AF)

Activity I	ID Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	3.7	6.7	9.1	11.0	12.5	8.8	5.8	3.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	4.7	8.4	11.4	13.8	15.7	11.0	7.3	4.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.4	0.8	1.2	1.6	2.0	1.6	1.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4.2	8.3	12.5	16.6	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	16.6	12.5	8.3	4.2	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.4	0.8	1.2	1.6	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.2	0.4	0.6	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	4.8	9.6	14.5	19.3	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.3	0.6	0.8	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.1	0.8	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	1.3	2.7	4.0	5.4	6.7	5.4	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	2.7	5.4	8.1	10.8	13.5	10.8	8.1	5.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Gross V	Water Savings	23.0	44.4	64.4	83.4	101.5	88.6	77.5	67.7	58.9	51.1	50.1	49.0	47.8	46.6	45.3	41.0	36.6	32.4	28.3	24.1	24.1	24.1	24.1	24.1	24.1

Active Water Savings (AF)

Activity I	D Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	/ Water Use Surveys/Audits - SFR	11.6	20.9	28.3	34.3	39.0	27.4	18.1	10.7	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	4.7	8.4	11.4	13.8	15.7	11.0	7.3	4.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	/ Mulch rebate	2.0	4.1	6.1	8.1	10.1	8.1	6.1	4.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	/ High Efficiency Clothes Washer Rebate - Res	4.2	8.1	11.9	15.5	18.9	18.0	17.2	16.5	15.8	15.2	14.6	14.0	13.5	13.0	12.6	9.9	7.3	4.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	/ Landscape Conversion or Turf Removal -SFF	2.0	4.1	6.1	8.1	10.1	10.1	10.1	10.1	10.1	10.1	8.1	6.1	4.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	/ Smart Irrigation Controller (Weather-Based Ir	0.6	1.2	1.9	2.5	3.1	3.1	3.1	3.1	3.1	3.1	2.5	1.9	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.3	0.7	1.0	1.4	1.7	1.7	1.7	1.7	1.7	1.7	1.4	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.2	0.3	0.5	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	/ UHET <1.0 gal/flush Rebate - Residential	4.8	9.5	13.9	18.2	22.3	21.4	20.5	19.7	18.9	18.2	17.4	16.7	16.1	15.4	14.8	14.2	13.6	13.1	12.6	12.1	11.6	11.1	10.7	10.3	9.8
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	/ Drip Irrigation Incentive for SFR	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	/ Incentivize Irrigation Equipment Upgrades - S	0.3	0.6	0.8	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.1	0.8	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	/ High Efficiency Faucet Aerator / Showerhead	1.3	2.7	4.0	5.4	6.7	5.4	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	2.7	5.4	8.1	10.8	13.5	10.8	8.1	5.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active	Water Savings	35.0	66.3	94.7	120.6	144.5	120.4	99.7	81.6	65.7	51.6	46.8	42.2	37.3	32.5	27.8	24.3	20.9	17.9	14.9	12.1	11.6	11.1	10.7	10.3	9.8

Peak Active Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	7.9	14.2	19.3	23.3	26.5	18.6	12.3	7.3	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	1.6	3.2	4.9	6.5	8.1	6.5	4.9	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	1.6	3.2	4.9	6.5	8.1	8.1	8.1	8.1	8.1	8.1	6.5	4.9	3.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.4	0.9	1.3	1.7	2.2	2.2	2.2	2.2	2.2	2.2	1.7	1.3	0.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.2	0.5	0.7	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.0	0.7	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active V	Vater Savings	11.9	22.3	31.4	39.5	46.8	37.3	29.3	22.7	17.0	12.1	9.7	7.3	4.9	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Off Peak Active Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	3.7	6.7	9.1	11.0	12.5	8.8	5.8	3.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	4.7	8.4	11.4	13.8	15.7	11.0	7.3	4.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.4	0.8	1.2	1.6	2.0	1.6	1.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4.2	8.1	11.9	15.5	18.9	18.0	17.2	16.5	15.8	15.2	14.6	14.0	13.5	13.0	12.6	9.9	7.3	4.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.4	0.8	1.2	1.6	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

6	Single Family Smart Irrigation Controller (Weather-Based Ir	0.2	0.4	0.6	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial Smart Irrigation Controller (Weather-Based Ir	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation Landscape Conversion or Turf Removal - MF	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family UHET <1.0 gal/flush Rebate - Residential	4.8	9.5	13.9	18.2	22.3	21.4	20.5	19.7	18.9	18.2	17.4	16.7	16.1	15.4	14.8	14.2	13.6	13.1	12.6	12.1	11.6	11.1	10.7	10.3	9.8
10	Multi Family Drip Irrigation Incentive for MFR and CII	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family Drip Irrigation Incentive for SFR	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family Incentivize Irrigation Equipment Upgrades - S	0.3	0.6	0.8	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.1	0.8	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family High Efficiency Faucet Aerator / Showerhead	1.3	2.7	4.0	5.4	6.7	5.4	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial Restaurant Spray Nozzle Rebates	2.7	5.4	8.1	10.8	13.5	10.8	8.1	5.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Active Water Savings	23.0	44.0	63.3	81.1	97.8	83.2	70.3	59.0	48.7	39.5	37.1	34.9	32.5	30.1	27.8	24.3	20.9	17.9	14.9	12.1	11.6	11.1	10.7	10.3	9.8

Passive Water Savings (AF)

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Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	0.0	0.2	0.6	1.1	1.9	2.7	3.5	4.3	5.0	5.6	6.2	6.8	7.3	7.8	8.2	6.8	5.2	3.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0.0	0.2	0.6	1.1	1.9	2.7	3.6	4.4	5.2	6.0	6.7	7.4	8.1	8.7	9.3	9.9	10.5	11.0	11.5	12.0	12.5	13.0	13.4	13.9	14.3
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive	Water Savings	0.0	0.4	1.2	2.3	3.7	5.5	7.1	8.7	10.2	11.6	12.9	14.2	15.4	16.5	17.5	16.7	15.7	14.6	13.4	12.0	12.5	13.0	13.4	13.9	14.3

Peak Passive Water Savings (AF)

Activity II	O Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive	Water Savings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Off Peak Passive Water Savings (AF)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	0.0	0.2	0.6	1.1	1.9	2.7	3.5	4.3	5.0	5.6	6.2	6.8	7.3	7.8	8.2	6.8	5.2	3.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0.0	0.2	0.6	1.1	1.9	2.7	3.6	4.4	5.2	6.0	6.7	7.4	8.1	8.7	9.3	9.9	10.5	11.0	11.5	12.0	12.5	13.0	13.4	13.9	14.3
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Passive	Water Savings	0.0	0.4	1.2	2.3	3.7	5.5	7.1	8.7	10.2	11.6	12.9	14.2	15.4	16.5	17.5	16.7	15.7	14.6	13.4	12.0	12.5	13.0	13.4	13.9	14.3

Customer Water Bill Savings (2020 dollars)

Activity II	O Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$28,357	\$52,569	\$73,390	\$91,445	\$107,247	\$77,596	\$52,844	\$32,119	\$14,702	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$12,973	\$24,050	\$33,576	\$41,836	\$49,065	\$35,500	\$24,176	\$14,695	\$6,726	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$4,952	\$10,200	\$15,758	\$21,638	\$27,857	\$22,952	\$17,728	\$12,172	\$6,268	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$10,150	\$20,403	\$30,779	\$41,297	\$51,975	\$51,073	\$50,251	\$49,507	\$48,839	\$48,244	\$47,722	\$47,270	\$46,886	\$46,570	\$46,318	\$37,488	\$28,461	\$19,217	\$9,737	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$4,952	\$10,200	\$15,758	\$21,638	\$27,857	\$28,690	\$29,547	\$30,431	\$31,341	\$32,278	\$26,594	\$20,542	\$14,104	\$7,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$1,523	\$3,136	\$4,845	\$6,653	\$8,565	\$8,821	\$9,085	\$9,357	\$9,636	\$9,924	\$8,177	\$6,316	\$4,337	\$2,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

	Total Wastew	ater Savings	\$88.064	\$171.892	\$252.679	\$331.429	\$408,991	\$350,164	\$297.602	\$249,987	\$206.222	\$165.391	\$154,500	\$143.053	\$130 239	\$116 759	\$102 578	\$92 329	\$81 841	\$71 995	\$61 919	\$51 592	\$51 009	\$50 433	\$49 863	\$49 300	\$48 743
14	Commercial	Restaurant Spray Nozzle Rebates	\$7,464	\$15,374	\$23,750	\$32,613	\$41,986	\$34,593	\$26,720	\$18,346	\$9,447	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$3,283	\$6,761	\$10,445	\$14,344	\$18,466	\$15,214	\$11,752	\$8,069	\$4,155	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$684	\$1,409	\$2,177	\$2,989	\$3,849	\$3,964	\$4,082	\$4,204	\$4,330	\$4,459	\$3,674	\$2,838	\$1,949	\$1,003	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$216	\$445	\$687	\$943	\$1,215	\$1,251	\$1,288	\$1,327	\$1,366	\$1,407	\$1,449	\$1,493	\$1,230	\$950	\$652	\$336	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$331	\$682	\$1,053	\$1,446	\$1,862	\$1,917	\$1,975	\$2,034	\$2,094	\$2,157	\$2,221	\$2,288	\$1,885	\$1,456	\$1,000	\$515	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$11,781	\$23,781	\$36,008	\$48,470	\$61,177	\$60,486	\$59,803	\$59,127	\$58,459	\$57,799	\$57,146	\$56,501	\$55,862	\$55,231	\$54,607	\$53,991	\$53,381	\$52,778	\$52,182	\$51,592	\$51,009	\$50,433	\$49,863	\$49,300	\$48,743
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$456	\$939	\$1,451	\$1,992	\$2,565	\$2,642	\$2,721	\$2,802	\$2,886	\$2,972	\$2,449	\$1,891	\$1,299	\$669	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$944	\$1,943	\$3,002	\$4,123	\$5,308	\$5,466	\$5,630	\$5,798	\$5,971	\$6,150	\$5,067	\$3,914	\$2,687	\$1,384	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Wastewater Savings (AF)

	<u> </u>	<u> </u>																									
Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	4.5	8.1	10.9	13.2	15.1	10.6	7.0	4.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4.0	7.8	11.4	14.9	18.2	17.4	16.6	15.9	15.2	14.6	14.0	13.5	13.0	12.5	12.1	9.5	7.0	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	4.8	9.5	13.9	18.2	22.3	21.4	20.5	19.7	18.9	18.2	17.4	16.7	16.1	15.4	14.8	14.2	13.6	13.1	12.6	12.1	11.6	11.1	10.7	10.3	9.8
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	2.7	5.4	8.1	10.8	13.5	10.8	8.1	5.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Wastew	ater Savings	16.0	30.7	44.4	57.1	69.0	60.1	52.2	45.1	38.7	32.8	31.5	30.2	29.1	27.9	26.9	23.7	20.7	17.7	14.8	12.1	11.6	11.1	10.7	10.3	9.8

Customer Sewer Bill Savings (2020 dollars)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Wastew	ater Savings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Customer Electricity Savings (KWh)

Activity I	D Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Commercial	Water Use Surveys/Audits - CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Single Family	Mulch rebate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4,875.6	9,516.3	13,938.8	18,158.9	22,190.8	21,172.5	20,227.0	19,349.0	18,533.7	17,776.6	17,073.7	16,420.9	15,814.7	15,251.9	14,729.3	11,574.9	8,532.6	5,594.1	2,752.3	0.0	0.0	0.0	0.0	0.0	0.0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Single Family	Drip Irrigation Incentive for SFR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Commercial	Restaurant Spray Nozzle Rebates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Electric	ity Savings	4,875.6	9,516.3	13,938.8	18,158.9	22,190.8	21,172.5	20,227.0	19,349.0	18,533.7	17,776.6	17,073.7	16,420.9	15,814.7	15,251.9	14,729.3	11,574.9	8,532.6	5,594.1	2,752.3	0.0	0.0	0.0	0.0	0.0	0.0

Customer Electricity Bill Savings (2020 dollars)

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Activity ID Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1 Single Fa	mily Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2 Commerce	ial Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3 Single Fa	mily Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4 Single Fa	mily High Efficiency Clothes Washer Rebate - Res	\$1,356	\$2,647	\$3,878	\$5,051	\$6,173	\$5,890	\$5,627	\$5,382	\$5,156	\$4,945	\$4,750	\$4,568	\$4,399	\$4,243	\$4,097	\$3,220	\$2,374	\$1,556	\$766	\$0	\$0	\$0	\$0	\$0	\$0
5 Single Fa	mily Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6 Single Fa	mily Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Commerc	ial Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Electric	ity Savings	\$1,356	\$2,647	\$3,878	\$5,051	\$6,173	\$5,890	\$5,627	\$5,382	\$5,156	\$4,945	\$4,750	\$4,568	\$4,399	\$4,243	\$4,097	\$3,220	\$2,374	\$1,556	\$766	\$0	\$0	\$0	\$0	\$0	\$0

Customer Gas Savings (Therms)

Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	3,623	6,522	8,841	10,696	12,180	8,557	5,658	3,339	1,484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Commercial	Water Use Surveys/Audits - CII	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Single Family	Mulch rebate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	4,740	9,252	13,552	17,654	21,574	20,584	19,665	18,812	18,019	17,283	16,599	15,965	15,375	14,828	14,320	11,253	8,296	5,439	2,676	0	0	0	0	0	0
5	Single Family	Landscape Conversion or Turf Removal -SFF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Irrigation	Landscape Conversion or Turf Removal - MF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Single Family	Drip Irrigation Incentive for SFR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Commercial	Restaurant Spray Nozzle Rebates	7,305	14,610	21,915	29,220	36,525	29,220	21,915	14,610	7,305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Gas Sav	<i>r</i> ings	15,668	30,384	44,307	57,570	70,279	58,361	47,238	36,761	26,808	17,283	16,599	15,965	15,375	14,828	14,320	11,253	8,296	5,439	2,676	0	0	0	0	0	0

Customer Gas Savings (2020 dollars)

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Activity I	ID Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$7,254	\$13,057	\$17,700	\$21,414	\$24,385	\$17,131	\$11,328	\$6,685	\$2,971	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	/ Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	 High Efficiency Clothes Washer Rebate - Res 	\$9,490	\$18,523	\$27,131	\$35,345	\$43,193	\$41,211	\$39,371	\$37,662	\$36,075	\$34,601	\$33,233	\$31,963	\$30,783	\$29,687	\$28,670	\$22,530	\$16,608	\$10,889	\$5,357	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	 Landscape Conversion or Turf Removal -SFF 	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	 Drip Irrigation Incentive for SFR 	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$5,873	\$11,746	\$17,619	\$23,492	\$29,365	\$23,492	\$17,619	\$11,746	\$5,873	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Gas Sa	ivings	\$22,617	\$43,326	\$62,450	\$80,251	\$96,943	\$81,834	\$68,318	\$56,093	\$44,919	\$34,601	\$33,233	\$31,963	\$30,783	\$29,687	\$28,670	\$22,530	\$16,608	\$10,889	\$5,357	\$0	\$0	\$0	\$0	\$0	\$0

User Entered Utility Avoided Water System Cost (2020 dollars)

Activity ID C	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1 5	Single Family	Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2 0	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3 5	Single Family	Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4 S	Single Family	High Efficiency Clothes Washer Rebate - Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5 S	Single Family	Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6 5	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 0	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 li	rrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 5	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 N	/ulti Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 S	Single Family	Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 5	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13 5	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 C	Commercial	Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Т	otal Avoide	d Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

User Entered Utility Avoided Wastewater System Cost (2020 dollars)

	10 01					0004			0007				0004			0004						00.40		00.10			
Activity	ID Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

11	Single Family Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Avoided Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

User Entered Other Utility Avoided Cost (2020 dollars)

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Activity I	D Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Avoided	d Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Model Calculator Utility Water System Avoided Cost (2020 dollars)

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Activity ID	Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$17,402	\$32,106	\$44,582	\$55,221	\$64,344	\$46,362	\$31,423	\$18,996	\$8,644	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$7,008	\$12,929	\$17,953	\$22,237	\$25,912	\$18,670	\$12,654	\$7,650	\$3,481	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$3,039	\$6,230	\$9,572	\$13,067	\$16,713	\$13,713	\$10,542	\$7,199	\$3,685	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$6,229	\$12,461	\$18,697	\$24,938	\$31,183	\$30,515	\$29,880	\$29,280	\$28,714	\$28,181	\$27,760	\$27,366	\$26,998	\$26,657	\$26,342	\$21,231	\$16,042	\$10,774	\$5,427	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$3,039	\$6,230	\$9,572	\$13,067	\$16,713	\$17,141	\$17,570	\$17,998	\$18,426	\$18,854	\$15,470	\$11,892	\$8,122	\$4,157	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$934	\$1,915	\$2,943	\$4,018	\$5,139	\$5,270	\$5,402	\$5,534	\$5,665	\$5,797	\$4,757	\$3,657	\$2,497	\$1,278	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$510	\$1,045	\$1,605	\$2,191	\$2,803	\$2,875	\$2,947	\$3,018	\$3,090	\$3,162	\$2,595	\$1,994	\$1,362	\$697	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$246	\$505	\$776	\$1,059	\$1,355	\$1,389	\$1,424	\$1,459	\$1,493	\$1,528	\$1,254	\$964	\$658	\$337	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$7,230	\$14,524	\$21,874	\$29,270	\$36,704	\$36,139	\$35,560	\$34,970	\$34,370	\$33,762	\$33,242	\$32,710	\$32,167	\$31,615	\$31,056	\$30,578	\$30,088	\$29,589	\$29,081	\$28,567	\$28,127	\$27,676	\$27,217	\$26,750	\$26,277
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$203	\$416	\$640	\$873	\$1,117	\$1,145	\$1,174	\$1,203	\$1,231	\$1,260	\$1,292	\$1,325	\$1,085	\$833	\$569	\$292	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$132	\$272	\$417	\$570	\$729	\$747	\$766	\$785	\$803	\$822	\$843	\$864	\$708	\$544	\$371	\$190	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$420	\$861	\$1,322	\$1,805	\$2,309	\$2,368	\$2,427	\$2,486	\$2,546	\$2,605	\$2,137	\$1,643	\$1,122	\$574	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$2,014	\$4,130	\$6,345	\$8,662	\$11,079	\$9,090	\$6,988	\$4,772	\$2,443	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$4,032	\$8,265	\$12,699	\$17,335	\$22,173	\$18,193	\$13,986	\$9,551	\$4,889	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Avoided	I Cost	\$52,437	\$101,887	\$148,999	\$194,312	\$238,272	\$203,618	\$172,742	\$144,902	\$119,481	\$95,972	\$89,350	\$82,415	\$74,720	\$66,694	\$58,337	\$52,291	\$46,130	\$40,362	\$34,508	\$28,567	\$28,127	\$27,676	\$27,217	\$26,750	\$26,277

Model Calculator Utility Wastewater System Avoided Cost (2020 dollars)

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Activity II	O Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	Single Family	High Efficiency Faucet Aerator / Showerhead	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial	Restaurant Spray Nozzle Rebates	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Avoided	Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Total Avoided Water and Wastewater Production Cost (2020 dollars)

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Activity II	O Class	Activity Name	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
1	Single Family	Water Use Surveys/Audits - SFR	\$17,402	\$32,106	\$44,582	\$55,221	\$64,344	\$46,362	\$31,423	\$18,996	\$8,644	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Commercial	Water Use Surveys/Audits - CII	\$7,008	\$12,929	\$17,953	\$22,237	\$25,912	\$18,670	\$12,654	\$7,650	\$3,481	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Single Family	Mulch rebate	\$3,039	\$6,230	\$9,572	\$13,067	\$16,713	\$13,713	\$10,542	\$7,199	\$3,685	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Single Family	High Efficiency Clothes Washer Rebate - Res	\$6,229	\$12,461	\$18,697	\$24,938	\$31,183	\$30,515	\$29,880	\$29,280	\$28,714	\$28,181	\$27,760	\$27,366	\$26,998	\$26,657	\$26,342	\$21,231	\$16,042	\$10,774	\$5,427	\$0	\$0	\$0	\$0	\$0	\$0
5	Single Family	Landscape Conversion or Turf Removal -SFF	\$3,039	\$6,230	\$9,572	\$13,067	\$16,713	\$17,141	\$17,570	\$17,998	\$18,426	\$18,854	\$15,470	\$11,892	\$8,122	\$4,157	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Single Family	Smart Irrigation Controller (Weather-Based Ir	\$934	\$1,915	\$2,943	\$4,018	\$5,139	\$5,270	\$5,402	\$5,534	\$5,665	\$5,797	\$4,757	\$3,657	\$2,497	\$1,278	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Commercial	Smart Irrigation Controller (Weather-Based Ir	\$510	\$1,045	\$1,605	\$2,191	\$2,803	\$2,875	\$2,947	\$3,018	\$3,090	\$3,162	\$2,595	\$1,994	\$1,362	\$697	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Irrigation	Landscape Conversion or Turf Removal - MF	\$246	\$505	\$776	\$1,059	\$1,355	\$1,389	\$1,424	\$1,459	\$1,493	\$1,528	\$1,254	\$964	\$658	\$337	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Single Family	UHET <1.0 gal/flush Rebate - Residential	\$7,230	\$14,524	\$21,874	\$29,270	\$36,704	\$36,139	\$35,560	\$34,970	\$34,370	\$33,762	\$33,242	\$32,710	\$32,167	\$31,615	\$31,056	\$30,578	\$30,088	\$29,589	\$29,081	\$28,567	\$28,127	\$27,676	\$27,217	\$26,750	\$26,277
10	Multi Family	Drip Irrigation Incentive for MFR and CII	\$203	\$416	\$640	\$873	\$1,117	\$1,145	\$1,174	\$1,203	\$1,231	\$1,260	\$1,292	\$1,325	\$1,085	\$833	\$569	\$292	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Single Family	Drip Irrigation Incentive for SFR	\$132	\$272	\$417	\$570	\$729	\$747	\$766	\$785	\$803	\$822	\$843	\$864	\$708	\$544	\$371	\$190	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Single Family	Incentivize Irrigation Equipment Upgrades - S	\$420	\$861	\$1,322	\$1,805	\$2,309	\$2,368	\$2,427	\$2,486	\$2,546	\$2,605	\$2,137	\$1,643	\$1,122	\$574	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

13	Single Family High Efficiency Faucet Aerator / Showerhead	\$2,014	\$4,130	\$6,345	\$8,662	\$11,079	\$9,090	\$6,988	\$4,772	\$2,443	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	Commercial Restaurant Spray Nozzle Rebates	\$4,032	\$8,265	\$12,699	\$17,335	\$22,173	\$18,193	\$13,986	\$9,551	\$4,889	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Avoided Cost	\$52,437	\$101,887	\$148,999	\$194,312	\$238,272	\$203,618	\$172,742	\$144,902	\$119,481	\$95,972	\$89,350	\$82,415	\$74,720	\$66,694	\$58,337	\$52,291	\$46,130	\$40,362	\$34,508	\$28,567	\$28,127	\$27,676	\$27,217	\$26,750	\$26,277



Appendix C

Methodology for Water Conservation Program Savings Analyses



Appendix C

Methodology for Water Conservation Program Savings Analyses

This Appendix describes the methodology used to estimate water conservation program savings based on customer billing data, for the analyses presented in report Section 5.3.2, *Estimated Water Savings for Five Selected Programs Based on Customer Billing Data*.

Water use savings associated with conservation programs are typically estimated based on literature values, which may or may not accurately capture the specific ways customers in a specific area (i.e., North Marin Water District [District]) use water. Therefore, District customer billing data were analyzed in order to assess the amount of water typically saved through implementation of each of the five selected conservation programs. Water use by program participants was compared to water use by a representative cohort over the same time period, that was stratified based on key criteria. Water use savings were estimated for the five conservation programs identified below:

- 1. Cash for Grass Rebate Program
- 2. High efficiency clothes washer (HECW) Rebate Program
- 3. High efficiency toilet (HET) Rebate Program
- 4. Water Smart Survey Program
- 5. Weather Based Irrigation Controller (WBIC) Rebate Program

Specifically, water use before and after implementation of a given action (e.g., device replacement or turf removal) by program participants is compared to the water use by a cohort of accounts who have not participated in the same or other programs in the given time frame. The incremental volume of water saved by program participants compared to that of the cohort group can then be attributed to program participation, as other factors have been normalized. This analytical technique is a version of the "Difference-in-Differences Estimation" method. The Difference-in-Differences Estimation method is a standard method used in economics and social science for quantitatively evaluating observational study data by studying the differential effect of a treatment, or in this case participation in a given program as compared to a "control group," when a true controlled experiment cannot be performed (Columbia Public Health, 2013).

By comparing water use over time by program participants to a cohort group and identifying the incremental change in water use due to program participation, this methodology controls for variations in water use due to climatic, economic, and other temporally related factors. By stratifying (or weighting) the cohort group based on key factors (i.e., Census Block Group or neighborhood), this method also effectively controls for geographic-linked water use influencing factors, such as house and yard size, housing age, general socio-economic factors, general landscape management factors, etc.

<u>Participant Sample Groups</u>: In order to estimate the water saving attributable to a single conservation program, participant sample groups for this analysis were limited to accounts that participated in only one program, and who participated in that program in only one year (e.g., did not receive several HET rebates over several years), except as indicated in savings results tables, as appropriate. The participant sample groups were further limited to just those accounts that had active water use over the study period. Active accounts were identified as those who received six water bills and had non-zero water use in a given year.

Appendix C December 2020



<u>Comparison Cohort Sample Groups</u>: Accounts included in the cohort groups are limited to those accounts that had not participated in any program based on available data and that meet the same active account thresholds as described above for the participant sample groups (i.e., received six bills per year and nonzero annual water use). It is possible that members of the cohort group participated in a program that was not included in this study; however, given the large number of accounts included in these cohort groups the effect of participation in other programs would be expected to be minimal. Although not participants in a specific program, a portion of the cohort group members would be expected to have changed out water using devices with more efficient ones through natural replacement. Given this, the program savings identified by this method may actually be somewhat higher than estimated herein, resulting in a more conservative program savings estimate.

<u>Study Periods</u>: Since account-level water use billing data are available from 2004 to 2019, the participation data from 2010 to 2017 are analyzed so that two to three years of water use data can be used to capture the average water use before and after the participation year.

<u>Stratification</u>: The water savings calculations for all accounts were stratified (or weighted) based on the Census Block Group (except as indicated in savings results table notes, as appropriate), as a way to control for geographically linked variables such as house and yard size, housing age, general socio-economic factors, etc.

<u>Water Savings Calculation</u>: For each active account, the average annual water use for a period of three years prior to program participation is compared to the average annual water use in the two to three years following program participation, dependent on available data. The change in water use by program participants is then compared to that of the cohort group over the same time period. The difference between the change in water use of the participants and the change in water use of the cohorts is the water savings due to the given conservation program. A positive average water savings suggests the program resulted in water savings, while a negative average water savings suggests the program was not successful in saving water.

References

Columbia Public Health, 2013. Difference in Difference Estimation. Columbia Public Health, <u>https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation#Overview</u>, accessed 28 September 2020.



Appendix D

Prioritization and Screening of Future Water Conservation Measures

Prioritization and Screening of Future Water Conservation Measures

Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

Conservation Measure/Program	Туре	Indoor / Outdoor	Primary End Use	
Agency Actions and Water Rates				
Customer Water Loss Reduction (AMI Leak Detection)	Agency action	Both	Water Loss	All
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	Agency action	Both	Water loss; Irrigation	All
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	Agency action	Indoor	Toilet, Urinal, Faucet,	All
Increase Enforcement of State Water Waste Regulations	Agency action	Outdoor	Irrigation	All
Install ANAL for Evisting Assounts	Agongy action	Poth	Water Locc	
Install AMI for High Water Users and Large Landscape Accounts		Outdoor	Water Loss	
Install AMI in New Development	Agency action	Both	Water Loss	
Rate Structure Evaluation	Agency action	Both	All	All
Regional UHET and/or Urinal Bulk Purchase Program	Agency action	Indoor	Toilet / Urinal	All
Water Budgeting/Monitoring for Large Landscape Accounts	Agency action	Both		IRR
Establish Separate Pricing Structure for Irrigation Accounts	Water Rates	Outdoor	Irrigation	IRR
Violification to or Implementation of Tiered Rate Conservation Pricing	Water Rates	Both	All	
Water Rudget Raced Billing for All Customers	Water Rates	Both		
Water Budget Based Billing for Only Irrigation Customers	Water Pater	Outdoor	All	
Public Outrooch and Education	Water Rates	Outdoor	Ingation	(CII,
Public Outreach and Education		Dath		CII
Water Use Surveys/Audits - Cli	Audit/ Survey	Both	All	
Water Use Surveys/Audits - MFR	Audit/ Survey	Both		
Educational Workshops	Rublic Outreach/Workshop	Outdoor		
Garden tour	Public Outreach/ Workshop	Outdoor	Outdoor	SFR
Promote Green Building and Certification	Public Outreach/ Workshop	Both		
Provide Support with Smart Irrigation Controller Setup	Public Outreach/ Workshop	Outdoor	Irrigation	All
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	Public Outreach/ Workshop	Outdoor	All Indoor	All
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	Public Outreach/ Workshop	Indoor	Irrigation	All
QWEL Training (Qualified Water Efficient Landscaper)	Public Outreach/ Workshop	Outdoor	Irrigation	All
School Education Programs	Public Outreach/ Workshop	Both	All	SFR
Device-Based and Financial Incentive Programs			·	
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	Direct Install/ No-Cost Device	Indoor	Toilet, Urinal, Faucet, Showerhead	CII
Direct Install of Efficient Indoor Fixtures - Government Buildings	Direct Install/ No-Cost Device	Indoor	Toilet, Urinal, Faucet, Showerhead	CII
Direct Install of Efficient Indoor Fixtures - Low Income Residential	Direct Install/ No-Cost Device	Indoor	Toilet, Faucet, Showerhead	SFR
Direct Install of Efficient Indoor Fixtures - Residential	Direct Install/ No-Cost Device	Indoor	Toilet, Faucet, Showerhead	SFR
High Efficiency Clothes Washer Install - Low Income Residential Customers	Direct Install/ No-Cost Device	Indoor	Clothes Washer	SFR
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	Direct Install/ No-Cost Device	Indoor	Faucet, Showerhead	CII
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	Direct Install/ No-Cost Device	Indoor	Faucet, Showerhead	SFR
Rain Barrel Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	SFR
Rain Sensor Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All
Rotating Sprinkler Nozzle Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large	Direct Install/ No-Cost Device	Outdoor	Irrigation	ME
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	Direct Install/ No-Cost Device	Outdoor	Irrigation	SFR
Soil Moisture Sensor Giveaway	Direct Install/ No-Cost Device	Outdoor	Irrigation	All
Toilet Flapper Giveaway - SFR customers	Direct Install/ No-Cost Device	Indoor	Toilet	SFR
UHET Direct Installation - CII	Direct Install/ No-Cost Device	Indoor	Toilet	CII
UHET Direct Installation - Residential	Direct Install/ No-Cost Device	Indoor	Toilet	SFR
Urinal Direct Installation - CII	Direct Install/ No-Cost Device	Indoor	Urinal	CII
Autoclave (Steam-Sterilizer) Retrofit Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII
Connectionless Food Steamer Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII
Dipper Well Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII
Drip Irrigation Incentive for MFR and CII	Rebate/ Financial Incentive	Outdoor	Irrigation	MFI
Drip Irrigation Incentive for SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR
Dry Vacuum Pumps	Rebate/ Financial Incentive	Indoor	CII Equipment	CII
Efficient (EnergyStar) Dishwasher Rebates	Rebate/ Financial Incentive	Indoor	Dishwashers	SFR
High Efficiency Clothes Washer Rebate - Residential	Rebate/ Financial Incentive	Indoor	Clothes Washer	SFR
High Efficiency Clothes Washer Rebate Program - CII	Rebate/ Financial Incentive	Indoor	Clothes Washer	CII
High Efficiency Urinal (<0.25 gal/flush) Rebates - CII	Rebate/ Financial Incentive	Indoor	Urinal	CII

Sector	Priority as a Regional Program	Priority as a Local Program	Preference for Implementation	Current Implementation Status	Notes / Comments
					Enforcement of SB 407 at time of sale.
					Assumes water waste regulations per Executive Order B-40-17 rulemaking is completed largely as currently proposed.
					Fixtures are purchased in bulk at a discounted rate and then sold to customers at the discounted rate
RR					
MFR					
MFR					
MFR					
MFR					
MFR					
CII					
, Cli					
MFR					Could be used for CII customers, but hasn't been vet
MFR					
					More info: https://www.energy.gov/eere/femp/water-efficient-technology-opportunity-steam- sterilizer-condensate-retrofit-kit
					More info: https://www.energy.gov/eere/femp/water-efficient-technology-opportunity- connectionless-food-steamer
					Incentivize replacement of perpetual-flow holders for ice cream dippers & utensils; https://server- products.com/equipment/conservewell/utensil-holder/87740.htm
. CII					
-					
MFR					

	Source	Added By
	2015 Screening	EKI
	Added 2020	EKI
	2015 Screening	EKI
	Added 2020	EKI
	2015 Screening	EKI
e	2015 Screening	ΕΚΙ
	2015 Screening	EKI
	2015 Screening	EKI
	2015 Screening	EKI
	2015 Screening	EKI
	Added 2020	MMWD
	Added 2020	MMWD
	2015 Screening	EKI
	Added 2020	EKI
	2015 Screening	EKI
	2015 Screening	EKI
	Added 2020	EKI
	2015 Screening	EKI
	2015 Screening	ΕΚΙ
	2015 Screening	ΕΚΙ
	2015 Screening	EKI
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Prioritization and Screening of Future Water Conservation Measures

Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

					Priority as a						
		Indoor /			Regional	Priority as a Local	Preference for	Current Implementation			
Conservation Measure/Program	Туре	Outdoor	Primary End Use	Sector	Program	Program	Implementation	Status	Notes / Comments	Source	Added By
Hot Water on Demand Pump System Rebate	Rebate/ Financial Incentive	Indoor	Hot Water	SFR. MFR						2015 Screening	EKI
Incentivize Artificial Turf for Sports Fields	Rebate/ Financial Incentive	Outdoor	Irrigation	CII						2015 Screening	EKI
Incentivize Cooling Tower Upgrades	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						Added 2020	EKI
Incentivize Gray Water Retrofit for Existing SFR Customers	Rebate/ Financial Incentive	Outdoor	Irrigation / Gray Water	SFR						2015 Screening	EKI
Incentivize Gray Water Systems for New CII Development	Rebate/ Financial Incentive	Both	Irrigation / Gray Water	CII						2015 Screening	EKI
Incentivize Irrigation Equipment Upgrades - Large Landscapes	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII, IRR						2015 Screening	EKI
Incentivize Irrigation Equipment Upgrades - SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Incentivize Replacement of Inefficient Commercial and Industrial Equipment	Rebate/ Financial Incentive	Indoor	CII Equipment	CII					Example: SoCal Water Smart Water Savings Incentive Program:	2015 Screening	EKI
									https://socalwatersmart.com/en/commercial/water-savings-incentive-program/	Ŭ	
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	Rebate/ Financial Incentive	Both	Water loss; Irrigation	All					PRVs must be installed by customers with pressure exceeding 80 psi, per the plumbing code	2015 Screening	EKI
Incentivize Submetering for Existing Customers - CII	Rebate/ Financial Incentive	Both	All Indoor	MFR, COM, IRR						2015 Screening	EKI
Incentivize Submetering for Existing Customers - MFR	Rebate/ Financial Incentive	Both	All Indoor	MFR						2015 Screening	EKI
Incentivize Submetering of Cooling Towers for Existing Customers	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						2015 Screening	EKI
Indoor Fixture Program For Hotels & Motels	Rebate/ Financial Incentive	Indoor	All Indoor	CII						2015 Screening	EKI
Indoor Fixture Program For Schools	Rebate/ Financial Incentive	Indoor	All Indoor	CII						2015 Screening	EKI
Landscape Conversion or Turf Removal - MFR and CII	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	EKI
Landscape Conversion or Turf Removal -SFR	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Mulch rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						Added 2020	MMWD
Nonresidential Incentive for Self-closing or Metering Faucets	Rebate/ Financial Incentive	Indoor	Faucet	CII						Added 2020	Sonoma
Plumber Initiated UHET and / or Urinal Retrofit Program	Rebate/ Financial Incentive	Indoor	Toilet	All						2015 Screening	EKI
Rain Barrel Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	SFR						2015 Screening	EKI
Rain Sensor Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	All						2015 Screening	EKI
Rainwater Catchment System Rebate for Large Landscapes	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR. CII						2015 Screening	EKI
Rebates for Conductivity Controllers on Cooling Towers	Rebate/ Financial Incentive	Indoor	Cooling Towers	CII						2015 Screening	EKI
Restaurant Spray Nozzle Rebates	Rebate/ Financial Incentive	Indoor	CII Equipment	CII						2015 Screening	EKI
Rotating Sprinkler Nozzle Rebate	Rebate/ Financial Incentive	Outdoor	Irrigation	All						2015 Screening	EKI
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large	Rebate/ Financial Incentive	Outdoor	Irrigation	MFR, CII						2015 Screening	FKI
landscape										2010 001 001 001 00	
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SER	Rebate/ Financial Incentive	Outdoor	Irrigation	SER						2015 Screening	FKI
Soil Moisture Sensor Rehate	Rebate/ Financial Incentive	Outdoor	Irrigation							2015 Screening	FKI
Swimming Pool and Hot Tub Cover Rebates	Rebate/ Financial Incentive	Outdoor	Pool/Hot Tub	SER MER							EKI
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	Rebate/Financial Incentive	Indoor	Shower	SER MER CII					Reduce bot water use before showering https://www.thinkeyolve.com/	Added 2020	EKI
Tier 4 Exemption	Rebate/Financial Incentive	Both	toilet Faucet Showerhead	SFR					Exemption from high tier water rates w/installation of devices	Added 2020	
her + Exemption	Rebuter Financial Incentive	both	clothes washer irrigation	5111						//////	
UHET <1 0 gal/flush Rehate - CU	Rebate/Financial Incentive	Indoor	Toilet	CII						2015 Screening	EKI
UHET <1.0 gal/flush Rebate - Residential	Rebate/Financial Incentive	Indoor	Toilet	SER MER						2015 Screening	EKI
Water Savings Incentive Program for CII	Rebate/Financial Incentive	Indoor	All Indoor						Financial incentive to reward demonstrated water savings and offset capital improvement costs:	2015 Screening	FKI
	Rebater Financial meentive	madol							Example: SoCal Water Smart Water Savings Incentive Program:	2013 Sci cering	
									https://socalwatersmart.com/en/commercial/water-savings-incentive-program/		
Delisies and Degulations											
								1			
Demand Offset/Water Neutral Policy for Large New Developments	Policy/ Regulation	Both		All						Added 2020	EKI
Prohibit Once through Cooling Systems	Policy/ Regulation	Both	CII Equipment	CII						2015 Screening	EKI
Require <0.25 gal/flush Urinals in New Development	Policy/ Regulation	Indoor		CII						2015 Screening	EKI
Require <1.0 gal/flush Toilets in New Development	Policy/ Regulation	Indoor	loilet	All					State minimum efficiency is 1.28 gal/flush	Added 2020	EKI
Require Cooling Tower Retrofits	Policy/ Regulation	Indoor	Cooling Towers	CII						2015 Screening	EKI
Require Efficient (EnergyStar) Dishwashers in New Development	Policy/ Regulation	Indoor	Disnwasners	SFR, MFR						2015 Screening	EKI
Require High Efficiency Clothes Washers in New Development	Policy/ Regulation	Indoor	Clothes Washer	SFR, MFR						2015 Screening	EKI
Require Hot water on Demand / Structured Plumbing in New Residential Development	Policy/ Regulation	indoor	Shower/SINK	SFK, MIFK						2015 Screening	EKI
										2015.0	
Require Irrigation Designers / Installers be Certified (QWEL)	Policy/ Regulation	Outdoor		All						2015 Screening	EKI
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	CII					Example: https://sfwater.org/index.aspx?page=686	Added 2020	EKI
Developments										2015.0	
Require Plumbing for Gray Water in New SFR Development	Policy/ Regulation	Outdoor	Irrigation / Gray Water	SFR						2015 Screening	EKI
Require Plumbing for Recycled Water in New CII Development	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	CII						Added 2020	EKI
Require Plumbing for Recycled Water in New MFR Development	Policy/ Regulation	Outdoor	Irrigation / Recycled Water	MFR						Added 2020	EKI
Require Rain Barrels in New Development	Policy/ Regulation	Outdoor	Irrigation	SFR						2015 Screening	EKI
Require Submetering by Unit for Existing Commercial Customers	Policy/ Regulation	Indoor	All Indoor	CII						Added 2020	EKI
Require Submetering by Unit for New Commercial Developments	Policy/ Regulation	Indoor	All Indoor	CII						Added 2020	EKI
Require Submetering for New MFR Developments	Policy/ Regulation	Indoor	All Indoor	MFR						2015 Screening	EKI
Require Submetering for New Mobile Home Park Developments	Policy/ Regulation	Indoor	All Indoor	MFR						2015 Screening	EKI
Require Submetering of Cooling Towers for Existing Customers	Policy/ Regulation	Indoor	Cooling Towers	CII						Added 2020	EKI
Require Submetering of Cooling Towers for New Development	Policy/ Regulation	Indoor	Cooling Towers	CII						Added 2020	EKI
Require Submetering of Existing MFR (and Mobile Home Park) Customers	Policy/ Regulation	Indoor	All Indoor	MFR						Added 2020	EKI
Require Submetering of Landscaping for Existing MFR and Commercial Customers	Policy/ Regulation	Outdoor	Irrigation	MFR, CII						Added 2020	EKI
Require Submetering of Landscaping for New MFR and Commercial Developments	Policy/ Regulation	Outdoor	Irrigation	CII						Added 2020	EKI
Require Swimming Pool and Hot Tub Covers	Policy/ Regulation	Outdoor	Pool/Hot Tub	SFR, MFR						2015 Screening	EKI

Prioritization and Screening of Future Water Conservation Measures

Marin-Sonoma Saving Water Partnership

INSTRUCTIONS: Please review and complete the orange highlighted cells using the provided dropdown lists. Comments and clarifications may be added to the comments column on the right. You may use the filter features to help navigate this list. "Preference for Implementation" need only be completed when a program is given a priorty of 3 or greater. See READ ME tab for additional information.

					Priority as a						
		Indoor /			Regional	Priority as a Local	Preference for	Current Implementation			
Conservation Measure/Program	Туре	Outdoor	Primary End Use	Sector	Program	Program	Implementation	Status	Notes / Comments	Source	Added By
Require Water Efficiency Plan Reviews for New CII Development	Policy/ Regulation	Both	All Indoor	CII						2015 Screening	EKI
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil	Policy/ Regulation	Outdoor	Irrigation	All						2015 Screening	EKI
Moisture Sensors in New Development											
Restrict Landscape Irrigation to Designated Days/Times	Policy/ Regulation	Outdoor	Irrigation	All					Under all conditions, not just drought	2015 Screening	EKI
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	Policy/ Regulation	Outdoor	Irrigation	All						2015 Screening	EKI
Water Waste Ordinance	Policy/ Regulation	Outdoor	All Outdoor	All						Added 2020	MMWD

Abbreviations:

AMI = advanced metering infrastructure CII = commercial, industrial, institutional COM = commercial HET = high efficiency toilet HEU = high efficiency urinal Info = information IRR = irrigation account 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



MEMORANDUM

To: Board of Directors

From: Julie Blue, Auditor-Controller

Subj: Rate Increase Letter to Novato Water & Recycled Water Customers t:\ac\budget\y-2021.22\vate increase & prop 218\novato prop 218 letter fy 21.22 board memo.docx

RECOMMENDED ACTION: Approve Letter to Customers

FINANCIAL IMPACT: \$10,000 Expense

California law requires that customers be notified of a water rate increase at least 45 days prior to the public hearing where the Board considers adoption of the proposed increase. A public hearing is scheduled for Tuesday, June 15, 2021 at 6:00 PM at the District offices, 999 Rush Creek Place in Novato. Due to the COVID-19 pandemic this meeting may take place virtually and additional information regarding participation regarding accommodating public participation will be provided on the District website at <u>www.nmwd.com</u>. The June 15 hearing date requires that the letters be mailed by April 30, 2021. Postage, stationary and printing costs for approximately 18,500 active customers is estimated at \$10,000.

The proposed commodity and bimonthly service charge rate increase for Novato Water customers is 6%. The median single-family residential customer will see a \$3.75 per month increase (\$7.50 bimonthly) on their typical bill. The Annual Cost Calculator on the District's website allows each customer to see the impact of the proposed increase on their annual water cost based upon their water use over the past 12 months. As shown in the Novato Water Rate Comparison (Attachment 1), the cost of water is at the midpoint of the 17 agencies surveyed.

The proposed commodity and bimonthly service charge rate increase for Recycled Water customers is 6%. Additionally, for all Recycled Water customers with meters 1" and larger, an additional charge of \$24.11 will be added to the bi-monthly fixed service charge. This additional charge will increase the service charge to conform with the proposed rates as shown in the 2020 Novato and Recycled Water Rate Study.

Attachment 2 is a draft of the proposed letter for Board review and comment. Legal counsel has reviewed the letter to assure compliance with Prop 218.

RECOMMENDATION:

Approve mailing a letter notifying customers of a proposed rate increase and upcoming public hearing.

April 16, 2021

ATTACHMENT 1

NOVATO WATER RATE COMPARISON





NOTICE OF PUBLIC HEARING REGARDING PROPOSED RATE INCREASES For the Novato Service Area

This Notice provides information about proposed increases to North Marin Water District's water rates and charges for the Novato Service Area. The Board of Directors will hold a public hearing at which public comments will be considered and written protests will be counted before the Board votes on the proposed increases. HEARING DATE: Tuesday, June 15, 2021 TIME: 6:00 p.m. LOCATION*: North Marin Water District 999 Rush Creek Place Novato, CA 94945

The District proposes increasing revenue for fiscal year 2021-2022. If approved at the public hearing on June 15, 2021, the new rates will go into effect on July 1, 2021.

*Should COVID-19 restrictions remain in effect, for in-person meeting attendance in Marin County, at the time of the scheduled public hearing additional information regarding accommodating public participation shall be provided on the District website at www.nmwd.com.

REASONS FOR THE PROPOSED REVENUE INCREASE

The key reasons that a 6% rate increase is needed are described below.

Increased investment in water facilities. The District must continue to invest in facility upgrades and replacements with an approximate cost of \$4 million per year. This will help address the need to properly maintain the District's \$138 million system of pipelines, pumps, reservoirs, treatment plants, valves, hydrants, laboratory, monitoring systems, and more.

Rising costs to purchase imported water. The District typically imports 75% of its water from Sonoma County Water Agency. The cost of purchasing imported water accounts for 30% of the budget and the water supplier has forecast that the costs will continue to increase by 6% every year.

Impact of inflation on all costs. The proposed revenue increase is designed to meet all the costs of providing water service. This includes purchasing, treating, and delivering safe, high-quality, reliable water to your home or business, without fail, every day and around the clock.

MILLIONS OF DOLLARS SAVED

Cost control is a daily focus of North Marin Water District, which is one reason our rates are the lowest in Marin County and at the median for water agencies around the Bay Area region. Here are some of the ways we have kept rates down.

- We decreased electrical costs by installing clean solar energy systems.
- We obtained over \$10 million in grants for recycled water expansion.
- We saved \$18 million by sharing the cost of a large aqueduct project with other public agencies.
- We reduced future retirement benefit costs for new employees and reduced the number of full time employees from 58 a decade ago to 54 today.
- The new recycled water system was implemented without additional staffing. Recycled water costs our customers less than potable water.

Details of the Proposed Rate Increases

Proposed 6% rate increase.

<u>Novato Water</u> - North Marin Water District is proposing a 6% rate increase to cover the increasing costs of providing quality potable water service to our Novato Water service area customers. <u>Recycled Water</u> - A 6% rate increase is proposed for the Recycled Water System. Additionally, for all meters 1" and larger, an additional charge of \$24.11 will be added to the fixed service charge. This additional charge will increase the service charge to conform with the proposed rates as shown in the 2020 Novato and Recycle Water Rate Study.

The typical residential customer (approximately 56% of all customers) will pay about \$3.75 more per month if the changes are approved (\$7.50 on the bi-monthly bill).

PROPOSED BI-MONTHLY FIXED SERVICE CHARGES

The Bi-Monthly Fixed Service Charge includes an account charge and a meter charge. The meter charge is based on an industry standard that apportions costs based on meter size and flow capacity. Most single-family residential customers have a 5/8" meter. Residential accounts that have a 1" meter due to fire requirements, but would otherwise have a 5/8" meter, are charged at the 5/8" meter rate.

PROP SERVICE (OSED BI-MONTHLY CHARGE FOR POTAE	FIXED BLE WATER	PROPOSED BI-MONTHLY FIXED SERVICE CHARGE FOR RECYCLED WATER						
Meter Size (in inches)	Current Fixed Charge	Proposed Fixed Charge	Meter Size (in inches)	Current Fixed Charge	Proposed Fixed Charge				
5/8"	\$41.46	\$43.95	5/8"	\$48.78	\$51.71				
1″	\$74.06	\$78.50	1"	\$61.68	\$90.93				
1.5″	\$128.38	\$136.08	1.5″	\$123.35	\$156.31				
2″	\$193.57	\$205.18	2"	\$197.36	\$234.76				
3″	\$367.41	\$389.45	3″	\$394.72	\$443.96				
4"	\$562.98	\$596.76	4"	\$640.86	\$679.31				
6″	\$1,106.23	\$1,172.60	6"	\$1,233.50	\$1,333.07				
8″	\$1,432.18	\$1,518.11							

To learn how the proposed rates will affect your specific water bill, check out the District's water cost calculator, available at <u>mwd.com/account/annual-cost-calculator</u>.

The maximum rates that may be imposed are shown in this document. Prior to implementing the rates, the Board of Directors may choose to implement the full amount or less, but not more.

PROPOSED TIERED QUANTITY (USAGE) CHARGES

The Tiered Quantity (Usage) Charges has three tiers that reflect the costs of the different sources of water.

Tier 1 (1-262 gallons per day -GPD) is based on the cost of imported water. Tier 2 (263-720 GPD) is based on the cost of locally treated water from Stafford Lake. Tier 3 (>720 GPD) is based on the cost of locally treated water plus the cost of the District's conservation program, which is paid by those customers that use the most water. Usage charges include an elevation zone charge to recover the costs of pumping water to higher elevations

PROPOSED BI-MONTHLY TIERED USAGE RATES FOR RESIDENTIAL POTABLE WATER											
Quantity Charge	CU	RRENT RA	ATES	PROPOSED RATES							
Per 1,000 Gallons	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3					
Residential Elevation Zone A	\$5.50	\$6.23	\$7.67	\$5.83	\$6.60	\$8.13					
Residential Elevation Zone B	\$6.26	\$6.99	\$8.43	\$6.64	\$7.41	\$8.94					
Residential Elevation Zone C	\$7.60	\$8.33	\$9.77	\$8.06	\$8.83	\$10.36					

PROPOSED BI-MONTHLY TIERED USAGE RATES FOR COMMERCIAL POTABLE WATER											
Quantity Charge	CURREN	NT RATES	PROPOSED RATES								
Per 1,000 Gallons	Winter	Summer	Winter	Summer							
Commercial Elevation Zone A	\$5.50	\$7.67	\$5.83	\$8.13							
Commercial Elevation Zone B	\$6.26	\$8.43	\$6.64	\$8.94							
Commercial Elevation Zone C	\$7.60	\$9.77	\$8.06	\$10.36							

PROPOSED FIRE SERVICE CHARGES

PROPOSED B

Fire Service Charges apply to commercial connections with fire sprinklers. The charges are based on the actual cost of maintaining fire service lines.

PROPOSED BI-MONTHLY
USAGE RATES FOR OTHER
WATER SERVICES

These charges are for additional services that are offered to customers.

PROPOSED BI-M	ONTHLY FIRE CONN	PROPOSE	D BI	
Service Size	Current	Proposed	Quanti	ty Cł
1"	\$14.24	\$15.09	Water Type	
2″	\$18.78	\$19.91	Raw	
4"	\$52.40	\$55.54	Recycled	
6″	\$73.60	\$78.02	Temporary	
8″	\$97.83	\$103.70		
10"	\$128.11	\$135.80		

PROPOSED BI-MONTHLY USAGE RATES					
Quantity Charge Per 1,000 Gallons					
Water Type Current Proposed					
Raw	\$2.93	\$3.11			
Recycled	\$6.24	\$6.61			
Temporary	\$6.99	\$7.41			



990 Rush Creek Place PO Box 146 Novato, CA 94945 nmwd.com

BOARD OF DIRECTORS

James Grossi, President Stephen Petterle, Vice President Jack Baker, Director Rick Fraites, Director Michael Joly, Director

GENERAL MANAGER

Drew McIntyre

Notice of Public Hearing on Proposed Rate Increases

Where to Learn More, Get Answers, and Make Comments

CONTACT US:

Phone: 415-897-4133 Email: info@nmwd.com

VISIT OUR WEBSITE: www.nmwd.com

VISIT OUR OFFICE: North Marin Water District 999 Rush Creek Place Novato, CA 94945

ATTEND THE BOARD HEARING

The Board will review and consider adopting the rate increases on June 15, 2021, at 6:00 p.m. at North Marin Water District, 999 Rush Creek Place, Novato, CA 94945. Should COVID-19 restrictions remain in effect in Marin County at the time of the scheduled public hearing, additional information regarding accommodating public participation will be provided on the District's website at www.nmwd.com.

At the Public Hearing: The Board of Directors will accept and consider all written protests and will hear and consider all verbal comments to the proposed rate increases at the Public Hearing. Verbal comments must be accompanied by a written protest to qualify as a valid protest. At the conclusion of the Hearing, the Board of Directors will consider adoption of the proposed rate increases as outlined in this notice. If written protests of the proposed changes are presented by a majority of the property owners or tenants subject to the proposed changes, the proposed rate increases will not be adopted.

How to Protest the Proposed Changes

Any owner of a parcel upon which the water service charges are proposed to be changed, or any tenant that directly pays the water bill for such parcel, may submit a written protest of the proposed rate changes. Only one protest will be counted per parcel. Written protests must: (1) state that the property owner or tenant is opposing the proposed increases; (2) provide the location of the parcel (by street address, assessor's parcel number, or customer account number); and (3) include the name and signature of the property owner or tenant submitting the protest. Written protests may be submitted by mail or in person to the District Secretary at North Marin Water District, 999 Rush Creek Place, Novato, CA 94945, or in person at the Public Hearing. All written protests must be received prior to the close of the public input portion of the Public Hearing. Protests submitted via email or other electronic means will not be accepted. Please mark the protest: Attn: Novato Rate Hearing.

PRSRT STD U.S. POSTAGE PAID SAN RAFAEL, CA PERMIT NO 2



MEMORANDUM

To: Board of Directors

April 16, 2021

From: Julie Blue, Auditor-Controller

Subj: Rate Increase Letter to West Marin Water and Oceana Marin Sewer Customers t/ac/budget/ly-2021.22/rate increase & prop 218/prop 218 wm & om Itr cover memo fy 20.21.docx

RECOMMENDED ACTION: Approve Letter to Customers

FINANCIAL IMPACT: \$1,700 (\$1,500 West Marin & \$200 Oceana Marin)

California law requires that customers be notified of a water or sewer rate increase at least 45 days prior to the public hearing where the Board considers adoption of the proposed increases. A public hearing is scheduled for Tuesday, June 22, 2021 at 6:00 PM at the District offices at 999 Rush Creek Place in Novato. Historically rate hearings have been held at the Dance Palace in Point Reyes Station. At the time of this memo the Dance Palace is not hosting onsite meetings. Also, due to the COVID-19 pandemic this meeting may take place virtually and additional information regarding participation regarding accommodating public participation will be provided on the District website at <u>www.nmwd.com</u>. The June 22 public hearing date requires that the notification letters be postmarked no later than May 7, 2021. The Oceana Marin Sewer System letters will be printed in-house and the marginal postage, stationary and copying cost for the 235 active customers will be approximately \$200. The West Marin Water System letters will be printed and mailed through a printing service and will cost approximately \$1,500.

West Marin Water

As proposed in the 2021 West Marin Water Rate Study, accepted by the Board of Directors at the March 16, 2021 board meeting, the proposed commodity and bimonthly service charge with generate an additional 6% (\$59,000) in revenue.

Proposed rate structure modifications will result in individual customer bills that may increase more or less than the 6% global increase. The Annual Water Cost Calculator on the District's website allows each customer to see the impact of the proposed increase on their annual water cost based upon their water use over the past 12 months. The typical residential customer, assuming no change in water use, will see an increase of \$4 per month (\$8 bi-monthly). As shown in Attachment 1, the Coastal Area Water Cost Comparison, the cost of water for West Marin Water customers is the second lowest of the eight agencies surveyed.

Oceana Marin Sewer

A 5% rate increase (a \$5 increase to \$103 per month) effective July 1, 2021 is proposed for Oceana Marin sewer service. The increase would generate approximately \$14,100 annually and would support projects identified in the 2016 Oceana Marin Master Plan Update. In contrast JB Memo re Rate Increase Letter to West Marin Water and Oceana Marin Sewer Customers April 16, 2021 Page 2 of 2

to the 10% rate increases adopted in 2016 and 2017 to finance the CIP plan on a pay-go basis, the current 5-year financial plan includes a current year increase of 5% and subsequent annual 5% rate increases and also forecasts borrowing \$750,000 to complete the CIP plan. As shown in Attachment 2, the Coastal Area Sewer Cost Comparison, the Oceana Marin sewer rates are highest when compared to similar agencies.

The proposed letters are attached for Board review and comment (West Marin Water – Attachment 3 and Oceana Sewer – Attachment 4). Legal counsel has reviewed the letters to assure compliance with the notification requirements of California's Prop 218 law.

RECOMMENDATION:

Approve mailing a letter notifying customers of a proposed rate increase and upcoming public hearing.

4/13/2021

2021 COASTAL AREA WATER COST COMPARISON

Comparison of NMWD's Charges with Other Agencies Based on Rates and Charges in Effect on 7/1/21 Single Family Residence Median Use of 54,000 Gallons Annually (5/8" x 3/4" Meter)

	No. of	Bimonthly	Commodity		Annual	Annual	Total
	Water	Service	Rate per		Water	Тах	Annual
Agency	Services	Charge	1,000 Gallons		Cost ¹	Cost ²	Cost
Bolinas Community PUD	587	\$237.50	\$1.33/\$2.00	(3)	\$1,509	\$634 (4)	\$2,143
Stinson Beach Co Water	731	\$137.72	\$2.61/\$6.26	(5)	\$990	\$833 (6)	\$1,823
Estero Mutual Water District	143	\$207.90	\$7.86/\$11.56	(7)	\$1,608	-	\$1,608
Muir Beach Community Services	159	\$79.73	\$10.10/\$11.51	(8)	\$1,071 (9) \$300 (10)	\$1,371
Bodega Bay PUD	1,114	\$78.38	\$11.93	(11)	\$686	\$420 (12)	\$1,106
Inverness PUD	516	\$146.00	\$4.01/\$6.68	(13)	\$1,049	-	\$1,049
NMWD West Marin Service Area	784	\$42.59 (14) \$11.52	(15)	\$878	\$77 (16)	\$954
California Water Coast Springs	255	\$63.48	\$7.85/\$9.81		\$903 (1	7) -	\$903

Notes:

(1) Median annual consumption for West Marin Service Area single-family detached home is 54,000 gallons. Use will differ in other areas and microclimates.

(2) Includes taxes for debt service on outstanding water bonds and loans plus any applicable apportionment of the AB8 1% County levy distributed to compensate for the Prop 13 elimination of the operation and maintenance tax.

- (3) 1st 15 Ccf quarterly @\$1.00/Ccf, 16 to 21 Ccf @\$1.50, 22 28 @\$3.00, 29 40 @\$6.00, 41 60 @\$10, 61 75 @\$15 and 76+ Ccf @\$18/Ccf (billed quarterly).
- (4) Shares in 1% County levy. This "allocation" is projected by the County of Marin at \$371,916 for Bolinas in 2020/21 of which 100% is credited to the water fund.

(5) First 4,495 gal @ \$.002603/gal; next 2,991 gal @ \$.006259/gal; next 4,487 gal @ \$.010538/gal; next 2,991 gal @ \$.014447/gal; next 7,479 gal @ \$.022693/gal; next 7,479 gal @ \$.028350/gal; 29,928 gal and over @ \$.036782/gal.

- (6) Stinson Beach shares in 1% County levy. This "allocation" is projected at \$870,102 in 2020/21 of which 70% is credited to the water fund amounting to \$833 per service.
- (7) First 25 cubic meters bimonthly @ \$2.075/cm; next 25 cm @ \$3.051/cm. Drought surcharge of \$20.00/cm for use in excess of 50 cm.
- (8) \$79.73/bimonthly flat rate plus volumetric price per gallon of \$.0202/gallon with conservation discount rates applied of 50% for the first 4,500 gallons, 43% for the next 5,500 gallons, 30% for the next 20,000 gallons and no discount for anything above 30,000 gallons.
- (9) 25% of revenue is allocated to capital improvements.
- (10) The annual \$300 charge is collected via water billings and is allocated to capital improvements.
- (11) \$69.46 bi-monthly water service charge for 0-800 cubic feet, then \$8.92/100 cubic feet for 801 cubic feet and above.
- (12) Based on share of 1% County levy. This "allocation" by the County of Sonoma was estimated at \$467,605 for 19/20, of which 100% was allocated to water amounting to \$420 per service. The 20/21 estimate will not be available until June.
- (13) Tiered Rates of 5-12 ccf @ \$3.00/ccf; 13 to 24 ccf @ \$5.00/ccf, 25 to 36 @ \$6.00/ccf, 37 to 48 @ \$10.00/ccf, 49 to 60 @ \$12.00/ccf and 61+ @ \$28.00/ccf. Each customer is entitled to use up to 4ccf of water (approx 50 gallons a day) over the two-month period at no charge.
- (14) Includes a proposed bi-monthly increase of \$6.91.
- (15) Rate shown is weighted average of Point Reyes Station, Olema, Bear Valley/Inverness Park & Paradise Ranch Estates and includes a Proposed 4.5% commodity rate increase. Tier rate charges do not apply to the typical residential customer as median use does not exceed the 400 gpd tier rate threshold.
- (16) West Marin Service Area receives an allocation of the 1% County levy projected at \$60,000 in 2021/22, amounting to \$77 per service.
- (17) In 2016 the PUC agreed to consolidate Cal Water's Redwood Valley rates with its "Bayshore District" (South Bay) rates. Roughly 2,000 connections in the Redwood Valley District, of which Coast Springs is a part, are now combined with Bayshore's 54,000 connections, resulting in a significant rate reduction for Coast Springs customers.

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2021 COASTAL AREA SEWER COST COMPARISON

Comparison of NMWD's Charges with Other Agencies based on Charges in effect on 7/1/21

	No. of	Monthly	Annual	
	Sewer	Service	Тах	Annual
Agency	Services	Charge	Revenue ⁽¹⁾	Total
> NMWD Oceana Marin	235	\$103.00 ⁽²⁾	\$272 (3)	\$1,508 <
Bolinas Community PUD	163	\$117.58	\$0	\$1,411
Marshall Community Wastewater System	52	\$103.93 ⁽⁴⁾	\$0	\$1,247
Tomales Village CSD	108	\$81.90	\$83 ⁽⁵⁾	\$1,065
Stinson Beach Co Water - Inspection Only	710	\$39.65 ⁽⁶⁾	\$368 ⁽⁷⁾	\$843
Bodega Bay PUD	1,074	\$61.10	\$0	\$733

Notes:

- (1) Includes taxes for debt service on outstanding sewer bonds and loans plus any applicable allocation of the AB8 1% County levy distributed to compensate for the Prop 13 elimination of the operation and maintenance tax.
- (2) Includes proposed increase of \$5/month.
- (3) Based on share of 1% County levy. This "allocation" is projected by the County of Marin at \$64,000 for 2021/22 which equates to \$272 per service.
- (4) Community wastewater step-system commenced October 2008. Each parcel has own septic tank, pumped to a community collection tank, then pumped into a community leach field. Rate shown is last year's rate. Rates are based on the Bay Area CPI at April 30th which will be available toward the end of May. Rate used is the April 2020 rate.
- (5) Based on home with net AV of \$413,100 (average 2020/21 AV on 80 single family homes in Tomales) and tax rate of 2.0¢/\$100 AV.
- (6) On-Site Wastewater System no sewer system. Services provided include septic inspections, ground and surface water monitoring and other inspections required by the State Water Quality Control Board. In addition to the cost paid to Stinson Beach Water Co., each customer must purchase and install their own on-site wastewater system.
- (7) Stinson Beach shares in 1% County levy. This "allocation" was projected by the County of Marin at \$870,102 for 2020/21 of which 30% was allocated to sewer amounting to \$368 per service.

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4/13/2021



NOTICE OF PUBLIC HEARING REGARDING PROPOSED REVENUE INCREASES AND RATE STRUCTURE CHANGES For the West Marin Water System Service Area

This Notice provides information about proposed increases to North Marin Water District's West Marin Water System Service Area water rates and charges and proposed rate structure modifications. The Board of Directors will hold a public hearing at which public comments will be considered and written protest will be counted before the Board votes on the proposed changes.

HEARING DATE: Tuesday, June 22, 2021 TIME: 6:00 p.m. LOCATION*: North Marin Water District 999 Rush Creek Place Novato, CA 94945

The District proposes increasing revenue and revising the water rate structure for fiscal year 2021-2022. If approved at the public hearing on June 22, 2021, the new rates and rate structure changes will go into effect on July 1, 2021.

*Should COVID-19 restrictions remain in effect in Marin County at the time of the scheduled public hearing, additional information regarding accommodating public participation shall be provided on the District website at www.nmwd.com.

REASONS FOR THE PROPOSED REVENUE INCREASE

The key reasons rate revenue increases are needed are described below.

Continued investment in water facilities. The District must continue to make investments in facility upgrades and replacements that will benefit the West Marin Water System's fire protection, water supply, and aging infrastructure. This will help to properly maintain the service area's treatment plant, 26 miles of pipeline, 7 pump stations, 13 tanks, 3 wells, 168 hydrants, monitoring systems, and more.

Impact of inflation on all costs. The proposed revenue increase is designed to meet all the costs of providing water service, all of which rise every year with inflation. These costs include treating and delivering safe, highquality, reliable water to your home or business without fail, every day and around the clock.

REASONS FOR THE PROPOSED RATE STRUCTURE CHANGES

The cost for serving each class of customers varies over time because of changes in customer water use, state regulations, service costs, and other factors. The District engaged Hildebrand Consulting, an experienced rate consultant, to review its water rate structure for the West Marin Water System Service Area. The proposed changes to the water rate structure are based on the recommendations of the consultant and will ensure that each class of customer continues to pay their fair and proportional share of costs.

DOLLARS SAVED

Cost control is a daily focus of the North Marin Water District, which is one reason our West Marin water rates are the second lowest when compared to other West Marin Coastal Area Retail Water Agencies. Here are some of the ways we have kept rates down.

- We participate in a local agency chemical purchase pool to get the best pricing available based on economies of scale.
- We obtained 57% grant/outside contribution funding for the \$0.7 million Lagunitas Creek Streambank Stabilization project.
- We obtained 98% grant funding for the \$1.3 million Gallagher Well Field Transmission Pipeline project.
- We reduced the number of full-time employees from 58 a decade ago to 54 today.

Details of the Proposed Revenue

Proposed 6% revenue increase. North Marin Water District is proposing a global 6% rate revenue increase in its West Marin Water System in order to cover the increasing costs of providing potable water that is reliable, high quality, environmentally responsible and reasonably priced.

Proposed rate structure modifications will result in individual customer bills that may increase more or less than the 6% global rate revenue increase. The District conducted an extensive cost of service study examining every aspect of service, including water supply, treatment, delivery, facility replacement/ upgrades, and many other factors. The study identified changes in the proportion of costs required to serve each customer class (residential and commercial). The rate structure modifications are part of a necessary process to update rates to reflect current customer water use, state regulations, the cost to provide service, rate structure approach, and recent case law. The proposed rate structure will ensure that each customer class continues to pay a fair and proportional share of the utility's costs.

PROPOSED BI-MONTHLY FIXED SERVICE CHARGES

The bi-monthly fixed Service Charge is made up of an account charge and a meter charge. The meter charge is based on an industry standard that apportions costs based on meter size and flow capacity. Most single-family residential customers have a 5/8" meter. Residential accounts that have a 1" meter due to fire requirements, but would otherwise have a 5/8" meter, are charged at the 5/8" meter rate.

PROPOSED BI-MONTHLY FIXED SERVICE CHARGE FOR POTABLE WATER					
Meter Size	Current	Proposed			
(in inches)	Fixed Charge	Fixed Charge			
5/8″	\$35.68	\$42.59			
PRE* 5/8"&1"**	\$54.08	\$42.59			
1"**	\$71.36	\$104.80			
1.5″	\$87.05	\$208.47			
2″	\$135.74	\$332.88			
3″	\$268.77	\$664.64			
4"	\$431.59	\$1,037.87			

*PRE is the area of Paradise Ranch Estates

**Residential accounts that have a 1" meter due to fire requirements, but would otherwise have 5/8" meter, are charged at the 5/8" meter rate.

To learn how the proposed rates will affect your specific water bill, check out the District's water cost calculator, available at <u>mwd.com/account/annual-cost-calculator</u>.

The proposed changes in rates are based on detailed engineering, financial, and legal evaluations carried out with the help of recognized experts in water rates. The rates conform to California law requiring that each class of customers (residential and commercial) pay their proportionate share of the cost to serve them.

The maximum rates that may be imposed are shown in this document. Prior to implementing the rates, the Board of Directors may choose to implement the full amount or less, but not more.

Increases and Rate Structure Changes

PROPOSED TIERED QUANTITY (USAGE) CHARGES

The proposed update to Quantity (usage) Charges reflect the cost of the different sources of water in the tiered and seasonal rates. Tier 1* (1-250 gallons per day (GPD)) is based on the cost of drawing water from existing wells and half of the capital costs associated with developing a new well. Tier 2* (251-600 GPD) includes all of Tier 1 costs, as well as the remaining capital costs associated with the new well. Tier 3* (>600 GPD) includes all of the Tier 2 costs, as well as the costs of the District's conservation program. Usage charges may include an elevation (hydraulic) zone charge to recover the costs of pumping water to higher elevations.

PROPOSED BI-MONTHLY TIERED USAGE RATES FOR RESIDENTIAL POTABLE WATER						
Quantity Charge	CURRENT RATES			PROPOSED RATES		
Per 1,000 Gallons	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
Residential Elevation Zone 1	\$9.66	\$13.38	\$21.45	\$8.88	\$12.91	\$18.33
Residential Elevation Zone 3	\$10.61	\$14.33	\$22.40	\$9.98	\$14.01	\$19.43
Residential Elevation Zone 2	\$9.91	\$13.63	\$21.70	\$11.07	\$15.10	\$20.52
Residential Hydraulic Zone 4	\$16.12	\$19.84	\$27.91	\$15.04	\$19.07	\$24.49

PROPOSED BI-MONTHLY TIERED USAGE RATES FOR COMMERCIAL POTABLE WATER					
Quantity Charge	CURR	ENT RATES	PROPOSED RATES		
Per 1,000 Gallons	Winter	Summer	Winter	Summer	
Commercial Hydraulic Zone 1	\$9.77	\$13.51	\$8.88	\$18.33	
Commercial Hydraulic Zone 3	\$10.72	\$14.46	\$9.98	\$19.43	
Commercial Hydraulic Zone 2	\$10.02	\$13.76	\$11.07	\$20.52	
Commercial Hydraulic Zone 4	\$16.23	\$19.97	\$15.04	\$24.49	

*Current Tier Allocations: Tier 1 (0-400 GPD), Tier 2 (401-900 GPD) and Tier 3 (>900 GPD).

PROPOSED FIRE SERVICE CHARGES

Fire Service Charges apply to commercial connections with fire sprinklers. The charges are based on the actual cost of maintaining fire service lines.

PROPOSED BI-MONTHLY FIRE CONNECTION CHARGE				
Service Size	Current	Proposed		
1″	\$17.85	\$15.09		
2″	\$17.85	\$19.91		
4"	\$32.99	\$55.54		
6"	\$64.35	\$78.02		
8″	\$98.44	\$103.70		
10"	\$128.71	\$135.80		

PROPOSED BI-MONTHLY USAGE RATES FOR OTHER WATER SERVICES

These charges are for additional services that are offered to customers.

PROPOSED BI-MONTHLY USAGE RATES					
Quantity Charge Per 1,000 Gallons					
Water Type	Current	Proposed			
Temporary	\$19.97	\$15.10			
Outside Improvement District	\$3.85	\$4.08			



990 Rush Creek Place PO Box 146 Novato, CA 94945 nmwd.com

BOARD OF DIRECTORS

James Grossi, President Stephen Petterle, Vice President Jack Baker, Director Rick Fraites, Director Michael Joly, Director

GENERAL MANAGER Drew McIntyre

> Notice of Public Hearing on Proposed Revenue Increases and Changes to the Rate Structure

Where to Learn More, Get Answers, and Make Comments

CONTACT US:

Phone: 415-897-4133 Email: info@nmwd.com

VISIT OUR WEBSITE: www.nmwd.com

VISIT OUR OFFICE: North Marin Water District 999 Rush Creek Place Novato, CA 94945

ATTEND THE BOARD HEARING

The Board will review and consider adopting the rate increases and rate structure modifications on June 22, 2021, at 6:00 p.m. at the North Marin Water District, 999 Rush Creek Place, Novato, CA 94945. Should COVID-19 restrictions remain in effect in Marin County at the time of the scheduled public hearing, additional information regarding accommodating public participation will be provided on the District's website at www.nmwd.com.

At the Public Hearing: The Board of Directors will accept and consider all written protests and will hear and consider all verbal comments to the proposed rate increases and rate structure modifications at the Public Hearing. Verbal comments must be accompanied by a written protest to qualify as valid a protest. At the conclusion of the Hearing, the Board of Directors will consider adoption of the proposed revenue increases and changes to the rate structure described in this notice. If written protests of the proposed changes are presented by a majority of the property owners or tenants subject to the proposed changes, the proposed rate increases and rate structure modifications will not be adopted.

How to Protest the Proposed Changes

Any owner of a parcel upon which the water service charges are proposed to be changed, or any tenant that directly pays the water bill for such parcel, may submit a written protest of the proposed rate changes. Only one protest will be counted per parcel. Written protests must: (1) state that the property owner or tenant is opposing the proposed increases; (2) provide the location of the parcel (by street address, assessor's parcel number, or customer account number); and (3) include the name and signature of the property owner or tenant submitting the protest. Written protests may be submitted by mail or in person to the District Secretary at North Marin Water District, 999 Rush Creek Place, Novato, CA 94945, or in person at the Public Hearing. All written protests must be received prior to the close of the public input portion of the Public Hearing. Protests submitted via email or other electronic means will not be accepted. Please mark the protest: Attn: West Marin Rate Hearing.

PRSRT STD U.S. POSTAGE PAID SAN RAFAEL, CA PERMIT NO 2



999 Rush Creek Place P.O. Box 146 Novato, CA 94948-0146

PHONE 415-897-4133

EMAIL info@nmwd.com WEB www.nmwd.com

April 30, 2021

RE: Notice of Proposed Oceana Marin Sewer Service Cost Increase

Dear Customer:

This letter is to advise you of a **proposed increase to the Oceana Marin sewer service charge** that would take effect on July 1, 2021. It also provides information about a **Public Hearing scheduled on June 22, 2021**, at which time written protests and oral comments will be considered and a vote on the proposed increase will be taken by the North Marin Water District Board of Directors.

How much is the proposed rate increase?

Current Oceana Marin sewer service charges are \$98/month (\$1,176/year). A **5% increase** is proposed equaling \$103/month (\$1,236/year).

How will the proposed increase affect my sewer bill?

Oceana Marin sewer service charges are collected on the Marin County property tax bill, which is rendered annually for the fiscal year period July 1 through June 30. The proposed sewer service charge increase would add \$5 per month to the cost of sewer service for all customers in Oceana Marin, resulting in a total annual charge for fiscal year 2021/22 of \$1,236 (\$103 per month for July 2021 through June 2022).

Why are rates being increased?

In January 2016 the District concluded a Master Plan Update that identified over \$3 million in projects necessary to improve the reliability and redundancy of the Oceana Marin Wastewater System. Constructing these improvements will be financially challenging for the 235 customers of the Oceana Marin utility. Even if the projects are constructed over a 20-year period, the cost would still average \$150,000 annually. The proposed increase, if enacted, would generate approximately \$14,100 of additional revenue annually (\$60/year X 235 customers). The entire Master Plan Update is available for review at: https://nwwd.com/wp-content/uploads/2020/04/011916-1.pdf.

Additional rate increases will be necessary in future years as the District continues to improve the reliability of the existing facilities and to construct redundant facilities in order to protect against potential system failure and sewage spills. Prior years' rate increases were in-line with financing the CIP plan on a pay-go basis while the current 5-year financial plan includes an annual rate increase of 5% for FY 21/22 and 5% thereafter, and forecasts borrowing funds to complete the plan.

Public Hearing

A public hearing before the NMWD Board of Directors to consider the proposed sewer service charge increase is scheduled for 6:00 pm, Tuesday, June 22, 2021, at the North Marin Water District, 999 Rush Creek Place in Novato. Should COVID-19 restrictions remain in effect, for in-person meeting attendance in Marin County, at the time of the scheduled hearing additional information regarding participation regarding accommodating public participation shall be provided on the District website at <u>www.nmwd.com</u>.

The Board of Directors will accept and consider all written protests and will hear and consider all verbal comments to the proposed sewer service charge increase at the Public Hearing. Verbal comments must be accompanied by a written protest to qualify as a valid protest. At the conclusion of the Hearing, the Board of Directors will consider adoption of the proposed sewer service charge increase as outlined in this notice. If written protests to the proposed sewer service charge increase as outlined in this notice. If written protests to the proposed sewer service charge increase are presented by a majority of the property owners, the proposed increase will not be adopted.

Your written protest must be received prior to the close of the June 22, 2021 public hearing. Written protests must: 1) state that the property owner is opposing the proposed increase 2) include the name and signature of the property owner; and 3) must include a description of the parcel (parcel number or service address). Only one written protest will be counted for each property. Send or deliver written protests to:

District Secretary North Marin Water District PO Box 146 Novato, CA 94948

For more information about the North Marin Water District, including a history of the Oceana Marin Sewer System, or to view the most recent Coastal Area Sewer Cost Comparison or the District's audited financial statement, visit NMWD's website at <u>www.nmwd.com</u> or call the District Secretary at (415) 897-4133.

Sincerely,

DMQ

Drew McIntyre General Manager

t:\ac\budget\fy-2021.22\rate increase & prop 218\om increase Itr to customers 2021.docx



MEMORANDUM

To: Board of Directors

April 16, 2021

From: Drew McIntyre, General Manager

Subject: Renew Declaration of Local Emergency Related to COVID-19 Pandemic t/gm/bod misc 2021/renew covid emergency declaration #25 4_16_21.doc

RECOMMENDED ACTION:

Approve continuation of the local emergency resulting from the COVID-19 pandemic as declared in District Resolution No. 20-07

FINANCIAL IMPACT:

~\$174,735 as of March 31, 2021 (total fiscal impacts are currently unknown)

On March 4, 2020, the Governor of the State of California declared a State of Emergency as a result of the coronavirus (COVID-19) pandemic. On March 13, 2020, the President of the United States declared a National Emergency as a result of the threat of COVID-19.

On March 16, 2020, the County of Marin by Order of the Health Officer issued a Shelter in Place Order limiting the travel of all county residents and ordering county businesses to cease all non-essential activities and to take further actions as described in said Order through April 7, 2020. The order limits activity, travel and business functions to most essential needs.

On March 16, 2020 the General Manger, as the District's Emergency Manager activated the District's Emergency Operations Plan.

On March 19, 2020, Governor Newson issued Executive Order N-33-20 ordering all individuals living in California to stay home at their place of residence, with certain exceptions for critical services and other qualifying exceptions. This shelter-in-place order has no specified termination date.

On March 31, 2020, the County of Marin by Order of the Health Officer issued an extended Shelter in Place Order through May 3, 2020 that is more restrictive than the original order. The new order continues to provide an exception for the operations and maintenance of "Essential Infrastructure," which includes, but is not limited to, water, wastewater, and recycled water service. Exemptions are also in place for Essential Government Functions, for certain "Minimum Basic Operations," for emergency management functions, for certain narrowly prescribed "Essential Business" functions, and for certain qualifying private construction, such as housing projects meeting low-income needs. Memo re Continuation of Local Emergency April 16, 2021 Page 2 of 4

On April 29, 2020, Marin County and the other six Bay Area Public Health Officers issued a new order effective May 4, 2020 through May 31, 2020. Marin's public health order concerning use of face coverings does not have an end date and will remain in place until further notice. Under the May 4th Shelter-In-Place order, construction activities, certain businesses that operate primarily outdoors, and some outdoor activities will be allowed to resume with specific conditions.

On May 15, 2020, Marin County issued a new order allowing a limited number of additional businesses and activities to resume operations subject to specified conditions. In particular, office spaces were allowed to resume operation on June 1, 2020 subject to strict compliance with specific Marin County requirements. This new order has no end date and is to remain in effect until rescinded or superseded.

On July 13, 2020 Governor Newson issued a statewide order to dial back on recent loosening of restrictions due to a significant increase in the number of confirmed cases. As a result, various activities in Marin County were once again closed down, including: office space for non-essential operations, indoor malls, hair salons/barbershops and indoor seating at restaurants.

On September 15, 2020, Marin County successfully appealed to the California Department of Public Health (CDPH) to move into Tier 2 in the state's COVID-19 response framework. Moving from Tier 1, or "widespread" COVID-19 community risk (or purple) status, to the Tier 2 "substantial" (or red) status risk category allowing more businesses to reopen.

On October 27, 2020 Marin County was notified that California was moving the county from Tier 2 or "substantial risk" status to the Tier 3 or "moderate risk" level due to fewer daily cases, and a reduction in the positivity rate.

On November 16, Governor Gavin Newsom announced that CDPH officially moved Marin County from orange Tier 3 ("moderate risk") to the more restrictive red Tier 2 ("substantial risk") on its Blueprint for a Safer Economy. The step back comes just three days after the Marin County Department of Health and Human Services (HHS) notified local businesses and agencies about preemptive restrictions to stem the virus' spread locally.

On December 3, 2020 Governor Newsom announced that all sectors other than retail and essential operations will be closed in regions of California when less than 15% of intensive care unit (ICU) beds are available under a new Regional Stay Home Order. Marin County proactively implemented the State's Regional Stay Home Order at noon on December 8th and the state officially

Memo re Continuation of Local Emergency April 16, 2021 Page 3 of 4

issued said Order to Marin County (as part of the Bay Area region) on December 17th.

On January 25, 2021, CDPH lifted the Regional Stay-Home Order for the Bay Area and statewide. All 11 counties in the Bay Area, including Marin, thereby moved into the purple (or Tier 1) stage within the State's "<u>Blueprint for a Safer Economy</u>".

On February 23, 2021, the State has announced that Marin County will move from "purple"(Tier 1) to "red" (Tier 2) status in the <u>Blueprint for a Safer Economy</u> effective Wednesday, February 24. The move from Tier 1 or "widespread risk" status to the less restrictive Tier 2 or "substantial risk" level is based on consecutive weeks of progress in Marin's <u>COVID-19</u> case statistics.

On March 11, 2021, the state opened up additional segments as eligible for the COVID-19 vaccination. This includes utility workers who have been reclassified as Emergency Service workers which includes water and wastewater workers and support staff (all NMWD employees)

On March 24th 2021, Marin moved from the Red status (Tier 2) to Orange status (Tier 3). This move relaxed indoor operation restrictions for a number of sectors. Non-essential offices may now reopen again.

On April 6, 2021, Governor Newsom announced that California will lift nearly all of its restrictions on business and gathering on June 15, 2021,

On April 7th, the Board of Directors approved Resolution No. 20-07 proclaiming the existence of a local emergency, granting the General Manager to take actions necessary for emergency response due to the COVID-19 pandemic until the State of Emergency is terminated.

Since April 21, 2020, the Board of Directors has, at every regular meeting, approved continuation of the local emergency resulting from the COVID-19 pandemic as declared in District Resolution No. 20-07.

District emergency planning has been aggressively implemented since March 16, 2020. The District's current COVID-19 Preparedness and Response Plan has been prepared to maintain optimum health and safety working conditions. As a result of the Plan, the District has adopted various housekeeping and physical distancing protocols and also instituted modified work schedules as appropriate. Initially approximately 50% of the District's staff were physically separated as much as possible by rotating shifts and having some employees work from home, but all critical operations needed to maintain essential services continue. Relocation of additional staff back to the District buildings, and certain other projects and activities has occurred and the District is now operating

Memo re Continuation of Local Emergency April 16, 2021 Page 4 of 4

with 86% of staff on-site or in the field full time. The balance of staff are teleworking from home with most coming into the office at least one day each week. Walk-in customer service is still suspended. A summary of key emergency actions taken and current estimated costs is provided in Attachment 1.

As the COVID-19 emergency continues in our service area, Staff is requesting the Board find that there still exists a need to continue the State of Emergency reflected by Resolution No. 20-07.

RECOMMENDED ACTION:

Approve continuation of the local emergency resulting from the COVID-19 pandemic as declared in District Resolution No. 20-07.
Emergency Actions Summary

Emergency Operations Team Actions

- Water treatment plants have been closed to all non-essential staff and the public; expanded social distancing and safety measures for essential plant staff.
- Public lobby in the District Administration building has been closed and customers have been provided with alternative methods for communicating with District staff.
- Developed guidelines for social distancing in the office and in the field; distributed guidance to all employees and posted social distancing protocol at facility entrances.
- Developed an initial rotational schedule for operations and maintenance staff to reduce staffing density on-site and minimize the number of employees on duty while completing essential work. (This approach reduced productivity, but improved the likelihood of healthy backup staff.)
- During initial response, shifted ~50 percent of employees to rotating schedule and/or rotating work currently ~15% of employees are on full or partial temporary telework assignments.
- Procured additional District cell phones for field staff to have better access to District communications and direct contact with supervisors.
- Disinfected District vehicles and reconfigured vehicle assignments to accommodate single occupancy to allow for social distancing, including re-deployment of vehicles scheduled for auction.
- Suspended discretional water service turn-offs for the duration of the emergency declaration.
- Continuing coordination with local agency, county and state contracts to share information and implement best practices.
- Participating in weekly multi agency coordination calls through Marin County Office of Emergency Services (OES).
- Updating public website, messaging and social media posts as necessary including messages on suspension of walk-in services and water safety and reliability.
- Spring 2020 Waterline newsletter, direct mailed to all customers, included COVID-19 messaging with information on water safety and reliability.
- Posted magnetic signage on vehicles to inform public to respect distancing around crews.
- Issued guidance on face coverings in compliance with Centers for Disease Control and Prevention and County recommendations; revised to address April 29 County order generally requiring members of the public and workers to wear face coverings.
- Developed and rolled out an employee self-assessment screening questionnaire for use by any District employee or vendor prior to entering a District workspace; self-assessment questions are reviewed and updated as needed.
- Continue to procure necessary face coverings and personal protective equipment, including disposable masks, face covering and N95 equivalent masks.
- Tracking customer delinquency and comparing to last year to asses potential revenue impacts.

Emergency Actions Summary April 16, 2021 Page 2

- Developing a living "lessons learned" document.
- Installed hand disinfecting stations at District facilities.
- Expanded use of District's on-call requirements to ensure construction crew staff maintain their work "bubbles" to ensure adequate back-up staff availability.
- Increased janitorial services to include disinfection of frequently touched areas (door handles, knobs, etc.).
- Modified work spaces to improve physical separation between staff.
- Developed a COVID-19 Preparedness and Response Plan and provided training.
- Implemented a daily self-assessment reporting program for all staff reporting to work.
- Modifying District office front lobby in preparation of re-opening walk-in services (Date to be determined).
- Installed "No Touch" drinking fountains in both Administration Building and Construction Building.

General Manager Authorizations

- Extended vacation accrual maximums from July 1, 2020 to September 30, 2020.
- Extended FY 2019/20 vision insurance reimbursement eligibility from July 1 to August 31, 2020.

COVID Cost Summary

PROCUREMENT EXPENSES

Vendor Purchases	Procurement Type	Total Purchase Order Amount	Date
Durkin Signs & Graphics	Magnetic "Social Distance" Signs	\$1,077	4/14/2020
Winzer Corporation	Surgical Masks (2,000)	\$3,751	4/15/2020
Boucher Law	COVID Protection Plan + Ongoing Support	\$12,778	3/2020-2/2021
JCA Construction	Misc. Office Social Distancing Modifications	\$13,177	6/30/2020
Winzer Corporation	Surgical Masks (2,000)	\$1,592	7/6/2020
Novato Glass	Plexiglass	\$3,969	6/9/2020
Amazon	Face Masks (12)	\$54	6/30/2020
USA Bluebook	Digital Forehead Thermometers (2)	\$218	7/30/2020
Amazon	Digital Thermometers (20)	\$144	6/24/2020
Amazon	Face Masks (120)	\$405	8/20/2020
Winzer Corporation	Surgical Masks (2,000)	\$570	1/14/2021
Total Procurement Amount To-Date		\$37,735	

Emergency Actions Summary April 16, 2021 Page 4

Internal Labor Expenses

Increased on-call labor costs:	~\$87,900 thru February 28 2021 ~\$94,500 thru March 31, 2021
Families First Coronavirus Response Act (FFCRA) Allows employees to take time off for COVID medical reasons and/or childcare.	~\$33,500 thru February 28, 2021 ~\$33,900 thru March 31, 2021
Payroll Collection Costs	~\$7,060 thru February 28, 2021 ~ \$8,600 thru March 31, 2021

Water Bill Delinquency Impacts

<u> </u>	3/2020	3/2021
Customer Accounts Past Due (count)	3.6%	3.7%
Delinquent Balances % Due on Account	9.0%	10.6%
Delinquent Balances \$ Due on Account	\$92,000	\$129,000

t:\gm\bod misc 2021\emergency actions summary 4.16.21 attachment 1.docx



MEMORANDUM

TO:	Board of Directors	April 16, 2021
FROM:	Drew McIntyre, General Manager	
SUBJ:	Gallagher Well No. 2 Coastal Permit Appeal (County r/folders by job no/6000 jobs/8609.20 new gallagher well #2/bod memos/ coastal permit appeal of	ID P3010) 14_16_21.doc

RECOMMENDED ACTION: Information Only

FINANCIAL IMPACT: Unknown at this time

Design for installation of Gallagher Well No. 2 is complete and staff is ready to move forward with requesting Board approval for advertisement of the well installation phase. The Board approved the CEQA Addendum for this Project and adopted a Resolution finding the proposed mitigation measures were consistent with the previously approved 2009 Mitigated Negative Declaration for the Project and filed a Notice of Determination with the county on March 5, 2021. No protest was received during the 30-day posting period.

The project site, located to the north of the existing Gallagher Well No. 1 site at the Gallagher family ranch, is within the Coastal Zone and therefore subject to the policies of the Marin County Local Coastal Program (LCP). The District submitted an LCP permit application to the Marin County Community Development Agency (CDA) which is responsible for processing a Coastal Permit application. The Marin County CDA held a public hearing on March 25, 2021 for the Project's LCP permit (see Attachment 1) and the Deputy Zoning Administrator (DZA) approved the Use Permit at the same hearing (see Attachment 2). The DZA also indicated that interested parties may appeal the decision to the Marin County Planning Commission within five business days. An appeal was submitted by Save Our Seashore (SOS) within the five-day window (Attachment 3).

Construction of Gallagher Well No. 2 is being suspended due to this appeal. Staff is consulting with legal counsel on the appeal and we continue to have regular meetings. The next step is for the Marin County Planning Commission (MCPC) to hear the appeal. The tentative MCPC hearing date is May 24th, 2021. Our environmental consultant, ESA, has been asked to prepare a response to SOS' appeal so that it can be submitted to Marin County CDA staff in advance of the MCPC Appeal Hearing.

COMMUNITY DEVELOPMENT AGENCY PLANNING DIVISION

COUNTY OF MARIN

STAFF REPORT TO THE MARIN COUNTY DEPUTY ZONING ADMINISTRATOR Gallagher Family Coastal Permit and Use Permit			
Recommendation: Approval Hearing Date: March 11, 2021			
Application No(s): Agenda Item: Last Date for Action:	P3010 1 4/8/2021	Owner(s): Assessor's Parcel No(s): Property Address: Project Planner: Signature:	Gallagher Family LLC 119-050-17 14500 Pt. Reyes-Petaluma Road, Point Reyes Immanuel Bereket
		Dunte	>
Countywide Plan Designation: Community Plan Area: Zoning District: Environmental Determination:		C-AGI-1 (Coastal Agricultural) N/A C-APZ-60 (Coastal, Agricultural Production Zone) Mitigated Negative Declaration North Marin Water District as the lead agency.	

PROJECT SUMMARY

The applicant, Drew McIntyre, on behalf of the North Marin Water District (NMWD) and the the Gallagher Family, is requesting a Coastal Permit and Use Permit approval to construct and operate a municipal well to provide water for customers in its service area in the community of Point Reyes Station. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1"). is located on the project site. The purpose of the project is to increase the reliability of water supply and to offset the loss of water production at the other public wells located on the U.S. Coast Guard property. The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells, which would be located approximately 500 feet north of the existing well. The proposed well would tie into the existing water transmission pipeline located south of the private Gallagher Ranch access road. The proposed well and distribution pipelines would occur within 100 feet of Lagunitas Creek, which traverses the project site.

As part of this project, the NMWD would abandon the existing Downey Well that lies within the Lagunitas Creek stream channel. This well is a hazard, causes adverse impacts to the stream, and produces water with unsafe water quality. The Downey Well was initially constructed on the bank of the stream, but the creek has migrated and captured the wellhead, and thus it is now located in the middle of the creek. Other improvements proposed include the construction of

ATTACHMENT 1

water distribution pipelines, pump stations, a well field, and other components both within and outside the project site.

Coastal Permit approval is required under Section 22.56.055(C) of Marin County Development Interim Code because the project involves the construction of a well; and (2) Use Permit is required pursuant to Section 22.57.033I(17) of Marin County Development Interim Code because project proposes to construct water facility.

PROJECT SETTING

Characteristics of the site and surrounding area are summarized below:

Lot Area: Adjacent Land Uses: Topography and Slope:	14,378,720 square feet (330 acres). Active grazing and Agricultural uses. 30 percent average slope
Existing Vegetation:	The site is moderately covered with vegetation. Vegetation consists of a non-native annual grassland and mature trees along the entire perimeter of the property.
Environmental Hazards:	The project is located in a Seismic Shaking Amplification Hazard Area Zone 2, but is not located within the vicinity of any known fault lines.

The project site consists of a 330-acre ranch within an agricultural production zone (APZ). It is currently used for grazing. The well site is located on a small land area within the Lot (130 feet by 85 feet. The site is sparsely improved with a residence, driveway, and a grove of various mature trees are located along the entire perimeter of the property. Point Reyes-Petaluma Road provides access to the site. The only residence near the well site is the residence on the Gallagher Ranch, which is located approximately 300 feet east of the existing well site and 400 to 800 feet from the proposed well site.

The surrounding agricultural land is characterized by grassy and steeply sloping hills, fencing, and open space. Development in the surrounding area is sparse, with occasional residences punctuating the otherwise open landscape. Much of the area is actively used for grazing and active farming. The nearest residences on adjacent ranches are more than one-half mile away from the proposed site. A segment of the Lagunitas Creek, identified as a blue-line stream on the most recent edition of the USGS 7.5-minute quadrangle map, traverses the property. An existing District well is located within approximately 100 feet of the creek channel.

BACKGROUND

The NMWD is a regulated public utility and provides water to Point Reyes Station, Olema, Inverness Park, and Paradise Ranch Estates from three wells and through a single interconnected system (the water supply network is collectively known as Point Reyes Water System). Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1") is located on the project site. The service area is approximately 24 square miles. The NMWD service area has approximately 776 active connections serving a population of 1,700, using approximately 263 acre-feet per year (AF/Y).

Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated

the construction of this project, Gallagher Well No. 2, as an urgent matter to protect the quality of water served. Additionally, the existing Gallagher Well No. 1 routinely underperforms. The proposed project would provide an additional source of water supply to be used when the Coast Guard Wells cannot be operated due to salinity intrusion and other operational conditions preventing pumping.

The NMWD is the public agency responsible for carrying out the proposed project and is considered the Lead Agency under the California Environmental Quality Act (CEQA). The NMWD approved a Mitigated Negative Declaration (MND) for the entire Point Reyes Water System, which consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells and Pipeline Project, which was approved by NMWD in 2009. The majority of proposed facilities have been constructed and are currently operational. While this new location is within the Gallagher Ranch project site described in the 2009 IS/MND, it requires an alternate alignment for the pipeline.

To address these minor project changes, the NMWD prepared and circulated a CEQA Addendum analysing the impacts of construction and operation of the proposed Gallagher Well No. 2, which was previously studied in the 2009 MND. The CEQA addendum was ciruclated on January 5, 2021 for a 30-day public review. On March 2, 2021, the NMWD Board approved a resolution adopting the Addendeum.

In addition to the Coastal Permit and Conditional Use Permit, the application would require other permits from the California State Water Resources Control Board, Division of Water Rights, the California Department of Fish and Game, and the California Public Utilities Commission ("CPUC"). The California Department of Fish and Game will review the proposed project and Water License amendment to ensure that the project will not significantly affect fish or other wildlife.

Upon receipt of this application on January 6, 2021, the project was transmitted to the Department of Public Works (DPW), Environmental Health Services (EHS), the California Coastal Commission (CCC), California Water Board, and posted online for public review and comments. Staff received a written memorandum EHS, two letters from Mr. Dan Logan, on behalf of an organization called Save Our Seashore, objecting to the project as well several correspondences from residents of West Marin in support of the project. Since the first of the two letters from Mr. Logan was submitted during the CEQA 30-day review, the NMWD prepared a detailed response to his comments that was incorporated into the final Addendum that the NMWD adopted. The second letter from Mr. Logan to NMWD calls into question the adequacy fo the CEQA documents for the project. The Calfiornia Code of Regulations, 14 CCR § 15164 Addendum to an EIR or Negative Declaration (b), authorizes use of an addendum to an adopted negative declaration "if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred." The Addnedum the NMWD Board adopted at its meeting of March 2, 2021, concluded that the proposed minor revisions to the project meet these criteria and adopted the addendum in compliance with CEQA regulations. All correspondences are provided as attachments to this report. The application was deemed complete on February 6, 2021.

RECOMMENDATION

Staff recommends that the Deputy Zoning Administrator review the administrative record, conduct a public hearing, and approve the Gallagher Family Coastal Permit Use Permit.

Attachments:

- 1. Recommended resolution
- 2. Marin County Environmental Health Services, memorandum dated January 9, 2021
- Letter from Save Our Seashore, dated February 1, 2021 and response from the district
 All other correspondences
- 5. Project plans

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

RESOLUTION NO.

A RESOLUTION APPROVING THE GALLAGHER FAMILY COASTAL PERMIT AND USE PERMIT 14500 PT. REYES-PETALUMA ROAD, POINT REYES STATION ASSESSOR'S PARCEL: 119-050-17

SECTION I: FINDINGS

1. **WHEREAS**, Drew McIntyre, on behalf of the North Marin Water District (NMWD) and the Gallagher Family, is requesting a Coastal Permit and Use Permit approval to construct and operate a municipal well to provide water for customers in its service area in the community of Point Reyes Station. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1"). is located on the project site. The purpose of the project is to increase the reliability of water supply and to offset the loss of water production at the other public wells located on the U.S. Coast Guard property. The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells, which would be located approximately 500 feet north of the existing well. The proposed well would tie into the existing water transmission pipeline located south of the private Gallagher Ranch access road. The proposed well and distribution pipelines would occur within 100 feet of Lagunitas Creek, which traverses the project site.

As part of this project, the NMVVD would abandon the existing Downey Well that lies within the Lagunitas Creek stream channel. This well is a hazard, causes adverse impacts to the stream, and produces water with unsafe water quality. The Downey Well was initially constructed on the bank of the stream, but the creek has migrated and captured the wellhead, and thus it is now located in the middle of the creek. Other improvements proposed include the construction of water distribution pipelines, pump stations, a well field, and other components both within and outside the project site.

The property is located at 14500 Pt. Reyes-Petaluma Road, Point Reyes Station, and is further identified as Assessor's Parcel 119-050-17.

2. **WHEREAS**, on March 25, 2021 the Marin County Deputy Zoning Administrator held a duly noticed public hearing to take public testimony and consider the project.

3. **WHEREAS**, the North Marin Water District adopted a Mitigated Negative Declaration (MND) in 2009 and subsequent addenda to the MND.

4. **WHEREAS**, the North Marin Water District (NMWD) prepared and adopted a Mitigated Negative Declaration (NMD) 2009, in accordance with the requirements of the California Environmental Quality Act Guidelines (14 Cal. Code Regs. 15000, et seq.).

5. **WHEREAS,** the NMWD prepared an Addendum to the 2009, which was circulated for a 30-day public review period and was adopted by the NMWD Board at its meeting of March 2, 2021.

6. **WHEREAS**, the proposed municipal water well will serve the public's critical need by creating a reliable water source for the communities of Point Reyes Station, Olema, Inverness Park, and Paradise Ranch Estates.

7. **WHEREAS,** the project is consistent with the goals and policies of the Marin Countywide Plan for the following reasons:

- A. As discussed in Section 6 below, the proposed project is compatible with the C-APZ land use designation for the project site. It would not interfere with the existing use of the ranch property for livestock grazing. The project will involve the construction of a municipal well that is accessory to the existing use. The design, location, size, and operating characteristics of the proposed facility will be compatible with the allowed uses in the vicinity.
- **B.** As discussed in Section 7 below, the mandatory Use Permit findings can be made under Section 22.48.040I of the Marin County Code to allow a public utility to service the public and is necessary for public safety, convenience, and welfare.
- **C.** The project would serve the critical water supply needs of the communities of Point Reyes Station, Olema, Inverness Park, and Paradise Ranch Estates.
- **D.** The project is consistent with the CWP woodland preservation policy (BIO-1.3) because it would not entail the irreplaceable removal of a substantial number of mature, native trees. No vegetation removal is proposed with this project.
- E. The project is consistent with the CWP special-status species protection policy (BIO-2.2) because the subject property does not provide habitat for special-status species of plants or animals.
- F. The project is consistent with the CWP natural transition and connection policies (BIO 2.3 and BIO 2.4) because it would not substantially alter the margins along riparian corridors, wetlands, baylands, or woodlands. As documented in the MND, two components of the proposed project would require work within the stream channel of Lagunitas Creek. Removing the existing wellhead of the Downey Well will require that an excavator, working from the top of the bank, remove the existing wellhead. No riparian vegetation would be removed to abandon the well. The relocated gauging station would be constructed on the edge of the Gallagher Ranch pasture and would not require removal of riparian or vegetation other than annual grasses.
- **G.** The project is consistent with the CWP stream and wetland conservation policies (BIO-3.1 and CWP BIO-4.1) because the proposed municipal water well is one of the types of improvements permitted within the WSA and SCA, provided such projects would not result in any significant adverse direct or indirect impacts on wetlands and minimize impacts to stream function and to fish and wildlife habitat.

As discussed above, the proposed project is to construct a municipal well to serve the public. Although the proposed project would be located adjacent to Lagunitas Creek, which is identified as a blue-line stream, no stream impoundments or direct diversions would take place as part of the project, nor would the propejct alter the stream channel or stream banks. As proposed, construction activities would not conflict with any Habitat

Conservation Plans, Natural Conservation Community Plans, or any approved local, regional, or State habitat conservation plans. Additionally, the project proposes to dedicate certain water rights for instream flows for the protection, preservation, restoration, and recovery of aquatic organisms and wildlife habitat. Although the project would occur within the SCA and WCA, the project would benefit wetland habitat by allowing the National Park Service to implement its planned Olema Marsh restoration by accessing additional water, which will enable full implementation of the beneficial Giacomini Wetland Restoration Project.

Strict adherence to the adopted Mitiation Monitoring and Reporting Program (MMRP) would ensure no impacts to the CWP stream and wetland conservation policies would occur.

- A. The project is consistent with CWP water quality policies and would not result in substantial soil erosion or discharge of sediments or pollutants into surface runoff (WR-1.3, WR-2.2, WR-2.3) because the grading and drainage improvements would comply with the Marin County standards and best management practices required by the Department of Public Works.
- **B.** The project would not cause significant adverse impacts on water supply, fire protection, waste disposal, schools, traffic and circulation, or their services.

8. **WHEREAS,** the project is consistent with the mandatory findings for Coastal Permit approval (Marin County Code Section 22.56.130I).

A. Water Supply.

The NMWD historically has relied on the two Coast Guard Wells (located to the south of its treatment plant, which is located approximately 500 feet from the end of Commodore Webster Drive at the Point Reyes Station Coast Guard Housing Facility) to supply water for the West Marin service area. Due to the wells' location in the upper tidal reach of Lagunitas Creek, they are under the influence of flows in the tidal reach of Lagunitas Creek and subject to periodic salinity intrusion and occasional flooding. The Gallagher Ranch site is upstream of any flooding and tidal reaches of Lagunitas Creek. However, the existing NMWD Gallagher supply well has a limited flow capacity (170 gallons per minute) and is not connected to the West Marin distribution system. This project would increase the Gallagher Well site's capacity and integrate those wells into the District distribution system. Because the Coast Guard Wells mostly have good water quality, and are reliable during most months, and have ample recharge, the Coast Guard Wells will continue to be the primary supply.

This new water source would be used during periods of high tides, avoiding saltwater intrusion into the existing primary supply wells (Coast Guard Wells). By establishing a reliable emergency backup source of water upstream of the high tide water influences of Tomales Bay, water service reliability will increase. The new well will serve West Marin communities of Point Reyes Station (including the Coast Guard housing area), Inverness Park, Paradise Ranch Estates, Bear Valley (including the Point Reyes National Seashore), and Olema. The North Marin Water District has an agreement to assist the Inverness Public Utilities District during emergency water shortages. The development of this supplementary supply, therefore, stands to benefit that community.

3

The project itself would not result in the need for additional water supply at the site for project construction or operation. The project would create an additional water source to increase water production capacity and supply to address water production deficiencies caused by underperforming (Gallagher Well No. 1). However, the project would not increase the total amount of water available to NMWD and its customers, but would provide an additional source of water supply to be used when the Coast Guard Wells cannot be operated due to salinity intrusion and other operational conditions preventing pumping.

The project would be consistent with planned development and planned growth in the region. The Local Coastal Plan (LCP) describes existing and projected growth in the region. The LCP also describes existing and projected water supply and demand in keeping with this projected growth. As described in the Project Purpose, the project would not increase the NMWD's water supply; rather, it would provide increased reliability for the Point Reyes Water Supply System to address increased saline intrusion and deficiency in water production. The project would offset pumping volumes obtained at the Coast Guard Wells only when unavailable due to salinity intrusion or other operational conditions preventing pumping. The amount of water pumped from all wells would remain within the limits set in the water right permits.

B. Septic System Standards.

The Marin County Environmental Health Services Division staff reviewed the proposed project and determined that the existing septic system would not be affected by the project.

C. Grading and Excavation.

The project site has various slopes, and the project is designed to fit the site's topography and existing soil conditions. The project would include digging an approximately 500-foot-long trench to place the pipeline and digging the 59-foot deep well. The land exposed at any one time during construction will be kept to the shortest possible time. As required by the MMRP, the area must be restored to a similar condition as before the project. All excavated soil and excess material will be hauled to NMWD's Corporation Yard in Novato for future use. The well pad would be the only impervious surface created by the project. Chemicals, fuels, and any other materials onsite would be used only for construction and would be properly disposed of within an authorized landfill.

D. Archaeological Resources.

The project site was surveyed for archaeological and historical resources in connection with the MND and the Gallagher Ranch bank stabilization project, which was completed in 2010. No archaeological resources were identified as part of this survey. While it is unlikely that the project would result in disturbances to cultural resources, in the event archeological resources are uncovered during construction, all work shall immediately cease, and the services of a qualified consulting archaeologist be engaged to assess the value of the resource and to develop appropriate mitigation measures.

E. Coastal Access.

The proposed project is not located adjacent to a shoreline. Therefore, the project would not have any impact upon coastal access.

F. Housing.

The proposed project would not result in the removal of a residential unit that would provide housing opportunities for people of low or moderate-income.

G. Stream and Wetland Resource Protection.

No-stream impoundments or direct diversions would take place as part of the proposed project: The proposed municipal well is allowed under the Marin County Interim Development Code Section 22.56.130I, G.1, which provides "[s]tream diversions shall be limited to necessary water supply projects..." and the minimum flows necessary to maintain fish habitat, existing water quality, and protect downstream resources are maintained, as determined by the Department of Fish and Game and the Division of Water Rights of the State Water Resources Control Board (SWRCB). Additionally, under the LCP's Natural Resources Policy 3.a, development of water supply infrastructure within mapped perennial or intermittent streams, including impoundments, diversions, channelizations, and other substantial alterations, are permitted, provided such projects minimize impacts on sensitive coastal resources. The LCP's Natural Resources Policy 3.b provides that for such water supply projects must "incorporate the best mitigation measures feasible, including erosion and runoff control measures, and revegetation of disturbed areas with native species. Disturbance of riparian vegetation shall be held to a minimum."

As described in the project documents, the project could result in a reduction in creek discharge. However, the magnitude of this reduction would be negligible and would not substantially reduce streamflow or lower water surface to the degree that would adversely impact stream habitat, and thus would not decrease stream flows, individually or cumulatively, below the minimum flow level required by the SWRCB.

H. Dune Protection.

The project site is located east of the community of Point Reyes Station. There are no naturally occurring dunes on or within the vicinity of the project site.

I. Wildlife Habitat Protection.

According to the project MND, no vegetation or special-status species and sensitive natural communities would be removed or impacted by the project. Additionally, no sensitive plant species are identified in the project area. Special-status animal species, including Steelhead and Coho were identified as present in the project area along Lagunitas Creek. However, the proposed project would be sited to avoid wildlife habitat areas and to provide buffers for such habitat areas. Additionally, MMRP 12-25 requires protection measures for special-status species. Adherence to the required mitigation measures described in the MND would minimize impacts to special status species.

J. Protection of Native Plant Communities.

The proposed project itself would not adversely impact native plant communities because of the location of the proposed well on the site where there is no vegetation. However, according to the MND, the project site includes special-status species and non-indigenous, naturalized annual grass species. These non-indigenous grasses threaten the re-establishment of native plant species. As required by the project MMRP, the project would include reseeding of disturbed areas with native vegetation appropriate for the habitat type following construction.

K. Shoreline Protection.

The subject property is not adjacent to the shoreline, and the proposed project would not result in adverse effects on the coastline. The project would not require additional shoreline protection.

L. Geologic Hazards.

The project is located in a Seismic Shaking Amplification Hazard Area Zone 2, but is not located within the vicinity of any known fault lines.

M. Public Works Projects.

The proposed project is not located near Highway 1, nor would it include any roadway improvements. As described in the application material, the purpose of the project is to protect the safety and reliability of NMWD's water supply for its consumers. The water from the project would help improve the existing water supply and quality. The project would not increase NMWD production capacity but would provide a supplemental supply source when the other well sites are unavailable. The project would not expand utility service beyond the existing service limits and would conform with the resource and visual policies of the LCP and Marin municipal code.

N. Land Division Standards.

The project does not include a land division or property line adjustment.

O. Visual Resources and Community Character.

Once the construction of the project is completed, project improvements would not be visible from public vantage points because of topography and existing vegetation. The small gauging station enclosure would be screened by vegetation between Point Reyes-Petaluma Road and the creek. The wellhead vault would be almost flush with the ground surface. Piping would be underground, except where it is attached to the underside of the Gallagher Ranch bridge. The pump control steel cabinet would be aboveground but screened for public view by roadside vegetation from Point Reyes/Petaluma Road. The project would not alter existing open space views in the area.

P. Recreational/Commercial/Visitor Facilities.

The project site is governed by C-APZ-60 (Coastal, Agricultural Production Zone) zoning regulations and would not provide commercial or recreational facilities.

Q. Historic Resource Preservation.

The project site is not located within an identified historic area of the LCP. The project site was surveyed for archaeological and historical resources in 2009 for the Gallagher Ranch bank stabilization project, and no historical resources were identified.

A California Historical Resources Information System (CHRIS) records search identified one existing resource of the Black Mountain Historic era ranch. The bridge over Lagunitas Creek was identified as a new historic resource. The project would not impact these resources because the well and the mains would be primarily underground.

9. **WHEREAS**, the proposed project is consistent with the governing C-APZ-60 (Coastal, Agricultural Production Zone, one unit per 60 acres maximum density) and required findings under Section 22.57.036l of Marin County Code because:

- A. The project would be compatible with and accessory to the existing agricultural uses on the property. Public water facilities like wells are conditionally permitted in the C-APZ zoning district. The proposed well would not significantly affect agricultural production on the Gallagher Ranch. The project would affect less than 0.01 percent of the 330-acre ranch and would not interfere with the operation of the existing livestock ranching operations; and
- **B.** The proposed improvements would not impair the open space and scenic values of the site.

10. **WHEREAS**, the proposed project is consistent with the mandatory findings to approve a Use Permit (Section 22.88.010I.2 of the Interim Marin County Code), as specified below.

A. Public utility and service use may be approved by Use Permit pursuant to Section 22.88.010I.2 of the Interim Marin County Code when it is found to be necessary for public health, safety, convenience, or welfare.

The proposed project would benefit the public health, safety, and welfare by providing safe water for domestic consumption. The project would reduce the need to pump at the Coast Guard Wells during high tides or other conditions where pumping is known to cause saltwater intrusion and contamination of the aquifer. The project would reduce the need for increased off-tide pumping (which is currently done to compensate for the times when high tides prohibit pumping). Due to salination, the NMWD have had to truck in water for its consumers. The proposed project would not only increase safety but would improve supply reliability. The project, therefore, will be beneficial for public health, safety, and welfare.

The project would further benefit the environment by providing water for plants, fish, and wildlife by permanently dedicating 212.7 acre feet (0.699 cfs) of Lagunitas Creek water that the District can currently divert to instream uses (i.e., for the benefit of

plants, fish, and wildlife using the creek). Reduction in off-tide pumping at higher rates would also benefit the Lagunitas Creek fishery by keeping more water in the stream.

- **B.** The proposed project would be consistent with the policies of the Marin Countywide Plan as discussed above.
- **C.** The proposed project would not result in visual impacts because the facility would be located over 400 feet from the nearest public roadway in an area that is partially screened from off-site locations by existing vegetation and topographical features. The project would not alter the drainage pattern of the area. The pipeline would be constructed in the road right-of-way and would not change area drainage patterns.
- **D.** The proposed project would be incidental to the primary agricultural use of the subject property for livestock grazing and would not alter or impair the character of the site.
- E. As conditioned, granting the Use Permit on the subject property would not be detrimental to the public interest, health, safety, convenience, or welfare of persons working or residing in the surrounding neighborhood.

SECTION II: ACTION

NOW THEREFORE, BE IT RESOLVED that the project described in condition of approval 1 is authorized by the Marin County Deputy Zoning Administrator and is subject to the conditions of project approval.

This decision certifies the proposed project's conformance with the requirements of the Marin County Development Code and in no way affects the requirements of any other County, State, Federal, or local agency that regulates development. In addition to a Building Permit, additional permits and/or approvals may be required from the Department of Public Works, the appropriate Fire Protection Agency, the Environmental Health Services Division, water and sewer providers, Federal and State agencies.

SECTION III: CONDITIONS OF PROJECT APPROVAL

NOW, THEREFORE, BE IT RESOLVED that the Marin County Deputy Zoning Administrator hereby approves the Gallagher Family Coastal Permit Use Permit subject to the conditions as specified below:

CDA-Planning Division

1. This Coastal Permit and Use Permit approval authorizes the construction of a municipal well provide water for customers in its service area in the community of Point Reyes. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1"). is located on the project site. The purpose of the project is to increase the reliability of water supply and to offset the loss of water production at the other public wells located on the U.S. Coast Guard property. The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells and would be located approximately 500 north of the existing well. The proposed well would tie

into the existing water transmission pipeline located south of the private Gallagher Ranch access road. The proposed well and distribution pipelines woold occur within 100 feet of Lagunitas Creek, which traverses the project site.

As part of this project, the NMWD would abandon the existing Downey Well that lies within the Lagunitas Creek stream channel. This well is a hazard, causes adverse impacts to the stream, and produces water with unsafe water quality. The Downey Well was initially constructed on the bank of the stream, but the creek has migrated and captured the wellhead, and thus it is now located in the middle of the creek. Other improvements proposed include the construction of water distribution pipelines, pump stations, a well field, and other components both within and outside the project site.

2. Plans submitted for a Building Permit shall substantially conform to plans identified as Exhibit A, entitled "Gallagher Well No. 2," consisting of 2 sheets prepared by North Marin Water District, received in final form on February 6, 2021, and on file with the Marin County Community Development Agency, except as modified by the conditions listed herein.

SECTION IV: VESTING

NOW THEREFORE, BE IT RESOLVED that unless conditions of approval establish a different time limit or an extension to vest has been granted, any permit or entitlement not vested within two years of the date of the approval shall expire and become void. The permit shall not be deemed vested until the permit holder has actually obtained any required Building Permit or other construction permit and has substantially completed improvements in accordance with the approved permits, or has actually commenced the allowed use on the subject property, in compliance with the conditions of approval.

SECTION V: APPEAL RIGHTS

NOW, THEREFORE, BE IT RESOLVED that this decision is final unless appealed to the Marin County Planning Commission. A Petition for Appeal and the required fee must be submitted in the Community Development Agency, Planning Division, Room 308, Civic Center, San Rafael, no later than five business days from the date of this decision.

SECTION VI: ADOPTION

ADOPTED at a regular meeting of the Deputy Zoning Administrator of the County of Marin, State of California, on the 11th day of March 2021.

ADD SPECIAL CONDITION 10

MICHELLE LEVENSON MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

Attest:

Michelle Reed DZA Recording Secretary

INTERDEPARTMENTAL TRANSMITTAL MARIN COUNTY ENVIRONMENTAL HEALTH SERVICES ROOM 236, 473-6907

DATE:	January 19, 2021		TYPE OF DOCUMENT
то:	Immanuel Bereket, Senior Planner		DESIGN REVIEW
FROM:	Gwendolyn Baert, Senior REHS		LAND DIVISION
RE:	Gallagher Family Coastal/Use Permit	Х	USE PERMIT
	Project ID P3010		VARIANCE
AP#:	119-050-17		MASTER PLAN
ADDRESS:	14500 Pt. Reyes Petaluma Rd., Point Reyes	X	COASTAL PERMIT
			LOT LINE ADJ.
			OTHER

THIS APPLICATION HA	S BEEN REVIEWED FOR THE	E FOLLOWING ITEMS:
X WATER	SEWAGE	SOLID WASTE
POOLS	HOUSING	FOOD ESTABLISHMENT
THIS APPLICATION IS I	OUND TO BE:	NY TYLET CONTRACT CONTRACTOR AND CONTRACT AND

FIND IT COMPLETE.

FIND IT INCOMPLETE UNTIL THE ITEMS LISTED BELOW HAVE BEEN SUBMITTED.

X FIND IT ACCEPTABLE AS PRESENTED, WITH THE FOLLOWING CONDITIONS.

RECOMMEND DENIAL FOR THE REASONS LISTED BELOW.

Marin County Environmental Health finds this project acceptable with the following conditions. The well construction will require a Well Drilling Permit from Marin County. The construction details will need to meet the requirements of a Community Water Supply Well, annular seal depth to be a minimum of 50 feet, unless the California State Water Board grants a variance to this condition.



🗰 🗯 Save Our Seashore 🗯 🗯

A 501(c)(3) Charitable Organization (EIN 94-3221625) Founded in 1993 to Protect Marin County's Ocean, Coasts, Estuaries, Watersheds and Creeks 40 Sumyside Dr. Inverness CA 94956 <u>gbatmuirb@aol.com</u> 415-663-1881

February 1, 2021

Re: 2021 North Marin Water District (NMWD) Gallagher Wells CEQA Addendum

Save Our Seashore respectfully requests that NMWD withdraw this Project (Gallagher Well #2) and do a comprehensive CEQA analysis of cumulative impacts for reasons cited below:

Piecemealing: The Addendum for this Project states "flow impacts during dry season pump tests indicate discernable, but de minimus alterations in flows during combined pumping of the two wells." But because the test on Gallagher Well #2 was done "while [Gallagher] Well #1 was actively pumping," the Addendum actually analyzes only the incremental impacts of Well #2 and not the "combined pumping of two wells." So, the Project has been piecemealed without an analysis of the cumulative impacts of all wells pumping simultaneously.

Changed Conditions: The Sutro Analysis (Appendix B of the Addendum) takes as a given the operating conditions outlined in NMWD's 2009 Initial Study/Mitigated Negative Declaration (IS/MND), which states that the Gallagher Wells #1 and #9 (emphasis ours) "would be used to supplement the existing Coast Guard wells, which are the primary water source" (pg1)...and "would be used during periods of high tides." Similarly, the Addendum states that "the Coast Guard Wells would continue to be in operation whenever water quality conditions allow," but there is no quantification of this commitment or trigger specified for the "conditions allowed." In fact, during the summer of 2020, Well #1 was not just "used during periods of high tides," but rather was operating continuously.

In contrast, D. McIntyre, NMWD states: "Our normal mode of operation since 2015 is to **operate primarily with the Gallagher Well** (100-150 gpm) [gallons per minute] and use one of the Coast Guard Wells to make up for any deficit supply. In the winter months, all demands are typically met solely with the Gallagher Well. However, during the summer months we need to also run one of the Coast Guard wells since the Gallagher Well can only produce 100-150 gpm."

Thus, the primary and supplemental wells have switched since the IS/MND. So, what the IS/MND described (but did not quantify) as temporary and intermittent stream impacts from the Gallagher wells are now chronic impacts.

Further, as described in the section below (Potential Intertic Problems), the IS/MND assumption (that flows sufficient to meet minimum requirements at the upstream US Geological Service (USGS) Park gage will always result in flows sufficient to meet minimum requirements at the downstream USGS Pt Reyes gage)...is simply not correct. These changed circumstances require a new cumulative and comprehensive CEQA analysis.

Other Contradictions to the IS/MND The IS/MND notes (emphasis ours): "NMWD is prohibited from diverting water from Lagunitas Creek when...From June 16 through November 1 of any dry year whenever there is less than 6 cfs in the creek as measured at the USGS Park Gauge....These same minimum flows would be required in the section between the Gallagher Wells and the Coast Guard Wells..." However, the USGS data for June 16-Nov 1, 2020 shows that in the for roughly half those days, the streamflow was less than the 6 cfs minimum, yet Well #1 continued to pump throughout the summer. We have asked NMWD for clarification, but as of the date of this letter, have had no reply. 1-1

Fair Argument: The Addendum states *"flow impacts during dry season pump tests indicate discernable, but de minimus alterations in flows."* We believe this admission represents a "fair argument" of potential impacts to the endangered Coho (Oncorhynchus kisutch), the endangered California freshwater shrimp (Syncaris pacifica) and to the threatened Steelhead (Oncorhynchus mykiss irideus) that are known to live and breed in Lagunitas Creek. Impacts, no matter how small, to endangered and threatened species deserve careful analysis that was not done here.

Lack of Consultation: There was no scoping for either the IS/MND or the Addendum. Neither the IS/MND nor the Addendum list any consultation with the National Marine Fisheries Service that should have triggered a Biological Assessment on the federally threatened and endangered species. Neither the IS/MND nor the Addendum list any consultation with the California Department of Fish and Wildlife regarding state-listed endangered species. Such consultation triggers input into the proposed design of the project and is wholly different from the after-project-design 30-day comment period provided for the Addendum. Further, we believe that the admission that the project results in "alterations in flows" triggers the need for a streambed alteration permit under Fish and Game Code Section 1600.

Lack of Substantial Evidence: The Addendum attempts to qualify under CEQA Guideline § 15164 (e) (Addendum to an EIR or Negative Declaration), which states (emphasis ours): "A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR...The explanation must be supported by substantial evidence." We do not believe the Addendum provides the required "substantial evidence" for numerous reasons outlined below.

<u>Minimized</u> Well Impact During Test: Water extracted from Well #2 during the test was released on site presumably nearby and therefore likely, perhaps within a few hours, percolated down to the water table, which may have minimized the claimed impact from Well #2. Because no tests were done on Well #1, we do not know its impact on creekflow. If the subsurface soils between Well #1 and the creek are highly permeable, then the creekflow impact from Well #1 could be greater, perhaps much greater, that the impact claimed from Well #2. Further, there is a third ("Private Ranch") well approximately 150 feet from Well #1 and thus possibly with the creek. The private well likely operates intermittently but there is no guarantee that its creekflow impact would not change if the private well operated continuously as seemingly intended for Well #1 and Well #2. The combined impact to creekflow from all three wells is cumulative, but impacts from only Well #2 have been studied and those impacts appear to have been minimized. The Sutro Analysis shows no "substantial evidence" that would contradict these reasonable possibilities that would almost certainly increase the impact to creekflows from all the wells.

<u>Maximized</u> Streamflow During Test The Sutro Analysis concludes that well impacts are negligible by comparing the measured impacts (0.2 cubic feet per second (cfs) to 0.3 cfs change in streamflow) to the average streamflow during the 7-day test (5.8 cfs to 6.8 cfs per Figure 5). But Figure 4 shows that the test period (Sep 22 - Sept 29) took place during a surge in flows at the Park gage, most likely caused by an upstream release by the Marin Municipal Water District (MMWD) to satisfy the flow requirement mandated by State Water Board Order WR 95-17. So, it is likely that MMWD flows artificially inflated the flow against which the impact was measured

Further, MMWD's WR 95-17 mitigation (increased flows) is being used twice...once by MMWD and later by NMWD. Thus, the measured well impact should not be measured against the total flow (natural flow <u>plus</u> MMWD releases), but rather against the total flow <u>less</u> MMWD releases (we have requested flow release data from both NMWD and MMWD, but as of the date of this letter, we have receive no reply).

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Further still, impact should be measured at the lowest flow during the dry season (4.1 cfs less any MMWD releases), not the average flows during the test period. Aquatic creatures survive above minimum thresholds, which is why WR 95-17 required minimum flows, not average flows.

Thus, the Sutro Analysis reduces the nominator in the impact calculation (by considering the impact from only one of three wells at the site) and also increases the denominator of the impact calculation (by choosing a test period of artificially high flows). Thus, we do not believe the Addendum provides that "substantial evidence" of "negligible" impact.

Instream Dedication Cannot Mitigate NMWD water permits and licenses (App #013965B, #025062 and #025079) state that the maximum simultaneous rate of diversion is measured under all NMWD permits and license's **combined**. Consequently, it appears that the .669 Instream Permit (#025062) can be used to satisfy the dry year reduction, which does not appear to be in accord with NMWD's 2003 Agreement with Trout Unlimited et al and which may undermine the claim that the .669 Instream diversion can mitigate for the Project.

Potential Intertie Trigger Problems For the period June 15 through November 1, Sutro Figure 4 shows the flows at the Pt Reyes gage were **lower** (average about 5.5 cfs) than flows at the Park gage (average about 6.2). This contrasts with the IS/MND, which states (emphasis ours) "Some additional streamflow enters Lagunitas Creek downstream of the USGS Park Gauge, notably from Devil's Gulch, Cheda Creek, and Nicasio Creek, so streamflows past the Gallagher Wells site are **higher** than the flows required at the USGS Park Gauge." But the Sutro Analysis clearly shows that flows at the Park gage are not correlated with flows at the Pt. Reyes gage and the IS/MND assumption (that flows sufficient to meet minimum requirements at the upstream Park gage will also result in sufficient flows at the downstream Pt Reyes gage) is shown to be incorrect by Sutro Figure 4. This raises the question of the adequacy of the trigger for MMWD's intertie release, which the IS/MND and Addendum both hold out as assurance that NMWD withdrawals will not adversely impact streamflows.

Temperature The Sutro Analysis omits mention of possible temperature impacts from reduced flows. Well #2 (and likely Well #1) will cause withdrawals to come primarily from the colder water at the bottom of the creek, thus raising the temperature of the remaining water. WR 95-17 recognizes the importance of cold water for endangered Coho in Lagunitas, of particularly during low flows and specifies a minimum temperature to be maintained by flow releases from the bottom of Peters Dam: "Permittee shall bypass or release sufficient water from Kent Lake to maintain a mean daily water temperature of 58 degrees Fahrenheit [14.4 C], or less, between May 1 and October 31, as measured at the USGS gage at Taylor State Park. From November 1 through April 30, permittee shall bypass or release sufficient water from Kent Lake to maintain a mean daily water temperature of 56 degrees Fahrenheit [13.3 C], or less, as measured at the USGS gage at Taylor State Park."

Just as WR 95-17 assumed that minimum required flows at the Park gage would suffice for the same minimum flows at the Pt Reyes gage, then it also seems reasonable that the WR 95-17 minimum required temperatures at the Park gage should also apply at the Pt Reyes gage. But the Reyes gage does not measure temperature and the Park gage measured instantaneous temperature only from 10/9/2003 to 7/27/2006. During that period, the instantaneous temperature exceeded the WR 95 -127 required minimum numerous times (e.g., 8/31/04 at 16 C or 60.1 F; 5/31/05 at 16 C or 60.1 F; and 7/27/06 at 16.5 C or 61.7 F). With diminished flows at the Pt Reyes gage and with Well #1 pumping from the bottom of the creek, then temperatures at the Pt Reyes gage likely exceeded the exceedances at the Park gage.

Since salmonids avoid high temperature water, this raises the possibility that a salmonid survey downstream of the Gallaher site may find little salmonid use because of the poor habitat resulting from the pumping, rather than the poor habitat being a reason to allow pumping. This points out the need to add temperature monitoring capability at both USGS gages.

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Habitat Impact vs Streamflow Impact The Sutro Analysis uses streamflow change as a proxy for habitat impact. But habitat impact is a function of **both** streamflow **and** channel shape. A flow change in a steeply sided channel may make a trivial habitat change, but that same flow change in a broad slightly sloping channel or floodplain, could de-water edges or reduce water depth enough to allow increased predation. Since the Pt Reyes gage takes its yearround data from the low flow channel at Lagunitas, there is no way to predict the impact of even small (¼" to ¼2") water height changes at the gage on the downstream floodplain, where even ¼" to ¼2" less water could materially reduce the size of the inundation. Further salmonids move up and down the stream in response to environmental conditions, yet neither the IS/MND nor the Addendum have any data on salmonid use of Lagunitas below the Gallagher well site. This points out the need for a stream channel survey and salmonid survey (under normal flow conditions) below the Gallagher wells.

Need for the Project is not Documented with Substantial Evidence The primary stated need for the Well #2 Project is regular summer salinity intrusion. However, this need does not appear to be supported by *"substantial evidence."* According to NMWD (D McIntyre), summer demand is 181 gallons per minute. With Well #1 pumping continuously at 100-150 gpm, then at most 81 gpm that would need to be added by one of the two Coast Guard wells (with capacities of 250 and 300 gpm). Assuming the smaller 250 gpm well, then that 81 gpm could be added by pumping only 7.8 hours per day (81/250 x 24), presumably more than enough time to avoid high tide impacts and thus the need for the Well #2 Project. Conversely, if the larger of the Coast Guard wells pumped 12 hours per day (presumably enough time to avoid high tide impacts) then its daily production would be 150 gpm out of 181 gpm needed. The remaining 31 gpm could then be added by Well #1 pumping at 100 gpm for 7.4 hours per day at might when streamflows are higher.

Reasonable Alternatives Not Analyzed According to the 12/9/20 Pt Reyes Light article NMWD tests salinity only once per week. If instead salinity data were collected more frequently (e.g., hourly), that may allow NMWD to more carefully time its withdrawals to avoid salinity and thus reduce or eliminate the need for the Well #2 Project. Also not discussed is the large increase in water use for landscaping during the dry season when creek flow is so low that it allows salinity intrusion. If dry season landscape water were better conserved, this might reduce or eliminate the need for Well #2. This points out the need for NMWD to analyze its customers' winter use and project winter use onto summer use in order to isolate landscape use. Further omitted as a possible solution to the stated need is increased storage capacity that would allow the two Coast Guard Wells to pump into added storage during off tides with Well #1 running only during high tides. Increased storage could accommodate peaks within daily use and potentially reduce or eliminate the need for the Well #2 Project. Well #2's potential impact to threatened and endangered species impacts is unreasonable if there are feasible alternatives that could replace the Well #2 Project and its impacts

In sum, the piecemealing, the changed circumstance from the IS/MND and omissions and errors in the Sutro Analysis and Addendum do not provide "substantial evidence" to support its conclusion that "the current project would not result in more severe impacts than those disclosed in the 2009 IS/MND." It is unfortunate that NMWD seemingly got inadequate environmental and permitting advise on this Project. Problems with this Project could have been addressed if NMWD had presented its preliminary project design to the Lagunitas Technical Advisory Committee (Lag TAC), which (with its agency and NGO members) reviews many salmonid-related projects in the Lagunitas watershed. We would encourage NMWD to consider joining the Lag TAC or at least presenting its preliminary designs for informal but informed comment by the Lag TAC. Until then, we respectfully request that NMWD withdraw this Project and do a proper CEQA analysis of cumulative impacts.

porton Gennet President, Save Our Seashore and Lag TAC member

dan.loganb@noaa.gov, ryan_olah@fws.gov, nicole.fairley@waterboards.ca.gov, amanda.culpepper@wildlife.ca.gov, Roberta.A.Morganstern@usace.army.mil

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Comment Letter 1: Save Our Seashore (Gordon Bennett)

Comment 1-1: Piecemealing. Pumping tests were conducted while Gallagher Well No. 1 was operating in order to review the cumulative drawdown effect of both wells pumping simultaneously. (See response to Comment 2-8 below.) As such, the analysis does not piecemeal well operations. As noted on Page 2 of the Groundwater and Streamflow Response Analysis prepared by Sutro Science, LLC (Sutro Report), the 7-day constant-rate aquifer test of 140 gpm at Test Well NP-5 was conducted while Gallagher Well No. 1 was actively pumping. According to data recorded by the NMWD's Supervisory Control and Data Acquisition (SCADA) system, between September 18 and October 1, 2020, the flow output from the Gallagher Well No. 1 ranged from about 90 to 134 gallon per minute (gpm).

Additionally, the private domestic ranch well located 163 feet east of Gallagher No. 1 cycled on during periods of domestic demand throughout the same period. Thus, the additional groundwater withdrawal from the Test Well NP-5 combined with pumping from the Gallagher Well No. 1 and the private domestic ranch well represents the most conservative testing parameters and a cumulative condition that exceeds actual potential operating conditions (i.e., under current maximum summer demand conditions the average total supply pumped from Gallagher Ranch would average ~ 180 gpm). With respect to impacts associated with pumping operations, the cumulative effect of Gallagher Well No.1, Gallagher Well No. 2, and the private onsite well has been demonstrated in the pumping test, which indicates de minimus changes in flows in Lagunitas Creek. Therefore, the discernable impacts have been demonstrated to be less than significant, and the project's potential contribution to cumulative impacts is not cumulatively considerable and less than significant.

Comment 1-2: Changed Conditions. NMWD well operations are optimized to meet water supply and water quality demands in the Pt. Reyes System. All well operations are under NMWD's water rights. The Coast Guard Wells are considered a primary supply source for NMWD's Point Reyes System, and those Wells will continue to be operated as primary supply wells in concert with Gallagher Well No. 1, and the proposed Gallagher Well No. 2 in order to meet water supply and water quality needs of the Point Reyes Station system. This is consistent with the original intent of the wells as described in the 2009 MND. (See response to Comments 2.5, 2.6, and 2.7 below.) With respect to impacts associated with pumping operations, the cumulative effect of Gallagher Well No.1, Gallagher Well No. 2, and the private onsite well has been demonstrated in the pumping test, which indicates de minimus changes in flows in Lagunitas Creek. Therefore, the discernable impacts have been demonstrated to be less than significant, consistent with the 2009 MND, irrespective of individual well operations, which have been and will necessarily be dependent upon annual and seasonal conditions within the watershed.

Comment. 1-3: Other Contradictions to the IS/MND. This comment indicates that flows were below 6 cfs between the Gallagher Gage and the Coast Guard Wells and fell below 6 cfs for about half the period between June 18 and November 1, and indicates that NMWD pumping should have ceased when flows are less than 6 cfs between the Gallagher Gage and the Coast Guard Wells. As discussed in the Sutro Report on Page 4, stream flow in Lagunitas Creek can fluctuate due to diurnal changes attributed to evapotranspiration, irrigation runoff, pumping from private domestic or irrigation supply wells, increased runoff, leachfield flows, stream diversions, or operational anomalies at the gage itself, such as debris accumulation or its removal. During the time period noted by the commenter, the Point Reyes Gage was fluctuating for some reason and was not providing consistent and accurate readings: USGS did not have an explanation for this fluctuation. **Figure 1** and **Figure 2** provided below shows that the 3-4 cfs drops in flow were temporary in nature and then recovered. **Figure 3** also provides additional flow information from the last three summers, and shows an exceptionally low flow in the summer of 2020 when compared to summer/fall conditions in 2019 and 2018. Also see response to Comment 2-9 below.

Operationally, on a daily basis, Marin Water relies on the USGS real-time SPT stream gage website (https://waterdata.usgs.gov/ca/nwis/uv?site_no=11460400) to monitor flow conditions and adjust releases from Kent Lake to ensure compliance with the minimum flow requirements of Order WR95-17. It is important to note that the real-time data provided on this website are considered "provisional" by USGS, and are subject to retroactive changes once the data are "approved" for publication some months later. As a result, the approved USGS flow record may indicate that stream flows in Lagunitas Creek were occasionally slightly below the minimum required flows. However, the real-time flows (i.e. provisional data) that were used by Marin Water operators to determine Kent Lake releases for any given day were within the required limits at the time.









Figure 3



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Response to Comments on the NMWD Gallagher Well No. 2 CEQA Addendum

Comment 1-4: Fair Argument. Although discernable, the changes in water surface elevation as shown at USGS Gallagher Gage were de minimus. The fact that gage data was able to discern a reduction of approximately 0.3 cfs through careful analysis of the data does not in and of itself represent an impact to sensitive species habitat. As discussed in the Sutro Report on Page 4, stream flow in Lagunitas Creek can fluctuate due to diurnal changes attributed to evapotranspiration, irrigation runoff, pumping from private domestic or irrigation supply wells, increased runoff, leachfield flows, stream diversions, or operational anomalies at the gage itself, such as debris accumulation or its removal. Releases or flow reductions at Peters Dam on Kent Lake also affect flow in Lagunitas Creek. These sorts of fluctuations in flow are captured on the gage data graphs available from the USGS website¹. Depending on the factors affecting the flow, the fluctuations can be recorded as abrupt, temporary changes or gradually increasing or decreasing trends. The discernible decrease in flow observed at the Point Reyes Gage was about 0.3 cfs or about 140 gpm, which is the approximate constant pumping rate throughout the aquifer test at Test Well NP-5, which included cumulative operations of all three wells. As further discussed below, changes in cfs of this magnitude would not have an effect on sensitive species habitat. (see response to *Comments 1.11 and 1.12*). Thus, even during worst case flow conditions, operations of both wells did not result in changes in stream flow at scales sufficient to affect sensitive species habitat.

CEQA Guidelines Section 15064, *Determining the Significance of the Environmental Effects Caused By A Project*, indicates that the decision as to whether a project may have one or more significant effects shall be based on substantial evidence in the lead agency's record. Section 15064(f)(7), indicates that while the provisions regarding preparation of supplemental CEQA documentation (Sections 15162, 15163 and 15164) apply when the project being analyzed is a change to, or further approval for a project for which a negative declaration was previously adopted, under case law, the fair argument standard does not apply to determination of significance pursuant to Sections 15162, 15163, 15164.

Comment 1-5: Lack of Consultation. The extent of scoping or consulting regarding the 2009 IS/MND is not legally relevant, and scoping is not required as part of the preparation of an Addendum. Nonetheless, the addendum was specifically circulated to California Department of Fish and Wildlife and NOAA Fisheries for review and comment. Formal consultation under the Endangered Species Act or the California Fish and Game Code is not required given the minute changes in stream flow that are associated with the project. As discussion in the Addendum, CDFW reviewed the project as part of the 2009 IS/MND and did not regulate the project under Fish and Game Code Section 1600. No formal comments were received from CDFW or NOAA Fisheries in response to the courtesy circulation of the addendum.

Comment 1-6: Lack of Substantial Evidence. NMWD has entered substantial evidence into the administrative record to support the use of an Addendum to the MND. A response to each of the items raised by the commenter is provided below. Substantial evidence as defined in CEQA Section 15384 (a,_b) means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused

https://nwis.waterdata.usgs.gov/usa/nwis/uv/?cb_00060=on&cb_00065=on&format=gif_stats&site_no=11460600&period= &begin_date=2020-09-27&end_date=2020-10-01

by physical impacts on the environment does not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.

Comment 1-7: Minimized Well Impact During Test. As noted on Page 2 of the *Groundwater and Streamflow Response Analysis* prepared by Sutro Science, LLC (Sutro Report), the 7-day constant-rate aquifer test at Test Well NP-5 was conducted while Gallagher Well No. 1 was actively pumping. According to data recorded by the NMWD's Supervisory Control and Data Acquisition (SCADA) system, between September 18 and October 1, 2020, the flow output from the Gallagher Well No. 1 ranged from about 90 to 134 gallon per minute (gpm). Additionally, the private domestic ranch well located 163 feet east of Gallagher No. 1 cycled on during periods of domestic demand throughout the same period. The additional groundwater withdrawal from the Test Well NP-5 combined with pumping from the Gallagher Well No. 1 and the private domestic ranch well represents the most conservative testing parameters and thereby allowed the evaluation of cumulative impacts. Previous aquifer testing has indicated that pumping at Gallagher Well No. 1 has only a minor effect on groundwater levels near the Test Well NP-5 as evidenced by negligible drawdown (less than 0.05 feet) in observations wells NP-2 and NP-3.²

Comment 1-8: Maximized Streamflow During Test. As discussed in the Sutro Report on Page 4, stream flow in Lagunitas Creek can fluctuate due to diurnal changes attributed to evapotranspiration, irrigation runoff, pumping from private domestic or irrigation supply wells, increased runoff, leachfield flows, stream diversions, or operational anomalies at the gage itself, such as debris accumulation or its removal. Releases or flow reductions at Peters Dam on Kent Lake also affect flow in Lagunitas Creek. These fluctuations in flow are captured on the gage data graphs available from the USGS website³. Depending on the factors affecting the flow, the fluctuations can be recorded as abrupt, temporary changes or gradually increasing or decreasing trends. Figure 4 of the Sutro Report shows instances of flow releases from Kent Dam and Shift-Adjusted Ratings⁴ made to the gage data by the USGS. The comment incorrectly asserts that "the test period (Sep 22 – Sep 29) took place during a surge in flows at the Samuel P Taylor Gage, most likely caused by an upstream release by the Marin Municipal Water District...." According to NMWD, MMWD increased released flows from Kent Lake on July 23, August 17, and September 1, and October 16. These increases in flow are evident on Figure 4 of the Sutro Report at both the Samuel P Taylor Gauge and the Point Reyes Gage.

As previously noted in Comment 1-3, operationally, on a daily basis, Marin Water relies on the USGS real-time SPT stream gage website (https://waterdata.usgs.gov/ca/nwis/uv?site_no=11460400) to monitor flow conditions and adjust releases from Kent Lake to ensure compliance with the minimum flow requirements of Order WR95-

Some%20measurements%20indicate%20a%20change,called%20a%20Shift%2DAdjusted%20Rating).

PES Environmental Inc. (PES), 2020b. Supplemental Exploration for Potential Groundwater Supply Well. Gallagher Ranch Property
 North Pasture Area, Gallagher Well Project, Point Reyes Station, California. October 28, 2020 Page 2/9.

³ https://nwis.waterdata.usgs.gov/usa/nwis/uv/?cb_00060=on&cb_00065=on&format=gif_stats&site_no=11460600&period= &begin_date=2020-09-27&end_date=2020-10-01

⁴ Stage-discharge relations (ratings) are usually developed from a graphical analysis of numerous current-meter discharge measurements (sometimes called calibrations). All discharge measurements are compiled and maintained in a data base. Some measurements indicate a change in the rating, often due to a change in the channel or riparian vegetation. Such changes are called shifts; they may indicate a short- or long-term change in the rating for the gage. Applying these shifts to a rating is called a Shift-Adjusted Rating. Shifts are either positive or negative, depending on whether the changed values are added to or subtracted from the recorded gage height as it is adjusted from the base rating. Possible causes for negative shifts include fill or deposition in the channel, temporary dams (natural or human-made), seasonal vegetative or algal growth, and debris jams while positive shifts can be caused by scour, gravel mining, and clearing of debris or vegetation from channel either by floods or humans (USGS: https://waterdata.usgs.gov/nwisweb/local/state/ca/text/whatisarating.html#:~:text=

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17. It is important to note that the real-time data provided on this website are considered "provisional" by USGS, and are subject to retroactive changes once the data are "approved" for publication some months later. As a result, the approved USGS flow record may indicate that stream flows in Lagunitas Creek were occasionally slightly below the minimum required flows. However, the real-time flows (i.e. provisional data) that were used by Marin Water operators to determine Kent Lake releases for any given day were within the required limits at the time.

No MMWD flow releases or USGS shift adjustments were made during the constant-rate aquifer test at Test Well NP-5 between September 22 and September 29, 2020. As shown on Figure 6 of the Sutro Report, average flows in Lagunitas Creek as measured by the Point Reyes Gage remained stable, fluctuating within typical margins, slightly above 6 cubic feet per second (cfs) at the start of the pump test and decreasing to just below 6 cfs during the latter part of the test. Similarly, gage height (Figure 7 of the Sutro Report) remained steady [generally between 0.97 feet and 0.99 feet (0.02 feet variation) or a difference of about one-quarter of an inch] through the aquifer test period. Based on the dates of the known inputs (releases) to Lagunitas Creek and the recorded shift adjustments made by the USGS, it is evident that stream flows were not increasing in Lagunitas Creek at the Point Reyes Gage during the constant-rate aquifer test (between September 22 and September 29, 2020) and the results of the stream response analysis or potential impacts of the aquifer test therefore were not masked. Additional evidence to support this is the direct correlation between pumping rate during the test and the decrease in stream flow; the discernible decrease in flow observed at the Point Reyes Gage was about 0.3 cfs or about 140 gpm, which is the approximate constant pumping rate throughout the aquifer test at Test Well NP-5.

Comment 1-9: Instream Dedication Cannot Mitigate. The comment first notes that "NMWD water permits and licenses state that the maximum simultaneous rate of diversion is measured under all NMWD permits and license's combined." This is generally correct, ⁵ although License 4324B goes on to state that "[i]n a dry year, the equivalent of such continuous flow allowance for any 30-day period may be diverted in a shorter time provided there is no interference with other rights and instream beneficial uses and provided further that all terms and conditions protecting instream beneficial uses are observed."

The comment next asserts that "the .669 Instream Permit (#025062) can be used to satisfy the dry year reduction," presumably referring to the diversion limitations described in the previous paragraph, but then asserts – without explanation – that doing so "does not appear to be in accord with NMWD's 2003 Agreement with Trout Unlimited et al and which may undermine the claim that the .669 Instream diversion can mitigate for the Project." These assertions do not raise an issue cognizable under CEQA, but the assertions are incorrect. NMWD has fully complied with the provisions of the referenced Agreement concerning the instream dedication by "fil[ing and successfully pursuing a] petition to temporarily change the place of use and purpose of use ... to the purpose of preserving or enhancing wetlands habitat, fish and wildlife resources in Lagunitas Creek," leading to the issuance of an Amended Permit in 2013 making the required dedication. Further, NMWD has complied with the provisions requiring it to enact a Water Shortage Contingency Plan applicable to its West Marin service area to "further reduce water usage in response to dry year conditions."

Comment 1-10: Potential Intertie Trigger Problems. The NMWD-MMWD Interconnection agreement provides the ability to offset demonstrable changes in flow conditions related to NMWD water rights. However,

⁵ It is stated in NMWD's two permits – Permit 19724 (referenced as "App #25062") and 19725 (referenced as "App #25079") that "[i]n a dry year, the maximum simultaneous rate of diversion under this permit and the rights pursuant to Application 13965B and [the other permit] shall not exceed 1.18 cubic feet per second." A similar limitation is stated in License 4324B (referenced as "App #013965B") before the additional qualification stated in the text.

release requests would be equivalent to and limited by NMWD's water rights. The Interconnection agreement does not guarantee flows of 6 cfs at the Gallagher Well site, nor does Water Rights Order 95-17 mandate such flows at any location other than the Park Gauge. However, if reductions in flow attributable to NMWD operations result in observed reductions in stream flow, the Interconnection agreement remains an available mechanism to offset those observed reductions by requesting additional release of flows from MMWD. Please refer to RWQCB Comment 2-14 for further discussion of the Interconnection agreement and the further modifications of Mitigation Measure BR-2.

Comment 1-11: Temperature. Reductions in flow of the magnitude identified in the hydrologic analysis would not affect temperature within the water body. Temperature under WR 95-17 is measured at the Park Gauge. See additional discussion regarding habitat effects. NMWD is not responsible for temperature monitoring on Lagunitas Creek.

The commenter is correct to note that access to cold-water habitat is an essential part of salmonid life history; particularly for steelhead who often rear over the summer period in isolated, disconnected pool habitats. However, the hydrologic analysis demonstrates that the effect of the proposed well operation at most would have de minimis impacts on the aquifer such that the associated changes in the rate of groundwater infiltration would not rise to a level sufficient to significantly impair aquatic habitat by exposing fish to elevated water temperatures. At present, the Lagunitas Creek watershed is not a system where elevated water temperatures are perceived to be a threat to salmonid abundance. The NMFS recovery plan for central California coast steelhead and for central California coast Coho does not identify water temperatures as one of the primary limiting factors affecting abundance of these runs within the watershed.^{6,7} Similarly, the Lagunitas Creek Stewardship Plan fails to identify water temperatures as a significant impairment to aquatic habitat. ⁸ That is, outside of extended dry periods, salmonids are unlikely to be exposed to water temperatures above a threshold of concern.

Although the aforementioned pump test documented a slight decrease in gage height and discharge, it is likely that these slight reductions would have equilibrated had the test been allowed to continue, because the aquifer is transmissive. The transmissibility of the aquifer suggests that any impacts to the rate of groundwater infiltration downstream of pump operation would be temporary and negligible, and therefore that the contemplated pumping regime would at most have a limited effect on instream water temperature. Additionally, because the pump test was conducted during a dry year and under seasonal low flows, the small observed reductions in gage height and streamflow can be viewed as a worst-case condition. It is likely that in times of higher creek flows and elevated groundwater levels (i.e., most periods of most years), continued pumping at the site would not register a discernable response in the creek. Please refer to Response 2-14 regarding revisions to the hydrologic design plan to incorporate pre and post project monitoring to ensure that adverse aquatic ecosystem impacts are less than significant.

Comment 1-12: Habitat Impact vs. Streamflow Impact. The commenter is correct to note that impacts to aquatic habitat need to be viewed as a result of not just reduction in streamflow but how those reductions interact with channel morphology. Importantly, as described under the response to *Comment 1.11*, the observed reduction

⁶ National Marine Fisheries Service (NMFS), 2016. Final Coastal Multispecies Recovery Plan. National Marine Fisheries Service, West Coast Region, Santa Rosa, California.

⁷ National Marine Fisheries Service (NMFS), 2012. Final Recovery Plan for Central California Coast coho salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.

⁸ Marin Municipal Water District (MMWD), 2011. Lagunitas Creek Stewardship Plan. Final. June 2011.

Response to Comments on the NMWD Gallagher Well No. 2 CEQA Addendum

in gage height and streamflow during the pump test were extremely minor, resulting in an observed reduction in streamflow by 0.2 - 0.3 cfs and with a reduction in gage height of approximately one-quarter of an inch. Changes of this magnitude, representing a worst-case condition and below the accuracy of the USGS gage collecting the data, would not result in significant impacts on salmonid habitat downstream of the well site. Please refer to Response 2-14 regarding revisions to the hydrologic design plan to incorporate pre and post project monitoring to ensure that adverse aquatic ecosystem impacts are less than significant.

Comment 1-13: Need for the Project is not Documented by Substantial Evidence. NMWD has been identifying the need for additional pumping capacity to address salinity intrusion since the original CEQA analysis of Gallagher Well No. 1 in 1989, and salinity intrusion affecting water quality at the Coast Guard wells has been well documented. There is no requirement under CEQA for a project need to be documented by substantial evidence. Rather, agencies are required to identify project objectives to be reviewed by decision making bodies in the context of their discretionary actions to dedicate public funds. The hypothetical pumping scenarios proposed in Comment 1-13 are unrealistic because the salinity situation is far more complex than avoiding high tide impacts. In addition, the proposed pumping regime is incompatible with operational protocols developed to ensure continuous and reliable service for the customers that depend upon potable water service for their basic health and safety needs. In any event, the need for a well field capable of pumping 300 gpm of low salinity water on a consistent basis was established by the 2009 IS/MND; since that time the salinity impacts at the Coast Guard Wells have only increased in frequency, length, and severity.

Comment 1-14: Reasonable Alternatives Not Analyzed. As discussed in response to the Comment 1-13, the sort of pumping regime advocated by the commenter is not feasible. Further, saline intrusion is occurring on a seasonal basis, not on a tidal basis; this condition necessitates the need for additional groundwater supplies that are not subject to salinity intrusion. The magnitude of storage necessary would be infeasible due to the large cost and small customer base that would need to bear the cost. Water conservation efforts have effectively hardened water demands, largely exhausting the potential to treat conservation as a feasible alternative to the new Project. Water demand in the Pt. Reyes Service Area has reduced approximately 40 percent as compared to usage at the time of the 2003 agreement, and implementation of the Water Shortage Contingency Plan will result in additional reductions in the use of water for landscaping irrigation.

Comment 1-15: Reasonable Alternatives Not Analyzed. The foregoing responses establish that the environmental (and hydrologic) analysis was not "piecemealed" and did not contain omissions or errors; the Addendum provides ample – and substantial – evidence that the current iteration of the project would not result in more severe impacts than those analyzed and discussed in the 2009 IS/MND. As previously noted, impacts to sensitive species habitat are less than significant.

The commenter closes with the suggestion that NMWD should obtain "informal but informed comment" from the Lagunitas Creek Technical Advisory Committee. Please note that, as discussed in greater detail in the response to Comment 2-14, Mitigation Measure BR-2 is being revised to add the following text: "NMWD will continue to work with agencies and stakeholders to update the hydrologic design plan to monitor resulting flow levels and meet the mitigation standard, and will include analysis of other critical parameter."

Bereket, Immanuel

From:	Mamie Yee <mbyee@sbcglobal.net></mbyee@sbcglobal.net>
Sent:	Wednesday, March 17, 2021 6:25 PM
То:	Bereket, Immanuel
Subject:	Letter to the Marin County Deputy Zoning Administrator re North Marin Water District Well

Marin County Deputy Zoning Administrator

We endorse North Marin water District's plan to construct a second well on the Gallagher Family property to increase the reliability of the Point Reyes Water System by allowing the production of groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already approved Well No. 2 and abandon the initial location. The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Mamie Yee and Bill Wigert 51 Cypress Road Point Reyes Station, CA 94956

We are NMWD customers.

Bereket, Immanuel

From:	Stacey Laumann <stacey@clam-ptreyes.org></stacey@clam-ptreyes.org>
Sent:	Wednesday, March 17, 2021 11:50 AM
То:	Bereket, Immanuel
Cc:	laura leek
Subject:	North Marin Water District - SUPPORT for Gallagher Ranch well

To the Marin County Deputy Zoning Administrator,

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System by allowing the production of

groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already-approved Well No. 2 and abandon the initial location. The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply. Thank you for your consideration.

Stacey Laumann, Acting Executive Director, Community Land Trust Association of West Marin (CLAM)

CLAM is a NMWD customer with 12 dwelling units served by NMWD in Point Reyes Station and Inverness.

Stacey Laumann Acting Executive Director she/her/hers CLAM (Community Land Trust Association of West Marin) (415) 272-2073 (direct) (415) 663-1005 (main) <u>clam-ptreyes.org</u>

Bereket, Immanuel

From:	Heather Furmidge <heatherfurmidge1@gmail.com></heatherfurmidge1@gmail.com>
Sent:	Wednesday, March 17, 2021 11:16 AM
То:	Bereket, Immanuel
Subject:	Sea-level rise requires a new well in West Marin

To: MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallagher Family property to increase the reliability of the Point Reyes Water System. The salt water intrusion into the drinking water that our community has experienced this year has been unfortunate to say the least, and health-threatening for some of us. With the ongoing effects of sea-level rise, this situation is only worsening. Please approve this.

Thank you, Heather Furmidge *Heather Furmidge* Point Reyes Station 94956 Fam a NMWD customer

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From:	Karen Anderson <karen77anderson@gmail.com></karen77anderson@gmail.com>		
Sent:	Tuesday, March 16, 2021 11:01 AM		
То:	Bereket, Immanuel		
Subject:	Water for West Marin.		

Mr. Immanuel Bereket : I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property.

Thank you.

Karen Anderson 9920 SFD Blvd. Olema, CA 94950

From:	Myn Adess <mynedit@gmail.com></mynedit@gmail.com>		
Sent:	Tuesday, March 16, 2021 2:01 PM		
То:	Bereket, Immanuel		
Subject:	in favor of well #2		

I'm registering that I'm in favor of a second well on the Gallagher ranch. I hope a Coastal Permit and Use Permit can be expedited to improve water quality for local residents as soon as possible. I am a NMWD customer (under my husband's account, James O'Hara). We've recently had to purchase water-purifying appliances in order to rid our water of excess salinity. We understand that the new well will mitigate the problem.

Thank you, Myn Adess 134 Mesa Road Point Reyes Station 94956

From:	Terrie Kehoe <tkehoe@nmwd.com></tkehoe@nmwd.com>		
Sent:	Monday, March 15, 2021 5:22 PM		
To:	Bereket, Immanuel		
Cc:	'hsbarlow@outlook.com'		
Subject:	FW: new well		

3/15/2021

Dear Mr. Bereket,

I am forwarding you this email regarding the Gallagher Family Coastal Permit and Use Permit (P3010). Feel free to contact me if you have any questions.

Thank you,

Terrie Kehoe, District Secretary North Marin Water District <u>tkehoe@nmwd.com</u> P O Box 146 999 Rush Creek Place Novato, CA 94945 415-761-8921

From: Harriet Barlow <hsbarlow@outlook.com> Sent: Monday, March 15, 2021 11:26 AM To: Info NMWD <info@nmwd.com> Subject: new well

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System by allowing the production of

groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the alreadyapproved Well No. 2 and abandon the initial location.

The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station

("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("GallaGher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.



Save Our Seashore m m

A 501(c)(3) Charitable Organization (EIN 94-3221625) Founded in 1993 to Protect Marin County's Ocean, Coasts, Estuaries, Watersheds and Creeks 40 Sunnyside Dr, Inverness CA 94956 <u>gbatmuirb@aol.com</u> 415-663-1881

March 5 , 2021

Re: Objection to 2021 North Marin Water District (NMWD) Gallagher Wells CEQA Addendum and related Permits and Authorizations

Save Our Seashore again respectfully requests that Permits and Authorizations for the above NMWD Project (Gallagher Well #2) not be issued until a more comprehensive CEQA analysis is completed on actual and planned conditions, rather than conditions that did not exist at the time of the CEQA analyses and were never planned to exist. As we noted in our 2/1/21 letter:

NMWD's 2009 Initial Study/Mitigated Negative Declaration (IS/MND) stated that the Gallagher Wells #1 and #2 (emphasis ours) "would be used to supplement the existing **Coast Guard wells, which are the primary water source**"...and "would be used **during periods of high tides**." In contrast, D. McIntyre, NMWD stated: "Our normal mode of operation since 2015 is to **operate primarily with the Gallagher Well** (100-150 gpm) and use one of the Coast Guard Wells to make up for any deficit supply. In the winter months, all demands are typically met solely with the Gallagher Well. However, during the summer months we need to also run one of the Coast Guard wells since the Gallagher Well can only produce 100-150 gpm."

Save Our Seashore has now reviewed additional records that evidence that the above contradiction, rather than being addressed, has instead been wholly incorporated into NMWD's plans and budgets. These additional reports document that the Gallagher wells are needed not just for "periods of high tides," but instead, first, to satisfy current **Summer Landscaping Use** and, second, to satisfy **Projected Buildout Needs**. Thus, a CEQA Addendum that relies on the "high tide" conclusions of a faulty underlying CEQA Study cannot be allowed to stand.

Summer Landscaping Use: The <u>NMWD 2021 West Marin Water Rate Study</u> makes clear that NMWD customers do not use water efficiently (emphasis ours):

By Baseline water demand, we mean that the water supply from the West Marin Water System's existing water supply sources (currently from the Coast Guard wells and Gallagher Well #1) would be largely sufficient to meet current water demands if all customers used water more efficiently.... The Residential Tier 1 rate and the Commercial Winter rate are designed to recover all of the District's operating, maintenance and capital costs that are associated with the West Marin Water service area's "Baseline" water demands...Gallagher Well #2 will be needed to meet the demands created by higher volume water users."

Thus, this Water Rate Study supports the point in our 2/1/21 letter that feasible options to Gallagher well #2 construction (e.g., increased conservation education and pricing) were not adequately explored in either the 2009 CEQA Study or the 2012 Addendum. For discussion purposes (a more detailed and exact examination is required), we note:

California <u>Water Board</u> records show the 7-year average of annual water use on the Central Coast was 68 Residential Gallons Per Capita per Day (R-GPCD) and <u>California law</u> sets a conservation goal of 55 R-GPCD. NMWD's 2021 Rate Plan notes the *"West Marin Service area had...approximately 832 dwelling units. The estimated service area population is 1,800."* These numbers work out to 2.16 people per West Marin household (1800/832). Translating the state's gallon per capita numbers to West Marin's 2.16 people per household:

- Table 7 proposes a baseline use of 250 gallons per West Marin household per day
- The Central Coast average is 147 gallons (68 x 2.16) per West Marin household per day
- The California goal is **119 gallons** (55 x 2.16) per West Marin household per day.

Thus, if NMWD set its Tier 1 allowance at the Central Coast average, that would result in an annual consumption allowance of 44,640,960 gallons (147 x 832 x 365). In contrast, the Coast Guard wells pump at a combined rate of 420 gallons per minute, for a theoretical maximum annual production of 220,752,000 gallons (420 x 60 x 24 x 365). So, if the Coast Guard wells operated at only ~20% of theoretical maximum capacity (44,640,960/220,752,000), they could supply the Central Coast average to all of NMWD's West Marin households.

Endangered Coho certainly use the Gallagher site at least in transitioning from Tomales Bay to upstream Lagunitas spawning and rearing sites. Threatened Steelhead have been observed spawning at the Gallaher site (MMWD, Eric Ettinger, personal communication). Thus, **both** Gallagher well #1 and the proposed Gallagher well #2 are diverting water <u>necessary</u> for endangered and threatened native species in order to supply peak water for <u>discretionary</u> nonnative landscaping...water that NMWD admits is being wasted.

Projected Buildout Needs: The <u>2014 NMWD West Marin Water System Master Plan</u> also makes clear that potentially three more wells (two more than the currently proposed Gallagher well #2) are anticipated at the Gallaher site to supply projected buildout (emphasis ours):

Coast Guard Wells Point Reyes Station has a pumping deficit of 445 gpm at buildout. Since Gallagher well [#1] will be adding 120 gpm flow, the deficit is reduced to 325 gpm....there is a future project to add well(s) at Gallagher Ranch site [325/120=2.7 additional wells, which were stripped pipeline budget but not from the plan]....Project involves Gallagher pipeline [for Well #1]...and installing 3 new wells at Gallagher [Gallagher #2 plus two more].

But again, using NMWD's numbers, Table 3 shows buildout adding 345 more households to the existing 832, or an increase of 41.5%, which could be satisfied by the two Coast Guard wells operating at \sim 29% of theoretical maximum capacity.

In sum: We understand that there are other factors involved in these baseline and buildout calculations, but we believe our calculations establish a large enough ballpark to require further refinement. Protecting endangered and threatened species while allowing reasonable buildout landscape water are not necessarily incompatible goals. But to satisfy both requires careful analysis that was not done in either the 2009 CEQA Study or the 2021 Addendum, both of which assumed "temporary-high-tide-only" conditions that did not exist at the time of either CEQA analyses and were never planned to exist after those CEQA analyses.

Thus, we request that the permits and authorizations for this second Gallagher well not be issued until a more comprehensive CEQA analysis is completed.

Jordon Gennert

Gordon Bennett, Save Our Seashore President, Lagunitas Technical Advisory member...and NMWD customer

cc: dan.loganb@noaa.gov, ryan_olah@fws.gov, nicole.fairley@waterboards.ca.gov, amanda.culpepper@wildlife.ca.gov, Roberta.A.Morganstern@usace.army.mil, ibereket@marincounty.org

From:	Terrie Kehoe <tkehoe@nmwd.com></tkehoe@nmwd.com>
Sent:	Monday, March 15, 2021 5:19 PM
То:	Bereket, Immanuel
Cc:	'katburda@yahoo.com'
Subject:	FW: Second well

3/15/2021

Dear Mr. Bereket,

I am forwarding you this email regarding the Gallagher Family Coastal Permit and Use Permit (P3010). Feel free to contact me if you have any questions.

Thank you,

Terrie Kehoe, District Secretary North Marin Water District

tkehoe@nmwd.com P O Box 146 999 Rush Creek Place Novato, CA 94945 415-761-8921

From: Katarina Burda <katburda@yahoo.com> Sent: Monday, March 15, 2021 6:54 AM To: Info NMWD <info@nmwd.com> Subject: Second well

To General Manager, Drew McIntyre

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System by allowing the production of

groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the alreadyapproved Well No. 2 and abandon the initial location.

The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station

("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Name _Katarina Burda_____ Signature____KatBurda_____

Subject: FW: NMWD Second Well

From: C Dorinson <<u>cdorinson@hotmail.com</u>> Sent: Sunday, March 14, 2021 3:28 PM To: Info NMWD <<u>info@nmwd.com</u>> Subject: NMWD Second Well

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System by allowing the production of ground water at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already-approved Well No. 2 and abandon the initial location.

The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Cathleen K Dorinson NMWD customer and Resident of Pt Reyes Station, CA 94956

From:	jeff felix <felix2468@horizoncable.com></felix2468@horizoncable.com>		
Sent:	Tuesday, March 16, 2021 9:22 AM		
То:	Bereket, Immanuel		
Subject:	2nd Well on Gallagher Property YES		

Mr. Bereket

I live at 171 Mesa Road in Point Reyes Station. Our water has tasted very salty more frequently as tides increase. We NEED another Well for a source for water and the Gallagher Well looks like exactly the thing to do to correct our situation.

Thanks for listening. Or should I say thanks for reading this,

Jeff Felix Point Reyes Station

From:Doug Haner <doug@yosemitecreek.com>Sent:Monday, March 15, 2021 5:11 PMTo:Bereket, ImmanuelSubject:Gallagher Well

Dear Immanuel,

We are NWMD customers at 65 Mesa Road in Point Reyes Station. We need your help in expediting the approval of a well on the Gallagher property so we can have safe drinking water to drink at our home. The taste and quality of our water has deteriorated greatly with the increased infusion of salt water into the existing well. We are no longer able to drink the water and make trips every two week to friends in Inverness or family in San Francisco to refill one gallon and 5 gallon water bottles that total close to 30 gallons. We transport this water to our home, carry it inside and use it for cooking and drinking. As people in our late 70's this is hard work but it is essential we keep doing it as increased sodium in our bodies is a grave health concern.

Anything you can do to approve and expedite a new well will be greatly appreciated.

Doug Haner and Bonnie Tank 65 Mesa Road P.O. Box 1497 Point Reyes Station, CA. 94956

From:	Terrie Kehoe <tkehoe@nmwd.com></tkehoe@nmwd.com>
Sent:	Monday, March 15, 2021 5:18 PM
То:	Bereket, Immanuel
Cc:	'jerry@hudgins.us'
Subject:	FW: Comment regarding the Point Reyes Station water supply

3/15/2021

Dear Mr. Bereket,

I am forwarding you this email regarding the Gallagher Family Coastal Permit and Use Permit (P3010). Feel free to contact me if you have any questions.

Thank you,

Terrie Kehoe, District Secretary North Marin Water District tkehoe@nmwd.com P O Box 146 999 Rush Creek Place Novato, CA 94945 415-761-8921

-----Original Message-----From: Jerry Hudgins <jerry@hudgins.us> Sent: Sunday, March 14, 2021 3:03 PM To: Info NMWD <info@nmwd.com> Subject: Comment regarding the Point Reyes Station water supply

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallagher Family property to increase the reliability of the Point Reyes Water System by allowing the production of groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already-approved Well No. 2 and abandon the initial location. The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Name: Jerry Hudgins Zip Code: 94956 I am a NMWD customer: Yes

From:	Katherine Hunting <hunting@gwu.edu></hunting@gwu.edu>
Sent:	Monday, March 15, 2021 7:11 PM
То:	Bereket, Immanuel
Subject:	Support for NMWD's Plan for New Well in Point Reyes Station

Marin County Deputy Zoning Administrator Project Planner Immanuel Bereket ibereket@marincounty.org

Dear Mr. Bereket,

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System.

I am an NMWD customer living in Point Reyes Station. The salinity intrusions this past summer and fall were very pronounced and impacted my drinking water quality from the existing Coast Guard Wells.

I urge the Marin County Deputy Zoning Administrator to accept NMWD's plan, which would enhance public health for municipal water users. I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Sincerely,

Katherine Hunting 11 Ridge View Ln/PO Box 415 Point Reyes Station, CA 94956

From:	Suzi Katz <suzi@suzikatzgardendesign.com></suzi@suzikatzgardendesign.com>		
Sent:	Tuesday, March 16, 2021 9:05 AM		
То:	Bereket, Immanuel		
Subject:	Please expedite our Gallagher well permit!		

Mr. Bereket,

I am writing to request that you do everything within your power to expedite the permitting for the new Gallagher well. Our water was very salty last summer. We were unable to filter out the salt and we would like to avoid a recurrence of sub-standard drinking water if possible.

Suzi Katz 65 Manana Way Point Reyes Station

From:	Ken <klevin13@gmail.com></klevin13@gmail.com>	
Sent:	Monday, March 15, 2021 6:49 PM	
То:	Bereket, Immanuel	
Subject:	Fwd: Gallagher Well #2	

This email is to let you know that I and my family are in favor of permitting and bringing on line the second Gallegher well.

West Marin needs a reliable source of salinity and chloride-free water. Thanks to NMWD for planning the necessary infrastructure changes in order to bring this about.

Well #2 was approved in 2009, following extensive environmental review. The present application relocates the site of Well #2 only a few hundred feet from its original placement.

Low stream flow water release agreements are already in place and promise protection to fish and wildlife in the event of low water levels in the creek.

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Thank you.

Ken Levin and family

Point Reyes Station

From:Kate Levinson <klevinson@gmail.com>Sent:Monday, March 15, 2021 8:55 PMTo:Bereket, ImmanuelSubject:NMWD

Immanuel Bereket:

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallaher Family property to increase the reliability of the Point Reyes Water System by allowing the production of

groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already-approved Well No. 2 and abandon the initial location. The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station

("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Kate Levinson 94937 I am not a NMWD customer

We have been sharing our IPUD water with a friend who is a NMWD customer but we have limited water ourselves.

From:	Terrie Kehoe <tkehoe@nmwd.com></tkehoe@nmwd.com>		
Sent:	Monday, March 15, 2021 5:21 PM		
То:	Bereket, Immanuel		
Cc:	'toni@wild-carrots.com'		
Subject:	FW: New well for Point Reyes, Olema and Inverness Park		

3/15/2021

Dear Mr. Bereket,

I am forwarding you this email regarding the Gallagher Family Coastal Permit and Use Permit (P3010). Feel free to contact me if you have any questions.

Thank you,

Terrie Kehoe, District Secretary North Marín Water District <u>tkehoe@nmwd.com</u> P O Box 146 999 Rush Creek Place

Novato, CA 94945 415-761-8921

From: Toni Littlejohn <toni@wild-carrots.com> Sent: Sunday, March 14, 2021 3:31 PM To: Info NMWD <info@nmwd.com> Subject: New well for Point Reyes, Olema and Inverness Park

MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

I endorse North Marin Water District (NMWD)'s plan to construct a second well on the Gallagher Family property to increase the reliability of the Point Reyes Water System by allowing the production of

groundwater at the project site to offset production at the Coast Guard Wells. This application is simply to relocate the already-approved Well No. 2 and abandon the initial location. The source of water for the Point Reyes Water System consists of three wells at two sites adjacent to Lagunitas Creek. Two wells are located on U.S. Coast Guard property in Point Reyes Station

("Coast Guard Wells"), while the third well is located on water district property approximately one mile upstream ("Gallagher Well No. 1"). Recent salinity intrusion has impacted water quality from the existing Coast Guard Wells, threatening public health for municipal water users. This change in conditions has necessitated the construction of this project as an urgent matter to protect the quality of water served.

I urge the Marin County Deputy Zoning Administrator to expedite the Coastal Permit and Use Permit to minimize the chances for another season with increased salinity in our water supply.

Name Toni Littlejohn

From:bobbi loeb <bobbil@sonic.net>Sent:Monday, March 15, 2021 6:45 PMTo:Bereket, ImmanuelSubject:second well

Dear Immanuel Bereket,

I endorse N.M.W.D. plan to construct a second well on the Gallagher

family property.

I urge the Marin CountyDeputy Zoning Administrator to expedite the Coastal permit.

I live in Point Reyes Station and I am a long time customer of N.M.W. (94956)

Thank you,

Bobbi Loeb

From:	David Morris <dmorris@ilsr.org></dmorris@ilsr.org>		
Sent:	Tuesday, March 16, 2021 7:03 AM		
То:	Bereket, Immanuel		
Subject:	Second Gallagher well		

Dear Mr. Bereket,

I am writing in support of the North Marin Water District request to be able to drill a second well on the Gallagher property without having to undertake a new Environmental Impact Statement. I am a resident of Point Reyes Station and this winter we were unable to drink our water due to salinity levels, levels which even affected the commercial operation of some businesses. (e.g. pottery). We feel, along with NMWD a sense of urgency in having a second well come on line by the fall.

The new well will be within the same meadow as the first well and only about 450 feet away from the first well and an addendum to the 2009 IS/MND has been submitted to deal with the minor project changes involving a different alignment for the pipeline.

I understand there is in place an agreement that protects water flow for other purposes in case of severe drought.

The threats to public health are clear and present. The altered location of the second well imposes only minor changes in its impact, which the Water District has addressed with its addendum to the 2009 IS/MND.

Given the situation, I hope the Coastal Commission will approve the second well without delays.

Thanks you,

David Morris

3 Los Reyes Drive

Point Reyes Station, CA 94956





MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

RESOLUTION NO. 21-105

A RESOLUTION APPROVING THE GALLAGHER FAMILY COASTAL PERMIT AND USE PERMIT 14500 PT. REYES-PETALUMA ROAD, POINT REYES STATION ASSESSOR'S PARCEL: 119-050-17

SECTION I: FINDINGS

1. WHEREAS, Drew McIntyre, on behalf of the North Marin Water District (NMWD) and the Gallagher Family, is requesting a Coastal Permit and Use Permit approval to construct and operate a municipal well to provide water for customers in its service area in the community of Point Reyes Station. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1"). is located on the project site. The purpose of the project is to increase the reliability of water supply and to offset the loss of water production at the other public wells located on the U.S. Coast Guard property. The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells, which would be located approximately 500 feet north of the existing well. The proposed well would tie into the existing water transmission pipeline located south of the private Gallagher Ranch access road. The proposed well and distribution pipelines would occur within 100 feet of Lagunitas Creek, which traverses the project site.

As part of this project, the NMWD would abandon the existing Downey Well that lies within the Lagunitas Creek stream channel. This well is a hazard, causes adverse impacts to the stream, and produces water with unsafe water quality. The Downey Well was initially constructed on the bank of the stream, but the creek has migrated and captured the wellhead, and thus it is now located in the middle of the creek. Other improvements proposed include the construction of water distribution pipelines, pump stations, a well field, and other components both within and outside the project site.

The property is located at 14500 Pt. Reyes-Petaluma Road, Point Reyes Station, and is further identified as Assessor's Parcel 119-050-17.

2. **WHEREAS,** on March 25, 2021 the Marin County Deputy Zoning Administrator held a duly noticed public hearing to take public testimony and consider the project.

3. **WHEREAS**, the North Marin Water District adopted a Mitigated Negative Declaration (MND) in 2009 and subsequent addenda to the MND.

4. **WHEREAS**, the North Marin Water District (NMWD) prepared and adopted a Mitigated Negative Declaration (NMD) 2009, in accordance with the requirements of the California Environmental Quality Act Guidelines (14 Cal. Code Regs. 15000, et seq.).

5. **WHEREAS,** the NMWD prepared an Addendum to the 2009, which was circulated for a 30-day public review period and was adopted by the NMWD Board at its meeting of March 2, 2021.

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6. **WHEREAS,** the proposed municipal water well will serve the public's critical need by creating a reliable water source for the communities of Point Reyes Station, Olema, Inverness Park, and Paradise Ranch Estates.

7. **WHEREAS,** the project is consistent with the goals and policies of the Marin Countywide Plan for the following reasons:

- A. As discussed in Section 6 below, the proposed project is compatible with the C-APZ land use designation for the project site. It would not interfere with the existing use of the ranch property for livestock grazing. The project will involve the construction of a municipal well that is accessory to the existing use. The design, location, size, and operating characteristics of the proposed facility will be compatible with the allowed uses in the vicinity.
- **B.** As discussed in Section 7 below, the mandatory Use Permit findings can be made under Section 22.48.0401 of the Marin County Code to allow a public utility to service the public and is necessary for public safety, convenience, and welfare.
- **C.** The project would serve the critical water supply needs of the communities of Point Reyes Station, Olema, Inverness Park, and Paradise Ranch Estates.
- **D.** The project is consistent with the CWP woodland preservation policy (BIO-1.3) because it would not entail the irreplaceable removal of a substantial number of mature, native trees. No vegetation removal is proposed with this project.
- E. The project is consistent with the CWP special-status species protection policy (BIO-2.2) because the subject property does not provide habitat for special-status species of plants or animals.
- F. The project is consistent with the CWP natural transition and connection policies (BIO 2.3 and BIO 2.4) because it would not substantially alter the margins along riparian corridors, wetlands, baylands, or woodlands. As documented in the MND, two components of the proposed project would require work within the stream channel of Lagunitas Creek. Removing the existing wellhead of the Downey Well will require that an excavator, working from the top of the bank, remove the existing wellhead. No riparian vegetation would be removed to abandon the well. The relocated gauging station would be constructed on the edge of the Gallagher Ranch pasture and would not require removal of riparian or vegetation other than annual grasses.
- **G.** The project is consistent with the CWP stream and wetland conservation policies (BIO-3.1 and CWP BIO-4.1) because the proposed municipal water well is one of the types of improvements permitted within the WSA and SCA, provided such projects would not result in any significant adverse direct or indirect impacts on wetlands and minimize impacts to stream function and to fish and wildlife habitat.

As discussed above, the proposed project is to construct a municipal well to serve the public. Although the proposed project would be located adjacent to Lagunitas Creek, which is identified as a blue-line stream, no stream impoundments or direct diversions would take place as part of the project, nor would the propejct alter the stream channel or stream banks. As proposed, construction activities would not conflict with any Habitat

Conservation Plans, Natural Conservation Community Plans, or any approved local, regional, or State habitat conservation plans. Additionally, the project proposes to dedicate certain water rights for instream flows for the protection, preservation, restoration, and recovery of aquatic organisms and wildlife habitat. Although the project would occur within the SCA and WCA, the project would benefit wetland habitat by allowing the National Park Service to implement its planned Olema Marsh restoration by accessing additional water, which will enable full implementation of the beneficial Giacomini Wetland Restoration Project.

Strict adherence to the adopted Mitiation Monitoring and Reporting Program (MMRP) would ensure no impacts to the CWP stream and wetland conservation policies would occur.

- A. The project is consistent with CWP water quality policies and would not result in substantial soil erosion or discharge of sediments or pollutants into surface runoff (WR-1.3, WR-2.2, WR-2.3) because the grading and drainage improvements would comply with the Marin County standards and best management practices required by the Department of Public Works.
- **B.** The project would not cause significant adverse impacts on water supply, fire protection, waste disposal, schools, traffic and circulation, or their services.

8. **WHEREAS,** the project is consistent with the mandatory findings for Coastal Permit approval (Marin County Code Section 22.56.130I).

A. Water Supply.

The NMWD historically has relied on the two Coast Guard Wells (located to the south of its treatment plant, which is located approximately 500 feet from the end of Commodore Webster Drive at the Point Reyes Station Coast Guard Housing Facility) to supply water for the West Marin service area. Due to the wells' location in the upper tidal reach of Lagunitas Creek, they are under the influence of flows in the tidal reach of Lagunitas Creek and subject to periodic salinity intrusion and occasional flooding. The Gallagher Ranch site is upstream of any flooding and tidal reaches of Lagunitas Creek. However, the existing NMWD Gallagher supply well has a limited flow capacity (170 gallons per minute) and is not connected to the West Marin distribution system. This project would increase the Gallagher Well site's capacity and integrate those wells into the District distribution system. Because the Coast Guard Wells mostly have good water quality, and are reliable during most months, and have ample recharge, the Coast Guard Wells will continue to be the primary supply.

This new water source would be used during periods of high tides, avoiding saltwater intrusion into the existing primary supply wells (Coast Guard Wells). By establishing a reliable emergency backup source of water upstream of the high tide water influences of Tomales Bay, water service reliability will increase. The new well will serve West Marin communities of Point Reyes Station (including the Coast Guard housing area), Inverness Park, Paradise Ranch Estates, Bear Valley (including the Point Reyes National Seashore), and Olema. The North Marin Water District has an agreement to assist the Inverness Public Utilities District during emergency water shortages. The development of this supplementary supply, therefore, stands to benefit that community.

The project itself would not result in the need for additional water supply at the site for project construction or operation. The project would create an additional water source to increase water production capacity and supply to address water production deficiencies caused by underperforming (Gallagher Well No. 1). However, the project would not increase the total amount of water available to NMWD and its customers, but would provide an additional source of water supply to be used when the Coast Guard Wells cannot be operated due to salinity intrusion and other operational conditions preventing pumping.

The project would be consistent with planned development and planned growth in the region. The Local Coastal Plan (LCP) describes existing and projected growth in the region. The LCP also describes existing and projected water supply and demand in keeping with this projected growth. As described in the Project Purpose, the project would not increase the NMWD's water supply; rather, it would provide increased reliability for the Point Reyes Water Supply System to address increased saline intrusion and deficiency in water production. The project would offset pumping volumes obtained at the Coast Guard Wells only when unavailable due to salinity intrusion or other operational conditions preventing pumping. The amount of water pumped from all wells would remain within the limits set in the water right permits.

B. Septic System Standards.

The Marin County Environmental Health Services Division staff reviewed the proposed project and determined that the existing septic system would not be affected by the project.

C. Grading and Excavation.

The project site has various slopes, and the project is designed to fit the site's topography and existing soil conditions. The project would include digging an approximately 500-foot-long trench to place the pipeline and digging the 59-foot deep well. The land exposed at any one time during construction will be kept to the shortest possible time. As required by the MMRP, the area must be restored to a similar condition as before the project. All excavated soil and excess material will be hauled to NMVVD's Corporation Yard in Novato for future use. The well pad would be the only impervious surface created by the project. Chemicals, fuels, and any other materials onsite would be used only for construction and would be properly disposed of within an authorized landfill.

D. Archaeological Resources.

The project site was surveyed for archaeological and historical resources in connection with the MND and the Gallagher Ranch bank stabilization project, which was completed in 2010. No archaeological resources were identified as part of this survey. While it is unlikely that the project would result in disturbances to cultural resources, in the event archeological resources are uncovered during construction, all work shall immediately cease, and the services of a qualified consulting archaeologist be engaged to assess the value of the resource and to develop appropriate mitigation measures.

E. Coastal Access.

The proposed project is not located adjacent to a shoreline. Therefore, the project would not have any impact upon coastal access.

F. Housing.

The proposed project would not result in the removal of a residential unit that would provide housing opportunities for people of low or moderate-income.

G. Stream and Wetland Resource Protection.

The proposed municipal well is allowed under the Marin County Interim Development Code Section 22.56.130I, G.1, which provides "[s]tream diversions shall be limited to necessary water supply projects..." and the minimum flows necessary to maintain fish habitat, existing water quality, and protect downstream resources are maintained, as determined by the Department of Fish and Game and the Division of Water Rights of the State Water Resources Control Board (SWRCB). Additionally, under the LCP's Natural Resources Policy 3.a, development of water supply infrastructure within mapped perennial or intermittent streams, including impoundments, diversions, channelizations, and other substantial alterations, are permitted, provided such projects minimize impacts on sensitive coastal resources. The LCP's Natural Resources Policy 3.b provides that for such water supply projects must "incorporate the best mitigation measures feasible, including erosion and runoff control measures, and revegetation of disturbed areas with native species. Disturbance of riparian vegetation shall be held to a minimum."

As described in the project documents, the project could result in a reduction in creek discharge. However, the magnitude of this reduction would be negligible and would not substantially reduce streamflow or lower water surface to the degree that would adversely impact stream habitat, and thus would not decrease stream flows, individually or cumulatively, below the minimum flow level required by the SWRCB.

H. Dune Protection.

The project site is located east of the community of Point Reyes Station. There are no naturally occurring dunes on or within the vicinity of the project site.

I. Wildlife Habitat Protection.

According to the project MND, no vegetation or special-status species and sensitive natural communities would be removed or impacted by the project. Additionally, no sensitive plant species are identified in the project area. Special-status animal species, including Steelhead and Coho were identified as present in the project area along Lagunitas Creek. However, the proposed project would be sited to avoid wildlife habitat areas and to provide buffers for such habitat areas. Additionally, MMRP 12-25 requires protection measures for special-status species. Adherence to the required mitigation measures described in the MND would minimize impacts to special status species.

J. Protection of Native Plant Communities.

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The proposed project itself would not adversely impact native plant communities because of the location of the proposed well on the site where there is no vegetation. However, according to the MND, the project site includes special-status species and non-indigenous, naturalized annual grass species. These non-indigenous grasses threaten the re-establishment of native plant species. As required by the project MMRP, the project would include reseeding of disturbed areas with native vegetation appropriate for the habitat type following construction.

K. Shoreline Protection.

The subject property is not adjacent to the shoreline, and the proposed project would not result in adverse effects on the coastline. The project would not require additional shoreline protection.

L. Geologic Hazards.

The project is located in a Seismic Shaking Amplification Hazard Area Zone 2, but is not located within the vicinity of any known fault lines.

M. Public Works Projects.

The proposed project is not located near Highway 1, nor would it include any roadway improvements. As described in the application material, the purpose of the project is to protect the safety and reliability of NMWD's water supply for its consumers. The water from the project would help improve the existing water supply and quality. The project would not increase NMWD production capacity but would provide a supplemental supply source when the other well sites are unavailable. The project would not expand utility service beyond the existing service limits and would conform with the resource and visual policies of the LCP and Marin municipal code.

N. Land Division Standards.

The project does not include a land division or property line adjustment.

O. Visual Resources and Community Character.

Once the construction of the project is completed, project improvements would not be visible from public vantage points because of topography and existing vegetation. The small gauging station enclosure would be screened by vegetation between Point Reyes-Petaluma Road and the creek. The wellhead vault would be almost flush with the ground surface. Piping would be underground, except where it is attached to the underside of the Gallagher Ranch bridge. The pump control steel cabinet would be aboveground but screened for public view by roadside vegetation from Point Reyes/Petaluma Road. The project would not alter existing open space views in the area.

P. Recreational/Commercial/Visitor Facilities.

The project site is governed by C-APZ-60 (Coastal, Agricultural Production Zone) zoning regulations and would not provide commercial or recreational facilities.

Q. Historic Resource Preservation.

The project site is not located within an identified historic area of the LCP. The project site was surveyed for archaeological and historical resources in 2009 for the Gallagher Ranch bank stabilization project, and no historical resources were identified.

A California Historical Resources Information System (CHRIS) records search identified one existing resource of the Black Mountain Historic era ranch. The bridge over Lagunitas Creek was identified as a new historic resource. The project would not impact these resources because the well and the mains would be primarily underground.

9. **WHEREAS**, the proposed project is consistent with the governing C-APZ-60 (Coastal, Agricultural Production Zone, one unit per 60 acres maximum density) and required findings under Section 22.57.0361 of Marin County Code because:

- **A.** The project would be compatible with and accessory to the existing agricultural uses on the property. Public water facilities like wells are conditionally permitted in the C-APZ zoning district. The proposed well would not significantly affect agricultural production on the Gallagher Ranch. The project would affect less than 0.01 percent of the 330-acre ranch and would not interfere with the operation of the existing livestock ranching operations; and
- **B.** The proposed improvements would not impair the open space and scenic values of the site.

10. **WHEREAS**, the proposed project is consistent with the mandatory findings to approve a Use Permit (Section 22.88.010I.2 of the Interim Marin County Code), as specified below.

A. Public utility and service use may be approved by Use Permit pursuant to Section 22.88.010I.2 of the Interim Marin County Code when it is found to be necessary for public health, safety, convenience, or welfare.

The proposed project would benefit the public health, safety, and welfare by providing safe water for domestic consumption. The project would reduce the need to pump at the Coast Guard Wells during high tides or other conditions where pumping is known to cause saltwater intrusion and contamination of the aquifer. The project would reduce the need for increased off-tide pumping (which is currently done to compensate for the times when high tides prohibit pumping). Due to salination, the NMWD have had to truck in water for its consumers. The proposed project would not only increase safety but would improve supply reliability. The project, therefore, will be beneficial for public health, safety, and welfare.

The project would further benefit the environment by providing water for plants, fish, and wildlife by permanently dedicating 212.7 acre feet (0.699 cfs) of Lagunitas Creek water that the District can currently divert to instream uses (i.e., for the benefit of plants, fish, and wildlife using the creek). Reduction in off-tide pumping at higher

rates would also benefit the Lagunitas Creek fishery by keeping more water in the stream.

- **B.** The proposed project would be consistent with the policies of the Marin Countywide Plan as discussed above.
- **C.** The proposed project would not result in visual impacts because the facility would be located over 400 feet from the nearest public roadway in an area that is partially screened from off-site locations by existing vegetation and topographical features. The project would not alter the drainage pattern of the area. The pipeline would be constructed in the road right-of-way and would not change area drainage patterns.
- **D.** The proposed project would be incidental to the primary agricultural use of the subject property for livestock grazing and would not alter or impair the character of the site.
- E. As conditioned, granting the Use Permit on the subject property would not be detrimental to the public interest, health, safety, convenience, or welfare of persons working or residing in the surrounding neighborhood.

SECTION II: ACTION

NOW THEREFORE, BE IT RESOLVED that the project described in condition of approval 1 is authorized by the Marin County Deputy Zoning Administrator and is subject to the conditions of project approval.

This decision certifies the proposed project's conformance with the requirements of the Marin County Development Code and in no way affects the requirements of any other County, State, Federal, or local agency that regulates development. In addition to a Building Permit, additional permits and/or approvals may be required from the Department of Public Works, the appropriate Fire Protection Agency, the Environmental Health Services Division, water and sewer providers, Federal and State agencies.

SECTION III: CONDITIONS OF PROJECT APPROVAL

NOW, THEREFORE, BE IT RESOLVED that the Marin County Deputy Zoning Administrator hereby approves the Gallagher Family Coastal Permit Use Permit subject to the conditions as specified below:

CDA-Planning Division

1. This Coastal Permit and Use Permit approval authorizes the construction of a municipal well provide water for customers in its service area in the community of Point Reyes. Two wells are located on U.S. Coast Guard property in Point Reyes Station ("Coast Guard Wells"), while the third well ("Gallagher Well No. 1"). is located on the project site. The purpose of the project is to increase the reliability of water supply and to offset the loss of water production at the other public wells located on the U.S. Coast Guard property. The current proposal is to construct Gallagher Well No. 2 as part of the Gallagher Wells and would be located approximately 500 north of the existing well. The private Gallagher Ranch

access road. The proposed well and distribution pipelines woold occur within 100 feet of Lagunitas Creek, which traverses the project site.

As part of this project, the NMWD would abandon the existing Downey Well that lies within the Lagunitas Creek stream channel. This well is a hazard, causes adverse impacts to the stream, and produces water with unsafe water quality. The Downey Well was initially constructed on the bank of the stream, but the creek has migrated and captured the wellhead, and thus it is now located in the middle of the creek. Other improvements proposed include the construction of water distribution pipelines, pump stations, a well field, and other components both within and outside the project site.

- 2. Plans submitted for a Building Permit shall substantially conform to plans identified as Exhibit A, entitled "Gallagher Well No. 2," consisting of 2 sheets prepared by North Marin Water District, received in final form on February 6, 2021, and on file with the Marin County Community Development Agency, except as modified by the conditions listed herein.
- 3. The project shall conform to the Planning Division's "Uniformly Applied Standards 2021" with respect to all of the standard conditions of approval and the following special conditions: 10.

SECTION IV: VESTING

NOW THEREFORE, BE IT RESOLVED that unless conditions of approval establish a different time limit or an extension to vest has been granted, any permit or entitlement not vested within two years of the date of the approval shall expire and become void. The permit shall not be deemed vested until the permit holder has actually obtained any required Building Permit or other construction permit and has substantially completed improvements in accordance with the approved permits, or has actually commenced the allowed use on the subject property, in compliance with the conditions of approval.

SECTION V: APPEAL RIGHTS

NOW, THEREFORE, BE IT RESOLVED that this decision is final unless appealed to the Marin County Planning Commission. A Petition for Appeal and the required fee must be submitted in the Community Development Agency, Planning Division, Room 308, Civic Center, San Rafael, no later than five business days from the date of this decision.

SECTION VI: ADOPTION

ADOPTED at a regular meeting of the Deputy Zoning Administrator of the County of Marin, State of California, on the 25th day of March 2021.

Michollo Levenson

MICHELLE LEVENSON MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

Gallagher Family Coastal Permit Use Permit Attachment No. 1 DZA Hearing March 25, 2020 Attest:

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1

Michelle Reed DZA Recording Secretary

> Gallagher Family Coastal Permit Use Permit Attachment No. 1 DZA Hearing March 25, 2020

	RECEIVED		P3110
	APR 01 2021	(PC)	
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and the second s	COUNTY OF MARTAGENCY	PLANNING DIVISIO	N
COUNTY OF A	MARIN V COMBINING DIVISION 2019		
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TO:	THE MARIN COUNTY Planning Const	1155102	
	3501 Civic Center Drive (Planning	Commission or Board of Supervis	ors)
	San Rafael, CA 94903-4157		
1	The undersigned Save OUY Seashorn	් , hereby file	es an appeal
1.	(Appellant/Petitioner)	C + NC	
	of the decision issued by the $D7A$		
	(Director, or Deputy	Zoning Administrator, or Planning C	commission)
	manufing the North Marin (unter D	istud Callochen Well	
	regarding the <u>NONN (10) (NO.01</u>		*****
	relating to property described and located as foll	ows.	
	a) Assessor's Parcel Number 119-050-17	1	
	b) Street Address <u>14500 Pt Reyes-P</u>	etaluma RI, Pt Reges Station	<u>^</u>
2.	The basis of this appeal is: i) NMWD clarms study of m Studied impact of only 1 we 2) conditions of unduly my (EGA stu	points from all wells, but . 11. Why have changed, thus hendriving	actually "Addition" moot
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	3) see 2)1/21 (eller and 3/5/	SI Click	
	(The pertinent facts and the basis for the appeal appeal is filed, but no later than the last date es following the date of the decision. If more sp setting forth the bases for appeal.)	I shall be provided to the Agency at ablished for the appeal period – usu ace is needed, please attach addit	the time the ally 10 days ional pages
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	(City/State/Zip Code)	(Email)	

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ATTACHMENT 3

COMMUNITY DEVELOPMENT AGENCY Planning Department

3501 Civic Center Drive San Rafael, CA 94903 415-473-6269 T 415-473-7880 F marincounty.org/depts/cd/divisions/planning



PROJECT# P3110

April 01, 2021

Applicant: Project: Seashore appeal GALLAGHER-3010 APPEAL PC Parcel: 119-050-17

Payment #43985	Payment Amt: \$ 712.00	Payment	Method: CHECK	Pay Date: 4/1/21	Recpt. By: eleiva	
Line Items			Fee Amount	Charge Date	Payer Name	Amount Paid
Appeal - Appeal to th	e Planning Commission		\$ 712.00	4/1/21	SAVE OUR SEASHORE	\$ 712.00

Grand Total Payments: \$7

\$ 712.00



DISBURSEMENTS - DATED APRIL 8, 2021

Date Prepared 4/6/21

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
P/R*	Employees	Net Payroll PPE 3/31/21	\$146,399.24
90371*	Internal Revenue Service	Federal & FICA Taxes PPE 3/31/21	66,270.47
90372*	State of California	State Taxes & SDI PPE 3/31/21	15,030.83
90273*	CalPERS	Pension Contribution PPE 3/31/21	38,394.21
1	AT&T	Telephone (\$70), Fax (\$88), Leased Lines (\$142) & Data (\$285)	585.62
2	AWWA CA-NV SEC	Virtual Operator Symposium Registration (Stompe, Simpson & Foster) (3/23-3/24)	875.00
3	Bobcat of Santa Rosa	Hose Brackets (3) (Bobcat Track Loader)	121.62
4	Borges & Mahoney	Parts to Rebuild Chlorine Gas Regulators @ STP	881.69
5	Calif Dept of Water Resources	FY22 Annual Dam Fees (Budget \$16,000)	15,648.00
6	CA Association of Mutual Water	Annual Membership (01/21-01/22) Re-issue Check	500.00
7	Caltest Analytical Laboratory	Lab Testing	82.95
8	Charles Custom Welding	Welding Services (Landsea Homes)	1,740.00
9	DataTree	March Subscription Parcel Data Info	100.00
10	Devincenzi, Steven	Novato "Toilet Rebate" Program	200.00
11	Diesel Direct West	Diesel (200 gal) (\$808) & Gasoline (500 gal) (\$1,860)	2,668.11
12	Direct Line	April Telephone Answering Service	168.00
13	Dobbs Peterbilt	Truck Repairs ('09 Peterbilt 335)	1,050.00

Seq	Payable To	For	Amount
14	Environmental Science Assoc	Prog Pymt#4: NMWD Gallagher Well No. 2 CEQA/Coastal Permit Services (Balance Remaining on Contract \$5,066)	28,568.50
15	Fiserv/Bastogne	Return Payment-Not Our Customer	152.62
16	Fishman Supply	First Aid Kits for Fleet (6)	323.87
17	GHD	Prog Pymt#18: Engineering Services for the Oceana Marin Pond Rehab Project (Balance Remaining on Contract \$20,992)	97.50
18	Grainger	Caution Signs (2) (STP), Chain for Hydrant Meters (100') (\$274), Chemical Resistance Gloves (72) (STP) (\$185) & Miscellaneous Maintenance Tools & Supplies (\$400)	888.33
19	Heselton, Heather & Kevin	Refund Excess Advance Over Actual Job Cost (465 Gage Lane)	45.15
20	Lappen, Stan	Novato "Hot Water Recirculation System" Rebate Program	75.00
21	Life House	Return Payment-Not Our Customer	151.08
22	Lincoln Life	Deferred Compensation PPE 3/31/21	8,171.65
23	Marin Landscape Materials	Cinder Blocks (20) (STP Fish Habitat)	75.95
24	McMaster-Carr Supply	Air Chuck for Yard, Pipe Plugs (3) & Pipe Fittings (2) (\$120)	238.26
25	Nationwide Retirement Solution	Deferred Compensation PPE 3/31/21	920.00
26	NTT Training	Seminar Fee "Basics of Industrial Electricity" (Bergstrom) on 5/4-5/5	1,095.00
27	Office Depot	MIsc Office Supplies	171.17
28	Pace Supply	Regulator Control Valves (2) (\$792), Bolts (77) (\$82), Angle Meter Stops (33) (\$1,965), Couplings (46) (\$1,147), Tar Tape (40) (\$2,212), Nipples (122) (\$3,762), PVC Pipe (400') (\$2,765), Plugs (30), Corp Stops (6) (\$287), Hub Adaptors (2) (\$276), Gaskets (27) (\$200) & Elbows (20) (\$404)	13,931.58
30	Pape Machinery	Service Parts ('04 Backhoe)	159.97
31	Pearlman, Avram	Exp Reimb: Oct 2020-Mar 2021 Mileage	153.13

Seq	Payable To	For	Amount
32	PumpMan Norcal	Labor & Rehab Services for Coast Guard Well #2 (\$6,633) & Pump/Motor for Well #4 (\$6,930)	13,563.54
33	Soiland	Asphalt Recycling (17 tons) (\$172) & Rock (48 tons) (\$968)	1,139.75
34	Sonoma County Water Agency	February Contract Water	445,683.65
35	South Bay Foundry	Valve Caps (47)	1,172.53
36	Staples Business Credit	Office Supplies	319.05
37	Syar Industries	Sand (24 tons) (\$941) & Asphalt (5 tons) (\$884)	1,825.04
38	Van Bebber Bros	Metal for Shop (42')	127.88
39	Verizon Wireless	Cellular Charges: Data (\$1,111), Airtime (\$104), iPads for Asset Management (\$200) & Equipment (\$642)	2,057.08
40	Winzer	Cutting Disks (20)	377.55
41	Yager Pump & Well Service	Pump & Motor for Coast Guard Well #2 TOTAL DISBURSEMENTS	8,644.44 \$820,845.01

The foregoing payroll and accounts payable vouchers totaling \$820,845.01 are hereby approved and authorized for payment.

0 Auditor-Controller

04/06/21 Date

General Manager

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1	r	

4/6/26 Date

DISBURSEMENTS - DATED APRIL 15, 2021

The following demands made against the District are listed for approval and authorization for payment in accordance with Section 31302 of the California Water Code, being a part of the California Water District Law:

Seq	Payable To	For	Amount
1	Able Tire & Brake	Tires (3) (Compressor-\$382 & '10 F150-\$227)	\$608.81
2	Alpha Analytical Labs	Lab Testing (W.M.)	860.50
3	Anderson, Robert & Maura	Refund Overpayment on Closed Account	125.99
4	Arrow Benefits Group	March Dental Expense	4,014.12
5	Badger Meter	5/8" Meters (50)	3,716.12
6	Bay Area Barricade Service	Markers (4) (\$65), Nuts, Bolts, Sign Posts (4) (\$130) & Signs for Vineyard Road "No Parking- Fire Lane" (6) (\$214)	417.95
7	Borges & Mahoney	Annual Calibration (STP)	269.99
8	Boucher Law	February Labor & Employment Law Matters	1,842.50
9	Building Supply Center	Plumbing Supplies	8.96
10	Caltest Analytical Laboratory	Lab Testing	82.95
11	Chandrasekera, Carmela	Retiree Exp Reimb (April Health Ins)	1,063.97
12	Chavez, Monica	Duplicate Payment-Customer Refund Check	76.08
13	Cilia, Joseph	Retiree Exp Reimb (April Health Ins)	372.37
14	Cummings Trucking	Sand (47 yds) (\$1,050) & Rock (65 yds) (\$980)	2,030.00
15	Dirks, Radhica	Refund Overpayment on Closed Account	122.85
16	Enterprise FM Trust	Monthly Leases for Chevy Colorado, F250's (2), Nissan Rouges (2), Nissan Frontier & F150's (4)	5,040.54
17	Evoqua Water Technologies	Service on Deionization System	416.21
18	Fastenal	Tripod Part Used in Confined Space Entry	58.23
Seq	Payable To	For	Amount
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19	Fishman Supply	First Aid Bandages (100) & Lens Wipes (600) (\$47)	85.41
20	Grainger	Pressure Washer Hoses (2) (\$417) & Miscellaneous Maintenance Parts & Supplies (\$475)	891.95
21	Green, Eric	Refund Overpayment on Open Account	99.34
22	Jackson, David	Retiree Exp Reimb (April Health Ins)	1,063.97
23	KDW Construction	Refund Security Deposit on Hydrant Meter Less Final Bill	409.08
24	K. Johnson, Ashok & Melanie	Refund Overpayment on Closed Account	23 49
25	Latanyszyn, Roman	Retiree Exp Reimb (April Health Ins)	372.37
26	Lemos, Kerry	Retiree Exp Reimb (April Health Ins)	1,063.97
27	Luu, Marvin	Novato "Washer Rebate" Program	50.00
28	Mallory Safety and Supply	Replacement Docking & Calibration Station for Air Monitors	3,985.02
29	Manzoni, Alicia	Retiree Exp Reimb (April Health Ins)	1,063.97
30	Marin County Ford	Cup Holder, Service Parts ('19 F150-\$55 & '19 F550-\$240), Motor Oil (5) ('19 F550) & Trim ('19 F150) (\$188)	557.53
31	McGee, Barbara	Novato "Cash for Grass" Program	400.00
32	MSC Construction Group	Refund of Deposit/New Development/WC Restriction-Novato	1,000.00
33	North Marin Auto Parts	Wrench Set (\$132) & Miscellaneous Maintenance Parts & Supplies (\$664)	796.20
34	North Bay Gas	Acetylene (\$591), Carbon Dioxide, Breathing Air & March Cylinder Rental (Lab)	709.51
35	Novato Builders Supply	Lumber (6)	152.68
36	Office Depot	Office Supplies	13.99
37	Pace Supply	Meter Pit Pump (\$175) & Service Saddles (9) (\$1,127)	1,302.55

Seq	Payable To	For	Amount
38	PG&E	Energy Bill for District Apartment (\$13) & Power: Bldgs/Yard (\$4,076), Other (\$129), Pumping (\$58,610), Rect/Controls (\$460) & Treatment (\$202)	63,491.46
39	Pini Hardware	Miscellaneous Maintenance Parts & Supplies	616.93
40	Point Reyes Light	Emergency Water Conservation Notice on 3/25/21 (Ord 39)	144.00
41	Pollard Water	Meter Lid Lifters (2)	94.94
42	PumpMan Norcal	Rehabilitation (\$4,720) & Pump/Motor for Gallagher Well (\$6,841)	11,560.72
43	R & B	Flanges (15) (\$321), Nipples (31) (\$399), Tees (6) (\$442), Valves (7), Elbows (7) (\$586), Bushings (4), Clamp (\$515), Hydrant Extension (2) (\$184) & Couplings (4) (\$1,573)	4,084.73
44	Recology Sonoma Marin	March Trash Removal	541.78
45	Roy's Sewer Service	Televised & Located Existing Lateral (Office/Yard)	500.00
46	Shape Incorporated	Adaptor for STP Centrifuge	482.83
47	Soiland	Asphalt Recycling (6 tons)	62.10
48	Sundt Construction	Refund Overpayment on Closed Account	160.92
49	Syar Industries	Sand (24 tons)	964.18
50	Troy, Kathi	Refund Overpayment on Closed Account	18.53
51	Univar	Sodium Bisulfite 25% (4,400 lbs) (STP)	1,980.00
52	Verizon Wireless	SCADA & AMI Collectors (\$650)	810.96
53	VWR International	Endo Broth (Lab)	186.69

Seq	Payable To	For	Amount
54	Water Education Foundation	Annual Membership (1/21-1/22) (McIntyre) (Budget \$140) TOTAL DISBURSEMENTS	172.50 \$121,042.44

The foregoing payroll and accounts payable vouchers totaling \$121,042.44 are hereby approved and authorized for payment.

04/12 Date 140 202 Auditor-Controller 4 2021 General Manager Date

North Marin Water must suspend new hookups

Readers' Forum

Illarin Independent Journal

Tuesday, April 6, 2021

According to a statement on its website, the North Marin Water District: "carries out its mission with a highly-motivated competent staff, empowered to conduct business by placing customer needs and welfare first."

If one takes this at face value it is reasonable to assume NMWD would be ready, given current conditions, to require a temporary moratorium on new hookups for water service.

Before building any new housing, NMWD is already calling for harsh cutbacks — including the elimination of low-drip watering for landscaping. Many of us have invested thousands of dollars in landscaping. We will be limited on flushing toilets and washing solar panels to make them operate more efficiently. It will hinder our ability, in general, keep our house clean, as well as wash dishes and clothes.

New housing will only cause further deterioration for living conditions. If one goes to sell a house surrounded by a failing landscape and additional restrictions, the value to the property is diminished.

Bay Area officials must adjust their last outrageously large housing allocations to Marin while considering the pending drought in the county. I have been told natural hazards, including drought, will not be incorporated into any modifications at this time. Officials are failing to consider critical conditions at the expense of current residents and insist on arbitrarily large amounts of housing based on jobs in Silicon Valley.

The last 15 years have made it clear that climate change alters our future water supplies. Until this is resolved, all new hookups should be suspended until a reasonable solution is determined.

— Al Dugan, Novato

MMWD proposes mandatory water rules

LOW RAINFALL IMPACT

Conservation ordinance vote scheduled April 20

Illarin Independent Journal

By Will Houston

whouston@marinij.com

The Marin Municipal Water District is proposing mandatory conservation rules for the first time since 1988 in response to record-low rainfall levels akin to those of the notorious 1976-77 drought.

The proposed ordinance would require customers to limit outdoor watering to one day per week starting May 1 and adhere to other restrictions. The district board of directors plans to vote on the ordinance on April 20. The district has received just 20 inches of rain this year, its second-lowest amount in 143 years of records. The lowest was 18 inches in 1924.

"We are still hitting just under 43% of average for this year," Lucy Croy, the district water quality manager, said during the board meeting on Tuesday. "And looking ahead, it looks like there still is no miracle rainfall coming through April, unfortunately."

The district relies on seven reservoirs in the Mount Tamalpais watershed, which make up about 75% of its total water supply. The other 25% is purchased and imported from Sonoma Water. As of April 1, the reservoirs had about 43,500 acre-feet of stored water, well below the average of about 73,500 acre-feet for that time span. It is the lowest storage level for this time of year in 38 years, which is the period that the district has had its current storage capacity.

The district has had to tap infrequently used reservoirs such as Phoenix Lake because of the low rainfall. Later this month, the staff expects to begin pumping water from the Soulajule Reservoir, which the district hasn't done in 30 years.

District board members are hopeful the 191,000 residents in its service area will step up to the challenge. "Historically, Marin saves and will conserve when they get the message," board member Larry Bragman said at the directors' meeting.

To promote greater conservation, the district also plans to offer enhanced incentives such as higher lawn replacement rebates and discounts on smart meter technology.

"We have a window here to make a dent but if we don't move quick that window is going to pass," said board member Larry Russell.

"Conservation is supply, and we need to invest in that in the same way we invest in other sources of supply," board president Cynthia Koehler said.

If approved later this month, the outdoor irrigation restrictions would take effect on May 1. San Rafael, Mill Valley, Corte Madera, Larkspur, Fairfax, Sausalito, Belvedere and Tiburon would each be assigned a weekday in which residents would be allowed to water. District staffers would patrol areas to ensure compliance and ratepayers would be encouraged to report violations.

The district hopes to cut back summer water use by 40%, or 7,300 acre-feet, from May to October under the plan. This was not the most restrictive option being considered. One option proposed was to limit irrigation to trees only, which was estimated to save 8,200-acre feet, or 55%, of typical summer water use.

The urgency conservation ordinance also would include prohibitions on the following:

- installing new or expanded landscaping
- power washing buildings and homes
- using potable water for dust control, compaction, street cleaning, etc.
- refilling pools, hot tubs and decorative fountains
- washing vehicles, boats and planes without using hose shutoff nozzles

Any violations would start with a warning, followed by a \$25 fine for a second offense and then a \$250 fine if the same violation is repeated within 60 days.

While residents are not being required to hit certain conservation percentages or adhere to rationing, the district is asking them to continue voluntary conservation at home. Some members of the public called on the board to be more specific on a conservation target, such as 20%.

"That's the sort of thing that people should know," Roger Roberts told the board.

Russell said the district is being too liberal by allowing one day of watering and allowing people to wash their cars at home.

"I think we should step harder here than we're proposing," Russell said.

To incentivize water savings, the district plans to double its lawn-to-turf rebates to \$2 per square foot and offer discounted smart meter technology to allow ratepayers to track their water usage.

Ben Horenstein, the district's general manager, said the dry conditions this year are expected to cost the district nearly \$21 million. The costs come from increased purchases of imported Sonoma County water to extend the supply of local reservoirs; reductions in water sales; renting generators to pump water from reservoirs; and conservation campaigns.

The district is authorized to implement drought rates up to 25% higher under mandatory conservation rules. However, the staff is recommending the board defer any decision on increasing rates and monitor the financial impacts in the meantime.

Other local water districts have or are planning to enact similar mandatory measures. The Bolinas Community Public Utility District approved a plan earlier this year to begin mandatory water rationing of 125 gallons per day per home if ratepayers' water use goes over a certain threshold.

The North Marin Water District plans to consider mandatory conservation rules similar to MMWD's later this month in response to its record lowest rainfall.

The U.S. Drought Monitor shows more than 90% of California, including Marin County, is experiencing at least moderate drought conditions.

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Thursday, 04/08/2021 Page .A01Copyright Terms a

Hot race expected for Novato supervisor

5TH DISTRICT SEAT

Incumbent Arnold won't seek new term in 2022

Marin Independent Journal

By Richard Halstead

<u>rhalstead@marinij.com</u>

Marin County Supervisor Judy Arnold announced she won't seek a fifth term in June 2022, essentially firing the starting pistol for a race in the Novato district.

"There could be any number of candidates who want to make the move from the Novato City Council to the Board of Supervisors," said Brian Sobel, a Petaluma-based political analyst.

Paul Cohen, chairman of the Marin Democratic Party and a political consultant who managed Arnold's 2018 campaign for supervisor, said, "A n open seat, a race without an incumbent, always attracts interest."

Arnold announced her decision in an email on Wednesday.

"There are many occupations in this world though none quite as rewarding as serving one's community," she wrote. "It's an honor that passes from one person to another, from one generation to the next. Today, I am announcing that I will not be seeking reelection in 2022 so that this honor may too be passed on to the next."

During a phone interview on Thursday, Arnold, who will turn 81 in July, said, "I feel like I could do four more years as far as my energy goes."

She is one year younger than House Speaker Nancy Pelosi and seven years younger than Sen. Dianne Feinstein.

Arnold, a native of Kansas, said she would like more free time to spend with her children, two of whom live in Los Angeles, and her six grand-children. Arnold's younger sister Nancy died on New Year's Day due to complications from COVID-19.



Arnold

Cohen said that unlike many of the county's other supervisorial districts, which are more sprawling, the 5th District that Arnold represents is very concentrated. It includes nearly all of the city of Novato and the unincorporated areas of Bel Marin Keys, Loma Verde, Black Point, Green Point and Indian Valley.

Cohen said that gives Novato City Council members who run for the seat a leg up.

Sobel said Novato Mayor Pat Eklund and Councilman Eric Lucan are both wellpositioned to run.

"I was actually quite surprised by her announcement," said Eklund, a longtime member of the City Council. "I guess with her announcement I'm going to have to give it some thought."

Eklund finished 921 votes behind Arnold in 2006 when Arnold was first elected to the Board of Supervisors. Lucan has been on the Novato City Council since 2011 and has been mayor.

"Eric was the first name that came to my mind as the candidate who would be the prohibitive favorite," Sobel said.

Arnold said that many of the people who have contacted her since her announcement have asked if she would consider backing Lucan. Arnold didn't need a lot of convincing.

"If this is what he wants to do, I'll be behind him," Arnold said. "I would feel good leaving him in charge."

Lucan said the spotlight at this time should be on Arnold and her many distinguished years of public service.

"But I do hope to have the privilege of serving as supervisor," Lucan said, "given that Judy has chosen not to run for reelection."

"I'm not ready to make that an official announcement," he added. "I don't have a campaign up and running at this point."

Arnold said Lucan is better positioned to run for the 5th District seat than she was in 2006; at that time, she had served only two years on the Novato City Council.

Arnold was hardly an unknown commodity, however. She served as an aide to former Marin County supervisor Gary Giacomini and worked for former state senators John Burton and Carole Migden before running for office herself.

In 2003, Arnold finished third in a race for three seats on the Novato City Council, edging out two male incumbents. After defeating Eklund — who had already served over a decade on the Novato City Council at that point — to win her seat on the Board of Supervisors, Arnold got a pass in 2010 when no one challenged her.

Four years later, however, Arnold came close to being upset by Toni Shroyer, a real estate agent. Shroyer rode a wave of discontent sparked by the initial adoption of Plan Bay Area, a regional effort to promote housing growth along transit lines that is aimed at reducing greenhouse gas emissions.

"The first time Toni ran, Marin was in total hysteria over the state saying we needed more affordable housing," Arnold said. "People were so angry. It was startling to me."

Nevertheless, Arnold squeaked by, winning reelection in 2014 by 215 votes, less than 2% of the vote.

Four years later, Arnold got another scare from the same opponent. The morning after the election, Arnold trailed Shroyer by 124 votes, but when all the votes were counted days later she had won by 618 votes.

Shroyer did not respond to requests for comment on Arnold's retirement announcement.

Arnold said one of the disadvantages of making her announcement so far in advance of her term ending is that many people think she is retiring immediately.

She said, "I'm not going anywhere yet."

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Saturday, 04/10/2021 Page .A01Copyright Terms and Terms of Use. Please review new arbitration language here

POINT REYES LIGHT

MALT hires new leader

By Braden Cartwright 04/07/2021

The Marin Agricultural Land Trust has selected Thane Kreiner, an entrepreneur and executive from Sebastopol, as its new C.E.O. His hiring marks a new chapter for MALT, as its mission is increasingly focused on sustainability, innovation and stewardship.

"I'm really excited about working with the community to experiment, adopt and model best practices and transform our food systems from being a net source of greenhouse gas emissions to carbon negative, and doing so in a way that's inclusive and respectful of BIPOC communities," he said in an interview with the Light.

Mr. Kreiner has a long resume. He was educated as a neuroscientist, but then he witnessed his friends dying during the AIDS pandemic and wanted to do more to get the best science and technology into people's hands. He started several life science companies and served on the boards of several more. For the past decade, he worked in Santa Clara as the head of the Miller Center for Social Entrepreneurship, an organization that helps nonprofits and businesses around the world to increase their impact, with the goal of ending poverty. He said he has worked with 1,000 enterprises in 100 countries, raising \$500 million.

Mr. Kreiner first heard about MALT from longtime friend Corey Goodman, a fellow scientist and entrepreneur who was on Mr. Kreiner's doctoral thesis advisory committee. Mr. Goodman owns a sheep ranch in Marshall whose property has a MALT conservation easement, and his wife Marcia Barinaga gave Mr. Kreiner and his husband her first wheel of cheese in 2009. Mr. Kreiner is a fan of the branded products that MALT's partners create. When the job opportunity arose, he was attracted to the organization's mission to nourish the local community and its growth mindset, as well as the shorter commute.

Mr. Kreiner isn't a farmer, but he said he practices permaculture on his three-acre property, where he sees how a simple move like adding a hedgerow can promote biodiversity. He said his first 100 days will be learning from ranchers how MALT can best support them. He would like to explore how to ensure dignified housing and work for Latino farmworkers, which includes empowering them to become farmers themselves. And he is also interested in doing more to conserve waterways across properties. He already sat down with six current and former MALT board members to discuss the organization's future plans. Everyone seemed pleased with his arrival.

Ray Fort, who served as the acting director, will return to his position as the director of operations.

The past year has been rocky for MALT. Marin County Parks asked the land trust to return a \$833,250 grant because its funding request had not disclosed a property appraisal, and executive director Jamison Watts and director of conservation Jeff Stump resigned. A number of policies have since been updated to increase transparency. Bylaws now prohibit MALT from purchasing easements from board members and their immediate families. The county will no longer appoint two members to MALT's board, and a supervisor isn't invited to serve on the board. MALT will also hold an annual community meeting to share information and answer questions.

POLITICS

Despite second dry year, Newsom resists declaring a drought emergency San Francisco Chronicle

Dustin Gardiner April 13, 2021Updated: April 13, 2021 6:20 p.m. Comments



A depth gauge stands partially exposed at Briones Reservoir in Orinda on Feb. 28, 2021. Stephen Lam / The Chronicle

SACRAMENTO — Despite bipartisan calls to declare a state of emergency over California's deepening drought, Gov. Gavin Newsom sidestepped questions Tuesday about when he may issue a proclamation.

The governor said his administration is talking with federal officials daily about the status of the state's water supply after two years of minimal rainfall that have dried out much of California.

Last week, he said he wasn't ready to declare a drought emergency "at this moment." And on Tuesday, Newsom gave few answers when reporters pressed him for more details.

"We are mindful of the urgency, as it relates to the anxiety now entering the second year of drought conditions," Newsom said in a news conference at Lake Oroville in Butte County, where he signed legislation to spend \$536 million on fire-prevention efforts.

The governor spoke from a high-and-dry boat launch overlooking the receding reservoir behind Oroville Dam, where the water level has fallen by hundreds of feet.

A group of state legislators from the Central Valley sent Newsom a letter last week urging him to declare an emergency so the state can mitigate the effects of a drought on farmers and the food-supply chain.

"California produces half of the nation's livestock and produce products, which are an essential part of our economy and a crucial aspect of our national security," the legislators wrote.

Last month, U.S. Agriculture Secretary Tom Vilsack declared that 50 of California's 58 counties are disaster areas because of drought, allowing farmers to apply for emergency loans.

If Newsom signed an emergency declaration, state agencies could more easily require water conservation and transfer water to support agriculture and other priority users.

But Newsom downplayed the significance of such a declaration Tuesday. He said the state can move forward with many drought measures without officially calling the situation an emergency. He said his team has already "dusted off" the drought plan from former Gov. Jerry Brown's administration and has drafted executive orders to deal with shortages.

Brown issued California's last drought declaration in 2014, and kept it in place for three years. His order required cities and water suppliers to reduce consumption, mandated that state agencies cut water use and allowed the state to more quickly transfer water to priority users.

Natural Resources Secretary Wade Crowfoot, an architect of drought policy in Brown's administration, said Tuesday that it was important for Newsom to consider such a declaration "very carefully" because it would give him expanded powers. Crowfoot declined to say whether a declaration could be necessary.

"I've learned a couple of things helping to manage drought response, and one of them is avoid making predictions," he said.

Dustin Gardiner is a San Francisco Chronicle staff writer. Email: dustin.gardiner@sfchronicle.com Twitter: @dustingardiner

Awareness key to plan for Marin's water

Editorial

Marin Independent Journal

We don't have to see the lowering water level at the Soulajule Reservoir to be aware that this year's rainy season fell far short of what we need.

Across the county, umbrellas and rain gear didn't get much use.

And hope that we might get some late-season rain also disappointed.

We've been here before. Longtime residents can recall several droughts when they faced conservation orders from Marin's water agencies.

Local rainfall has amounted to 20 inches, about 43% of Marin's annual average.

The Marin Municipal Water District is likening this year's rainfall levels to those of the 1976-77 drought when residents, schools and businesses faced long-term rationing.

MMWD is proposing mandatory conservation measures, starting May 1, when consumers would be required to limit outdoor watering to one day per week.

Consumers in MMWD and the North Marin Water District, Marin's two largest water agencies, have a long history of conserving water. It is sort of a local ethic. For many, that keen awareness dates back to living through the 1976-77 drought when household water use was rationed to the level of 49 gallons per person, 57% less than the amount that was normally used.

People were taking showers with buckets and using that water for their plants or to flush their toilets. Some rigged up ways to capture "grey water" from their washing machine. Residents were not allowed to re-fill their swimming pools and ranchers had to have water trucked in for their livestock.

That experience helped turn conservation into a norm for many Marin residents.

Low-flow toilets, water-conservation washing machines and dishwashers and conservation- minded watering have helped Marin preserve its water supply. Tapping Lake Sonoma has also helped MMWD and NMWD keep up with local demand.

But even with that water supplementing our local reservoirs, we are going to need to conserve — and we need to begin sooner than later.

MMWD's first measure is to reduce outdoor watering, with a target of reducing water use by 40% from May to October, when hopefully rainfall will return to normal.

That will mean, among other measures, strict limits on the days when outdoor watering is allowed, prohibiting power washing of buildings and homes, no refilling of pools and hot tubs, and washing vehicles using hoses with shutoff nozzles.

These measures will include enforcement and possible fines.

North Marin, which already has conservation regulations in place, is considering additional limits. Its records show that rainfall at its Stafford Lake reservoir has been just about 8 inches since July, the lowest amount since 1916, when the recording of its rainfall levels began.

We are headed into several seasons when we are all going to be a lot more cognizant about saving water.

Local water officials also need to be cognizant of the impacts of these measures and be ready to make reasonable adjustments. Key to overall success will be widespread public awareness.

Marin residents, over the years, have proven their mettle in striving to meet required conservation goals. Letting us know how we are doing — individually and as a community — should be a priority.

The measures being advanced should come as no surprise. Nor should local participation in weathering another dry spell.

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`ONE DAY AT A TIME'

Marin County ranchers brace for driest year in decades

Illavin Independent Journal

By Will Houston

whouston@marinij.com

Marin County ranchers say this year's drought and record low rainfall is the worst they can remember. And it's only expected to worsen in the coming months.

Creeks that flowed even during the notoriously dry 1976/77 drought have dried out or never ran at all. The lush pastures that would normally be in their prime this time of year are parched and barely reach ankle height. Stock ponds and pools for cattle and other livestock that would normally last into summer are dropping to alarmingly low levels, and some ranchers are considering trucking in water.

"I've been in the business for 50 years and I've never seen it this bad," said Jerry Corda, who runs the Lester Corda and Sons Dairy north of Novato near the county line with his brother Tom.

"This drought is absolutely and without a doubt the worst I have ever experienced and the worst I've ever heard about," said Sam Dolcini, who runs a beef cattle ranch near the Marin-Sonoma border. "From personal experience and talking to people, the only thing close to this was the drought in the 1976-77 window and people say that at least enough rain fell that year to keep the pastures growing. That has not happened this year."

This year's record low rainfall is the second consecutive dry winter in Marin and California. Just 20 inches of rain fell at Lake Lagunitas this rainy season, the second-lowest amount in 143 years of records and just shy of the record low of 18 inches in 1924. Stafford Lake in Novato has only recorded about 8 inches of rain, the lowest on record since 1916.

With pasture quality so poor, Corda said he is already having to buy and use supplemental hay bales to feed his 180 cows when in a normal year they could go out to pasture twice per day. The drought is also expected to decrease the amount of supplemental feed available, which Corda says will drive prices even higher. That will come with a heavy price tag once he inevitably has to double the number of hay bales he feeds his cows.

"It's unprecedented to see this at this time of year," said Corda, who is also a member of the Marin County Farm Bureau board of directors.

The Marin County Agricultural Commissioner's office has asked the county's two largest water suppliers to allow ranchers to draw reservoir water if needed. Acting Agricultural Commissioner Stefan Parnay said this drought might well end up being one of the worst in state history.

"I've been in the business for 50 years and I've never seen it this bad."

— Jerry Corda, rancher



Jerry Corda walks on his ranch in rural northeast Marin County on Tuesday. Corda says the land where his cattle graze is usually lush green and often damp this time of year.

PHOTOS BY SHERRY LAVARS — MARIN INDEPENDENT JOURNAL



A dairy cow chews on bit of dry grass at Corda's ranch. Corda said he is already buying supplemental hay bales to feed his 180cows because the pasture is so arid. "Everybody needs to be mindful now with water and what they use," Parnay said. "It's a precious commodity and agriculture can't survive without it. I agree it's our responsibility to support our local agricultural industry so they can continue to be viable."

The Marin Municipal Water District will vote on Tuesday on Parnay's request to allow ranchers to draw as much as 2.3 million gallons, or about three-and-a-half Olympic-sized swimming pools' worth, of untreated water from the Nicasio reservoir in the coming months as needed. The amount is about one tenth of a percent of the district's total water supply of about 42,700 acre-feet, according to district staff. The permit would also be revocable at any time. The district vote will come at the same meeting the district will consider imposing mandatory water restrictions on the 191,000 residents in central and southern Marin for the first time since the late 1980s.

Two dairies have asked to buy the Nicasio reservoir water so far. One is the Dolcini Jersey Dairy ranch in Nicasio Valley, whose owner, Brian Dolcini, said he is already installing water tanks and plans to start trucking in water, something he hasn't had to do since 1977.

"In '76, the first year — and it tells you how different the years are — we were able to pump out of the creek. The creek actually ran a bit and get enough into the dam," Dolcini said, referring to the dam on his property. "This year the creeks never ran and in 1977 they never ran either. And that's when the county implemented a plan where they contracted the water trucks and hauled it in to us."

Dairies use an average of about 14,000 gallons of water in a single day, Parnay said. The amount fluctuates depending on the operation and the temperature.

The county already has an agreement with the North Marin Water District to draw water from Stafford Lake near Novato for ranches during droughts. But the number of ranches in West Marin makes the cost of trucking water even higher, which is why using Nicasio reservoir would be more cost-effective and easier, Parnay said.

The Marin Municipal Water District board voiced support for the idea last week.

"As far as risk-benefit, it's a pretty good bet and for our relations with our West Marin neighbors," board member Larry Bragman said at the board's meeting on April 6. The construction of the Nicasio reservoir in 1960 resulted in six dairies going out of business because they were in low-lying areas that are now inundated with water.

"It is not lost on the agricultural community that that reservoir, when it was built, took agricultural property out of production for the benefit of the urban population," said Sam Dolcini, who is a board member of the Marin County Farm Bureau and the Marin Agricultural Land Trust. "So, it's appreciated that for the first time since that dam was built in 1960 that resource will be shared back with the agriculturalists in the area."

Drew McIntyre, general manager of the North Marin Water District, said ranchers last had to draw water in 2014, but the amount was negligible and likely would be this year considering the high cost of trucking water. That said, the district is also preparing to enact mandatory conservation for its 60,000 Novato-area customers this summer.

"I think it's a good idea any time the local water agencies can work cooperatively to help benefit the county as a whole," McIntyre said. "It's a good thing so long as we make sure it's not having a negative impact on our customers."

Should the costs of having to truck in supplemental and water become unsustainable, Brian Dolcini said it's likely that ranchers will look to reduce their herd size, which often results in cows and cattle being sold for slaughter.

"In this business, you just take it one day at a time," he said. "Whatever gets thrown at you, you deal with it."



Jerry Corda feeds his cattle hay on Tuesday at his ranch between Novato and the Sonoma County line.

SHERRY LAVARS - MARIN INDEPENDENT JOURNAL

April 16, 2021



Web & Social Media Report

March 2021

Website Statistics

	NORTH MARIN WATER DISTRICT			Home A					
	Oct 2020	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021
2020/ 21 Visitors	4,903	3,869	4,110	5,046	4,677	5,475			

Advised for Building Owners

(Posted October 19, 2020) As Marin County implements gradual, phased reopening of business and school buildings that were dormant for months, NMWD suggests you fully flush your building's plumbing by [...]

Social Media Followers

	Oct-2020	Nov-2020	Dec-2020	Jan-2021	Feb-2021	Mar-2021	Apr-2021	May-2021	Jun-2021
Facebook Likes	1,185	1,186	1,188	1,186	1,181	1,185			
Twitter Followers	14	14	17	21	24	29			
lnstagram Followers	402	414	431	439	457	469			



NMWD Most Visited Pages

Pages	Unique Pageviews	% of Total		
Home	3,278	30.41%		
Online Billing	1,875	19.19%		
Watersmart	601	6.14%		
Your Water Statistics	297	2.68%		
Novato Water	226	2.06%		
Services Quality	218	1.91%		
Service Charge	217	1.86%		
Contact	215	1.83%		
Meetings 2021	202	1.69%		
Employment Opportunities	174	1.67%		

March News

How Mulch Can Help You Save Water And Money

(Posted March 24, 2021) We've been sharing tips on social media and in our recent News story about easy ways that you and your family can help conserve water. Not [...]



Emergency Water Conservation Ordinances Adopted (Novato and West Marin)

(Updated March 19, 2021) Public hearings were held on March 16, 2021 and the North Marin Water District Board of Directors adopted Emergency Water Conservation Ordinance No. 41 (Ordinance 41) [...]







March Social Media Highlights | Facebook

North Marin Water District 2 March - 🕲

North Marin Water District offers rebates of up to \$150 when customers replace their non-water conserving toilets (pre-1993). Visit nmwd.com/its-a-dry-year-save-water-with-us for more rebates and water saving tips.



56 people reached | 3 engagements



...

Happy #WorldEngineeringDay! Engineers are incredibly important to our society, and we are grateful for their hard work!



653 people reached | 6 engagements



...

North Marin Water District 9 March · 🕲

March 7-13 is #NationalGroundwaterAwarenessWeek! Did you know the average household's leaks can account for nearly 10,000 gallons of water wasted every year, according to the U.S. Environmental Protection Agency? Learn more: ngwa.org/get-involved/groundwater-awarenessweek

...



56 people reached | 1 engagements

Engagements include likes, reactions, clicks and comments



March Social Media Highlights | Facebook



Customers are welcome and encouraged to attend North Marin Water

District's virtual board meeting next Tuesday. See the agenda for how to

52 people reached | 1 engagements



It's Fix a Leak Week! Time to do some detective work and find those

hidden leaks once and for all. Learn more: epa.gov/watersense/fix-leakweek #FixALeakWeek



51 people reached | 2 engagements



Did you know we offer rebates up to \$100 per high-efficiency toilet (HET) and up to \$150 per ultra high-efficiency toilet (UHET) when customers change their non-water conserving toilets? Learn more: nmwd.com/save-water/indoors/



55 people reached | 2 engagements



Engagements include likes, reactions, clicks and comments



March Social Media Highlights | Facebook



...

Happy #WorldWaterDay! In honor of this year's theme — "Valuing Water" — we want to hear how water positively impacts your life. Please share in the comments!



53 people reached | 4 engagements

Engagements include likes, reactions, clicks and comments

North Marin Water District 23 March · 🔊

Find out why plants and gardeners like mulch, and how it can help save you money on your water bill: <u>nmwd.com/how-mulch-can-help-you-save-water-and-money/</u>

...



42 people reached | 1 engagements





March Social Media Highlights | Twitter

North Marin Water District @NorthMarinWater · Mar 2 ···· North Marin Water District offers rebates of up to \$150 when customers replace their non-water conserving toilets (pre-1993). Visit nmwd.com/save-water for more rebates and water saving tips. #northmarinwaterdistrict #water #savewater #savemoney #dryyear



North Marin Water District @NorthMarinWater · Mar 4 Happy #WorldEngineeringDay! Engineers are incredibly important to our society, and we are grateful for their hard work!



North Marin Water District @NorthMarinWater · Mar 9

March 7-13 is #NationalGroundwaterAwarenessWeek! Did you know the average household's leaks can account for nearly 10,000 gallons of water wasted every year, according to the U.S. Environmental Protection Agency? Learn more: ow.ly/JwdG50DUlgB







March Social Media Highlights | Twitter

North Marin Water District @NorthMarinWater - Mar 13 Customers are welcome and encouraged to attend North Marin Water District's virtual board meeting next Tuesday. See the agenda for how to join by phone or Zoom: nmwd.com/meetings



North Marin Water District @NorthMarinWater · Mar 15 It's #FixALeakWeek! Time to do some detective work and find those hidden leaks once and for all. Learn more: epa.gov/watersense/fix... #northmarinwaterdistrict #checkforleaks #savewater #drinkingwater



North Marin Water District @NorthMarinWater · Mar 18 ···· Did you know we offer rebates up to \$100 per high-efficiency toilet (HET) and up to \$150 per ultra high-efficiency toilet (UHET) when customers change their non-water conserving toilets? Learn more: nmwd.com/savewater/ind...

#highefficiency #savewater #rebates

...







March Social Media Highlights | Twitter



North Marin Water District @NorthMarinWater · Mar 22 ···· Happy #WorldWaterDay! In honor of this year's theme – "Valuing Water" – we want to hear how water positively impacts your life. Please share in the comments! #valuingwater #savewater #drinkingwater





North Marin Water District @NorthMarinWater · Mar 23 ···· Find out why plants and gardeners like mulch, and how it can help save you money on your water bill: nmwd.com/how-mulch-can-... #northmarinwaterdistrict #mulch #water #savewater #savemoney #dryyear #gardentips













9 likes

4 likes











4 likes







8 likes


What's Next?

- Spring 2021 Waterline Newsletter
- GFOA news story & social (date pending)
- Cash for Grass social media posts
- National Gardening Day social media posts
- Earth Day social posts
- Continued support of SMWSP 'Dry Year/ Save Water' posts



SUPPLEMENTAL INFORMATION FOR ITEM #8



WATER DEMAND ANALYSIS

NORTH MARIN WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

20 April 2021

DAVID UMEZAKI, PE



2020 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURES UPDATE

- Water Demand & Conservation analysis for 9 agencies, including NMWD
 - Analysis of water use/demand characteristics
 - Population and water demand projections (including passive savings)
 - Conservation program past participation and savings
 - Cost-benefit analysis of future water conservation programs / scenarios

NORTH MARIN WATER DISTRICT
2020 Water Demand Analysis and Water Conservation Measure Update North Marin Water District
December 2020 (EKI C00004.00)
Prepared by: EKI Environment & Water, Inc. 2001 Junipero Serra Boulevard, Suite 300 Daly City, California 94014 (650) 292-9100



www.ekiconsult.com 001 Junipero Serra Blvd, Suite 300 • Daly City, CA 94014

PROJECTED POPULATION AND EMPLOYMENT

Population

- Using ABAG (2018) adjusted for RHNA housing projections
- Total growth rate: 12.6%
- Average annual growth rate: 0.50%

Employment

- Using ABAG (2018) City of Novato projections
- Total growth rate: 5.4%
- Average annual growth rate: 0.27%



SYSTEM WATER DEMANDS

Annual Water Demand (AF)

Historical Water Demands

- Largest percent increase in demand between 2016 and 2020 was single family residential (25% increase), institutional/governmental (19%), and landscape irrigation (18%).
- Overall increase from 2016-2020 was 8.3%.
- Increase in 2018 due to rebound from drought

9.000 8,000 7,000 6,000 5,000 4,000 3.000 2,000 1,000 0 2016 2017 2018 2019 2020 Year Single Family Multi-Family Commercial Institutional/Governmental Landscape Other Potable Raw Water Losses Other Non-Revenue Water Make-Up to Recycled Water System

Annual Water Demand by Sector: 2016-2020

DEMAND FACTOR EVALUATION

Considered a	range o	f demand
factors based	on:	

- Pre-Drought usage
- Post-Drought usage
- A mid-point between pre- and postdrought
- Selected demand factors (shown in orange boxes) were combination of Pre-Drought and Post-Drought factors

	Water Demand Factor (GPD/account) (a)							
Water Use Sector	Pre-Drought (2011-2013)	Partial Rebound	Post-Drought (2017-2019)					
Single Family Residential								
Existing Accounts	351	316	281					
New Accounts (b)	426	388	349					
Apartment	999	934	868					
Townhouse/Condo	155	144	132					
Mobile Home	923	875	827					
Commercial	1,043	1,001	959					
Government	2,397	2,539	2,680					
Irrigation	2,046	2,260	2,473					
Pool	802	743	684					
Other	82	57	32					

Potential Water Demand Factors Considered



PROJECTED POTABLE WATER DEMANDS

 Incorporates passive conservation savings

	Additional	Projected Water Use							
Use Type	Description (as needed)	2025	2030	2035	2040	2045			
Single Family		5,928	6,072	6,271	6,308	6,355			
Multi-Family	Apartments, condos, mobile homes	1,278	1,263	1,264	1,243	1,230			
Commercial		932	930	919	906	896			
Institutional/ Governmental		297	299	299	297	295			
Landscape		1,001	1,024	1,035	1,038	1,040			
Other Potable	Pools, fire services	129	133	136	138	139			
Losses	(b)	301	311	322	325	329			
Other Non- Potable	Raw Water (c)	218	218	218	218	218			
	TOTAL	10,084	10,249	10,463	10,472	10,502			





PROJECTED POTABLE WATER DEMANDS

- 2045 projected demand is 24% higher than 2019 demand (but 10% lower than 2006 demand)
- In 2040, projected demand is almost the same as the 2015 UWMP projections
- 2045 demand is within range of historical demands



SAVINGS FROM WATER CONSERVATION PROGRAMS

- Historical passive savings and conservation savings estimates using the Alliance for Water Efficiency (AWE) model
- Programs with highest total savings include:
 - Water Smart Home Survey Program
 - High Efficiency Toilets Rebate Program
 - High Efficiency Clothes Washer Rebate Program
 - Cash for Grass Rebate Program



FUTURE CONSERVATION PROGRAMS

Table 6-3c

Comparison of Program Scenarios – Costs and Savings

North Marin Water District, Sonoma-Marin Saving Water Partnership

Scenario (a)	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Cumulative Water Savings (AF)				NMWD Cost of Water	
	NMWD	Customers	NMWD	Customers	NMWD	Customers	2025	2030	2035	2040	2045	Saved (\$/AF) (b)
A) Outdoor Programs	\$957,512	\$1,781,120	\$904,054	\$935,438	1.1	1.9	273	471	509	510	510	\$1,774
B) Highly-Ranked Local Programs	\$2,385,007	\$3,007,632	\$975,172	\$867,055	2.4	3.5	288	560	679	744	798	\$1,222
C) Highly-Ranked Regional Programs	\$1,423,705	\$3,462,132	\$845,093	\$1,963,204	1.7	1.8	345	617	710	734	734	\$1,151

- Future water conservation program savings assessed under three program scenarios using AWE model
- Scenario B (Highly-Ranked Local Programs) found to achieve highest water savings benefit to cost ratio



FUTURE CONSERVATION PROGRAMS

Table 6-3a

Conservation Program Scenarios

North Marin Water District, Sonoma-Marin Saving Water Partnership

		Indoor/ Outdoor	Program Scenario				
Program	Sector		A) Outdoor Programs	B) Highly- Ranked Local Programs	C) Highly- Ranked Regional Programs		
Drip Irrigation Incentive for MFR and CII	MFR, CII	Outdoor	X	Х			
Drip Irrigation Incentive for SFR	SFR	Outdoor	Х	Х			
High Efficiency Clothes Washer Rebate - Residential	SFR, MFR	Indoor			x		
High Efficiency Faucet Aerator / Showerhead Giveaway -		Indeer			v		
Residential Customers	SFK, WIFK	Indoor			^		
Incentivize Irrigation Equipment Upgrades - SFR	SFR	Outdoor	Х	Х			
Landscape Conversion or Turf Removal - MFR and CII	MFR, CII	Outdoor	х	Х	x		
Landscape Conversion or Turf Removal -SFR	SFR	Outdoor	X	Х	Х		
Mulch rebate	SFR	Outdoor	X	Х			
Restaurant Spray Nozzle Rebates	CII	Indoor			x		
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - Large Landscape	MFR, CII	Outdoor	x	x	x		
Smart Irrigation Controller (Weather-Based Irrigation Controller) Rebates - SFR	SFR	Outdoor	x	x			
UHET <1.0 gal/flush Rebate - Residential	SFR, MFR	Indoor		Х			
Water Use Surveys/Audits - CII	CII	Both	X		X		
Water Use Surveys/Audits - SFR	SFR	Both	X	X	х		



STATUS OF URBAN WATER MANAGEMENT PLAN SECTIONS

- I. Introduction
- 2. Plan Preparation
- 3. System Description
- 4. Water Use Characterization
- 5. SB X7-7 Baselines, Targets, and 2020 Compliance
- 6. Water Supply Characterization
- 7. Water Service Reliability and Drought Risk Assessment
- 8. Water Shortage Contingency Plan
- 9. Demand Management Measures
- 10. Plan Adoption and Submittal

Complete Complete Complete Complete Complete Staff Reviewing Staff Reviewing Staff Reviewing Staff Reviewing In Progress

NEXT STEPS

- 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) – Release of Draft, June 1
- Public Review Period 14 days
- Public Hearing for Approval of UWMP and WSCP June 15



QUESTIONS?

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650-292-9079

