RANCHO MURIETA COMMUNITY SERVICES DISTRICT

15160 Jackson Road, Rancho Murieta, CA 95683
Office - 916-354-3700 * Fax - 916-354-2082

IMPROVEMENTS COMMITTEE

(Directors Randy Jenco and John Merchant)

Regular Meeting
February 4, 2025 at 8:00 a.m.

AGENDA

1. **Call to Order**

2. **Improvements Staff Report**

   A. *Discussion Item* **Potable Water Storage System Evaluation and Recommendations Draft Report**

   B. *Discussion Item* **Ground Water Test Well/Site Selection/Guidelines for Location**

   C. *Discussion Item* **Monthly Water Inventory and Production Report**

   D. *Discussion Item* **WSC Urban Water Management Plan (UWMP) and Vision**

   E. *Discussion Item* **Granlees Pumping Electrical Cost**

   F. *Discussion Item* **Steel Pipe to Calero Reservoir**

   G. *Discussion Item* **List of CIP Projects FY25-26**

   H. *Discussion Item* **SCWA Deposit**

   I. *Discussion Item* **District Administration Office Beautification**

3. **Comments from the Public**

4. **Director and Staff Comments/Suggestions**

5. **Adjournment**

In compliance with the Americans with Disabilities Act if you are an individual with a disability and you need a disability-related modification or accommodation to participate in this meeting or need assistance to participate in this teleconference meeting, please contact the District Office at 916-354-3700 or awilder@rmcsd.com. Requests must be made as soon as possible.

Note: This agenda is posted pursuant to the provisions of the Government Code commencing at Section 54950. Posting location is District Office.
The date and time of this posting is January 30, 2025 at 12:30 p.m.

MEMORANDUM

Date: February 4, 2025

To: Improvements Committee

From: Eric Houston- Director of Operations

Subject: Monthly Improvements Committee Updates

A. Potable Water Storage System Evaluation and Recommendations Draft Report
Please see attached Domenichelli & Associates report for discussion.

B. Groundwater Test Well/Site Selection/Guidelines for location
Staff would recommend that locations for wells be on CSD owned property and near current raw and treated water connections. This allows the flexibility of the type of usage for the water that is found. Current ideas for land acquisition possibilities will be discussed.

C. Monthly Water Inventory and Production Report
Please see the attached State Water Resources Control Board Safer Clearinghouse Drought Reporting Attachment.

D. WSC Urban Water Management Plan (UWMP) and Water Vision
WSC will be available at the March Improvements committee meeting.

E. Granlees Pumping Electrical Cost
Please see the attached Granlees spreadsheet for discussion.

F. Steel Pipe to Calero Reservoir
Direction on whether an analysis of the pipe is warranted. Waiting on cost estimates from Lumos.

G. List of CIP Projects
Please see attached list of proposed CIP Projects.

H. Discussion Item SCWA Deposit
Please see attached SCWA staff report.

I. Discussion Item District Administration Office Beautification
Staff are awaiting Board direction.

Technical Memorandum

Rancho Murieta Community Service District (RMCSD)

Potable Water Storage System Evaluation and Recommendations

Prepared by: Joe Domenichelli, PE
Reviewed by: Daryl Heigher, P.E.
Date: January 17, 2025

SECTION 1-BACKGROUND AND PURPOSE

The Rancho Murieta Community Service District (District) provides potable water service to the community of Rancho Murieta. The potable water system is supplied from the dual train water treatment plant (WTP) The plant contains an older conventional filter plant (Plant 2) and a newer membrane plant (Plant 1). Plant 2 has a capacity to supply approximately 2 million gallons per day (MGD) and Plant 1, which is the primary source, has a capacity of approximately 4 MGD. The combined capacity of 6 MGD adequately serves the District which currently has an estimated maximum day demand of 2.5 to 3MGD. There are two pressure zones, each with a single storage tank to provide operational, fire protection and emergency storage. The Rio Oso Tank (upper zone) is a 1-million-gallon (MG) tank and the Van Vleck Tank (lower zone) is a 3 MG tank. In recent years, the District has been dealing with low level warnings triggered at the Rio Oso tank during peak demand days experienced in the summer months. The goals of this Technical Memorandum (TM) are to summarize the observed storage issues, explore possible causes and solutions, and to determine what capacity remains for future development utilizing existing supply and storage facilities.

SECTION 2- POTABLE WATER DEMANDS

This TM focuses on the distribution storage capacity relative to the demand for potable water within the Rio Oso (Pressure Zone) and the tank's capacity to support additional development within this upper pressure zone.

The District standard of 750 average annual gallons per day (GPD) per equivalent dwelling unit (EDU) is used as a demand factor for this effort. Per the District standard, the conversion from average annual demand to peak day demand is a factor of 2.1. To provide a perspective on District standard values compared to actual measured demand flow, we gathered demand data available for several summer months. For this comparison, our team gathered:

1) Rio Oso zone water billing data for several months, including hot summer months in 2023,
2) Water levels in the Rio Oso and Van Vleck tanks for July, August and September of 2024,
3) Inflow to the Rio Oso tank with a new temporary flow meter installed by D&A (mid-August) for August and September 2024.

The tank inflow and elevation data for both Rio Oso are at 1-minute intervals and have been correlated to match the timing. No inflow for the Van Vleck tank is available, however water surface levels were available at the same intervals and months as Rio Oso.

Table 1 provides a summary of the average day and peak day demands estimated for the Rio Oso zone distribution system, based on the standard values described above and the actual Equivalent Dwelling

Units (EDUs) derived from billing data within the zone. It should be noted that these users are exclusively residential dwellings. Factors for converting the actual dwelling units to (EDUs) are also shown in Table 1, resulting in the estimated demands.

Table 1 Estimate of Demands Supplied from Rio Oso Tank

	Type	Connections	EDU Ratio	# of EDU	Demand Avg Day (GPD)	Demand Peak Day (GPD)	Demand Peak Day Demand (GPM)
Residential	EST1	267	1.0	267.0	200,250	420,525	292
	EST2	10	0.9	9.0	6,750	14,175	10
	CIR	353	0.7	247.1	185,325	389,183	270
	COT	177	0.7	123.9	92,925	195,143	136
	HPLX	0	0.5	0.0	-	-	0
	TWN	71	0.5	35.5	26,625	55,913	39
	VIL	0	0.5	0.0	-	-	0
	MV	0	0.3	0.0	-	-	0
Subtotal		878		682.5	511,875	1,074,938	746

Demand GPD per EDU 750
Max Day Peaking Factor 2.1

As a check of the Table 1 flow values, the D&A team installed a temporary clamp-on flow meter on the inflow pipe of the Rio Oso Tank in mid-August of 2024. Using the inflow data and the change in tank volume for corresponding days, we were able to calculate the outflow from the Rio Oso tank. This data was taken every minute of the day and is summarized below in Figure 1, showing the highest days of use for late August. Figure 2 was also developed from the August 2024 data to show a typical diurnal flow pattern for these high use days. Note that the diurnal curve is not typical of a large community, showing a much higher than expected peak demand in the morning with minor secondary peak demands later in the day. Also, the peaking factor from maximum day flow to peak hour flow is approximately 4.0. This is primarily due to the irrigation cycle for most of the users in the area being concentrated between the hours of 4am and 9am and the fact that this pressure zone is comprised completely of residential units with higher-than-average unit demands.

To further demonstrate the extreme peak flow conditions in the morning hours, the callouts on Figure 1 show the difference in inflow and outflow during the critical 5 hour period when demands are peaking. The outflow is approximately 2.2 times the inflow to the tank during these peak hours. Also seen on Figure 1, is that the total day demand approaches 0.90 MGD or 625 gallons per minute (gpm) on three of these August days. This equates to a factor of 2.8 between the 5-hour peak demand of 1,757gpm and the daily average of 625 gpm during these peak demand days.

The August 0.9 MDG demand calculated correlates well with the estimated peak day demand value of 1.07 MGD in Table 1 using District standard values. In fact, we would expect that the August peak flow would be slightly lower than the actual peak day demand which occurred in July of 2024. July was by far the hottest month in 2024, when several days in a row reached greater than 100 degrees. Unfortunately, we did not have the flow meter installed until after these hottest days of July, in order to calculate actual peak day demand leaving the Rio Oso tank. However, we can compare the total water treatment plant (WTP) outflow on the peak demand day in July with that of the peak demand day in August to get a factor to scale the 0.9 MGD to a July maximum day demand value. Figures 3 and 4 below provide a

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graphical representation of the two storage tanks water surface levels, as well as an accounting of the total treated water effluent pumped from the WTP.

Figure 1 Rio Oso Tank - Inflow and Outflow (Demand) in August

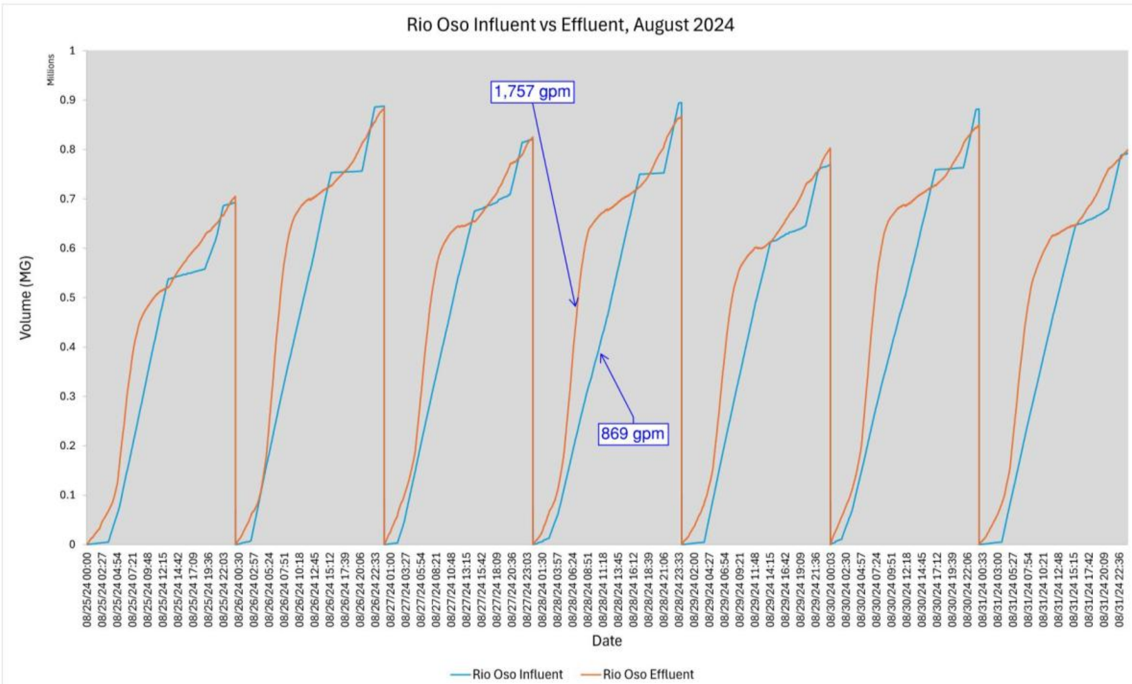

Figure 2 Maximum Day Diurnal Demand Flow Pattern for Rio Oso Zone

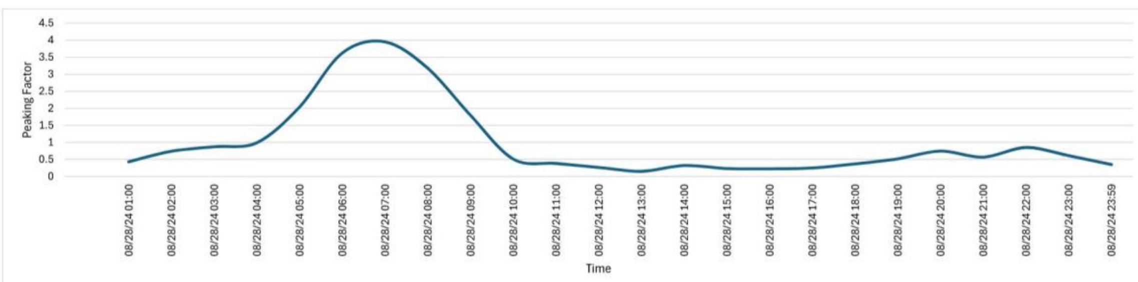

Figure 3 provides a graphical representation of the hottest days in July and the corresponding tank water levels for both Rio Oso Tank and the Van Vleck Tank. Also shown, in green, is the total WTP flow delivered to the system on those days (reset to zero at the end of each day). Figure 4 provides the same information for the tanks and the WTP flow for the August peak days. The ratio of the highest WTP daily delivery flows between these two months is 2.6MGD/2.3MGD, which is a factor of 1.13. Multiplying the 0.9MGD by 1.13 provides an estimate of 1.02MDG for the July peak day flow which is within 5% of the estimated demands in Table 1. Therefore, Table 1 will be used for future demand estimates in the upper pressure (Rio Oso) zone.

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Figure 3 Tank Levels for July 2024

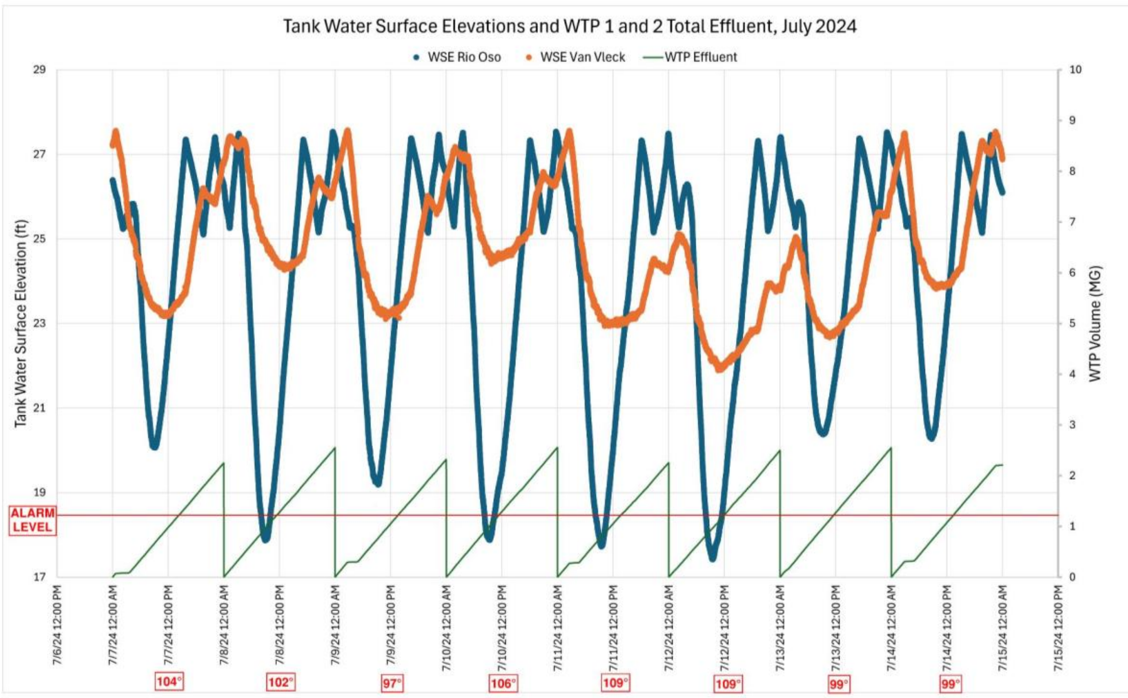
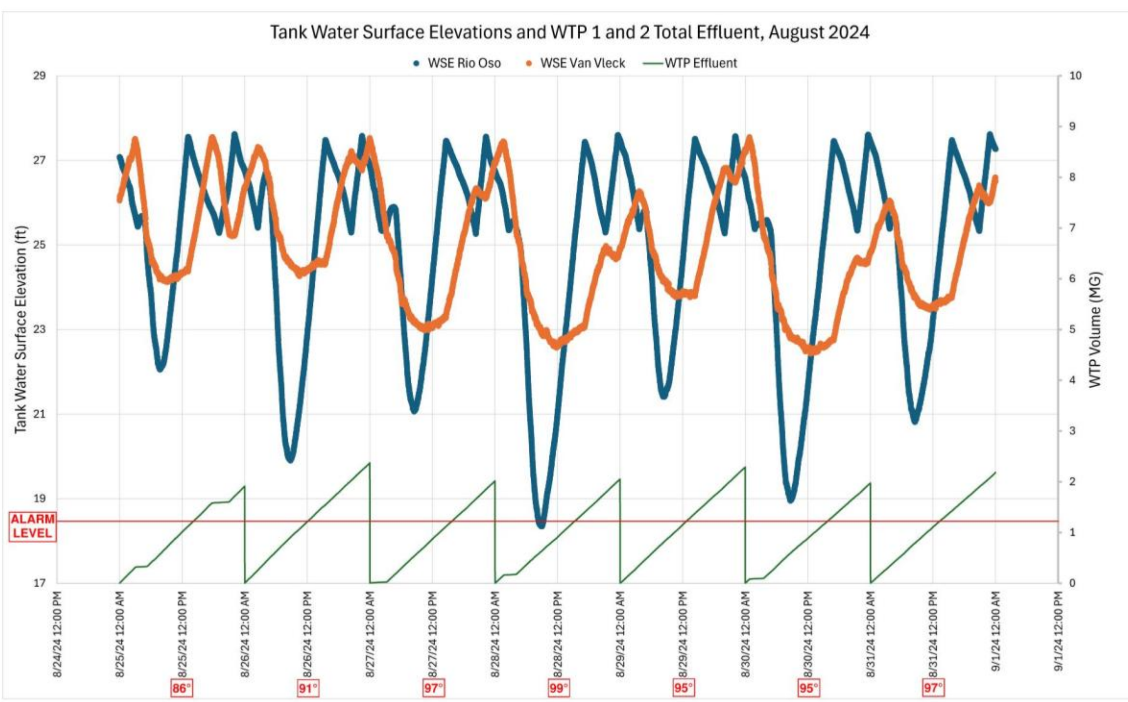


Figure 4 Tank Levels for August 2024



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SECTION 3-TANK STORAGE DEFICIENCIES

The tanks are considered full when the water depth is 27.5 feet and a low level alarm is triggered at a depth of 18.5 feet. The volume of water between these two levels is defined as the operational storage for the tank. The elevation of the Van Vleck tank is approximately 10 feet higher than Rio Oso tank and there is currently no check valve or altitude valve at this site. This allows a limited flow of water from Van Vleck to Rio Oso during low demand periods. Table 2 provides dimensions and tank volume information for the two tanks.

Table 2 Tank Data

Tank	Diameter (ft)	Maximum Usable Tank Level*	Usable Tank Volume (cubic ft)	Usable Tank Volume (gal)	Operational Volume - Elev 27.5 to 18.5 (gal)	Tank Volume per foot (gal)
Van Vleck	136	27.5	399,485	2,988,147	977,939	108,660
Rio Oso	80	27.5	138,230	1,033,961	338,387	37,599

* This level is approximately 0.5 feet below the overflow of the tank

As seen in Figure 3, the peak daily demands (flow leaving the tanks) occur during common irrigation times, primarily between 4am and 9am. During these hours in July, the Rio Oso tank dropped below the low-level warning depth of 18.5 feet, seven times on seven separate days. This required the use of water normally reserved for fire suppression and other emergency situations to help meet these peak operational demands. This overdraft of "operational storage" is considered a deficiency and should be remedied, especially before adding new demands on the Rio Oso tank system. Complete monthly tank level graphs for July and August can be found in Appendix A of this Technical Memorandum.

Figures 3 and 4 also show that as Rio Oso tank is dropping dramatically (as low as 17.3ft) during the morning hours, the Van Vleck tank seldom drops below a depth of 22.0 feet during July. As seen in Table 2, Van Vleck tank has significantly more storage per foot than Rio Oso and even at the lowest level in July had approximately 2.5 feet of operation storage remaining. We would recommend neither tank level be allowed to drop below 20.0 feet, allowing a 1.5 foot buffer for operational storage.

SECTION 4- IDENTIFICATION OF POTENTIAL SOLUTIONS

Given the operational storage deficiency described above for the Rio Oso tank, the most obvious solution is to add storage in this zone. Adding a new tank has been discussed by the District, along with other community members, including the development teams currently in the process of adding new residential units to Rancho Murieta. Determining how much storage to provide, where to site a new tank, how it will be funded, and the actual design and construction to complete the project will take considerable time. This will result in potentially long delays in the current land development process and extending the risk of having less than desired emergency storage available until a new tank is on-line.

In the interim, as a new tank design is being developed, there are possible modifications to the water delivery system and the existing tanks that could temporarily provide more water to the Rio Oso tank during the peak morning hours. The following lists possible interim modifications:

1. **Throttle flow to the Van Vleck Tank at the WTP -** This involves installing a motorized control valve, along with related electrical components, on the WTP discharge pipe to the Van Vleck Tank, reducing flow to VanVleck, and increasing flow to Rio Oso during peak demand morning hours. Added monitoring and control logic for the delivery system will also be required. This is the primary recommended interim modification, as it will make the largest impact toward mitigating the depletion of the Rio Oso tank storage.

2. **Modification to Rio Oso Tank level control –** Minor modifications to the level controls can be made to extend inflow duration to the Rio Oso tank. The Rio Oso tank has an automatic shut off (altitude) valve that shuts off flow from the inflow pipe when the tank is full. The valve remains shut until the tank level reduces to an elevation of 25.5 feet. Allowing the valve to open sooner can allow incoming flow when the tank begins to deliver morning demands. This would have a less significant impact on the overall volume required than the throttling alternative, but can add a small factor of safety.

3. **Modification to Van Vleck call for water control -** The Van Vleck tank does not have an altitude valve to shut off flow when full. Instead, there is a level sensor that shuts down the discharge pumps from the WTP when the tank reaches its full level of 27.5 feet (same level as Rio Oso). When the water depth has fallen to 25.5 feet, the Van Vleck tank controls will call for water and the pumps will come back on-line. With the treatment plant pumps off, only a limited amount of gravity flow from Van Vleck can reach the Rio Oso tank. If the pumps could be called on sooner in the morning hours, the flow to both tanks would increase earlier. However, upon review of the inflow and tank level data, the pumps appear to be running for nearly the entirety of the highest peak flow periods as the call for water and the opening of the Rio Oso valves usually coincide during maximum demand hours. As with the raising of the Rio Oso altitude valve opening level, the raising of the Van Vleck call for water level will provide only limited benefit, however, combined they should be considered as a possible addition to the above alternative 1 solution.

SECTION 5- RESULTS OF INTERIM SOLUTIONS ANALYSES

The effects of raising inflow control levels at the tanks (between 0.5 to 1.0 ft) should be tried in order to extend duration of flow into the Rio Oso tank. Without more flow measuring data at the tanks, this alternative will have to be attempted and tested during high demand periods to see if the impact can measurably help relieve the storage deficiency at the Rio Oso tank.

The flow throttling alternative to the Van Vleck tank, has been given a greater level of analysis for addressing the interim deficiency in Rio Oso tank storage. Table 3 provides design parameters for reducing the volume of flow to Van Vleck tank and increasing flow to the Rio Oso tank by installing an automatic throttling (control) valve system in the piped supply to Van Vleck tank. The valve would be located at the water treat plant where it discharges into the distribution system. The control concept is to monitor the depths in both tanks and modulated the throttling valve to attempt to keep the two tank levels as close to the same as possible during the morning peak demands. The worst case day of July 12th, 2024 was used as a maximum demand day model (see Figure 3). The tank levels on this day are used a basis to calculate the throttling required to equalize the tank levels. On this day, to equalize the tank levels, the Rio Oso tank would have needed to rise 3.5 feet and the Van Vleck Tank would need to lower 1.2 feet. Given the corresponding storage volumes per foot from Table 2, the matching tank level and calculated water volume transferred, are shown in Table 3.

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Table 3 Potential Impacts of a Throttling Alternative

Tank	Lowest Tank Level Figure 3 (July 12)	Level Change by Throttling (ft)	Matching Tank Level after throttling (ft)	Throttling Volume Change (gal)	Minimum Allowable Tank Level (ft)*	Storage Level Available (ft)**	Storage Volume Available (gal)*
Van Vleck	22.0	-1.2	20.8	131,261	20.0	0.8	86,059
Rio Oso	17.3	+3.5	20.8	131,261	20.0	0.8	29,745

* Provides a minimum cushion of 1.5ft to alarm level
** Storage level available after throttling

The resulting minimum water depth in each tank is 20.8 feet. This provides 2.3 feet of cushion above the 18.5 alarm level in the tanks during a maximum day demand, under current conditions. With a volume transfer of approximately 131,300 gallons over a 5-hour period, the inflow to Rio Oso would be increased by approximately 440 gallons per minute. This would increase the maximum velocity in the pipe from approximately 2 feet per second to 3 feet per second and would not negatively impact pipeline integrity.

Another important goal of this tank analysis is to estimate how the interim alternative modifications to the tank operations and storage would impact the system's capacity for the addition of future dwelling units. By implementing the flow throttling alternative, some of the 2.3 feet of storage above the low level alarm for operating storage could be allocated to newly developed dwelling units. Given the uncertainties of the precise effectiveness of the throttling effort and the probability of unexpected down-time of the WTP effluent pumping, relying on the entire 2.3 feet of additional storage would not be practical nor recommended. To account for the many variables and potential issues with the Rio Oso storage facility, we recommend leaving a cushion 1.5 feet. This equates to an operational tank low water elevation of 20.0 feet as seen in Table 3. In doing so, this reduces the available usable volume in the Rio Oso tank to 0.8 feet or 29,745 gallons. Comparatively, the larger Van Vleck tank which serves the significantly larger (gravity zone) will have a cushion of approximately 86,000 gallons at the same 0.8 feet of available tank volume.

Using the District standard demand units per EDU, for the Maximum Day Demand from Table 1 and the ratio of the peak 5 hour flow to the max day flow of 2.8 described in Section 2, a peak demand per EDU is established. The added storage required in the tank per EDU would then be the peak 5 hour demand minus the added maximum day inflow that would be necessary from the WTP as shown in Table 4.

Table 4 Added Storage Required per EDU for New Development

	CSD Standard per EDU (gal/day) *	CSD Standard Per EDU (gpm)	Peak 5 hour flow/max day flow**	Peak 5 hour demand per EDU (gpm)	Peak 5 hours EDU demand minus max day inflow (gpm)	Peak 5 hours Storage Required per EDU (gal)***
Max Day Demand	1,575	1.1	2.8	3.1	2.0	591

* Equal 750 gpd x 2.1 peaking factor
** See Section 2 for devielopment of this peaking factor
*** Converts the 2.0 gpm per EDU to storage volume over 5 hours

With a storage requirement per EDU established in Table 4, the number of new dwelling units that can be supported by the interim, short term solutions can be determined. Based on the available added storage volume after throttling derived in Table 3, and applying the unit storage required in Table 4, the number of new units possible to add has been calculated. Table 5 shows the estimated number of equivalent dwelling units that can be supported by each tank after the installation and operation of the throttling improvements.

Table 5 Additional EDUs served after Interim Improvements Completed

Tank	Storage Available (ft)	Storage Available (gal)	Peak 5 hours Storage Required per EDU (gal)	Equitable Additional Units *
Van Vleck	0.8	86,059	591	146
Rio Oso	0.8	29,745	591	50

* Equals Storage Available/Peak 5 Hour Storage Required per EDU

SECTION 6 – SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

D&A has identified two system improvements which should be pursued by the District in order to increase the reliability of the potable water system. The first improvement focuses on addressing emergency storage deficiencies while the second focuses on improving the operational capacity of the system.

1. Storage Capacity Increase

   Currently, the Rio Oso and Van Vleck tanks only have enough fire suppression plus emergency storage capacity to supply the RMCSD for approximately 24 hours during a supply system shut down on a maximum demand day. This assumes the tanks are 66% full at the time of the emergency. Due to the lack of redundancy in the raw and treated water supply and convey systems, the District should consider increasing this storage capacity with a new storage tank.

   In addition, the operational tank storage to supply water to the community during high summer demands is currently inadequate in the upper (Rio Oso) pressure zone. In July of 2024, The Rio Oso tank dropped below the low level alarm operational storage level on seven days. This operational storage in the tank is meant to supply water during peak demand hours, when the water supply from the water treatment plant (typically the average maximum day flow), cannot keep up with these higher peaks during the day.

   To resolve this current deficiency, D&A recommends that additional operational storage capacity be added along with the new tank described above. The size and location of a new tank needs to be investigated, designed and constructed. This will take considerable time. With the current inadequate peak storage volumes and new dwelling units planned to come on-line in the near future, an interim solution should be pursued right away.

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2. Interim Supply and Storage Control Solutions

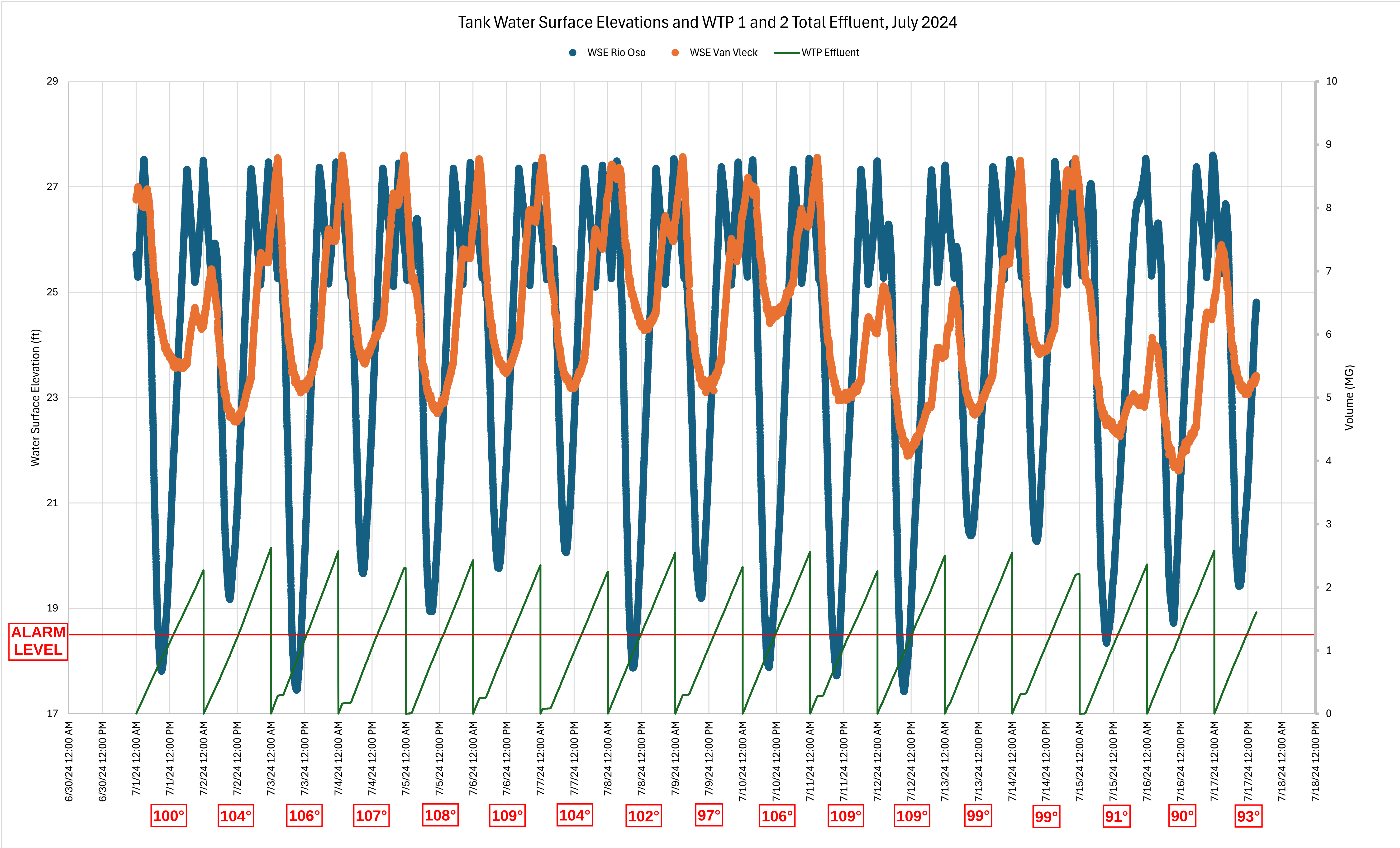
The current distribution system lacks basic controllability and monitoring. D&A recommends preliminary designs be started to enhance the water treatment plant (WTP) and tank storage facilities to provide additional control valves, pressure sensors, and flow meters which could be used to assist in distribution of flow during peak demands and reduce the likelihood for system instabilities and tank storage deficiencies.

The primary solution that could be implemented in the relatively short term is to take advantage of excess operational storage capacity in the Van Vleck tank that serves the lower (gravity) zone, and use that volume to help meet the Rio Oso tank deficiency. By modifying the tanks level and supply monitoring and control, peak daily flows can be diverted from the Van Vleck supply line to the Rio Oso supply. Adding a control valve to throttle (reduce) flow to the Van Vleck tank and in turn increase flow to the Rio Oso tank during early morning peak demands, will help alleviate the storage over-draft condition at Rio Oso. Also changing control levels in the tanks may be of some help.

An analysis of the throttling alternative showed that the potential to eliminate low level alarms at the Rio Oso tank is promising. In fact, if done with the right physical improvements and precise and efficient control system programming, it can also redistribute enough flow at the proper times to adequately serve some added dwelling units to the both the Rio Oso and Van Vleck service areas. The number of added dwelling units have been estimated and are shown in Table 5 of this Technical Memorandum.

Overall, addressing short term and long-term tank storage capacity should be a priority of the District and potential solutions have been identified for implementation as a guide for future improvements.

APPENDIX A - SUPPORTING DATA


Tank Water Surface Elevations and WTP 1 and 2 Total Effluent, July 2024
WSE Rio Oso
WSE Van Vleck
WTP Effluent
Water Surface Elevation (ft)
Volume (MG)
29
27
25
23
21
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17
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7
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ALARM LEVEL
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6/30/24 12:00 PM
7/1/24 12:00 AM
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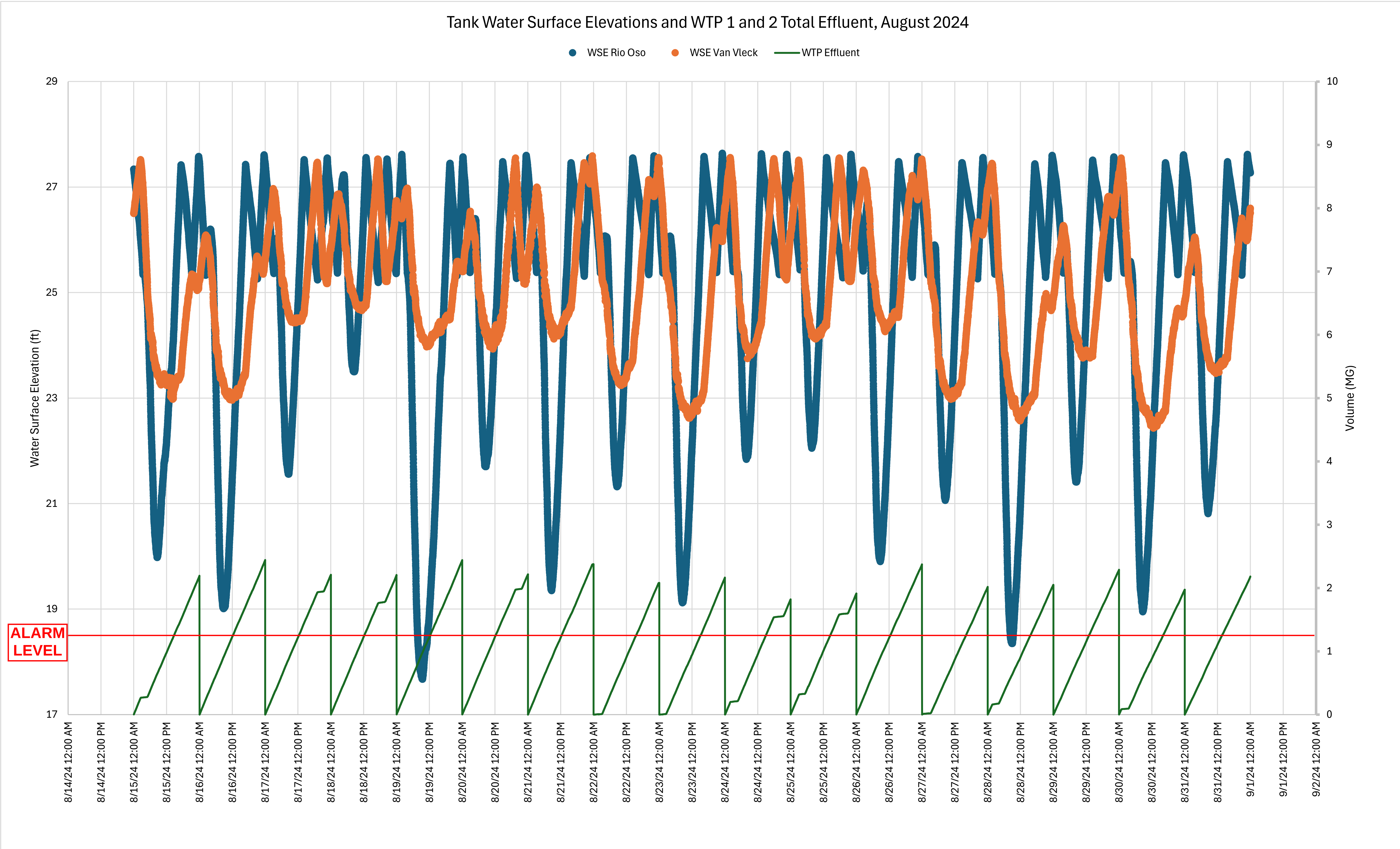

Tank Water Surface Elevations and WTP 1 and 2 Total Effluent, August 2024
WSE Rio Oso
WSE Van Vleck
WTP Effluent
Water Surface Elevation (ft)
Volume (MG)
ALARM LEVEL
29
27
25
23
21
19
17
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9
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3
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8/14/24 12:00 AM
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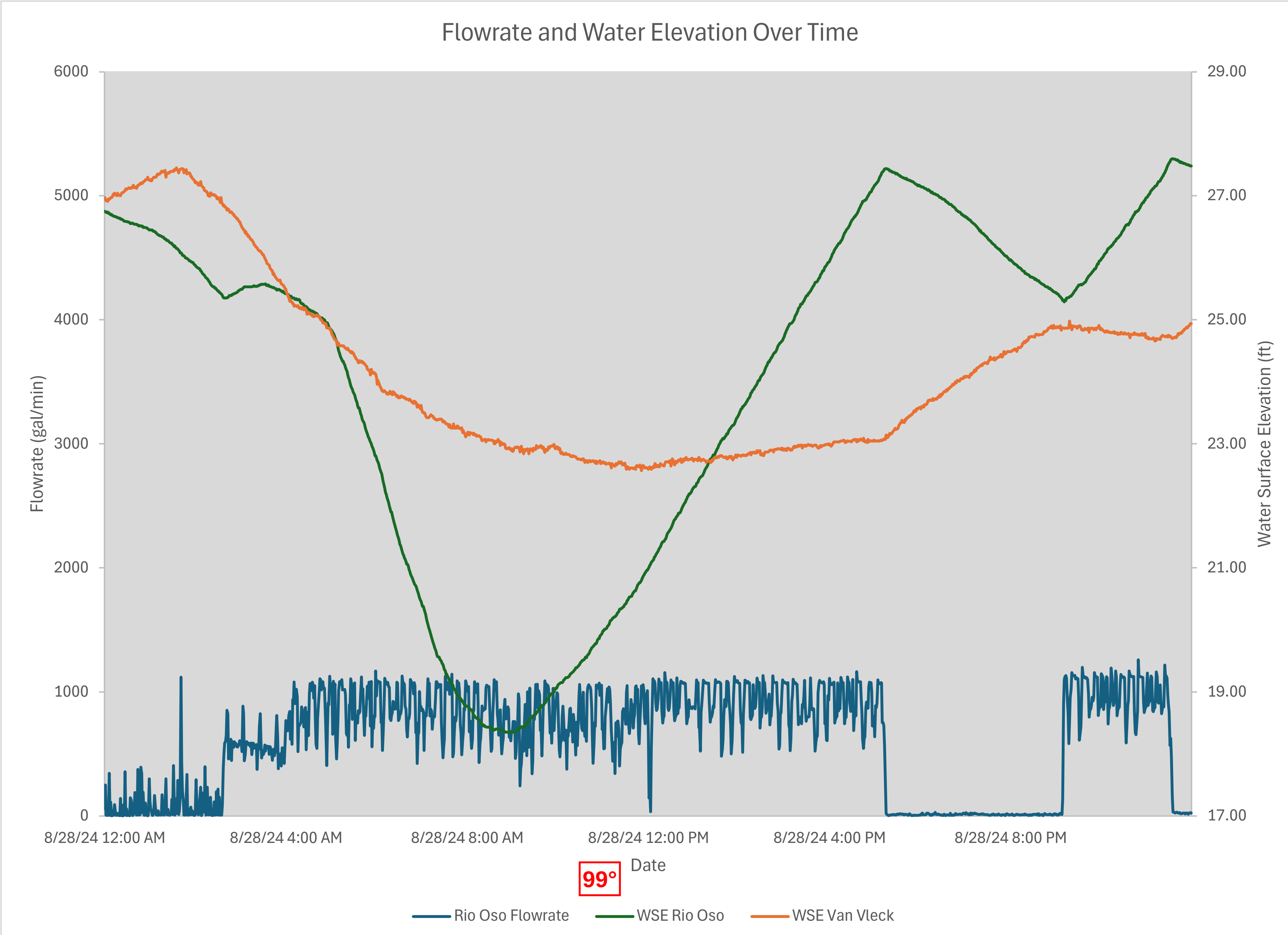
Flowrate and Water Elevation Over Time
Flowrate (gal/min)
6000
5000
4000
3000
2000
1000
0
Water Surface Elevation (ft)
29.00
27.00
25.00
23.00
21.00
19.00
17.00
8/28/24 12:00 AM
8/28/24 4:00 AM
8/28/24 8:00 AM
8/28/24 12:00 PM
8/28/24 4:00 PM
8/28/24 8:00 PM
Date
99°
Rio Oso Flowrate
WSE Rio Oso
WSE Van Vleck

		Calero Reservoir					Chesbro Reservoir							
Year	Month	Beginning Elevation in feet	Ending Elevation in feet	Reservoir Gain or Loss (feet)	Volume of Loss/ Gain Acre Feet	Loss to Evaporati on Acre Feet	Beginning Elevation (feet)	Ending Elevation (feet)	Reservoir Gain or Loss (feet)	Volume of Loss/ Gain Acre Feet	Loss to Evaporation Acre Feet	Total Added by Rain in inches	Total Volume Pumped Acre Feet	Total Loss or Gain Acre Feet
2024	January	274	278	4	383	3	256	260	4	133	1	5	549	516
	February	279	280	2	176	10	260	260	0	-12	5	5	260	164
	March	280	280	0	-19	24	256	255	-1	-21	8	4	39	-40
	April	280	283	3	323	40	255	261	5	200	13	2	388	523
	May	281	282	1	114	80	263	265	2	112	33	1	390	226
	June	282	281	-1	-99	102	264	258	-6	-256	37	0	0	-355
	July	280	277	-3	-347	110	258	256	-2	-72	38	0	0	-420
	August	277	274	-2	-217	83	255	255	0	-7	30	0	0	-224
	September	273	271	-2	-180	53	256	256	0	4	30	0	0	-176
	October	270	264	-6	-416	34	255	255	0	0	0	0	0	-416
	November	267	267	0	-10	8	256	256	0	4	6	3	91	-6
	December	267	267	0	16	0	256	256	1	21	0	3	120	37

Total Loss to Evaporation Acre Feet	Water Plant Influent Acre Feet	Water Plant Effluent Acre Feet	Water Plant Effluent Acre Feet	Underdrain Lossage Acre Feet	Evapora-tion in inches		Unaccounted for Water Loss Acre Feet
4	92	70	0	0	0	0	-92
14	83	63	0	0	1	0	-83
33	84	80	0	0	3	0	-84
53	99	92	0	0	4	0	-99
113	183	160	0	0	8	1	-183
139	233	204	0	0	11	1	-233
148	269	239	0	0	13	1	-269
113	253	224	0	0	10	1	-253
83	221	192	0	0	8	1	-221
34	205	178	0	0	6	1	-205
14	123	102	0	0	2	0	-123
0	0	0	0	0	0		0

California State Water Resources Control Board

DROUGHT REPORT

PWSID: CA3410005

Water System Name: RANCHO MURIETA COMMUNITY SERVI

Reporting Period: 12/01/2024 - 12/31/2024

Reporting Due Date: 01/31/2025

Report Created Date: 01/23/2025

WATER SHORTAGE

Experiencing a severe water shortage: No

Estimated date of when a severe water shortage may begin: Severe water shortage not expected

Do you have a Water Shortage Contingency Plan (or Drought Planning Elements)?: Yes

Website link to Water Shortage Contingency Plan: Water Shortage Contingency Plan Not Available Online

Upload Water Shortage Contingency Plan: water shortage contingency plan 09-2012 final.pdf

Adoption date of Plan: 09/01/2012

What equivalent level percent source reduction of your Water Shortage Contingency Plan have you invoked?: No Shortage Level Invoked

Comments:

SOURCE REPORTING

LAKE CHESBRO (CONSUMNES RIVER)

Source Information:

- **Facility ID**: 001
- **Facility Type**: Intake
- **Water Type**: Surface Water
- **Facility Availability**: Permanent
- **Activity Status**: Active
- **Intake Pump NPSHR (feet)**: 30
- **Water Source Type**: Lake
- **Ability to lower or extend your intake**: No
- **Water Rights ID**: A023416

Did you utilize this source during the reporting period?: Yes

Water Level (feet from surface water bottom): 43

Date Measured: 12/26/2024

Intake Level (feet from surface water bottom): 6

Intake Level (feet from surface water bottom) Date Measured: 12/31/2024

Potable Amount Produced During Reporting Period: 26.80800000

Potable Amount Produced During Reporting Period Date Measured: 12/31/2024

Potable Amount Produced During Reporting Period Unit of Measure: Million Gallons (MG)

Total Pump Hours During Reporting Period: 600.00000000

Instant Flow Rate: 700.00000000

Instant Flow Rate Date Measured: 12/31/2024

Instant Flow Rate Unit of Measure: Gallons per Minute (GPM)

Was this source under curtailment at any point within the reporting period from the State Water Board Division of Water Rights?: No

Comments:

TOTAL PRODUCTION DURING REPORTING PERIOD (gallons): 26,808,000.00

SUPPLY & DEMAND

ABOUT

Does your system supply or deliver non-potable water to customers or other water systems?: No

Does your system supply or deliver recycled water to customers or other water systems?: Yes

POTABLE SUPPLY

Unit of Measure: Gallons (G)

POTABLE SELF-PRODUCED

Surface Water Production	TOTAL Potable Self-Produced	Preliminary Estimate?
26,808,000	26,808,000	No

POTABLE EXTERNALLY-SOURCED

Bottled Water Reliance	TOTAL Potable Externally-Sourced	Preliminary Estimate?
No	0	No

TOTAL POTABLE SUPPLY

TOTAL Potable Supply	Preliminary Estimate?
26,808,000	No

POTABLE SUPPLY COMMENTS:

POTABLE DEMAND

Do you meter the volume of potable water delivered to your individual customers?: Yes

Unit of Measure: Gallons (G)

POTABLE RESIDENTIAL DEMAND

Residential Single-Family	Residential Multi-Family	TOTAL Residential Demand	Population Served	Residential Gallons per Capita per Day (R-GPCD)	Preliminary Estimate?
15,357,188	0	15,357,188	5,874	87.15	No

POTABLE NON-RESIDENTIAL DEMAND

Commercial & Institutional	Metered Irrigation of Commercial, Industrial, or Institutional Landscapes	Industrial	Agriculture	Other Non-Residential Demand	Total Non-Residential Demand	Preliminary Estimate?
1,065,152	329,868	0	0	0	1,395,020	No

POTABLE WATER DELIVERED TO OTHER WATER SYSTEM (S)

Volume Sold or Delivered to Other Water System(s)	Sold or Delivered To (Water Systems Only)	Preliminary Estimate?
0		No

TOTAL POTABLE DEMAND

TOTAL Potable Demand	Preliminary Estimate?
16,752,208	No

POTABLE DEMAND COMMENTS:

NON-POTABLE SUPPLY

Unit of Measure: Gallons (G)

NON-POTABLE SELF-PRODUCED SUPPLY

Recycled Water Self-Produced	Non-Potable Water Produced (not recycled; i.e., agriculture well)	TOTAL Non-Potable Water Self-Produced	Preliminary Estimate?
0	0	0	No

NON-POTABLE SUPPLY EXTERNALLY-SOURCED

Recycled Water Obtained	Recycled Water Obtained From (Water Systems Only)	Obtained Non-Potable Hauled Water	Other Non-Potable Water Obtained From Another Water System	Non-Potable Obtained Water Sources (Water Systems Only)	TOTAL Non-Potable Water Externally Sourced	Preliminary Estimate?
0			0		0	No

TOTAL NON-POTABLE SUPPLY

TOTAL Non-Potable Supply	Preliminary Estimate?
0	No

NON-POTABLE SUPPLY COMMENTS:

NON-POTABLE DEMAND

Do you meter the volume of potable water delivered to your individual customers?: Yes

Unit of Measure: Gallons (G)

RESIDENTIAL NON-POTABLE DEMAND

Residential Recycled Water Demand	Residential Non-Potable Demand (non-recycled)	TOTAL Residential Non-Potable Demand	Metered Non-Potable Residential Landscape Irrigation Demand	Preliminary Estimate?
0	0	0	0	No

NON-RESIDENTIAL NON-POTABLE DEMAND

Non-Residential Recycled Water Demand	Non-Residential Non-Potable Demand (non-recycled)	TOTAL Non-Residential Non-Potable Demand	Metered Non-Potable, Non-Residential Irrigation Demand for Commercial, Industrial, or Institutional Landscapes	Preliminary Estimate?
0	0	0	0	No

NON-POTABLE WATER DELIVERED TO OTHER WATER SYSTEM(S)

Volume Non-Potable Sold or Delivered to Other Water System(s)	Non-Potable Sold or Delivered To (Water Systems Only)	Preliminary Estimate?
0		No

TOTAL NON-POTABLE DEMAND

TOTAL Non-Potable Demand	Preliminary Estimate?
0	No

NON-POTABLE DEMAND COMMENTS:

TOTAL REPORT SUMMARY

POTABLE SUPPLY & DEMAND (IN GALLONS)

TOTAL Potable Supply	TOTAL Potable Demand	Preliminary Supply Estimate?	Preliminary Demand Estimate?	Potable Supply and Demand Difference
26,808,000	16,752,208	No	No	10,055,792

POTABLE SUPPLY & DEMAND COMMENTS:

NON-POTABLE SUPPLY & DEMAND (IN GALLONS)

TOTAL Non-Potable Supply	TOTAL Non Potable Demand	Preliminary Non-Potable Supply Estimate?	Preliminary Non-Potable Demand Estimate?	Non-Potable Supply and Demand Difference
0	0	No	No	0

NON-POTABLE SUPPLY & DEMAND COMMENTS:

ESTIMATED POTABLE WATER LOSS

Estimated Potable Water Loss (in gallons)
300,000

ESTIMATED POTABLE WATER LOSS COMMENTS:

ESTIMATED NON-POTABLE WATER LOSS

Estimated Non-Potable Water Loss (in gallons)
0

ESTIMATED NON-POTABLE WATER LOSS COMMENTS:

MAXIMUM DAY DEMAND (MDD)

Estimated Maximum Day Demand (in gallons): 1,297,161

Maximum Day Demand (in gallons): 1,185,000

Maximum Day Demand Date: 12/08/2024

MAXIMUM DAY DEMAND (MDD) COMMENTS:

ANNUAL SUPPLY (IN GALLONS)

Month	Surface Water Production	TOTAL Potable Supply
January	23,903,000	23,903,000
February	20,516,000	20,516,000
March	25,975,000	25,975,000
April	30,033,000	30,033,000
May	52,115,000	52,115,000
June	66,464,000	66,464,000
July	77,949,000	77,949,000
August	72,988,000	72,988,000
September	62,661,000	62,661,000
October	58,010,000	58,010,000
November	33,354,000	33,354,000
December	26,808,000	26,808,000
TOTAL	550,776,000	550,776,000

Month	Recycled Water Self-Produced	Non-Potable Water Produced (not recycled; i.e., AGRICULTURE well)	Recycled Water Obtained	Other Non-Potable Water Obtained From Another Water System	TOTAL Non-Potable Supply	TOTAL Supply
January						23,903,000
February						20,516,000
March						25,975,000
April	0	0	0	0	0	30,033,000
May	19,478,000	0	0	0	19,478,000	71,593,000
June	40,877,000	0	0	0	40,877,000	107,341,000
July	39,823,000	0	0	0	39,823,000	117,772,000
August	23,626,000	0	0	0	23,626,000	96,614,000
September	16,732,000	0	0	0	16,732,000	79,393,000
October	18,672,000	0	0	0	18,672,000	76,682,000
November	0	0	0	0	0	33,354,000
December	0	0	0	0	0	26,808,000
TOTAL	159,208,000	0	0	0	159,208,000	709,984,000

ANNUAL DEMAND (IN GALLONS)

Month	Residential Single-Family	Residential Multi-Family	Commercial & Institutional	Metered Irrigation of Commercial, Industrial, or Institutional Landscapes	Industrial	Agriculture	Other Non-Residential Demand	Volume Sold or Delivered to Other Water System(s)	TOTAL Potable Demand
January	15,962,320	0	1,268,608	684,420	0	0	0	0	17,915,348
February	12,551,440	0	1,222,980	438,328	0	0	0	0	14,212,748
March	14,041,590	0	1,494,504	356,796	0	0	0	0	15,892,890
April	21,134,792	0	1,939,564	1,296,284	0	0	0	0	24,370,640
May	31,805,304	0	2,736,184	3,191,716	0	0	0	0	37,733,204
June	53,113,984	0	4,336,904	4,336,904	0	0	0	0	61,787,792
July	59,471,984	0	5,049,000	6,339,300	0	0	0	0	70,860,284
August	58,777,840	0	5,255,448	7,030,452	0	0	0	0	71,063,740
September	53,235,908	0	3,892,592	4,865,740	0	0	0	0	61,994,240
October	50,944,993	0	8,500,272	4,069,868	0	0	0	0	63,515,133
November	29,219,124	0	2,066,724	1,869,252	0	0	0	0	33,155,100
December	15,357,188	0	1,065,152	329,868	0	0	0	0	16,752,208
TOTAL	415,616,467	0	38,827,932	34,808,928	0	0	0	0	489,253,327

Month	Residential Recycled Water Demand	Residential Non-Potable Demand (non-recycled)	Non-Residential Recycled Water Demand	Non-Residential Non-Potable Demand (non-recycled)	Volume Non-Potable Sold or Delivered to Other Water System(s)	Metered Non-Potable Residential Landscape Irrigation Demand	Metered Non-Potable, Non-Residential Irrigation Demand for Commercial, Industrial, or Institutional Landscapes	TOTAL Non-Potable Demand	TOTAL Demand
January									17,915,348
February									14,212,748
March									15,892,890
April	0	0	0	0	0	0	0	0	24,370,640
May	0	0	15,547,000	0	0	0	0	15,547,000	53,280,204
June	0	0	36,099,000	0	0	0	0	36,099,000	97,886,792
July	0	0	35,953,000	0	0	0	0	35,953,000	106,813,284
August	0	0	21,027,000	0	0	0	0	21,027,000	92,090,740
September	0	0	13,506,000	0	0	0	0	13,506,000	75,500,240
October	0	0	18,672,000	0	0	0	0	18,672,000	82,187,133
November	0	0	0	0	0	0	0	0	33,155,100
December	0	0	0	0	0	0	0	0	16,752,208
TOTAL	0	0	140,804,000	0	0	0	0	140,804,000	630,057,327

ATTEST

I certify that the information provided is true and accurate under penalty of perjury.

Travis Bohannon

01/23/2025

Granlees Pump Station (total to Calero/Chesbro in MGD)												
Total from 1st part of 20 season		0.00										
Day	January	February	March	April	May	June	July	August	September	October	November	December
1	2.678	7.801	3.664	0.000	6.716	0.000	0.000	0.000	0.000	0.000	0.000	2.287
2	3.284	5.560	0.000	0.000	7.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	3.378	0.092	0.000	0.000	6.275	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	6.110	0.000	0.000	0.000	6.696	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	6.471	0.000	0.000	0.000	7.316	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	6.632	0.000	0.000	6.065	7.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	4.092	0.000	0.000	8.548	6.589	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	3.345	6.589	0.000	5.794	7.516	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	3.560	7.224	0.000	7.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	3.791	6.451	0.000	6.830	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	4.452	6.863	0.000	1.624	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	2.952	6.742	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	6.944	6.744	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	8.352	7.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.907
15	5.243	1.289	0.000	0.000	6.785	0.000	0.000	0.000	0.000	0.000	0.000	3.574
16	7.169	0.000	0.000	0.000	7.144	0.000	0.000	0.000	0.000	0.000	0.000	6.973
17	6.640	0.000	0.000	0.000	6.926	0.000	0.000	0.000	0.000	0.000	0.000	3.437
18	6.534	0.000	0.000	6.141	8.170	0.000	0.000	0.000	0.000	0.000	0.000	3.645
19	6.580	0.000	3.822	7.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.960
20	6.779	0.000	3.371	6.751	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.537
21	6.699	0.000	1.981	7.177	8.888	0.000	0.000	0.000	0.000	0.000	0.000	3.659
22	7.283	0.000	0.000	6.672	4.977	0.000	0.000	0.000	0.000	0.000	0.000	3.962
23	6.412	0.000	0.000	6.392	6.931	0.000	0.000	0.000	0.000	0.000	0.000	4.146
24	6.300	0.000	0.000	6.885	0.000	0.000	0.000	0.000	0.000	0.000	3.728	5.113
25	6.664	7.394	0.000	6.966	0.000	0.000	0.000	0.000	0.000	0.000	6.993	3.716
26	6.761	7.236	0.000	6.934	0.000	0.000	0.000	0.000	0.000	0.000	3.792	6.963
27	6.695	0.000	0.000	6.931	0.000	0.000	0.000	0.000	0.000	0.000	3.785	6.742
28	7.110	3.471	0.000	7.880	0.000	0.000	0.000	0.000	0.000	0.000	4.053	3.500
29	6.325	3.929	0.000	6.260	6.513	0.000	0.000	0.000	0.000	0.000	3.610	6.669
30	7.006	-	0.000	7.540	6.819	0.000	0.000	0.000	0.000	0.000	3.694	6.899
31	6.629	-	0.000	-	8.578	-	0.000	0.000	-	0.000	-	6.521
Totals	178.870	84.735	12.838	126.529	126.990	0.000	0.000	0.000	0.000	0.000	29.655	89.210
Minimum	2.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	8.352	7.801	3.822	8.548	8.888	0.000	0.000	0.000	0.000	0.000	6.993	6.973
Average	5.770	2.922	0.414	4.218	4.096	0.000	0.000	0.000	0.000	0.000	0.989	2.878
19/20 pumping season total MG:			529.96						July 1 thru Dec. 31 =		118.87	
19/20 pumping season total Ac. Ft:			1626.50						Annual Total MG		648.83	
									Acre-ft			1991.311

32	430.48	1/13-2/13						
30		122.3	2/14-3/14					
29			151.27	3/15-4-12				
31				413.77	4/13-5/13			
30					226.09	5/14-6/12		

	Acre Feet	Cost per Acre Foot Pumped
Volume Pumped	294.048	$46.85
	41.913	$87.54
	120.6422226	$36.36
	259.7907925	$49.37
	71.731	$94.56

25-26 CIP List	Reason
Greens Lift Station Rennovation	Site is sinking severing lines
Aqua Metrics AMI Tower	Full AMI- staffing utilization
ater Distribution Control Valve Integration and Programmi	For Development and Control in Distribution System
Automate to Cell and Radio- remove analog lines	Remove AT&T line contract issues

Staff Report

Date: February 4th, 2025

To: Improvements Committee

From: Eric Houston Director of Operations

Subject: **Sacramento County Water Agency Study for Supplemental Water Supply**

California Senate Bill 552 (SB 552) requires that small water suppliers, defined as 3,000 connections or fewer, must have a backup supply source, either a groundwater well or intertied to a neighboring system. For the safety, security and reliability of potable drinking water California requires two sources of water before this threshold is met. During and following, past drought periods there had been exploration into alternative sources prior to SB552. Sacramento County's development has been moving east and will bring a treated water drinking connection that may be utilized as a second source as required if the District remains under 3,000 connections. An email request was received on October 24. 2024 requesting that the Water Supply Augmentation fund be utilized to facilitate a secondary source of supply. The cost of this proposed potential study was stated to be $30,000.00 which was verified by an attached email.

At the time staff proposed to the Board of Directors to approve the request and to make available the money to facilitate the study, if possible, to the Sacramento County Water Agency. After the Board voted to move forward with this request, a meeting was held between SCWA representatives and RMCSD staff. During the meeting it was determined that a current connection was not viable and could not be completed without substantial efforts from both agencies.

Following this meeting it was apparent that the study could not be currently completed due to various changes and requirements that both entities would have to complete prior to a study even being feasible. The money approved for the study was never deposited or spent. The Board authorization allowed the District the flexibility to seek out this opportunity if it had been a current viable opportunity. The projected timeline for a study was placed in the 10-year range with approvals and construction completion in the 15–20-year range. With an estimated cost of approximately $20 million.