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June 21, 2023

Rancho Murieta Community Services District
Board of Directors
Ms. Mimi Morris - General Manager
Michael Fritschi - Director of Operations
P. O. Box 1050
Rancho Murieta, Ca. 95683

Dear Board Members, Ms. Mimi Morris and Mr. Michael Fritschi,

On June 7, 2023 an email was sent to the Board regarding recycled water claims verses facts. The attached documents address additional discrepancies.

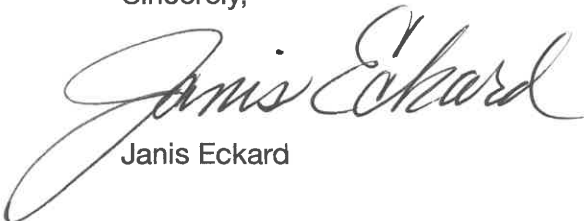
Since 2006, when the RMCS D issued their Integrated Water Master Plan, I have repeatedly appeared before the Board Members and General Mangers, expressing concern over the inaccurate data and aggressive assumptions used in the 2006 and subsequent water studies. Because my concerns always appeared to fall on deaf ears, my findings were presented to the Sacramento County Board of Supervisors, the Department of Public Health and the Department of Water Resources. These agencies provided CSD with a peer review and letters supporting my concerns, that called for change.

Unfortunately, since I began exposing the CSD's use of inaccurate data and unrealistic assumptions the CSD has continued and even accelerated this practice.

All of the studies I have expressed concern over were generated by Ms. Lisa Maddaus, the very person the current Board hired to do the 2023 Integrated Water Master Plan and Water Supply Assessment.

This Board has several very important questions to answer: Who directed Ms. Maddaus to use these predetermined assumptions? Who supplied the inaccurate data and why has the CSD been paying Ms. Maddaus to develop models that contain unachievable scenarios?

Sincerely,



Janis Eckard

ADDITIONAL RECYCLED WATER CLAIMS VERSES FACTS:

- 1) Page 5 of the CSD September 15, 2010 Water Supply Assessment states: "In the 2010 IWMP Update, the District was projected to have an average annual recycled water production estimated at 1,110 AFY"

For comparison purposes, Travis Bohannon, Chief Plant Operator, stated that the 2022 recycled water production was 160.848 Million Gallons = 493.69 Acre Feet. For additional supporting numbers, see the attached RMCCSD Treated Water Water Production document and Section 2, Page 2-4 of the 2020 Compliance Plan

These numbers DO NOT support the claim that the District's recycled water production estimate of 1,110 AFY is valid. The number gives the illusion there is a non-existent supply. The actual totals are approximately half that figure. Even if you project and include the recycled water generated by ALL of the proposed developer homes, this number is still way too high. The developer homes will not double the size of the community so they won't double the recycled water produced. Plus future conservation measures will reduce recycled water production.

- 2) September 15, 2010 2020 Compliance Plan pages: Figure C-15, Page 1 of 1 and Figure C-16, Page 1 of 1
These pages state: **ALL** (Emphasis added), "All new residential connections based on updated projected 615 connections between 2015 and 2020 (Phase 1) will use recycled water for irrigation demand."

Where will this recycled water come from?

As stated before, the CSD has a contract with the Rancho Murieta Country Club to supply 100% of the golf course's irrigation demand with recycled water, EVEN IN DROUGHT AND LOW WATER YEARS. Currently the RMCC must supplement with potable water due to INSUFFICIENT recycled water in all but heavy rainfall periods.

It takes approximately two homes potable (regular) water usage to generate enough recycled water to irrigate one household. At best, the developer homes might be able to produce enough recycled water to supply HALF (not ALL) of their properties and that total does not take into consideration the existing RMCC supply shortfall.

- 3) Figure C-2 of the 2020 Compliance Plan has a chart that shows a 36% water usage savings by assuming that recycled water will be used by new and existing customers.

Figure C-3 of the 2020 Compliance Plan's chart shows a 33% water usage savings by assuming that recycled water will service ALL new connections.

B-2 of the 2020 Compliance Plan states: "According to RMCCSD's 1994-2009 water use data, outdoor use is 61.3% of total residential use." If you assume ALL developer homes irrigate with recycled water, there will be a significant supply shortfall resulting in a need to supplement with potable (regular) water.

Studies with models that contain unachievable assumptions and inaccurate numbers place the community at risk of running out of water.

3.3 Recycled Water

The use of recycled water in Rancho Murieta offsets the demand for potable use. The new development is required to use recycled water for outdoor irrigation where economically feasible per District Policy 2011-07, adopted July 20, 2011. It also prevents the need for the District to obtain a National Pollutant Discharge Elimination System (NPDES) permit for disposing of treated wastewater.

Recycled water of the tertiary treated wastewater effluent is currently used exclusively on the two community golf courses. They have a combined irrigation area of approximately 250 acres and annual average demand of 550 AF (179.2 million gallons). The District's tertiary treatment plant typically operates annually from late April through October to produce recycled water for the golf courses' irrigation needs. Should the District have an excess of recycled water, it may be delivered for use on adjacent property located at the Van Vleck Ranch. In the 2010 IWMP Update, the District was projected to have an average annual recycled water production estimated at 1,110 AFY. ←

The District stops supplying recycled water in coordination with the Rancho Murieta Country Club (RMCC) each fall per a Waste Discharge Requirement with the Regional Water Quality Control Board, as well as when supplies are exhausted. RMCC then draws down the levels in their ponds at Holes 10, 11, 16 and 17 on the South Course and partially draws down Bass Lake on the North Course. This is to keep the ponds from violating the minimum of two feet from spillway requirement from the Regional Water Quality Control Board to prevent the ponds from overflowing due to storm water runoff during the rainy season.

Recycled water is distributed in a separate network of pipes that keeps reclaimed water pipes completely separate from potable water pipes. The non-potable reclaimed water is distributed in lavender (light purple) pipes or pipes marked as "RECYCLED WATER" to distinguish it from potable water. Where economically feasible, future development is required to install purple pipe and supply recycled water for residential and common area irrigation purposes.

3.4 Raw Water

The District's raw water infrastructure consists of an intake from the Cosumnes River at its Granlees Dam and diversion structure, diversion pumps, and piping to feed the three primary raw water storage reservoirs. The three primary storage reservoirs, Calero, Chesbro and Clementia have an estimated usable combined storage capacity of 4,608 AF. This value does NOT include the minimum storage volume of 400 AF that cannot be put into use, commonly referred to as dead storage. An additional 115 AF is available supply when the reservoir stop logs or flashboards are in place. Usable reservoir volume (meaning that dead storage is excluded because it is not usable) with stop logs in place is 4,723 AF. The WSA total available storage for the District is assumed to be the reservoir volume with the stop logs installed. During the 2012-2015 drought, the District was able to fill the reservoirs with the stop logs in place.

This 4,723 AFY is a conservative assumption of available supply because it does not include the amount of water that is directly supplied to residential and commercial customers during the District's permitted diversion season of November through May. This "dynamic pumping supply" is continually replaced in the reservoirs throughout the diversion season. The volume of additional "dynamic pumping" varies year to year depending on the flow levels in the river, storage volume in reservoirs, and other operational decisions. Under the District's water right permit 16762 the maximum amount of water allowed to be diverted from the Cosumnes River is 6,368 AFY. The difference between maximum storage and maximum diversion allowed is 1,645 AFY, which would be the maximum amount of "dynamic pumping" volume available to the District. This additional 1,645 AFY volume was not included in the water balance presented in

YEAR	RMCS D TREATED WASTEWATER PRODUCTION	TREATED WASTEWATER DELIVERED TO RMCC GOLF COURSES
2021		
2020		
2019	483.9	478.3
2018	463	475.4
2017		
2016	446.3	386.6
2015	402.2	329
2014	427.8	405.9
2013	449.5	435.4
2012	459.2	421
2011	484	470

Table 2-3. Historic Potable Water Use by Customer Category (AFY)

Year	Raw water accounts ^a	Total Commercial ^a	Total Irrigation ^a	Total Residential	Total Water Use
1994	NA	NA	NA	794	794
1995	NA	NA	NA	789	789
1996	NA	NA	NA	858	858
1997	NA	44	39	930	1,013
1998	NA	75	51	800	925
1999	NA	90	121	927	1,137
2000	NA	94	87	946	1,128
2001	129	140	93	1,063	1,424
2002	110	128	98	1,127	1,462
2003	105	135	93	1,114	1,447
2004	116	199	127	1,223	1,665
2005	78	164	121	1,208	1,571
2006	129	126	117	1,315	1,687
2007	106	133	134	1,522	1,895
2008	64	149	162	1,382	1,757
2009	145	140	136	1,292	1,713

^a NA = not available

Table 2-4. Historic Recycled Water Production, Use, and Losses (AFY)

Year	Recycled Water Production
1994	520
1995	562
1996	656
1997	456
1998	425
1999	697
2000	813
2001	506
2002	595
2003	194
2004	752
2005	484
2006	548
2007	586
2008	488
2009	448

FIGURE C-15
 Measure 22a - Recycled Water - New Connections Only
 2020 Compliance Model
 (NOT SELECTED FOR IMPLEMENTATION)

Fiscal Year	Number of EDUs Using Recycled Water	Annual Water Savings (gpy)	Projected Population	Total Water Savings (gpcd)	Benefits (\$)			Costs (\$)			Net Present Value (\$)
					Avoided Water Costs (\$)	Beneficially Used Recycled Water (\$)	Total Discounted Benefits (\$)	Total Discounted Costs (\$)	Total Discounted Costs (\$)		
2010-2011	6,535	-	-	-	-	-	0	0	0	0	0
2011-2012	6,535	-	-	-	-	-	0	0	0	0	0
2012-2013	6,535	-	-	-	-	-	0	0	0	0	0
2013-2014	6,535	-	-	-	-	-	0	0	0	0	0
2014-2015	6,535	-	-	-	-	-	0	0	0	0	0
2015-2016	6,535	-	-	-	-	-	0	0	0	0	0
2016-2017	123	12,424,699	6,872	5.0	5,948	20,329	22,718	337,289	-314,571	-314,571	
2017-2018	123	24,849,397	7,226	9.4	11,897	40,658	42,864	318,197	-275,333	-275,333	
2018-2019	123	37,274,096	7,599	13.4	17,845	60,987	60,656	300,186	-239,529	-239,529	
2019-2020	123	49,698,795	7,991	17.0	23,793	81,317	76,297	283,194	-206,897	-206,897	
2020-2021	123	62,123,493	8,403	20.3	29,741	101,646	89,973	267,164	-177,191	-177,191	
	615		20.3		89,224	304,937	292,509	1,506,029	-1,213,520	-1,213,520	

(ALL)

Assumptions:

All new residential connections based on updated projected 615 connections between 2015 and 2020 (Phase I) will use recycled water for irrigation demand.

No new residential connections between 2010 to 2015. Annual average growth rate is 123 connections/yr. No commercial irrigation demand for recycled water was included.

Benefits are the avoided potable water delivered and recycled water disposed at \$2.35 million and \$2.75 million per Table ES-2 in Recycled Water Feasibility Study.

Cost per account is assumed to be \$11.5 million recycled water system capital costs divided by 3,117 residential connections in 2020. Recycled water demand per residential equivalent dwelling unit is 0.31 acre-year/account (Recycled Water Feasibility Study, HDR, June 2009).

Benefit cost ratio: 0.2

FIGURE C-16
 Measure 22b - Recycled Water - New Connections and Existing Account Conversions
 2020 Compliance Model
 (NOT SELECTED FOR IMPLEMENTATION)

Fiscal Year	Number of EDUs Using Recycled Water	Conversion of			Projected Population	Total Water Savings (gpcd)	Avoided Water Costs (\$)	Benefits (\$)		Costs (\$)		Net Present Value (\$)
		Existing Other Areas (gpy)	Incremental Water Savings (gpy)	Annual Water Savings (gpy)				Total Discounted Benefits (\$)	Total Discounted Costs (\$)			
2010-2011				6,535	-	-	0	0	0	0	0	0
2011-2012				6,535	-	-	0	0	0	0	0	0
2012-2013				6,535	-	-	0	0	0	0	0	0
2013-2014				6,535	-	-	0	0	0	0	0	0
2014-2015				6,535	-	-	0	0	0	0	0	0
2015-2016				6,535	-	-	0	0	0	0	0	0
2016-2017	123	3,017,380	15,442,079	6,872	7.4	30,206	42,589	344,209	-301,620			
2017-2018	123		12,424,699	7,226	10.6	45,600	60,653	324,725	-264,072			
2018-2019	123		12,424,699	7,599	14.5	65,932	82,732	306,345	-223,612			
2019-2020	123		12,424,699	7,991	18.1	86,263	102,118	289,004	-186,887			
2020-2021	123		12,424,699	8,403	21.2	106,594	119,043	272,646	-153,602			
	615	3,017,380	65,140,873		21.2	334,595	407,135	1,536,929	-1,129,794			

<ALL>

Assumptions: All new residential connections based on updated projected 615 connections between 2015 and 2020 (Phase 1)

will use recycled water for irrigation demand.

No new residential connections between 2010 to 2015. Annual average growth rate is 106 EDUs/yr.

No commercial irrigation demand for recycled water was included.

Assumes only Stonehouse and Riverview Parks would be converted to recycled water for 40.6 AF/yr and 5.7 AF/yr, respectively.

Benefits are the avc per Table ES-2 in Recycled Water Feasibility

Cost per account is assumed to be \$11.5 million recycled water system capital costs and

\$250,000 conversion for the parks divided by 3,117 residential connections in 2020.

Source: Recycled water demand per residential equivalent dwelling unit is 0.31 acre-year/account (Recycled Water Feasibility Study, HDR, June 2009)

Benefit cost ratio: 0.3

2.4 Historical Water Conservation Activity in Rancho Murieta

RMCS D has actively used non-potable water for meeting golf course irrigation demands since the courses were built and switched over to recycled water in 1988 with raw water augmenting supply. Over time it is the RMCS D's intent to supply 100% of the golf course's irrigation demand with recycled water, even in drought and low water years. ←

In addition, RMCS D is currently and has historically been engaged in promoting water conservation awareness to its customers, including the following activities:

- ▣ Continue to designate ongoing conservation program funding in yearly budget planning
- ▣ Provide new home Welcome Packets which include copies of water conservation water code and a copy of the River Friendly Landscaping Guidelines
- ▣ Assist Rancho Murieta Association, (home owner association) with landscape plan reviews related to water wise landscaping and will work to incorporate the new Sacramento County Landscaping Ordinance requirements into future plan reviews
- ▣ Participate in the Regional Water Efficiency Program public outreach and rebate programs for high efficiency toilets and washers started in 2010
- ▣ Host web pages focused on water conservation education and awareness
- ▣ Support Garden Club efforts to promote water wise landscaping. Currently, the Garden Club is planning a water efficient landscape garden at RMCS D office with RMCS D assistance in pursuing grant funding
- ▣ Support Active water waste reporting and follow-up, staff notifications given if seen and anonymous reporting via the RMCS D web site
- ▣ Considered tiered pricing in 2009, but postponed implementation to later years to ensure compliance with 2020 mandates
- ▣ Held outreach events to promote conservation including distributing plumbing retrofit kits, including hosting drought fairs for the drought in the early 1990s
- ▣ Provided drought outreach in 2007-09 including alerts with web site notices

Lastly, this compliance report is evidence of the RMCS D Board's desire and commitment to be on the forefront in compliance with 2020 mandates and to insure the community has long term beneficial and reasonable water rights. As a result, RMCS D will be expanding their conservation program activities and budget based on the recommendations of this 2020 Compliance Plan.

FIGURE C-2. 2020 Compliance Plan Model - Scenario B - Limited Conservation Measures and Recycled Water for New Connections Only
July 1, 2010

Measure	2015 Estimated Savings (gpcd)	2015 Goal (gpcd)	2020 Estimated Savings (gpcd)	2020 Goal (gpcd)	2015 Contribution		2020 Contribution		Benefit/Cost Ratio
					Method 1 2015 Goal (gpcd)	Method 1 2020 Goal (gpcd)	Method 1 2015 Goal (gpcd)	Method 1 2020 Goal (gpcd)	
Measure 1 through 10 - Education/Outreach	3.0	29.8	7.5	59.6	1,800.0	3,800.0	3.0	7.5	—
Measure 11 - Residential Plumbing Kits	Yes	29.8	29.8	59.6	\$13,901	\$13,902	N/A	N/A	0.7
Measure 12 - HET Rebates	No	29.8	29.8	59.6	\$34,062	\$34,100	N/A	N/A	1.4
Measure 13 - High Efficiency Washers	Yes	0.9	29.8	2.2	\$35,754	\$35,754	0.9	2.2	2.3
Measure 14 - Residential Water Surveys	No	29.8	29.8	59.6	\$69,504	\$134,883	N/A	N/A	0.4
Measure 15 - Weather-based Controllers	Yes	7.4	29.8	12.1	\$60,263	\$138,990	7.4	12.1	0.8
Measure 16 - Irrigation Retrofits	No	29.8	29.8	59.6	\$16,572	\$38,233	N/A	N/A	1.0
Measure 17 - Landscape Retrofit	No	29.8	29.8	59.6	\$40,931	\$30,586	N/A	N/A	0.1
Measure 18 - Rain Barrels	Yes	29.8	29.8	59.6	\$37,305	\$16,058	N/A	N/A	0.0
Measure 19 - Large Landscape Water Budget Incentive	Yes	1.5	29.8	1.2	\$0	\$5,100	1.5	1.2	1.4
Measure 20 - Large Landscape Irrigation Upgrades	Yes	0.5	29.8	1.0	\$11,583	\$24,695	0.5	1.0	0.3
Measure 22a - Recycled Water - New Connections*	Yes	0.0	29.8	20.3	\$0	\$1,505,876	0.0	20.3	0.0
Measure 22b - Recycled Water - New and Existing Connections*	Yes	7.5	29.8	14.9	\$4,850	\$0	N/A	N/A	0.2
Measure 23-33 - Utility Operations, Rules and Regulations	Yes	22.3	29.8	60.6	107,994	1,728,160	22.3	60.6	—
Totals									

*Programming has been used to avoid double-counting. If conflicting measures are also provided, then this measure denoted with an asterisk will be automatically excluded from the plan

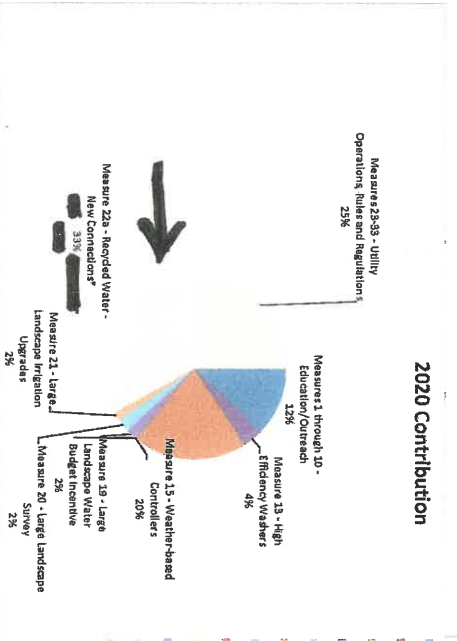
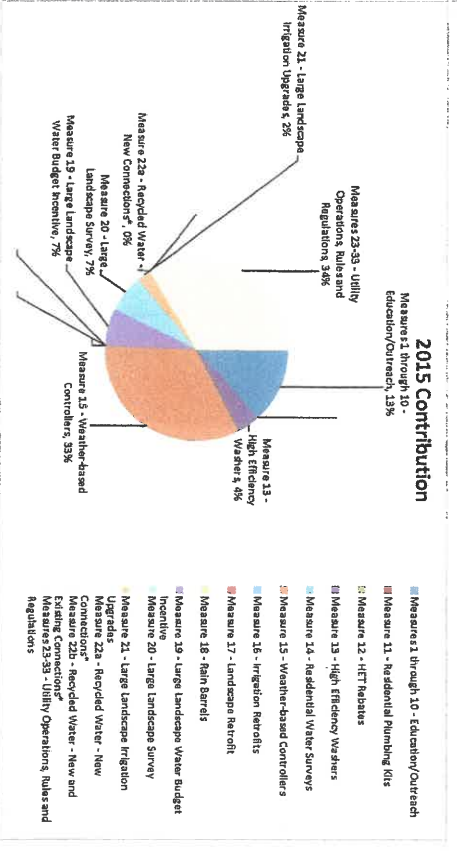
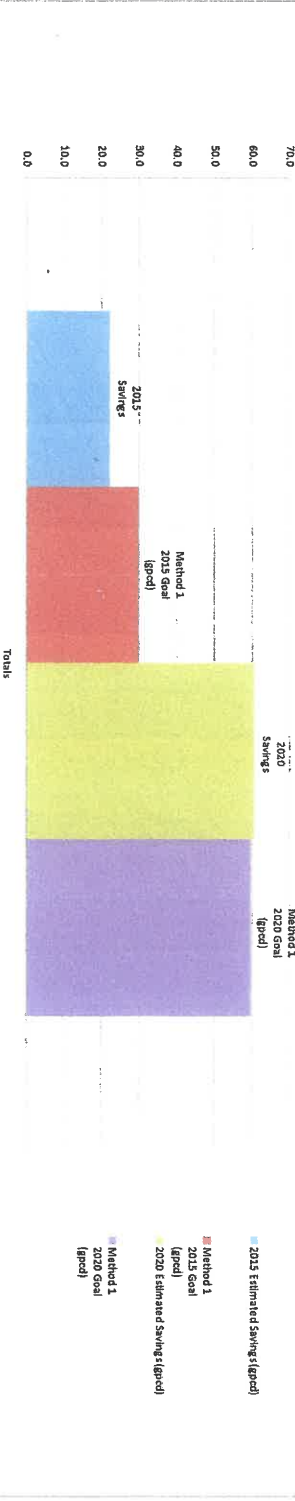
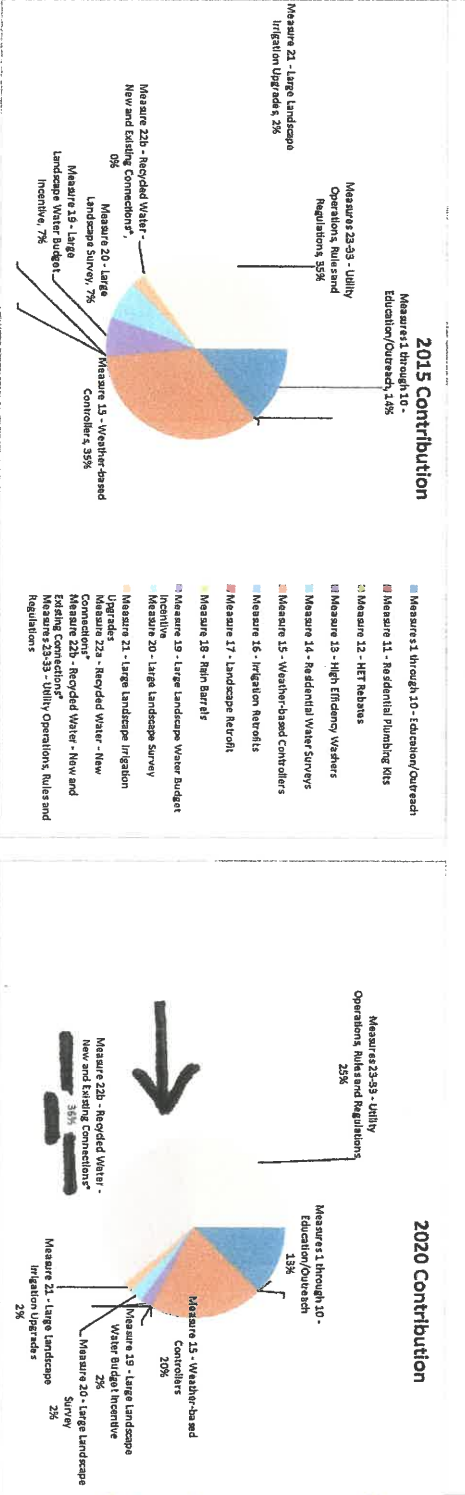
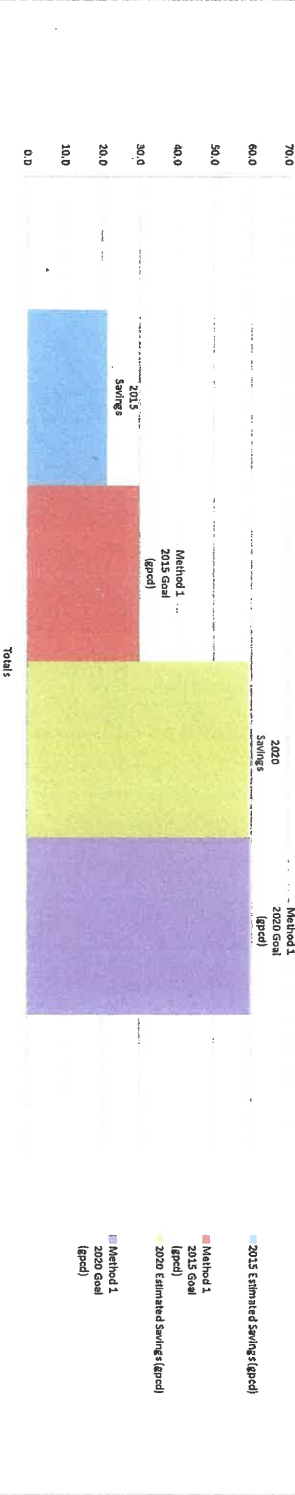


FIGURE C-3. 2020 Compliance Plan Model - Scenario C - Limited Conservation Measures and Recycled Water for New Connections and Existing Parks Only
July 1, 2010

Measure	2015		2020		5-yr Cumulative 2015 Budget (\$2010)	10-yr Cumulative 2020 Budget (\$2010)	2015 Contribution 2020 Contribution	Benefit Cost Ratio
	Estimated Savings (gpcd)	Method 1 2015 Goal (gpcd)	Estimated Savings (gpcd)	Method 1 2020 Goal (gpcd)				
Measures 1 through 10 - Education/Courtesy	3.0	29.8	7.5	59.6	3,800.0	3,800.0	3.0	7.5
Measure 11 - Residential Plumbing Kits	No	29.8		59.6	\$13,901	\$13,902	N/A	0.7
Measure 12 - HET Rebates	No	29.8		59.6	\$34,100	\$34,100	N/A	1.4
Measure 13 - High Efficiency Washers	No	29.8		59.6	\$35,754	\$35,754	N/A	2.3
Measure 14 - Residential Water Surveys	No	29.8		59.6	\$134,883	\$134,883	N/A	0.4
Measure 15 - Weather-based Controllers	Yes	29.8	12.1	59.6	\$80,263	\$138,990	7.4	0.8
Measure 16 - Irrigation Retrofits	No	29.8		59.6	\$38,233	\$38,233	N/A	1.0
Measure 17 - Landscape Retrolf	No	29.8		59.6	\$30,586	\$30,586	N/A	0.1
Measure 18 - Rain Barrels	No	29.8		59.6	\$37,305	\$37,305	N/A	0.0
Measure 19 - Large Landscape Water Budget Incentive	Yes	29.8	1.2	59.6	\$0	\$5,100	1.5	1.4
Measure 20 - Large Landscape Survey	Yes	29.8	1.0	59.6	\$9,096	\$9,096	0.5	1.0
Measure 21 - Large Landscape Irrigation Upgrades	Yes	29.8	0.5	59.6	\$11,583	\$24,695	0.5	0.3
Measure 22a - Recycled Water - New Connections*	No	29.8		59.6	\$0	\$0	N/A	0.0
Measure 22b - Recycled Water - New and Existing Connections*	Yes	0.0	29.8	21.2	\$0	\$1,256,929	0.0	0.2
Measure 23-33 - Utility Operations, Rules and Regulations	Yes	7.5	29.8	14.9	\$4,850	\$4,850	7.5	14.9
Totals	21.3	29.8	59.4	59.6	\$9,591	\$1,723,460	21.3	59.4

*Regenerating has been used to avoid double-counting. If conflicting measures are also included, then this measure identified with an asterisk will be automatically excluded from the plan.



From: Janis Eckard (janiseckard@ranchomurieta.org) **Date:** Wed, 7 Jun 2023 20:19:42 -0700
To: mmorris@rmcsd.com, mfritschi@rmcsd.com, awilder@rmcsd.com
Subject: Board of Directors and GM letter,

To: Board of Directors, Mimi Morris (General Manager), Michael Fritschi and Lisa Maddas,

Due to seeing and hearing conflicting information, additional research was completed. Here are my findings:

Recycled water claims verses facts.

At the March 18th CSD water study meeting, a Power Point presentation showed the Murieta Gardens homes using recycled water. It was stated that the CSD recycled water meets residential landscape usage safety regulations and the developer said they will irrigate with recycled water to reduce the impact their future homes have on the community's water supply.

*Facts:

- 1) Both The Murieta Gardens and The Retreats have purple pipe in place, but are NOT using recycled water.
- 2) The CSD Treatment Plant produces recycled water that meets residential safety standards, PROVIDED samples are taken where the wastewater leaves the plant. However, recycled water, which is currently stored in lakes located on the Rancho Murieta golf course (where it commingles with surface water and local runoff) DOES NOT.
- 3) Recycled water leaving the treatment plant contains excess chlorine. If delivered directly from the plant, it would damage landscape vegetation. As a result, the recycled water must be stored where the chlorine can dissipate prior to delivery. There is no infrastructure in place to safely deliver the recycled water directly from the treatment plant to any developer lots.
- 4) The RMCSd has a contract with the Rancho Murieta Country Club to supply 100% of the golf course's irrigation demand with recycled water, EVEN IN DROUGHT AND LOW WATER YEARS. The Country Club must supplement with potable water, due to INSUFFICIENT recycled wastewater supply, during all but heavy rainfall years.
- 5) The CSD 1991 Water Rights state the primary recycled water disposal will be on the golf courses, public park and maintenance yard. (Houses are not included.) Like golf course water, there are no chlorine or commingling health issues for park water.
- 6) Under normal precipitation conditions, it takes approximately two households potable water usage to generate enough recycled water to irrigate one home. During times of drought, water rationing DECREASES the amount of recycled water generated.

The May 3rd and May 10th River Valley Times CSD meeting coverage discussed the "excess" recycled water and reported a conversation regarding "whether the district would turn on the recycled water for The Retreats and Murieta Gardens ..."

*Facts:

- 1) The CSD cannot simply "turn on the recycled water," until the necessary infrastructure is in place to safely store and transport it.
- 2) During heavy rainfall years, there is less demand for recycled water, creating a temporary storage capacity issue. The Van Vleck spray field is used to dispose of excess recycled water, during these times.

For all the above facts/reasons, it is highly unlikely there will ever be sufficient recycled water to supplement future development and reduce the strain these homes will place on Rancho Murieta's precious water supply.

*All facts were found in Department of Public Health letters, CSD documents or provided by CSD staff.

Janis Eckard