RANCHO MURIETA
COMMUNITY SERVICES DISTRICT

15160 JACKSON ROAD
RANCHO MURIETA, CA 95683
Phone: 916-354-3700
Web: rmcsd.com

REGULAR MEETING
of the
BOARD OF DIRECTORS
Wednesday, October 16, 2024
Closed Session 3:30 p.m.
Open Session 5:00 p.m.

AGENDA

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1. CALL TO ORDER - Determination of Quorum – President Maybee **(Roll Call)**

2. CONSIDER ADOPTION OF AGENDA (Motion)

3. CLOSED SESSION

A. *CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION*

1. *Significant Exposure to litigation pursuant to Government Code section 54956.9(d)(2) and (e)(1) (one case)*
   a. *APPLICATION FOR LEAVE TO PRESENT LATE CLAIM OF RICARDO MENDOZA V. RANCHO MURIETA COMMUNITY SERVICES DISTRICT SACRAMENTO SUPERIOR COURT CASE NO. 24CV007494*
   b. *CLAIM OF GEORGE ARSENITH V. RANCHO MURIETA COMMUNITY SERVICES DISTRICT*

B. *Conference with Labor Negotiator pursuant to Government Code Section 54957.6.*

1. *Agency Designated Representatives: Michael Youril and Patrick Enright*
2. *Unrepresented Employees: General ManagerDirector of Finance and Administration, and Director of Operations*

C. *Public employee performance evaluation of General Manager (Gov. Code 54957)*

4. OPEN SESSION/REPORT BACK FROM CLOSED SESSION

5. CONSENT CALENDAR (Motion) **(Roll Call Vote)** *(5 min.) All items in this agenda item will be approved as one motion if they are not excluded from the motion adopting the consent calendar*.

A. Board and Committee Meeting Minutes

1. *September 18, 2024 Personnel*
2. *September 18, 2024 Improvements*
3. *September 18, 2024 Board Meeting*
4. *October 8, 2024 Personnel*
5. *October 8, 2024 Improvements*
6. *October 8, 2024 Communications and Technology*

*Date changes due to election on 11/5/2024

B. Bills Paid Listing

C. Continuation of Emergency Repair of Recycled Water Line Leak in Pipe On Yellow Bridge and Approval of Resolution R2024-12

D. Continuation of Emergency Repair of Leak in Pipe from Granlees to Calero Reservoir

6. REVIEW DISTRICT MEETING DATES/TIMES FOR NOVEMBER 2024

A. Personnel Committee – November 12, 2024 at 7:30 a.m. *

B. Improvements Committee – November 12, 2024 at 8:00 a.m. *

C. Communications & Technologies Committee – November 12, 2024 at 10:00 a.m. *

D. Regular Board Meeting –November 20, 2024 - Open Session at 5:00 p.m.

7. CORRESPONDENCE

A. Email from Bob Keil 10/4/2024

B. Letter from Serda Folk

8. COMMENTS FROM THE PUBLIC

9. STAFF REPORTS (Receive and File)

A. General Manager Report

B. Finance and Administration Report

C. Utilities Report

D. Information Technology Report ***Discussion Items***

10. *Discussion Item:* **REVIEW OF DRAFT INTEGRATED WATER MASTER PLAN** (Discussion/Action)

Action Items

11. MURIETA VILLAGE WATER MAIN LINES

A. *Action Item:* **CONSIDER APPROVAL OF CAPITAL IMPROVEMENT PLAN (CIP) PROJECT AS PART OF FY24-25 CIP #21-01-1**

B. *Action Item:* **CONSIDER APPROVAL OF POLICY P2024-02 REIMBURSEMENT FOR DAMAGES CAUSED BY MURIETA VILLAGE WATER MAIN LINE BREAKS** (Discussion/Action) (Motion) **(Roll Call Vote)**

12. *Action Item* **CONSIDER PROPOSAL TO AUGMENT TASK ORDER RM-045 FROM DOMENICHELLI & ASSOCIATES FOR DISTRIBUTION SYSTEM EVALUATION** (Discussion/Action) (Motion) **(Roll Call Vote)**

13. *Action Item* **CONSIDER PROPOSAL TO CONVERT WASTEWATER TREATMENT PLANT TO SODIUM HYPOCHLORITE, CIP 23-14-02** (Discussion/Action) (Motion) **(Roll Call Vote)**

14. *Action Item* **CONSIDER PROPOSAL TO PERFORM REHABILITATION ON WATER TREATMENT PLANT #2 FILTER BED, CIP 25-200-01** (Discussion/Action) (Motion) **(Roll Call Vote)**

15. *Action Item* **CONSIDER PROPOSAL FOR LED CONVERSION LIGHTING PROJECT IN DISTRICT BUILDINGS TO SAVE ELECTRICITY,MONEY AND IMPROVE VISIBILITY** (Discussion/Action) (Motion) **(Roll Call Vote)**

16. *Action Item* **APPROVE OR REJECT THE APPLICATION FOR LEAVE TO FILE A LATE CLAIM**

A. Ricardo Mendoza
(Discussion/Action) (Motion) **(Roll Call Vote)**

17. *Action Item:* **CONSIDER APPROVAL OF STREAMLINED PAY FOR PERFORMANCE PROGRAM MANUAL AND 2025 NR SALARY SCHEDULE** (Discussion/Action) (Motion) **(Roll Call Vote)**

18. *Action Item:* **CONSIDER APPROVAL OF RESOLUTION CONCERNING EXECUTIVE MANAGEMENT COMPENSATION AND BENEFITS AND CORRESPONDING SALARY SCHEDULES** (Discussion/Action) (Motion) **(Roll Call Vote)**

19. *Action Item:* **CONSIDER APPROVAL OF AMENDED GENERAL MANAGER EMPLOYMENT AGREEMENT WITH MIMI MORRIS** (Discussion/Action) (Motion) **(Roll Call Vote)**

20. DIRECTOR COMMENTS/SUGGESTIONS

In accordance with Government Code 54954.2(a), directors and staff may make brief announcements or brief reports of their own activities. They may ask questions for clarification, make a referral to staff or take action to have staff place a matter of business on a future agenda.

21. ADJOURNMENT (Motion)

In accordance with California Government Code Section 54957.5, any writing or document that is a public record, relates to an open session agenda item and is distributed less than 24 hours prior to a special meeting, will be made available for public inspection in the District offices during normal business hours. If, however, the document is not distributed until the regular meeting to which it relates, then the document or writing will be made available to the public at the location of the meeting.

In compliance with federal and state laws concerning disabilities, 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 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. The date of this posting is October 10, 2024. Posting locations are: 1) District Office; 2) Rancho Murieta Post Office; 3) Rancho Murieta Association; 4) Murieta Village Association.

MEMORANDUM

Date: October 7, 2024

To: Board of Directors

From: Personnel Committee Staff

Subject: September 18, 2024 Special Personnel Committee Meeting Minutes

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1. CALL TO ORDER
Director Jenco called the meeting to order at 7:30 a.m. Present were Director Jenco and Director Maybee. Present from District staff were Mimi Morris, General Manager; Mark Matulich, Director of Finance and Administration; and Amelia Wilder, District Secretary.

2. SECURITY PROGRAM CHANGE AND CREATION OF COMMUNITY SERVICES (CSO) CLASSIFICATION
Mr. Matulich discussed Staff's desire to add a CSO Classification. The Committee recommended this go to the Board for approval. ***This item will be on the September 18, 2024 Board Meeting Agenda.***

3. DISCUSS REPLACING RECORD RETENTION POLICY P2015-08 WITH UPDATED POLICY
Ms. Morris discussed proposed changes to the Record Retention Policy. The Committee recommended this go to the Board for approval. ***This item will be on the September 18, 2024 Board Meeting Agenda.***

4. OPERATIONS TEAM INDIVIDUAL EMPLOYEE FEEDBACK DISCUSSIONS
Ms. Morris shared the feedback of the Operations employees, noting that water dispensers will be purchased, and each Operations employee will be equipped with a Stanley thermos.

5. DISCUSS MAKING CHANGES TO SALARY RANGES FOR UNREPRESENTED CLASSIFICATIONS
Ms. Morris provided handouts to the Committee detailing Salaries at similar Districts for comparable positions. Mr. Jenco wondered if the District was competitive. Mr. Maybee suggested more salary step increases be added and that this item return to the Personnel Committee for further discussion.

6. PUBLIC COMMENT
None.

7. DIRECTOR COMMENTS
None.

8. ADJOURNMENT The meeting was adjourned at 8:01 a.m.

MEMORANDUM

Date: October 9, 2024

To: Board of Directors

From: Improvements Committee Staff

Subject: September 18, 2024 Special Improvements Committee Meeting Minutes

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1. CALL TO ORDER

Director Jenco called the meeting to order at 8:00 a.m. Present were Director Jenco and Director Pohll. Present from District staff were Mimi Moris, General Manager; Mark Matulich, Director of Finance and Administration; Travis Bohannon, Interim Director of Operations; and Amelia Wilder, District Secretary.

2. COMMITTEE ADJOURNED TO CLOSED SESSION TO DISCUSS THE FOLLOWING ITEMS:

A. *Closed session regarding appointment of the Director of Operations (Gov. Code, § 54957.)*

3. OPEN SESSION/REPORT BACK FROM CLOSED SESSION

Director Jenco reported that no decisions were made.

4. IMPROVEMENTS STAFF REPORT

The following topics were discussed:

A. Murieta Village Water Connection District Service Line vs. Private Lines

Mr. Bohannon discussed the placement and history of the water pipes in Murieta Village.

B. Release of Warranty Bond for Riverview Infrastructure Phase 1A and 1B

The Committee instructed Staff to execute these documents.

C. Broken Raw Water Conveyance Pipe from Granlees to Calero Reservoir

Mr. Bohannon updated the Committee on the broken raw water conveyance pipe from Granlees to Calero Reservoir, informing them that the replacement was moving along, and the pipe will be filled from the river, then the water will be released into the CIA Ditch.

D. Rio Oso Tank Flow Meter Installation Update

Mr. Domenichelli informed the Committee that he had received a month's worth of flow data. Domenichelli & Associates will begin to calculate the data.

E. District Raw Water Report Methodology

Mr. Pohll reminded the Committee that this item had been discussed at the August meeting and did not need to be discussed again.

F. Bathymetric Survey of Clementia

Mr. Pohll reminded the Committee that this item had been discussed at the August meeting and did not need to be discussed again.

G. Proposed Enhancement of District's Meter Technology/Leak Detection with Advanced Meter Infrastructure (AMI)

Ms. Morris updated the Committee on the availability of advanced meter infrastructure, detailing the currently available models, and their costs. She is exploring possible grant opportunities to aid in the purchase. Director Pohll asked if we could get a few of the different types of meters and try them out. ***This item will be on the November 20, 2024 Board Meeting Agenda.***

H. Proposal to Authorize a Comprehensive Distribution System Study

Mr. Bohannon informed the Committee that the Comprehensive Distribution System Study quote from Domenichelli & Associates has been received. The Committee asked that this item return to the Improvements Committee before it goes to the Board.

I. Development Update

Ms. Morris discussed the document she created reporting the Development.

Resident Jim Ferrell commented on the Development report.

J. Main Lift North ATS for Generator Replacement

Mr. Bohannon informed the Committee about the need for the generator at Main Lift North to be updated with an ATS switch. He is working with Sac Metro Fire to share the cost, as there is a contract which states that they will share this with the District.

K. North Gate UPS Upgrade to Make it Compatible with the Generator

Mr. Bohannon informed the Committee that Andy Lee, Information Technology Manager, is working on an upgrade to the UPS to make it compatible with the generator.

L. Lift Station 6B Rehab

Ms. Morris updated the Committee with the status of the 6B Lift Station electrical panel installed by KHov as part of a previous agreement with the District.

M. Lost Lake Maintenance Request

Ms. Morris discussed the current state of Basin 5 (Lost Lake) and its need maintenance.

N. State and Federal Regulatory Compliance

Mr. Bohannon updated the Committee on the current status of State and Federal Regulatory Reporting.

O. Repairs to Recycled Water Line on Yellow Bridge

Mr. Bohannon informed the Committee that the recycled water line on the yellow bridge has a leak, and Staff is working on repairing it with the assistance of TNT Industrial Contractors, Inc. ***This item will be on the September 18, 2024 Board Meeting Agenda.***

5. COMMENTS FROM THE PUBLIC

None.

6. DIRECTOR AND STAFF COMMENTS

Mr. Pohll asked for an update on the RFP for the Wastewater Treatment Plant Sodium Hypochlorite Conversion.

7. ADJOURNMENT

The meeting was adjourned at 10:54 a.m.

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
REGULAR BOARD MEETING MINUTES

September 18, 2024

Closed Session 4:00 p.m./Open Session 5:00 p.m.

1. CALL TO ORDER/ROLL CALL

President Maybee called the Regular Board Meeting of the Board of Directors of Rancho Murieta Community Services District to order at 4:00 p.m. in the District meeting room, 15160 Jackson Road, Rancho Murieta. Directors present at the District office were Linda Butler, Randy Jenco, Tim Maybee, and Martin Pohll. Director Stephen Booth was absent. Also present at the District office were Mimi Morris, General Manager, Mark Matulich, Director of Finance and Operations; Travis Bohannon, Interim Director of Operations; Patrick Enright, District General Counsel; and Amelia Wilder, District Secretary.

2. CONSIDER ADOPTION OF AGENDA

Motion/Maybee *to adopt the Agenda, with the addition of item 14, Emergency Repair to Recycled Water Pipe on Yellow Bridge.* ***S*econd/Butler. Roll Call Vote: Ayes: Butler, Jenco, Pohll, Maybee. Noes: None. Absent: Booth. Abstain: None.**

3. BOARD ADJOURNED TO CLOSED SESSION TO DISCUSS THE FOLLOWING ITEMS:

A. *CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION*
Significant Exposure to litigation pursuant to paragraph to Government Code section 54956.9(d)(2) and (e)(1) (one case)

B. *Public employee performance evaluation of General Manager (Gov. Code 54957)*

4. OPEN SESSION/REPORT BACK FROM CLOSED SESSION

Director Maybee reported that no decisions were made.

5. CONSENT CALENDAR

Motion/Maybee *to approve Consent Calendar.* ***S*econd/Jenco. Roll Call Vote: Ayes: Butler, Jenco, Pohll, Maybee. Noes: None. Absent: Booth. Abstain: None.**

6. REVIEW DISTRICT MEETING DATES/TIMES FOR SEPTEMBER 2024

Director Maybee instructed the Board to discuss any changes with the Board Secretary.

7. CORRESPONDENCE

None.

8. COMMENTS FROM THE PUBLIC

None.

9. STAFF REPORTS

Complete Staff Reports can be found in the September 18, 2024 Regular board Meeting Packet on the District's website or by clicking here.

Under Agenda Item 9A, Ms. Morris reviewed her report, highlighting the following topics:

- Developing District Staff
- Ensuring Water Quality and Access
- Keeping the Entire Rancho Murieta Community Safe
- Strengthening Financial Position
    - New FY 24-25
    - Audits
- Accounting Systems
- Grants
- Contracts
- Development
- Communications

Under Agenda Item 9B, Mr. Bohannon gave a summary of the utility update, including:

- Water Treatment Facility
- Water Consumption
- Raw Water Storage & Delivery
- Wastewater Facility
- Utility Crew Report
- FY 23-24 Capital Improvement Program (CIP) update
- SB170 Projects Update
    - Water Treatment Facility Sodium Hypochlorite Conversion
    - Recycled Water Disinfection Project
    - Granlees Safety Improvements
- Development
    - Retreats West
    - Retreats North & East
    - Residences of Murieta Hills East & West
    - Riverview Phase 1A&1B and Phase 2
    - Rancho North
    - Murieta Gardens Commercial

10. CONSIDER REVISIONS TO RECORD RETENTION POLICY: RESOLUTION R2024-10

Mr. Enright discussed the revisions to the Records Retention Policy. **Motion/Maybee** *to adopt Resolution R2024-10 and adopt policy P2024-01.* **Second/Butler. Roll Call Vote: Ayes: Butler, Jenco, Pohll, Maybee. Noes: None. Absent: Booth. Abstain: None.**

11. CONSIDER APPROVAL OF SECURITY PROGRAM CHANGE AND CREATION OF COMMUNITY SERVICES (CSO) CLASSIFICATION

Mr. Matulich discussed the addition of the new classification and changes to the Security Program. **Motion/Maybee** *to approve Security Program Change and add Community Services Officer Classification.* ***S*econd/Pohll. Roll Call Vote: Ayes: Butler, Jenco, Pohll, Maybee. Noes: None. Absent: Booth. Abstain: None.**

12. CONSIDER CONTINUATION OF EMERGENCY REPAIR OF LEAK IN PIPE FROM GRANLEES TO CALERO RESERVOIR

Mr. Bohannon reviewed the situation. This item will be on the October 16, 2024 Board Meeting Agenda.

13. CONSIDER AUTHORIZATION FOR EMERGENCY REPAIR OF RECYCLED WATER PIPE ON THE YELLOW BRIDGE (This item was added as an emergency item to the Agenda.)

Mr. Bohannon updated the Board on the need for repairs to the recycled water pipe on the Yellow Bridge. This item will be on the October 16, 2024 Board Meeting Agenda. **Motion/Maybee** *to approve the emergency repair to the recycled water pipe on the Yellow Bridge.* **Second/Butler. Roll Call Vote: Ayes: Butler, Jenco, Pohll, Maybee. Noes: None. Absent: Booth. Abstain: None.**

14. CONSIDER AUTHORIZATION OF COMPREHENSIVE DISTRIBUTION SYSTEM STUDY PROPOSAL FROM DOMENICHELLI & ASSOCIATES

Mr. Morris informed the Board that this item will be returned to the Improvements Committee after an updated quote is received from Domenichelli and Associates which includes a recycled water in the study.

15. CONSIDER APPROVAL OF BATHYMETRIC SURVEY FOR CLEMENTIA

Mr. Morris updated the Board on this topic, stating that it was addressed at the Improvements Committee meeting, and the members decided that it was premature to do this study.

16. CONSIDER PROPOSAL TO PERFORM MAINTENANCE AT LOST LAKE

Ms. Morris informed the Board that this topic has shared responsibility between some entities in the Community and will be researched further.

17. CONSIDER APPROVAL OF WATER AUGMENTATION RATE STUDY

Ms. Morris discussed the pursuit of a study for the Water Augmentation Rate Study. The Board instructed Staff to tie this to the Integrated Water Master Plan.
Bob Keil commented.

18. CONSIDER APPROVAL OF INCREASES TO SALARY RANGES FOR UNREPRESENTED CLASSIFICATIONS

Ms. Morris recommended an increase to the Non-Represented Salary Schedule and discussed the need to streamline the Pay for Performance Manual to improve its clarity. This item will return to the Personnel Committee for further discussion.

19. MURIETA VILLAGE WATER SUPPLY LINES: DISTRICT vs. PRIVATE

Ms. Morris stated that Staff will return with more information on this topic given the identification of a 2021 Capital Improvement Project that was never done.

20. DIRECTOR COMMENTS

Director Maybee thanked Staff for their work.

21. ADJOURNMENT

Motion/Maybee *to adjourn at 6:27 p.m.* **Second/Pohll. Roll Call Vote: Ayes: Butler, Jenco, Maybee, Pohll. Noes: None. Absent: Booth. Abstain: None.**

Respectfully submitted,

Amelia Wilder
District Secretary

MEMORANDUM

Date: October 16, 2024

To: Board of Directors

From: Personnel Committee Staff

Subject: October 8, 2024 Special Personnel Committee Meeting Minutes

1. CALL TO ORDER

Director Jenco called the meeting to order at 7:30 a.m. Present were Director Jenco and Director Maybee. Present from District staff were Mimi Morris, General Manager; Mark Matulich, Director of Finance and Administration; Eric Houston, Director of Operations; Travis Bohannon, Chief Plant Operator; and Amelia Wilder, District Secretary.

2. RECONSIDERATION OF TWO NON-EXEMPT EMPLOYEES TO BECOME EXEMPT EMPLOYEES

Ms. Morris discussed recommended changes to the two positions that are currently classified as non-exempt employees to non-represented employees. This item was tabled for more research.

3. Discuss Proposed Changes to Pay for Performance Program Manual, Updates to the Non-Represented Salary Schedules and Establishment of a new Non-Represented Executive Management Group

Ms. Morris shared a streamlined version of the 2021 Pay for Performance Program which applies to Non-Represented employees. Though no changes were proposed for the Program, Morris recommended increasing the Non-Represented Salary Schedule by 8% due to the failure to conduct a salary survey within the three year period outlined in the Pay for Performance Manual.

She also recommended the creation of an Executive Management Group consisting of the General Manager and the Director of Finance and Administration. The Committee recommended this go to the Board for approval. ***This item will be on the October 16, 2024 Board Meeting Agenda.***

4. PUBLIC COMMENT

None.

5. DIRECTOR COMMENTS

None.

6. ADJOURNMENT The meeting was adjourned at 8:17 a.m.

MEMORANDUM

Date: October 9, 2024

To: Board of Directors

From: Improvements Committee Staff

Subject: October 8, 2024 Special Improvements Committee Meeting Minutes

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1. CALL TO ORDER

Director Jenco called the meeting to order at 8:23 a.m. Present were Director Jenco and Director Pohll. Present from District staff were Mimi Moris, General Manager; Mark Matulich, Director of Finance and Administration; Eric Houston, Director of Operations; Travis Bohannon, Chief Plant Operator; and Amelia Wilder, District Secretary.

2. IMPROVEMENTS STAFF REPORT

The following topics were discussed:

A. Proposed Enhancement of District's Meter Technology/Leak Detection with Advanced Meter Infrastructure (AMI)

Ms. Morris introduced representatives from Kamstrup, who demonstrated their AMI system.

B. Murieta Village Water Connection District Service Line vs. Private Lines

Ms. Morris reviewed the history of the layout of the pipes under the homes. Staff proposes we lay new pipe under the streets. A Policy P2024-02 was also introduced which would reimburse homeowners in the Village for leaks going back to April 2024.

C. Broken Raw Water Conveyance Pipe from Granlees to Calero Reservoir

Mr. Bohannon informed the Committee on the status of the repairs to the Granlees pipe.

D. Comprehensive Distribution Study

Joe Domenichelli, District Engineer, discussed the progress with the meters at the Rio Oso Tank, and the proposal for a comprehensive distribution study.

E. Consider Amendment to Domenichelli Contract for Distribution System Capacity

The Committee agreed to move this item to the Board for consideration. ***This item will be on the October 16, 2024 Board Agenda.***

Betty Ferraro commented on the status of the tank oh Lookout Hill.

F. Lift Station 6B Rehab

Mr. Bohannon informed we are still waiting for the panel to be rebuilt.

G. Repairs to Recycled Water Line on Yellow Bridge

Mr. Bohannon informed the Committee that the recycled water line on the yellow bridge has been repaired.

H. RFP Bid Results for Water Treatment Plant #2 Filter Bed Rehab

Mr. Bohannon informed the Committee that one bid was received from TNT Industrial Contractors, Inc. There was a question about Policy on contractors getting bonds. ***This item will be on the October 16, 2024 Board Agenda.***

I. RFP Bid Results for Wastewater Treatment Plant Sodium Hypochlorite Conversion

Mr. Bohannon presented the bid sheet with the three bids that were received. ***This item will be on the October 16, 2024 Board Agenda.***

J. LED Conversion Lighting Project in District Buildings to Save Electricity and Improve Visibility

Ms. Morris discussed the project to replace all of the lights in District buildings with LED. ***This item will be on the October 16, 2024 Board Agenda.***

K. Basin 5 Maintenance Request

Ms. Morris discussed the unfolding of information for this topic. More research is needed before we can proceed.

5. COMMENTS FROM THE PUBLIC

None.

6. DIRECTOR AND STAFF COMMENTS

Mr. Pohll asked for an update on the RFP for the Wastewater Treatment Plant Sodium Hypochlorite Conversion.

7. ADJOURNMENT

The meeting was adjourned at 10:54 a.m.

MEMORANDUM

Date: October 10, 2024

To: Board of Directors

From: Communication & Technology Committee Staff

Subject: October 8, 2024, Special Communication & Technology Committee Meeting Minutes

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1. CALL TO ORDER

Director Butler called the meeting to order at 11:27 a.m. Present was Director Butler. Director Booth was absent. Present from District staff were Mimi Morris, General Manager; Mark Matulich, Director of Finance and Administration; and Amelia Wilder, District Secretary.

2. UPDATE ON WEBSITE AND SOCIAL MEDIA

Ms. Wilder gave an update on website and Facebook statistics.

3. COMMENTS FROM THE PUBLIC

None.

4. DIRECTOR AND STAFF COMMENTS

Director Butler would like more communication in the Pipeline.

5. Adjournment

The meeting was adjourned at 11:38 a.m.

MEMORANDUM

DATE: October 16, 2024
TO: Board of Directors
FROM: Mark Matulich, Director of Finance and Administration
SUBJECT: Receive and File Vendor Check Register Report

Attached is a list of checks issued from Banner Bank numbered 001388 through 001633 during Q1 FY 24-25. Invoices were presented by departments, reviewed by administration staff and subsequent checks were issued. All checks were in conformity with the District's policies and procedures. Monies were available to pay the amounts listed.

One hundred sixty-eight checks totaling $1,567,920.80 were issued during this time.

The Board is asked to receive and file this information.

ATTACHMENT
Vendor Check Register Report from July 1, 2024 to September 30, 2024.

Ranges:	From:	To:		From:	To:
Check Number	First	Last	Check Date	7/1/2024	9/30/2024
Vendor ID	First	Last	Checkbook ID	BANNER	BANNER
Vendor Name	First	Last			

Sorted By: Check Date

* Voided Checks

Check Number	Check Date	Vendor	Checkbook ID	Amount
001388	7/3/2024	CVCWA	BANNER	$3,350.00
001389	7/3/2024	Clark Pest Control	BANNER	$782.00
001390	7/3/2024	Ferguson Waterworks , Inc 1423	BANNER	$11,758.51
001391	7/3/2024	Folsom Lake Ford, Inc.	BANNER	$1,010.24
001392	7/3/2024	James Colas	BANNER	$400.00
001393	7/3/2024	Nor-Cal Lifting and Repairs	BANNER	$900.00
001394	7/3/2024	Streamline	BANNER	$375.00
001395	7/3/2024	TNT Industrial Contractors Inc.	BANNER	$18,647.38
001396	7/3/2024	Univar Solutions USA Inc	BANNER	$5,658.16
001397	7/3/2024	Vestis	BANNER	$445.02
001398	7/3/2024	State of California	BANNER	$77,640.00
001399	7/3/2024	Chemtrade Chemicals US LLC	BANNER	$3,799.18
001400	7/3/2024	Aqua-Metric Sales Company	BANNER	$2,758.34
001401	7/3/2024	California Waste Recovery Systems	BANNER	$106,254.25
001402	7/3/2024	Chemtrade Chemicals US LLC	BANNER	$3,800.83
001403	7/3/2024	Daily Journal Corporation	BANNER	$2,447.63
001404	7/3/2024	GSRMA	BANNER	$490,107.00
001405	7/3/2024	Liebert Cassidy Whitmore	BANNER	$217.50
001406	7/3/2024	LUXURY CLEANING SERVICE	BANNER	$2,000.00
001407	7/3/2024	Regional Water Authority	BANNER	$6,496.00
001408	7/3/2024	State of California	BANNER	$503.00
001409	7/3/2024	Tyler Technologies, INC	BANNER	$90.00
001410	7/3/2024	Watchdogs Surveillance	BANNER	$85.00
001411	7/3/2024	Supply Network	BANNER	$122.58
001412	7/11/2024	Andy Lee	BANNER	$75.41
001413	7/11/2024	Vitaliy Perepelka	BANNER	$105.80
001414	7/11/2024	The Ed Jones Co.	BANNER	$236.73
001415	7/11/2024	Andy Lee	BANNER	$17.14
001416	7/11/2024	Applications By Design, Inc.	BANNER	$2,520.00
001417	7/11/2024	Caltronics	BANNER	$98.33
001418	7/11/2024	Dewberry Engineers Inc.	BANNER	$18,352.92
001419	7/11/2024	Domenichelli and Associates, Inc	BANNER	$18,360.00
001420	7/11/2024	Greenfield Communications	BANNER	$329.00
001421	7/11/2024	Pace Supply Corp	BANNER	$2,097.44
001422	7/11/2024	Rancho Murieta Association	BANNER	$449.83
001423	7/11/2024	Sacramento County Sheriff's Office	BANNER	$125.00
001424	7/11/2024	Supply Network	BANNER	$1,100.00
001425	7/11/2024	Tyler Technologies, INC	BANNER	$968.75
001426	7/11/2024	S. M. U. D.	BANNER	$25,275.38
001427	7/18/2024	Andy Lee	BANNER	$122.84
001428	7/18/2024	Bartkiewicz, Kronick & Shanahan	BANNER	$13,106.48
001429	7/18/2024	Fidelity National Title	BANNER	$46.88
001430	7/18/2024	Lumos & Associates, Inc.	BANNER	$5,972.69
001431	7/18/2024	Monika Sobon	BANNER	$33.84
001432	7/18/2024	Old Republic Title	BANNER	$377.22
001433	7/18/2024	Stewart Title of Sacramento	BANNER	$52.45
001434	7/18/2024	Tahnee Lyons	BANNER	$109.71
001435	7/18/2024	Thatcher Company of California, Inc	BANNER	$5,498.00
001436	7/25/2024	Adkins Engineering and Surveying, Inc.	BANNER	$6,284.82
001437	7/25/2024	California Laboratory Services	BANNER	$3,595.20
001438	7/25/2024	Chemtrade Chemicals US LLC	BANNER	$3,658.20
001439	7/25/2024	Condor Earth Technologies	BANNER	$1,468.94
001440	7/25/2024	Domino Solar LTD	BANNER	$13,756.84
001441	7/25/2024	Operating Engineers Local Union No. 3	BANNER	$627.60
001442	7/25/2024	Signal Service, Inc.	BANNER	$428.75
001444	7/25/2024	Univar Solutions USA Inc	BANNER	$4,959.00
001445	7/25/2024	USA Blue Book	BANNER	$998.14
001446	7/25/2024	Vestis	BANNER	$222.51

* Voided Checks

Check Number	Check Date	Vendor	Checkbook ID	Amount
001447	7/25/2024	Operating Engineers Local Union No. 3	BANNER	$627.60
001448	7/25/2024	State of California	BANNER	$64.00
001449	7/31/2024	A&D Automatic Gate and Access	BANNER	$527.00
001450	7/31/2024	ABS Direct	BANNER	$3,184.69
001451	7/31/2024	Andy Lee	BANNER	$51.03
001452	7/31/2024	Arnolds For Awards	BANNER	$25.25
001454	7/31/2024	Bartkiewicz, Kronick & Shanahan	BANNER	$3,845.98
001455	7/31/2024	Brower Mechanical, Inc	BANNER	$564.00
001456	7/31/2024	CIT	BANNER	$475.22
001457	7/31/2024	Clark Pest Control	BANNER	$782.00
001458	7/31/2024	County of Sacramento	BANNER	$17,854.00
001459	7/31/2024	GSRMA	BANNER	$11,000.00
001460	7/31/2024	LUXURY CLEANING SERVICE	BANNER	$2,000.00
001461	7/31/2024	Pace Supply Corp	BANNER	$525.28
001462	7/31/2024	Rancho Murieta Association	BANNER	$532.15
001463	7/31/2024	Solitude Lake Management LLC	BANNER	$2,366.00
001464	7/31/2024	Thatcher Company of California, Inc	BANNER	$749.00
001465	7/31/2024	Vestis	BANNER	$410.56
001466	7/31/2024	Walker's Office Supplies, Inc	BANNER	$53.05
001467	8/1/2024	State of California	BANNER	$4,634.00
001468	8/8/2024	Aqua-Metric Sales Company	BANNER	$29,128.78
001469	8/8/2024	Backflow Distributors Inc	BANNER	$122.34
001470	8/8/2024	B & M BUILDERS	BANNER	$15,922.00
001471	8/8/2024	Condor Earth Technologies	BANNER	$10,358.43
001472	8/8/2024	Thatcher Company	BANNER	$7,498.00
001473	8/8/2024	Warlito Gabriel	BANNER	$253.00
001474	8/8/2024	Solitude Lake Management LLC	BANNER	$8,450.00
001475	8/15/2024	Andy Lee	BANNER	$554.55
001476	8/15/2024	Andres Lozano Consult Services	BANNER	$7,695.00
001477	8/15/2024	Brower Mechanical, Inc	BANNER	$434.00
001478	8/15/2024	Caltronics	BANNER	$140.60
001479	8/15/2024	Chemtrade Chemicals US LLC	BANNER	$3,585.84
001480	8/15/2024	Greenfield Communications	BANNER	$329.00
001481	8/15/2024	Pace Supply Corp	BANNER	$10,079.11
001482	8/15/2024	Streamline	BANNER	$375.00
001483	8/15/2024	Univar Solutions USA Inc	BANNER	$10,246.85
001484	8/15/2024	Vestis	BANNER	$221.43
001558	8/22/2024	California Laboratory Services	BANNER	$5,831.00
001559	8/22/2024	Chemtrade Chemicals US LLC	BANNER	$3,629.44
001560	8/22/2024	CHICAGO TITLE COMPANY	BANNER	$4.34
001562	8/22/2024	Domenichelli and Associates, Inc	BANNER	$34,282.75
001563	8/22/2024	Domino Solar LTD	BANNER	$13,829.45
001564	8/22/2024	Fidelity National Title	BANNER	$43.24
001565	8/22/2024	Land Graphics Fencing Company	BANNER	$1,828.00
001566	8/22/2024	Mario Moreno	BANNER	$400.00
001567	8/22/2024	Old Republic Title	BANNER	$350.00
001568	8/22/2024	Pace Supply Corp	BANNER	$211.34
001569	8/22/2024	Solitude Lake Management LLC	BANNER	$2,366.00
001570	8/22/2024	Stratus Environmental, Inc	BANNER	$6,816.08
001571	8/22/2024	Univar USA Inc.	BANNER	$2,052.54
001572	8/22/2024	USA Blue Book	BANNER	$2,061.68
001573	8/22/2024	Vestis	BANNER	$473.84
001574	8/22/2024	Next Level Escrow	BANNER	$355.58
001575	8/29/2024	Andres Lozano Consult Services	BANNER	$6,840.00
001576	8/29/2024	California CAD Solutions inc.	BANNER	$700.00
001577	8/29/2024	Chemtrade Chemicals US LLC	BANNER	$3,707.98
001578	8/29/2024	Clark Pest Control	BANNER	$782.00
001579	8/29/2024	Concentra DBA Occupational Health Centers o	BANNER	$239.00
001580	8/29/2024	Condor Earth Technologies	BANNER	$1,660.50
001581	8/29/2024	Domenichelli and Associates, Inc	BANNER	$29,812.74
001582	8/29/2024	EDCO Enterprises	BANNER	$3,200.00
001583	8/29/2024	Lumos & Associates, Inc.	BANNER	$31,837.55
001584	8/29/2024	NTU Technologies, Inc.	BANNER	$4,286.40
001585	8/29/2024	Sacramento Metropolitan Air Quality Mgt. Di	BANNER	$19,453.00
001586	8/29/2024	Thatcher Company of California, Inc	BANNER	$749.00

* Voided Checks

Check Number	Check Date	Vendor	Checkbook ID	Amount
001587	8/29/2024	Univar Solutions USA Inc	BANNER	$4,446.00
001588	8/29/2024	Vestis	BANNER	$493.15
001589	9/12/2024	Andy Lee	BANNER	$47.52
001590	9/12/2024	Andres Lozano Consult Services	BANNER	$5,130.00
001591	9/12/2024	Applications By Design, Inc.	BANNER	$1,500.00
001592	9/12/2024	Aqua-Metric Sales Company	BANNER	$426.65
001593	9/12/2024	Borges & Mahoney	BANNER	$264.89
001594	9/12/2024	Brower Mechanical, Inc	BANNER	$26,091.10
001595	9/12/2024	California Laboratory Services	BANNER	$3,340.80
001596	9/12/2024	Caltronics	BANNER	$116.88
001597	9/12/2024	California Waste Recovery Systems	BANNER	$241,716.21
001598	9/12/2024	Chemtrade Chemicals US LLC	BANNER	$3,652.32
001599	9/12/2024	Crime Alert Security	BANNER	$120.00
001600	9/12/2024	Cynthia Jones	BANNER	$932.13
001601	9/12/2024	Ditch Witch West	BANNER	$1,022.23
001602	9/12/2024	Domenichelli and Associates, Inc	BANNER	$2,403.81
001603	9/12/2024	Greenfield Communications	BANNER	$329.00
001604	9/12/2024	Hastie's Capitol Sand and Gravel Co.	BANNER	$761.57
001605	9/12/2024	Liebert Cassidy Whitmore	BANNER	$270.00
001606	9/12/2024	LUXURY CLEANING SERVICE	BANNER	$2,000.00
001607	9/12/2024	Operating Engineers Local Union No. 3	BANNER	$1,035.54
001608	9/12/2024	Pace Supply Corp	BANNER	$3,738.91
001609	9/12/2024	Pirtek Power Inn	BANNER	$1,009.35
001610	9/12/2024	Robert Miller	BANNER	$200.00
001611	9/12/2024	SIERRA VALLEY CONTRACTORS	BANNER	$13,920.00
001612	9/12/2024	Solitude Lake Management LLC	BANNER	$8,450.00
001613	9/12/2024	Streamline	BANNER	$375.00
001614	9/12/2024	Thatcher Company of California, Inc	BANNER	$3,749.00
001615	9/12/2024	USA Blue Book	BANNER	$3,089.49
001616	9/12/2024	W.W. Grainger Inc.	BANNER	$6,842.86
001617	9/12/2024	Zenon Environmental Corporation	BANNER	$2,723.28
001619	9/26/2024	Aestiva Software, Inc.	BANNER	$5,330.60
001620	9/26/2024	Andres Lozano Consult Services	BANNER	$4,275.00
001621	9/26/2024	Compressed Air Services	BANNER	$700.00
001623	9/26/2024	Lund Construction	BANNER	$618.01
001624	9/26/2024	Mark Matulich	BANNER	$2,231.13
001625	9/26/2024	Mario Moreno	BANNER	$125.00
001626	9/26/2024	Melinda Morris	BANNER	$2,171.70
001627	9/26/2024	Robert Musick	BANNER	$2,212.16
001628	9/26/2024	Old Republic Title	BANNER	$589.20
001629	9/26/2024	PR Diamond Products Inc.	BANNER	$930.00
001630	9/26/2024	Scott Chastain	BANNER	$118.60
001631	9/26/2024	Watchdogs Surveillance	BANNER	$2,787.33
001632	9/26/2024	Concentra DBA Occupational Health Centers o	BANNER	$717.00
001633	9/26/2024	Gabriel DeVault	BANNER	$369.73

Total Checks: 168 Total Amount of Checks: $1,567,920.80

RESOLUTION NO. R2024-11

A RESOLUTION OF THE BOARD OF DIRECTORS AUTHORIZING THE DISTRICT TO REPAIR THE YELLOW BRIDGE RECYCLED WATERLINE LEAK UNDER THE MASTER SERVICES AGREEMENT WITH TNT INDUSTRIAL CONTRACTORS, INC. (TNT)

WHEREAS, the District maintains the Recycled Waterline which runs across the Yellow Bridge spanning the Cosumnes River and it was determined that there was a leak in the recycled water line that transports recycled water from the water treatment plant to the Golf Course; and

WHEREAS, at its regular meeting on September 18, 2024, the Board of Directors added the item to the agenda after determining unanimously that an emergency existed as defined by Government Code section 54956.5 and there was an immediate need to act, and the emergency came to the attention of the District subsequent to the agenda being posted; and

WHEREAS, the District has an immediate need to stop the leak in this pipe to avoid accidentally discharging recycled water into the Cosumnes River, and does not have time to issue requests for proposals ("RFPs") to solicit proposals to fix the leaks;

WHEREAS, District Staff tried, unsuccessfully to repair the leak, but were not able to isolate the area of pipe that needed to be repaired to be able to drain the pipe and make necessary repairs. The Board directed the District staff to have TNT Industrial Contractors, Inc. repair the leak under the Master Services Agreement with TNT Industrial Contractors, Inc., dated January 19, 2023.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED AS FOLLOWS:

1. The Rancho Murieta Community Services District Board of Directors ratifies the direction of the Board adopted on September 18, 2024, and directs the General Manager to repair the leak under the Master Services Agreement with TNT Industrial Contractors, Inc.,

2. Authorize the cost of the repairs to be paid out of the Wastewater Replacement Reserve Fund, including the cost of TNT, materials, and supplies.

3. The General Manager is authorized to take all necessary and appropriate actions to carry out the purpose and intent of this resolution.

4. This Resolution shall take effect immediately upon adoption.

5. The Secretary shall certify to the adoption of this resolution.

PASSED, APPROVED, and ADOPTED by the Board of Directors of the Rancho Murieta Community Services District, Sacramento County, California, at a meeting held on the 16th day of October 2024, by the following roll call vote:

Ayes:
Noes:
Absent:
Abstain:

Timothy E. Maybee, President of the Board
Rancho Murieta Community Services District

[SEAL]
ATTEST:

Amelia Wilder, District Secretary

DATE OF REPORT: 10/11/24

WORK PERFORMED BY: TNT Industrial Contractors Inc

DESCRIPTION OF WORK: Expansion Joints Replacement at yellow bridge.

FIELD INSTRUCTION NUMBER

PC NUMBER

CONTRACT NO :

REPORT SUMMARY NUMBER 1

CONTRACTOR JOB NO 6531

CONTRACTOR REPORT NO

REPORT #	DESCRIPTION	TO DATE	AMOUNT	TOTAL AMOUNT TO DATE	$ 38,610.43
1	Install saddles with valves for draining line - expansion joint leaking on south side of yello bridge	8/30/2024	$ 3,924.88		
2	Tap master installed line stops, TNT replaced expansion joints	9/20/2024	$ 34,685.54		

Established 1991
3800 Happy Lane, Sacramento, CA 95827
Business: (916) 395-8400 | Fax: (916) 395-8429
tntindustrial.com
Facebook.com/TNT Industrial TNT
CA Contractors Lic. No 622974 | NV Contractors Lic. No. 0072754

DATE OF REPORT: 10/11/24 DATE WORK PERFORMED: 8/30/24 FIELD INSTRUCTION NUMBER est

PC NUMBER

WORK PERFORMED BY: TNT Industrial Contractors Inc CONTRACT NO :

DESCRIPTION OF WORK: Install saddles with valves for draining line - expansion joint leaking on south side of yello bridge REPORT NUMBER

CONTRACTOR JOB NO 6531

CONTRACTOR REPORT NO

EQUIP. NO.	EQUIPMENT Type / Model	HOURS	HOURLY RATE	EXTENDED AMOUNTS
TNT TRK	TNT Tuck (2500)	6.0	$ 30.00	$ 180.00
TNT TRK	TNT Tuck (2500)	6.0	$ 30.00	$ 180.00
TNT TRK	Hot tap machine	1.0	$ 100.00	$ 100.00
TNT TLR	Equipment Trailer		$ 18.75	$ -
TNT DUMP	Dump Truck		$ 62.50	$ -
TNT EXC	Mini Excavator		$ 38.06	$ -
TNT TRK	TNT Truck 21		$ 42.39	$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
			TOTAL FOR EQUIPMENT	$460.00

LABOR Name / Classification		HOURS	HOURLY RATE	EXTENDED AMOUNTS
Steve Decker - PF Foreman	REG.		$ 119.51	$ -
	O. T.	2.0	$ 163.51	$ -
	D.T.	4.0	$ 207.50	$ 830.00
				$ -
John Dixon - PF	REG.		$ 107.38	$ -
	O. T.	2.0	$ 145.30	$ 290.60
	D.T.	4.0	$ 183.22	$ 732.88
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
Josh Twist Project Manager	REG.	2.0	$ 120.00	$ 240.00
				$ -
			SUB-TOTAL	$2,093.48

MATERIAL AND/OR WORK DONE BY SPECIALISTS

DESCRIPTION	NO. UNIT	UNIT COST	TOTAL
Sacramento Windustrial.	1	54.30	$ 54.30
Pace Supply	1	1,165.37	$ 1,165.37
Pace Supply	1	-482.46	$ (482.46)
	1		$ -
	1		$ -
			$ -
			$ -
			$ -
			$ -
APPLICABLE TAXES	$ 737.21	0.00%	

LABOR EXPENSES

ADDED LABOR SURCHARGE - 26%				$ -
SUBSISTENCE				
TRAVEL EXPENSE				
OTHER				
OTHER				
OTHER				
OTHER				
OTHER				
OTHER				
		TOTAL COST OF LABOR	A	$ 2,093.48
		TOTAL COST OF EQUIPMENT	B	$460.00
		TOTAL COST OF MATERIALS AND WORK	C	$ 737.21
		LABOR COST + 20%	(A)	$ 418.70
		EQUIPMENT COST + 18%	(B)	$ 82.80
		MATERIAL AND WORK COST + 18%	(C)	$ 132.70
		CONSUMABLES COST + 10%		$ -
				$ -

TOTAL THIS REPORT $ 3,924.88

Labor Hours, Equipment & Material Quantities By:

CONTRACTOR'S REPRESENTATIVE DATE

Verified with daily report:

DATE

Acceptance of Labor Hours, Equipment & Material Quantities By:

PROJECT INSPECTOR DATE

Accepted for Payment:

RESIDENT ENGINEER DATE

PACE Supply Corp
P.O. Box 744915
Los Angeles,CA 90074-4915

INVOICE

INVOICE DATE	INVOICE #	PAGE
09/04/24	069800014	1 of 1

DATE SHIPPED	CUSTOMER #
09/04/24	24873-00

Branch Contact: 916-386-8347 FAX: 916-386-8674
Accounting & Credit: 855-306-5689

TNT INDUSTRIAL CONTRACTORS INC
3800 HAPPY LANE
SACRAMENTO,CA 95827

SHIP TO

TNT INDUSTRIAL CONTRACTORS INC
8400 24TH AVE.
SACRAMENTO, CA 95826

CUSTOMER PURCHASE ORDER	JOB NAME	SHIPPED VIA	TERMS	TAXABLE ITEMS
RMCSD REPAIR	RMCSD LEAK	PICK UP	2%10TH NET 25TH	

PART/DESCRIPTION	ORDER	SHIP	UNIT PRICE	EXTENSION	
NIPBR24 **2 X 4 BRASS NIPPLE**	2	2	24.7300	49.46	Y
RED5044AB2 **2 IPS LF FULL PORT 2PC BRS BALL VALVE R&W**	2	2	110.4500	220.90	Y
MUEBR2B1314IP200 **13.14-14.58 X 2 IP DS BRS SADDLE MUELLER**	2	2	385.0000	770.00	Y
LENHS134 **1 3/4 CARBIDE TOOTH HOLE SAW LENOX**	1	1	31.2400	31.24	Y

⚠ WARNING: The products you have purchased can expose you to chemicals and/or substances, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

Remit to: PACE Supply Corp P.O. Box 744915 Los Angeles, CA 90074-4915
DUE TO THE SUSTAINED SURGE IN FUEL PRICES, EFFECTIVE IMMEDIATELY, WE ARE INCREASING OUR STANDARD DELIVERY FEE FROM $10 TO $15. LIMIT ONE FEE PER DAY, PER JOB.,

TNT INDUSTRIAL
CONTRACTORS, INC.

SEP 05 2024

RECEIVED

THIS INVOICE IS SUBJECT TO ALL TERMS AND CONDITIONS ON THE FACE AND REVERSE	GROSS	TAX%	SALES TAX	SHIPPING & HANDLING	OTHER CHARGES	INVOICE TOTAL
	1071.60	8.750	93.77	0.00	0.00	1165.37

TO VIEW ONLINE GO TO: https://pacesupply.billtrust.com USE THIS ENROLLMENT TOKEN: TFD RMG RLW BILLTRUST ACCOUNT # 24873

A discount amount of 23.31 is offered if your payment via check, ACH or cash is received by 10/10/2024.

Material Signed for by: Josh Twist 08/30/24

PACE Supply Corp
P.O. Box 744915
Los Angeles,CA 90074-4915

PACE supply CORP.

INVOICE

INVOICE DATE	INVOICE #	PAGE
09/10/24	CM069821515	1 of 1

DATE SHIPPED	CUSTOMER #
09/10/24	24873-00

Branch Contact: 916-386-8347 FAX: 916-386-8674
Accounting & Credit: 855-306-5689

SHIP TO

TNT INDUSTRIAL CONTRACTORS INC
3800 HAPPY LANE
SACRAMENTO,CA 95827

TNT INDUSTRIAL CONTRACTORS INC
SACRAMENTO
3800 HAPPY LANE
COUNTY OF SACRAMENTO, CA 95827

CUSTOMER PURCHASE ORDER	JOB NAME	SHIPPED VIA	TERMS	TAXABLE ITEMS
.	RMCSD	OUR TRUCK	2%10TH NET 25TH	

PART/DESCRIPTION	ORDER	SHIP	UNIT PRICE	EXTENSION	
NIPBR24 **2 X 4 BRASS NIPPLE CREDIT FOR INVOICE#: 069800014 - LINE#: 1**	-1	-1	24.7300	-24.73	Y
RED5044AB2 **2 IPS LF FULL PORT 2PC BRS BALL VALVE R&W CREDIT FOR INVOICE#: 069800014 - LINE#: 2**	-1	-1	110.4500	-110.45	Y
MUEBR2B1314IP200 **13.14-14.58 X 2 IP DS BRS SADDLE MUELLER CREDIT FOR INVOICE#: 069800014 - LINE#: 3**	-1	-1	385.0000	-385.00	Y
⚠ WARNING: The products you have purchased can expose you to chemicals and/or substances, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov					
Remit to: PACE Supply Corp P.O. Box 744915 Los Angeles, CA 90074-4915					
DUE TO THE SUSTAINED SURGE IN FUEL PRICES, EFFECTIVE IMMEDIATELY, WE ARE INCREASING OUR STANDARD DELIVERY FEE FROM $10 TO $15. LIMIT ONE FEE PER DAY, PER JOB.,					

RECEIVED
SEP 27 2024
TNT INDUSTRIAL CONTRACTORS, INC.

THIS INVOICE IS SUBJECT TO ALL TERMS AND CONDITIONS ON THE FACE AND REVERSE	GROSS	TAX%	SALES TAX	SHIPPING & HANDLING	OTHER CHARGES	INVOICE TOTAL
	-520.18	7.750	-40.31	0.00	78.03	< -482.46 >

TO VIEW ONLINE GO TO:	https://pacesupply.billtrust.com	USE THIS ENROLLMENT TOKEN:	TFD RMG RLW	BILLTRUST ACCOUNT #	24873

A discount amount of -9.65 is offered if your payment via check, ACH or cash is received by 10/10/2024.

Credit

SACRAMENTO Windustrial COMPANY

INVOICE

SACRAMENTO WINDUSTRIAL CO.
5800 WAREHOUSE WAY
SACRAMENTO CA 95826-4916

TNT INDUSTRIAL CONTRACTORS, INC.

Page	CUSTOMER NUMBER	INVOICE NUMBER
1 of 1	00487-001947	511178 01
DB	INVOICE DATE	INVOICE TOTAL
22	08/30/2024	$54.30

SEP 09 2024

RECEIVED

BILL TO :

TNT INDUSTRIAL CONTRACTORS
3800 HAPPY LN
SACRAMENTO, CA 95827-9721

1149 1615

To Reorder Contact Us At
Phone No: (916) 381-4661
Fax No: (916) 381-4732

SHIP TO:

TNT INDUSTRIAL CONTRACTORS
5800 Warehouse Way
Sacramento CA 958264916

PURCHASE ORDER NUMBER	SALESPERSON	TYPE SHIPMENT	SHIP VIA	PAYMENT TERMS	SHIP DATE
VERBAL STEVE	023-JONATHAN STEIN	STOCK	WILL CALL	1% 10 PROX NET 30 DAYS	08/30/2024

PLACED BY	JOB NAME
STEVE	RANCHO MURITA 653

UNITS ORDERED	U/M	ITEM DESCRIPTION	UNITS SHIPPED	B/C	PRICE	DISC/RSTK	EXTENDED	TAX
2	EA	49-56-0717 1-3/4 CARBIDE TP HS 49-56-0717	2		$19.2850		$38.57	Y
3	EA	49-56-8000 ARBOR PILOT DRILL	3		$3.7873		$11.36	Y
VIEW INVOICES/STATEMENTS ONLINE: www.winsupplyinc.com/account/login								

	Net Sales	$49.93
	Freight	$0.00
State Tax %6.00	State Tax	$3.00
Local Tax %2.75	Local Tax	$1.37
	Invoice Total	$54.30

TAX AREA ID: 050672940
FEDERAL TAX ID NUMBER: 840716322
TERMS AND CONDITIONS: You agree that the sale of these products/services is subject to all of our standard terms and conditions of sale located at our website: www.winsupplyinc.com/tcsale

PAY FULL INVOICE AMOUNT BY 09/29/2024
IF PAID BY 09/09/24 YOU MAY DEDUCT $.50

When you provide a check as payment, you authorize us either to use information from your check to make a one-time electronic fund transfer from your account or to process the payment as a check transaction. For inquiries please call (916) 381-4661.

Established 1991
3800 Happy Lane, Sacramento, CA 95827
Business: (916) 395-8400 | Fax: (916) 395-8429
tntindustrial.com
Facebook.com/TNT Industrial TNT
CA Contractors Lic. No 622974 | NV Contractors Lic. No. 0072754

DATE OF REPORT: 10/11/24 DATE WORK PERFORMED: 9/20/24 FIELD INSTRUCTION NUMBER est

PC NUMBER

WORK PERFORMED BY: TNT Industrial Contractors Inc CONTRACT NO :

DESCRIPTION OF WORK: Tap master installed line stops, TNT replaced expansion joints REPORT NUMBER

CONTRACTOR JOB NO 6531

CONTRACTOR REPORT NO

EQUIP. NO.	EQUIPMENT Type / Model	HOURS	HOURLY RATE	EXTENDED AMOUNTS	LABOR Name / Classification	HOURS	HOURLY RATE	EXTENDED AMOUNTS
TNT TRK	TNT Tuck (2500)	8.0	$ 30.00	$ 240.00	James Roberts - PF Foreman	REG. 8.0	$ 119.51	$ 956.08
TNT TRK	TNT Tuck (2500)	8.0	$ 30.00	$ 240.00		O. T.	$ 163.51	$ -
TNT TRK	Hot tap machine		$ 100.00	$ -		D.T.	$ 207.50	$ -
TNT TLR	Equipment Trailer		$ 18.75	$ -				$ -
TNT DUMP	Dump Truck		$ 62.50	$ -	John Dixon - PF	REG. 8.0	$ 107.38	$ 859.04
TNT EXC	Mini Excavator		$ 38.06	$ -		O. T.	$ 145.30	$ -
TNT TRK	TNT Truck 21		$ 42.39	$ -		D.T.	$ 183.22	$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -	Bookkeeping	REG. 2.0	$ 85.00	$ 170.00
				$ -	Josh Twist Project Manager	REG. 2.0	$ 120.00	$ 240.00
				$ -				$ -
			TOTAL FOR EQUIPMENT	$480.00			SUB-TOTAL	$2,225.12

MATERIAL AND/OR WORK DONE BY SPECIALISTS

DESCRIPTION	NO. UNIT	UNIT COST	TOTAL
Tap Master Inc	1	28,590.00	$ 28,590.00
	1		$ -
	1		$ -
	1		$ -
	1		$ -
			$ -
			$ -
			$ -
			$ -
			$ -
APPLICABLE TAXES	$ 28,590.00	0.00%	

LABOR EXPENSES

ADDED LABOR SURCHARGE - 26%			$ -
SUBSISTENCE			
TRAVEL EXPENSE			
OTHER			
OTHER			
OTHER			
OTHER			
OTHER			
OTHER			
TOTAL COST OF LABOR		A	$ 2,225.12
TOTAL COST OF EQUIPMENT		B	$480.00
TOTAL COST OF MATERIALS AND WORK		C	$ 28,590.00
LABOR COST	+ 20%	(A)	$ 445.02
EQUIPMENT COST	+ 18%	(B)	$ 86.40
SUB-CONTRACTOR	+ 10%	(C)	$ 2,859.00
CONSUMABLES COST	+ 10%		$ -
			$ -
TOTAL THIS REPORT			$ 34,685.54

Labor Hours, Equipment & Material Quantities By:

CONTRACTOR'S REPRESENTATIVE DATE

Verified with daily report:

DATE

Acceptance of Labor Hours, Equipment & Material Quantities By:

PROJECT INSPECTOR DATE

Accepted for Payment:

RESIDENT ENGINEER DATE

Tap Master, Inc

1647 Willow Pass Rd. # 136
Concord, CA 94520-2611
Ph: (925) 439-7975 Fax: (925) 432-1871
DIR# 1000000405

CA Lic # 697696
NV Lic # 0056402
WA Lic# TAPMAMI835DT
OR Lic# 239622
ID Reg# RCE-62535

INVOICE

DATE	INVOICE #
9/20/2024	0924-81

BILL TO

TNT Industrial Contractors, Inc.
Attention: Accounts Payable
3800 Happy Ln.
Sacramento, CA 95827

P.O. #	TERMS	DUE DATE
PO#6531	Net 30	10/20/2024

DESCRIPTION	AMOUNT
LOCATION: 7000 ALAMEDA DRIVE - BRIDGE - RANCHO MURIETA, CALIFORNIA	
(1) 1-1/2" HOT TAP ON 12" DI RECLAIMED WATER LINE - BOLT ON TURNKEY	28,590.00
(2) 12" LINE STOPS ON DI RECLAIMED WATER LINE - BOLT ON TURNKEY	
INCLUDES THE FOLLOWING ON STRAIGHT TIME: LABOR, TRUCK, EQUIPMENT SMITH BLAIR DOUBLE STRAP SADDLE JCM 440 LINE STOP SADDLE XHSMS NIPPLE MUELLER CORP STOP IP X FIP NPT PLUG BLIND FLANGE 125# IMMEDIATE PRESSURE TEST BOLT ON INSTALLATION COUPON RETRIEVED	

TNT INDUSTRIAL CONTRACTORS, INC
SEP 24 2024
RECEIVED

WE NOW ACCEPT VISA, MASTERCARD & AMEX

Total **$28,590.00**

Tap Master, Inc does not agree to any retentions being held from the amount due. We can now accept ACH payments.
Past due accounts will be charged a finance charge at the periodic rate of 1-1/2% per month which is an annual percentage rate of 18% or a periodic rate not to exceed maximum rate allowed by state law.

Rancho Murieta Community Services District

November

Board/Committee Meeting Schedule

November 12, 2024

Personnel	**7:30 a.m.**
Improvements	**8:00 a.m.**
Communications	**10:00 a.m.**

November 20, 2024

Regular Board Meeting - Open Session **5:00 p.m.**

All meetings will be held in person at the District Office: 15160 Jackson Rd.

From:	bobkeilmrk@gmail.com
To:	Mimi Morris; Randy Jenco; Tim Maybee; Amelia Wilder
Cc:	Stephen Booth; Linda Butler; Martin Pohll; "Mike Robertson"
Subject:	FW: County Responsibility and Mutual Commitment
Date:	Friday, October 4, 2024 10:42:58 AM
Attachments:	03-Applicants Responsibility Form.pdf Untitled attachment 00304.htm 04-Mutual Commitment Form.pdf Untitled attachment 00307.htm

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Staff and Board,

Currently CSD does not have any plan review timelines. I have attached Sacramento County plan review
Timelines. I would like to formally request that the Board and Staff add the following request to the October Agenda for action.

I would like to propose that the Board adopt the Sacramento County plan review timelines for CSD plan check.
Currently we don't know how long each plan review will take. The only way we can find out is to continue to ask on a regular basis. In the past, CSD plan check has taken 3 or 4 times longer than the County review. By adopting these timelines it gives everyone the ability to schedule work appropriately and complete projects on time.

Thank you for your consideration,

Bob Keil
14768 Guadalupe Drive
916.521.8856

STATEMENT OF APPLICANTS RESPONSIBILITY
Improvement Plan

Dear Applicant:

Please read the following statement outlining your responsibilities regarding the checking and approval of your Improvement Plan. A Civil Engineer is required to prepare these plans and certify his work with his seal and signature.

California Government Code Section 66451.2 authorizes cities & counties to charge a fee for the actual cost of review. Sacramento County has implemented this fee in Section 22.20.016 of Sacramento County Code. In submitting your plan for review and signing this form, you are agreeing to take responsibility for the costs generated by the County related to plan review, material testing, and construction inspections. An initial deposit $1,400.00 is to accompany this plan submittal. Upon receipt, a unique account will be established in your name. You will receive a statement on a monthly basis, and all charges must be paid in full prior to the County Engineer's approval of your plans. If you are the owner of the affected land please sign on the line below. If you are an authorized agent of the owner please sign below and present a copy of your power of attorney for this project. Failure to keep your account current may result in delays of plan approval and issuance of building permits.

I hereby confirm that I understand my financial responsibility for this plan. If I sell or option this property, I will disclose the terms of this statement, and if I fail to do so, I will be jointly responsible.

(Please Print)

Assessor's Parcel No.: _____

Property Address/Project Name: _____

Planning Control No. (if applicable): _____

Applicant's Name: _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone No.: _____

E-mail address: _____

Signed & Date: _____

Improvement Plan Processing
Mutual Commitments

County Commitments

IMPROVEMENT PLAN REVIEWS

1. *Realistic and reasonable timelines will be developed and adhered to as follows:*
   - *1st plan review-20 working days for County to complete*
   - *2nd plan review-10 working days for County to complete*
   - *3rd plan review (if necessary) -10 working days for County to complete*

2. *A complete and comprehensive plan review will be performed with the first plan submittal.*

3. *Initial improvement plans reviews will be performed within 7 days of submittal in a coordinated effort during which improvement plan acceptance will be determined and will be contingent upon the completeness and quality of the submitted plan.*

4. *Incomplete plan submittals will not be accepted for review and plans will be returned to applicant engineers until submittals meet minimum established standards.*

5. *Improvement plans will be reviewed for consistency with most recent Board of Supervisor adopted Improvement Standards. Personal preferences will not be a basis for staff plan review.*

6. *Plans will be deemed incomplete when the following conditions are present:*
   a. *plans are inconsistent with County Improvement Standards,*
   b. *plans are inconsistent with County plan submittal checklists,*
   c. *technical studies, as defined in each Departments submittal requirements, are not included with plan submittal, and*
   d. *plans do not comply with Final Conditions of Approval.*

7. *Once accepted, County staff will review improvement plans utilizing Final Conditions of Approval. Plan review comments will be consistent with those conditions.*

8. *Improvement plan reviews will be completed within two review cycles. Prior to the initiation of a third review cycle, the Project Facilitator will convene a meeting with the developer, engineer and appropriate staff to resolve issues with the plan.*

9. *Plans resubmitted to the Land Division Site Improvement Review Section (LDSIRS) will be distributed upon day of receipt.*

10. *Plan check staff will be available by appointment during the hours of 1pm to 4:30 pm daily. Customers are encouraged to take advantage of appointment scheduling.*

11. *Plan check quality control measures will be instituted by County to insure consistency and accuracy of plan reviews including regular training of plan review staff, standard plan drafting standards and check lists made available to customers detailing plan submission requirements.*

PROJECT FACILITATOR ROLE

1. *A Project Facilitator will be designated for every improvement plan*
    - *to serve as a single point of contact for the developer and engineers,*
    - *to monitor status of plan review,*
    - *to monitor improvement plan time commitments are met by County staff,*
    - *and to insure consistency of plan reviews resulting in improved coordination of all comments.*

2. *County management and Project Facilitator will be responsible for monitoring timelines and to facilitate resolution of plan review issues.*

GENERAL PROVISIONS

1. *Technical study requirements will be developed in conjunction with the development community. Study requirements will be adhered to by both County staff and project customers.*

2. *At a minimum, quarterly technical staff training plans will be implemented to insure staff is knowledgeable in their craft and has the resources and skills to perform plan review.*

3. *LDSIRS will create, publish and maintain a scoreboard of performance measures for plan check review for all departments.*

4. *County will establish knowledgeable and responsible points of contact and return calls timely.*

5. *Improvement Standards will be updated by County every other year, at a minimum, to capture the changes to standards required to more accurately reflect the design function and infrastructure requirements of County service providers, the Board of Supervisors and the community.*

Developers/Engineers/Customers Commitments

1. *Quality control will be performed by the engineering firm submitting the improvement plan.*

2. *Developers/Engineers understand that plans will be deemed incomplete when the following conditions are present:*
    - *plans are inconsistent with County Improvement Standards,*
    - *plans are inconsistent with County plan submittal checklists,*
    - *technical studies, as defined in each Departments submittal requirements, are not included with plan submittal, and*
    - *plans do not comply with Final Conditions of Approval.*

3. *Improvement plan reviews will be completed within two review cycles. Prior to the initiation of a third review cycle, the County Project Facilitator will convene a meeting with the developer, engineer and appropriate staff to resolve issues with the plan.*

4. *Realistic and reasonable timelines will be developed and adhered to as follows:*
    - *Upon receiving notice of the County's 1st plan review comments the Developer shall resubmit to the County within 60 working days. If a complete re-submittal is not made within 60 working days the County's response time shall revert to 20 working days.*

- *If there is no submittal activity by the Developer on a project for a period of 120 working days, the County shall purge all improvement plan submittal documents from its files. Subsequent Improvement plan submittal for the project shall be treated as a completely new submittal and will require all documents associated with an initial Improvement Plan submittal.*

5. *Plans will not be resubmitted until the Developers/Engineers have responded to all comments provided by County on prior submittals. Written responses to each and every comment from the prior plan review will be provided with the next plan submittal.*

6. *Partial plan approvals will be requested only under the most extraordinary circumstances.*

7. *Developers/Engineers will verify all off-site conditions are met.*

8. *Developers/Engineers will establish knowledgeable and responsible points of contact and return calls timely from the County Project Facilitator.*

9. *Developers/Engineers will comply with appointment periods to allow plan check staff uninterrupted time to review improvement plans.*

Acknowledgement

I have read the above and agree to adhere to these commitments.

_____
Applicant's Name (Please print)

_____ _____
Signature Date

October 12, 2024

TO: Rancho Murieta Community Services District, Board of Directors and Rancho Murieta Country Club, Board of Directors:

Re: Lost Lake – The Community of South Rancho Murieta

On behalf of the residents who have homes that border the body of water called "Lost Lake" (referred to as Basin 5) and the surrounding parcel, we are requesting a written response to this letter from the above entities addressing the responsibilities of each of these entities for cleanup and ongoing maintenance of the body of water and the parcel on this site. The attached photos exemplify the overgrown vegetation and the toxic condition of the water; as well as, the unsightly appearance and health and fire safety issues. Following their monthly servicing, Apex Pest Control recently alerted residents of the increase of midge flies.

These concerns have been presented to each of these entities by the residents over many years, including the complaint of odor and the effect on the property value of their homes. The installation of aerators and fountain, intended to mitigate these conditions, have proven to be inadequate to resolve these issues, and frequently are not in operation.

In closing, we are asking CSD, and RMCC to address these issues and take the appropriate steps needed to provide for the clean-up and regular maintenance of Lost Lake.

Sincerely,

Serda Folk; 15117 Celebrar St.; (916)934-9377

Steve and Linda Haidet; 15129 Celebrar St;.(530)313-0457)

Attachments: Photos of Lost Lake and Surrounding Parcel; copy of 1997 "Pipeline"

Photos 1 & 2: Existing aerators and spray fountain unable to significantly reduce duckweed and primrose.

Photo 3: View from resident's backyard of the overall appearance of the lake.

Photo 4: Overgrown cattails at west end of lake.

Photo 5: Example of fire hazard from overgrown weeds and grasses bordering resident's fence.

Photo 6: Water pump intake clogged with debris.

Photo 7a & 7 b: Dead tree adjacent to resident's fence, and dry branches from other trees causing significant risk for damage to resident's home.

Vol. 10, No. 1 April, 1997

LOST LAKE • Pond #5 on Reynosa Drive at 5th Tee

by R. Lee Lawrence

Recently concern was expressed regarding the aesthetics and operation of Lost Lake. Some background information follows:

Prior to the construction of the south golf course, the pond was used for cattle watering. Following the golf course construction, the pond became an overflow pond for drainage prior to discharge to the river. To accommodate residential storm runoff, Winncrest Homes reconstructed the pond to serve as a storm water detention basin. At the same time, not wanting to lose a valuable wildlife habitat, features were added to enhance the habitat for the tri-colored blackbird.

Two feet below the water surface, a 10 foot wide shelf protects visitors from falling in and provides a base for cattails to grow. The center of the pond is 19 feet deep. Trees were added to screen the pond and provide additional bird sanctuary. Because of the dual function of the pond, maintenance is very troublesome.

The aesthetic desire of the residents must be balanced with the need to maintain the habitat in its natural state as much as possible. Compounding the problem, street runoff carries nutrients from lawns and other organics that increase algae and weed growth. No domestic water is used to flush through the pond to maintain clarity. Fish & Game monitors herbicide use, as the water eventually reaches the river. However, we routinely monitor the pond, and as necessary, perform pond maintenance and cleanup.

If you have any questions, please call R. Lee Lawrence.

RMCSD SERVICES

The Community Services District, your local government, provides water, sewer, drainage, flood control, and security services. If you have any questions about the services, the following staff members will be available to assist you. Telephone number - 354-3700.

Ed Crouse, General Manager/District Engineer
Greg Hall, District Accountant
Lee Lawrence, Supt., Water/Wastewater/Drainage
James Noller, Chief of Security
Betti Sadler, District Secretary

The District is governed by a five person Board of Directors elected by registered voters at Rancho Murieta. Board members are John Thurston, Elliot Sevier, Dick Stevens, James Lensch and Don Menicucci. Monthly Board meetings are on the third Wednesday of every month at 4:00 p.m. at the District office.

All meetings are open to the public and residents are encouraged to attend. The agenda for the meeting is available at the CSD Office.

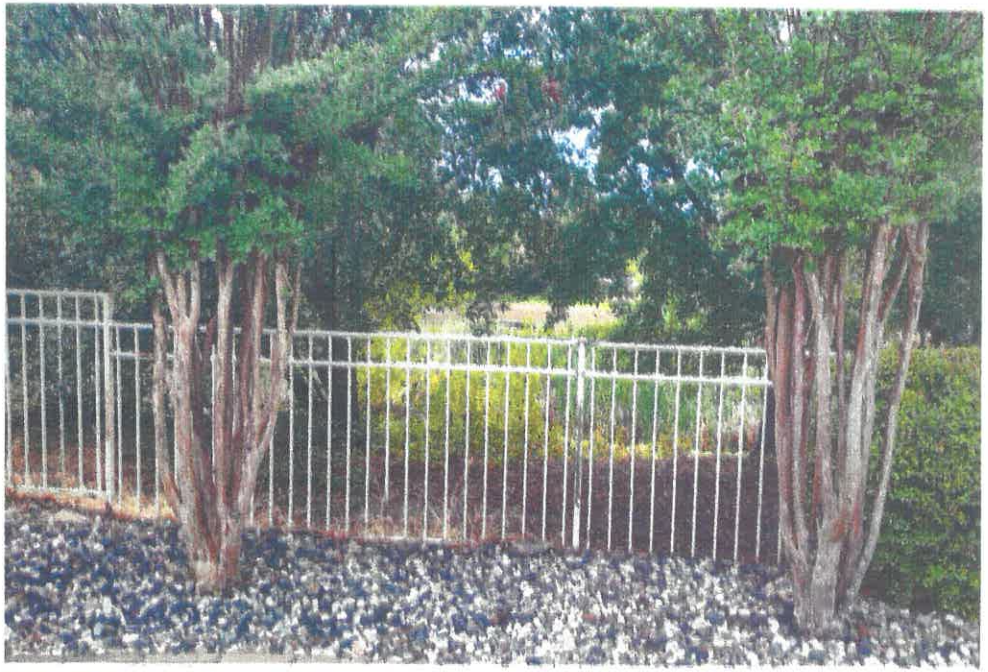
RANCHO MURIETA COMMUNITY SERVICES DISTRICT
15160 Jackson Road, P.O. Box 1050
Rancho Murieta, CA 95683 ■ (916) 354-3700

BULK RATE
US Postage
PAID
Permit # 200
R. Murieta, CA.

Resident
Rancho Murieta, CA 95683

1

3



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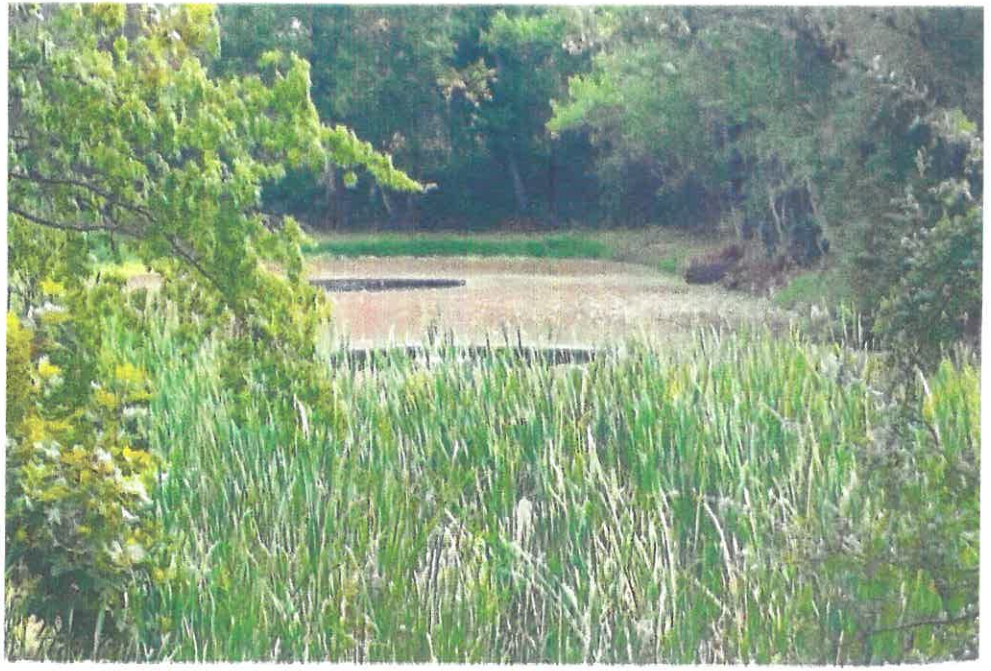

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5

7a

6

7b

GENERAL MANAGER'S REPORT TO THE BOARD OF DIRECTORS
OCTOBER 16, 2024

DEVELOPING DISTRICT STAFF

Director of Operations hired. I'm happy to announce the selection of Eric Houston as the new Director of Operations. Eric joined the team on October 3rd and has been quickly immersed in Operations' projects and activities. Eric has Certifications in both Water Treatment (T5) and Distribution (D4) and has been in water treatment and distribution for over twenty years. He comes to us from El Dorado Irrigation District and spent almost ten years each at both Stockton and Sacramento water agencies. .

Plant Operator Robert Miller left the District in mid September for another opportunity and staff is working to fill his spot. That is currently our only vacancy.

Last week the Personnel Committee received a streamlined version of the Pay for Performance (PFP) Program Manual, which applies to NonRepresented staff. The primary content was unchanged, just re-organized and simplified to make it easier to understand the historical components of the program. The program was last updated by the Board in November of 2021 and included a tri-annual salary survey. The District's focus on other administrative goals overshadowed the survey and staff recommends both an increase of 8% to the NonRepresented Salary Schedule and a plan to get back on track with a salary survey by October of 2025. Staff also recommended a cleanup item to correct inconsistencies in the old PFP and job descriptions wherein two positions are included as Exempt, NonRepresented staff in the Salary Schedule, but identified as NonExempt in their job descriptions, thereby earning overtime. Staff is preparing an updated proposal of the monthly salaries for those positions for consideration next month. The Personnel Committee also considered the establishment of a second NonRepresented Group, the Executive Management Group, with 10% increases to the Salary Schedule for that group. These items are included for consideration in tonight's agenda.

OPERATIONS

Operations has had a busy summer with multiple water and sewer line leaks that needed to be addressed immediately. The summer began with the identification of a leak on the large pipe running from Granlees to Calero and we were fortunate to have that repair underway during the non-pumping season. The repair is a few weeks away from completion and should not cause any delays to pumping season, which begins on November 1st, rain and river flows permitting.

The unit also had to troubleshoot leaks in a treated wastewater line across the yellow bridge that posed a few engineering challenges that staff and the contracted technicians were able to overcome.

Operations has also been overseeing the safety repair work on the Granlees Dam. This CIP project was funded in part with SB170 funds (Budget Act of 2021) and has been long-awaited by the community. This project should also be finished before we start pumping.

I want to thank Travis Bohannon for carrying the load of both Chief Plant Operator and Interim Director of Operations during the entire, extremely busy summer. He has been juggling a very heavy load during this time and has been very dedicated to keeping things running smoothly during that time. Thank you, Travis, for your efforts.

We are evaluating a few new approaches in Operations. We've had a Geographic Information System (GIS) mapping effort underway for the last several years to provide visibility and information regarding the locations

of pipes, valves, intakes, lifts, easements, etc. and are in discussions with the vendor about additional uses of that information such as maintenance management, remote access camera footage, etc.

Additionally, we had a demonstration from an Advanced Metering Infrastructure (AMI) vendor at the Operations Committee last week and will have another vendor share their product at the next committee meeting. Next month we will be submitting a federal grant application to help finance any AMI upgrade. These upgrades have multiple benefits, not the least of which is leak detection to ensure that water is not wasted. An important administrative benefit is the reliability of the usage data and the smooth and automatic interface with the billing system. The District currently relies heavily on manual efforts (a truck driving throughout the entire community) to pick up usage data.

I've also asked Eric to include some key topics in his reports so that the Board has a clear picture of our compliance and reporting obligations, our preventive maintenance work, the underlying information systems for both plants, CIP projects and leak detection for the four main areas under Operations (water, wastewater, drainage and development).
We are closing in on the 3,000 connections that move us into a new realm of reporting and compliance. Crossing that threshold pushes the District into the category of an Urban Water Supplier and that brings with it annual water reporting requirements and water audits that we have not yet had. We estimate that we will cross that connection line by either late 2025 or early 2026, depending on the progress of builders.
Along those lines, we've been advised that our reporting documentation is not likely to be accepted for much longer. The District has a very large Excel workbook which tracks multiple data points each day regarding flow levels, pumping amounts, etc. These worksheets have been provided to satisfy reporting obligations, but we've been told that the state is unlikely to continue to accept unwieldy reporting formats like that. Staff is sitting down to tackle this issue next week.

Eric has also been debriefed regarding the operational issues identified in 1:1 meetings with Operational Staff in August and will be working on those items. Included in that list of issues is dim or nonfunctioning lighting in the treatment plants and the warehouse and so an action item that is included in today's agenda is the replacement of old fluorescent lighting with more energy-efficient and brighter LED lights. This is a win-win because it improves working conditions and also helps to reduce the overall electricity usage and cost to the District.

ENSURING WATER QUALITY AND ACCESS
The IWMP Consultants submitted their final draft Integrated Water Master Plan (IWMP) report, which is a detailed document that includes their methodology and calculations and it was posted to the District website over the weekend for consideration and review by the general public. The report is included in today's agenda as a Discussion Item and for direction from the Board regarding next steps.

KEEPING THE ENTIRE RANCHO MURIETA COMMUNITY SAFE
Patrol Officers have been trained on the new Incident Intake system and **security logs** for October are attached. These reports represent a tremendous improvement in the efficiency of the communication regarding incidents as the patrol officers only must key in their information once and it becomes part of a database from which a public-facing report can be easily generated. All the privacy details that may not be released are purposefully and automatically not included in the security logs.

District staff has advised the Union of our establishment of the new Community Service Officer (CSO) Classification and has met with the new Business Agent regarding that approach. Staff also convened a group of mostly commercial customers to discuss opportunities to strengthen overall deterrence and observation in the community. Staff also deployed a pole camera in the commercial district over the last month. The company that makes these devices provided the pole camera to us for 30 days in order to

assess its value to the community. Staff is considering this and other options to utilize the resources in the Security Impact Fund, a revenue stream authorized in the 2014 670 FSA and which has a significant balance due to the required $1,200 per EDU payments when developers finalize new lots. The Security Impact Fund is a restricted reserve account, meaning that the funds in that account are specifically intended for certain types of expenditures only, which in this case is fixed security infrastructure to ensure greater security.

STRENGTHENING FINANCIAL POSITION

NEW FY: The 24-25 Fiscal Year started July 1st. Quarterly Finance Committee Meetings resumed this morning and the results show expenses at less than budgeted for the quarter ending on 9/30/24 and revenues slightly higher than budgeted for the same quarter. Mark has a full report. Mark and Chris have been working extensively to establish monthly closing procedures in order to diminish the actual effort required to generate these reports and I want to thank them for their many long hours to get the system to a more manageable state.

AUDITS

That is a great segue to the effort required to get the audits closer to completion. Due to the lack of proper accounting in prior years, Mark undertook a rebuild of prior fiscal years to ensure that the accounting accurately reflected transactions and fund obligations/benefits. In addition to the faulty accounting correction, Mark has worked to formalize accounting procedures and reconcile billing data. Those extensive efforts will enable the auditors to come in and do their job in just 3 to 4 weeks rather than the two years it took to unravel the 20-21 books to get that audit done. In short, we are still on track to have all three outstanding audits done by Spring of 2025.

We are also continuing to evaluate a few integrated financial/billing systems with the goal of transitioning to a fully integrated system by the start of 25-26.

INFORMATION SYSTEMS

IT Manager Andy Lee will report on his primary goals for getting the IT system fully operational. He has been working to ensure that we have 24-7 reliability in our system along with individual device functionality. I've asked him to establish a regular replacement plan where each year we upgrade devices so that the equipment stays current, and we stagger replacement costs to minimize the budgetary impact each year.

CONTRACTS – The Contract Report for the Quarter ending September 30, 2024 is attached and will be listed on the District website consistent with our goal of transparency regarding use of District financial resources.

DEVELOPMENT

Please see attached Report of Development.

COMMUNICATIONS

Please see attached Report of Public Inquiries, including PRA requests.

# # #

Rancho Murieta Community Services District
15160 Jackson Road • P.O. Box 1050 Rancho Murieta, CA 95683 • 916-354-3700 • Fax 916-354-2082
Visit our website-www.rmcsd.com

Public RMCSD Security Log
October 2024

INCIDENT ID#, DATE, & TIME	INCIDENT NAME, LOCATION, & REPORT AUTHOR	BRIEF INCIDENT DESCRIPTION
Incident # 1003 9/27/24 8:02 PM	Stolen vehicle Cantova Way	Follow up to stolen vehicle reported on 9/29/24 at 2041 hours. Patrol responded and made contact with reporting party at Zeta Broadband owner for report and video review. Reporting party had already reported to SSD.
Incident # 1002 9/27/24 8:02 PM	Stolen vehicle Cantova Way	Follow up to vehicle theft, patrol responded to take report and review video with reporting party.
Incident # 1004 10/2/24 7:59 PM	Welfare check Celebrar Street	Welfare check, report of juvenile pacing back and forth in the roadway in distress. Juvenile was gone on arrival and officer could not locate him.
Incident # 1006 10/5/24 8:47 AM	RMA rule Lake Clementia	RMA rule violation, dirt bike riding at Lake CLEMENTIA. Patrol responded and observed guest vehicle travel outbound with dirt bike.
Incident # 1008 10/5/24 9:36 AM	Citation# 21730 Ventana	RMA rule complaint , dirt bike at north back area. Patrol observed vehicle with dirt bike.Citation issued for use of streets and guest without resident
Incident # 1007 10/6/24 8:23 AM	RMA Rule violation/ Citation #21731 Labranza street	Patrol observed violation of no boat pass on North back Lakes, RMA rule violation, citation issued.

INCIDENT ID#, DATE, & TIME	INCIDENT NAME, LOCATION, & REPORT AUTHOR	BRIEF INCIDENT DESCRIPTION
Incident # 1009 10/6/24 8:40 AM	Citation # 21732 Guadalupe Dr.	RMA Rule violation observed at Lake CALERO, no boat pass, citation issued.
Incident # 1010 10/6/24 6:21 AM	415 Disturbance Murieta Drive	415, Murieta Inn & Spa requested patrol's assistance with uncooperative guest. Contact made with reporting party.
Incident # 1011 10/8/24 12:00 AM	594 pc Vandalism Clementia Park	Vandalism founded while on patrol. Bulletin board slashed by CLEMENTIA bathrooms. RMA maintenance notified.
Incident # 1012 10/8/24 6:57 PM	Welfare Check Guadalupe drive	Welfare check requested due to report of elderly driver leaving North Gate outbound towards Bel Air with disregard of stop light. RP tried to make contact, elderly driver did not acknowledge RP. Patrol checked on driver's status.
Incident # 1001 10/9/24 2:32 PM	Gate arm accident Lago Gate	Gate arm incident, golf cart collided with gate arm while driving inbound thru outbound gate lane.
Incident # 1013 10/13/24 2:45 AM	Burglary / Vandalism Alameda drive	Owner of Gibson Golf reported he had video footage of vandalism. Owner stated damages in upwards of $10,000. Patrol responded to reporting parties home to take report.

Report of District Contracts

Contract #	Vendor Name	Start/End Date:	Timeline	Any amendments?		Amount
2024.007	Domenichelli & Assoc	9/6/24		○ Yes ◉ No	Initial Budget	
Services		9/6/27	Contract Type	○ Standard Agreement ◉ Master Services	Augmentations	
Engineering & Construction Inspection	CIP Project # none				Total Budget	0
2024.006	RWG	6/3/24	Ongoing	○ Yes ◉ No	Initial Budget	
Services			Contract Type	○ Standard Agreement ◉ Master Services	Augmentations	
Legal Services	CIP Project # none				Total Budget	0
2024.005	AT&T	4/9/24	2 years	○ Yes ◉ No	Initial Budget	
Services		4/8/26	Contract Type	◉ Standard Agreement ○ Master Services	Augmentations	
Land Line Phone Service	CIP Project # none				Total Budget	0
2024.004	California Public Employees' Retirement	5/15/24	Ongoing	○ Yes ◉ No	Initial Budget	
Services			Contract Type	◉ Standard Agreement ○ Master Services	Augmentations	
OPEB	CIP Project # none				Total Budget	0
2024.003	NMI Holdings, Inc.	5/3/24	Until Complete	○ Yes ◉ No	Initial Budget	486,500
Services			Contract Type	◉ Standard Agreement ○ Master Services	Augmentations	
Granlees Safety Rehab	CIP Project # 23-04-01				Total Budget	486,500
2024.002	OnSolve - CodeRed	4/9/24		○ Yes ◉ No	Initial Budget	2,366
Services		4/8/25	Contract Type	◉ Standard Agreement ○ Master Services	Augmentations	
Emergency Notification Svstem	CIP Project # none				Total Budget	2,366
2023.013	Adkins Engineering and Surveying, Inc.	1/19/23	open	○ Yes ◉ No	Initial Budget	0
Services			Contract Type	○ Standard Agreement ◉ Master Services	Augmentations	
General Services	CIP Project #				Total Budget	0
2023.012	TNT Industrial Contractors	1/19/23	Ongoing	○ Yes ○ No	Initial Budget	
Services			Contract Type	○ Standard Agreement ◉ Master Services	Augmentations	
Industrial Contractors, MSA	CIP Project # none				Total Budget	0
2023.011	Sacramento County Elections Department	8/28/23	Until Complete	○ Yes ○ No	Initial Budget	1,000
Services		11/8/24	Contract Type	○ Standard Agreement ○ Master Services	Augmentations	
11/5/2024 Polling Facility	CIP Project # none				Total Budget	1,000

2023.010	Stratus	10/3/23	1 Year	○ Yes ○ No	**Initial Budget**	17,217
Services		10/3/24	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
FOG & IDDE Reporting		**CIP Project #** none			**Total Budget**	17,217
2023.009	Liebert Cassidy Whitmore (LCW)	9/13/23	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ◉ Master Services		**Augmentations**	
Legal Services		**CIP Project #** none			**Total Budget**	0
2023.008	Condor	9/11/23	Until Complete	○ Yes ○ No	**Initial Budget**	6,600
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Process Hazard Analysis		**CIP Project #** none			**Total Budget**	6,600
2023.007	Lumos & Associates	8/28/23	Until Complete	○ Yes ○ No	**Initial Budget**	159,437
Services			**Contract Type** ◉ Standard Agreement ○ Master Services		**Augmentations**	
CIP Planning & 5 Year Rate Study		**CIP Project #** 24-200-01 &			**Total Budget**	159,437
2023.005	Economic and Business Planning Systems	8/10/23	Ongoing	○ Yes ○ No	**Initial Budget**	10,000
Services			**Contract Type** ○ Standard Agreement ◉ Master Services		**Augmentations**	
670 FSA Advisor		**CIP Project #** none			**Total Budget**	10,000
2023.004	Crime Alert Security	8/10/23	Ongoing	○ Yes ○ No	**Initial Budget**	40
Services			**Contract Type** ◉ Standard Agreement ○ Master Services		**Augmentations**	
Keyless entry at District Office		**CIP Project #** none			**Total Budget**	40
2023.002	Solitude Lake Management	1/19/23	Ongoing	○ Yes ○ No	**Initial Budget**	23,400
Services		?	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Bi-Monthly Water Testing		**CIP Project #** none			**Total Budget**	23,400
2023.001	Solitude Lake Management	1/19/23	Ongoing	○ Yes ○ No	**Initial Budget**	27,300
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Monthly Maintenance to Ponds 1-5		**CIP Project #** none			**Total Budget**	27,300
2023-14	West Yost	9/26/23	open	○ Yes ◉ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ◉ Master Services		**Augmentations**	
		CIP Project #			**Total Budget**	
2022.011	Sacramento Tree Foundation	2/18/22	3 years	○ Yes ◉ No	**Initial Budget**	0
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Tree Planting		**CIP Project #**			**Total Budget**	0

2022.010	California Waste Management Services	11/17/22	10 years	○ Yes ○ No	**Initial Budget**	
Services		1/1/33		**Contract Type** ○ Standard Agreement ◉ Master Services	**Augmentations**	
Waste Hauler		**CIP Project #** none			**Total Budget**	0
2022.009	Tyler Technologies	1/17/22		◉ Yes ○ No	**Initial Budget**	176,852
Services				**Contract Type** ○ Standard Agreement ○ Master Services	**Augmentations**	
Financial Software & Svcs		**CIP Project #**			**Total Budget**	176,852
2022.008	Ring Central	2/18/22	Ongoing	○ Yes ○ No	**Initial Budget**	8,853
Services				**Contract Type** ○ Standard Agreement ◉ Master Services	**Augmentations**	
VOIP Phone Service		**CIP Project #** none			**Total Budget**	8,853
2022.007	Adkins	12/22/22	Ongoing	○ Yes ○ No	**Initial Budget**	295,000
Services				**Contract Type** ○ Standard Agreement ○ Master Services	**Augmentations**	113,368
IWMP		**CIP Project #** 24-200-02			**Total Budget**	408,368
2022.006	Dewberry	10/7/22	Until Complete	○ Yes ○ No	**Initial Budget**	214,668
Services				**Contract Type** ◉ Standard Agreement ○ Master Services	**Augmentations**	
WWTP Sodium Hypochlorite Design		**CIP Project #** 23-14-02			**Total Budget**	214,668
2022.005	Luxury Cleaning Services	6/2/22	Ongoing	○ Yes ○ No	**Initial Budget**	
Services				**Contract Type** ○ Standard Agreement ◉ Master Services	**Augmentations**	
Facilities Cleaning		**CIP Project #** none			**Total Budget**	0
2022.002	HDR	4/13/22	Until Complete	○ Yes ○ No	**Initial Budget**	238,310
Services				**Contract Type** ◉ Standard Agreement ○ Master Services	**Augmentations**	24,866
Design for WTP Sodium Hypochlorite Conversion		**CIP Project #** 21-02-01			**Total Budget**	263,176
2022.001	Del Rio Advisors	2/2/22	Ongoing	○ Yes ○ No	**Initial Budget**	
Services				**Contract Type** ○ Standard Agreement ○ Master Services	**Augmentations**	
Bond Advisors		**CIP Project #** none			**Total Budget**	0
2021.002	CalCad	8/23/21	Ongoing	○ Yes ○ No	**Initial Budget**	19,595
Services				**Contract Type** ◉ Standard Agreement ○ Master Services	**Augmentations**	41,458
GIS 2021		**CIP Project #** none			**Total Budget**	61,053
2021.001	Domenichelli & Assoc	3/19/21		◉ Yes ○ No	**Initial Budget**	
Services		3/19/24		**Contract Type** ○ Standard Agreement ◉ Master Services	**Augmentations**	
Engineering & Const Insp		**CIP Project #** none			**Total Budget**	0

2020.002	Richardson & Company	9/20/20	5 Years	○ Yes ○ No	**Initial Budget**	26,350
Services		9/20/25	**Contract Type** ◉ Standard Agreement ○ Master Services		**Augmentations**	
Auditing Services		**CIP Project #** none			**Total Budget**	26,350
2020.001	Pitney-Bowes	6/24/20	5 Years	○ Yes ○ No	**Initial Budget**	483
Services		6/24/25	**Contract Type** ◉ Standard Agreement ○ Master Services		**Augmentations**	
Stamp Machine		**CIP Project #** none			**Total Budget**	483
2018.001	Clark Pest Control	11/11/18	6 years	○ Yes ○ No	**Initial Budget**	
Services		11/10/24	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Pest Control		**CIP Project #** none			**Total Budget**	0
2017.001	Brower	6/19/17	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Quarterly Maintenance		**CIP Project #** none			**Total Budget**	0
2013.001	ALAIT aka ITS	3/1/13	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ◉ Master Services		**Augmentations**	
IT Services		**CIP Project #** none			**Total Budget**	0
2011.001	ABDi	9/22/11	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ◉ Master Services		**Augmentations**	
Gate and Patrol Security Software		**CIP Project #** none			**Total Budget**	0
2005.001	Sacramento County Waste Management	8/24/05	10 years	○ Yes ○ No	**Initial Budget**	
Services		10/31/15	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Waste Collection Services		**CIP Project #** none			**Total Budget**	0
2004.001	Murieta Village	1/1/04	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Key Services		**CIP Project #** none			**Total Budget**	0
2000.001	Rancho Murieta Association	6/6/20	Ongoing	○ Yes ○ No	**Initial Budget**	
Services			**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Security Services		**CIP Project #** none			**Total Budget**	0
1988.001	Rancho Murieta Country Club	5/16/88	Ongoing	○ Yes ○ No	**Initial Budget**	
Services		5/15/28	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**	
Reclaimed Water with Country		**CIP Project #** none			**Total Budget**	0

1956.001	Cosumnes Irrigation Association	4/30/56	Ongoing	○ Yes ○ No	**Initial Budget**
Services		12/16/27	**Contract Type** ○ Standard Agreement ○ Master Services		**Augmentations**
CIA Ditch		**CIP Project #** none			**Total Budget** 0

Summarized Development Report

10/15/2024

Overall 670 FSA Lots: 670 Lots

Cancelled Lots -- 120

Lakeview: 99 Original Approved Lots

99 Lots known as s ()

Murieta Gardens II: 21 Original Approved Lots

21 Lots known as Murieta Gardenss (Murieta Gardens II)

Connected Lots -- 242

Murieta Gardens II: 78 Original Approved Lots

78 Lots known as Murieta Gardenss (Murieta Gardens II)

Murieta Marketplace aka MG I: 50 Original Approved Lots

50 Lots known as Commercials ()

Retreats N&E: 62 Original Approved Lots

62 Lots known as Halfplexs (4100 sf)

Retreats West: 22 Original Approved Lots

22 Lots known as Halfplexs (4100 sf)

Riverview: 30 Original Approved Lots

2 Lots known as Big Estates (12,000-14,500 sq ft.)

11 Lots known as Circles (6500-8500 sf)

10 Lots known as Cottages (<6500 sf)

5 Lots known as Mini-Estates (8500-12K sf)

2 Lots known as Mini-Mansions (14,500-24,500 sq ft.)

Planned Lots -- 308

Residences of Murieta Hills: 198 Original Approved Lots

65 Lots known as Big Estates (12,000-14,500 sq ft.)

5 Lots known as Mansions (>24,500 sf)

99 Lots known as Mini-Estates (8500-12K sf)

29 Lots known as Mini-Mansions (14,500-24,500 sq ft.)

Riverview: 110 Original Approved Lots

4 Lots known as Big Estates (12,000-14,500 sq ft.)

42 Lots known as Circles (6500-8500 sf)

22 Lots known as Cottages (<6500 sf)

4 Lots known as Mansions (>24,500 sf)

31 Lots known as Mini-Estates (8500-12K sf)

7 Lots known as Mini-Mansions (14,500-24,500 sq ft.)

Report of

19 Public Inquiries in 2024

10/10/2024

Year:2024, 19 Requests

PRA: 15 Requests

PRA: NRR: 1 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.015	Jay Posey	Is there any documentation on the specific agreement and responsibilities the district made when they absorbed Murieta Village water and sewer system into the district.

Assigned To

Status: (•) NRR ( ) In Process ( ) Completed

8/29/2024 Date Requested

9.11.2024 Date Finalized

PRA: In Process: 2 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.008	Stephen Booth	Governing documents that mandate CSD to provide water for future development

Andrew

Assigned To

Status: ( ) NRR (•) In Process ( ) Completed

4/29/2024 Date Requested

5/8/2024 Date Finalized

ID	Name of Requester	Requested Information, Abbreviated
2024.01	Janie Collier	All int./ext. communication records 1/1/2010-present, referring/relating to: (1) IWMP being prepared as of 9/9/24;(2) meetings of District's Bd & District's consultant(s) re IWMP;(3)any WSAs prepared or contemplated by District;(4) water supply forecasting for District;(5) District's diversion/use under its water rights;(6) District's petitions to extend time to perfect its water rights; (7) availability or nonavailability of water supplies for developments contemplated by 670 &RN FSAs; (8) satisfaction or nonsatisfaction of RN FSA terms by Property Owners named therein;(9) any prospective declaration of water shortage emergency or other mechanism by which to declare a moratorium on water connections; (10) decision not to add wells as water source for District;(11) consideration of any water source that may be used to augment District's water supplies

Amelia

Assigned To

Status: ( ) NRR (•) In Process ( ) Completed

9/9/2024 Date Requested

Date Finalized

PRA: Completed: 11 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.001 Amelia Assigned To 1/10/2024 Date Requested 1/10/2024 Date Finalized	Deltek Public Status ○ NRR ○ In Process ◉ Completed	Project Name: Capital Improvement Planning and Water & Wastewater Rate Study Bid Number: n/a; Due Date: 7/12/23; Contract Number: n/a Awarded Vendor Name, Address, Phone, Award Amount: Start and End Date of Contract: Continuing Contract Terms; Contract Document - all info in the shared doc
2024.005 Amelia Assigned To 2/6/2024 Date Requested 2/15/2024 Date Finalized	Richard Gehrs Status ○ NRR ○ In Process ◉ Completed	Unredacted CSD security log including all entries between October 1, 2023 and January 16, 2024. Please note that I am requesting and UNREDACTED copy.
2024.006 Amelia Assigned To 3/5/2024 Date Requested 3/5/2024 Date Finalized	Claudia Lomeli Status ○ NRR ○ In Process ◉ Completed	Any incident and/or fire department records, 911 audio and CAD logs from October 5, 2023 at the Equestrian Center.
2024.007 Travis Assigned To 4/22/2024 Date Requested 4/30/2024 Date Finalized	Dan Gamon Status ○ NRR ○ In Process ◉ Completed	All Water-related (stormwater, septic, groundwater/surface water sampling, etc.) records for 7200 Lone Pine Drive, Sloughhouse, CA, Murieta Equestrian Center
2024.009 Amelia Assigned To 5/3/2024 Date Requested 5/14/2024 Date Finalized	Roger Status ○ NRR ○ In Process ◉ Completed	Form 700 (Statement of Economic Interest) filings, plus schedules for the time period from January 1, 2020, through December 31, 2024, for the following positions: Board Directors, General Manager, Director of Finance and Administration, District Secretary, head of security, Director of Operations, Utilities Supervisor, Chief of Plant Operations.

2024.010

Richard Gehrs

Copy of announcement referred to in the attached copy of an article from April 26, 2024 issue of the River Valley Times. It says, CSD "issued an April 22 announcement stating it had reached resolution in two lawsuits filed by former employees."

Amelia

Assigned To

5/14/2024

Date Requested

5/14/2024

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

2024.011

Richard Gehrs

Copy of the settlement agreement that resolved the lawsuit by Paula O'Keefe

Andrew/Derri

Assigned To

5/14/2024

Date Requested

5/14/2024

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

2024.012

Richard Gehrs

The attached email from Dale Schell was part of the CSD Board Meeting (May 15, 2023) materials (CORRESPONDENCE). I want a copy of Nov 2023 letter sent to Tracy, HOA Manager, Murieta Village detailing what lines CSD will/will not manage moving forward.

Amelia

Assigned To

5/15/2024

Date Requested

5/23/2024

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

2024.015

Richard Gehrs

Copy of Contract(s) or agreement(s) and amendments with Akins Engineering & Surveying and Maddaus Water Management for the preparation of a new or revised Integrated Water Master Plan that is currently in progress

Amelia

Assigned To

5/31/2024

Date Requested

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

2024.016

Janis Eckard

All Maddaus Water Management (MWM) recycled water pie charts from May 30, 2024 Town Hall; All docs used by MWM to determine drought conservation measures including but not limited to how long the drought conservation will last per 2024 IWMP. All docs used to determine evaporation & water seepage rate in Lakes Chesbro & Calero. All docs used by MWM & Adkins to determine when conservation measures begin & how long they last. All docs used to determine equivalent dwelling unit (EDU) water usage per unit and how water usage is determined by lot type. All RMCSD & MWM contracts

Assigned To

7/19/2024

Date Requested

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

2024.018

Betty Ferraro

All records of presentation to the Board during her term on Basin 5.

Assigned To

10/7/2024

Date Requested

10/7/2024

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

PRA: Withdrawn: 1 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.002	Susan Kim Igo	Any incident and/or fire department records, 911 audio and CAD logs from October 5, 2023 at the Equestrian Center.

Amelia
Assigned To

1/24/2024
Date Requested

2/20/2024
Date Finalized

Status
- ○ NRR
- ○ In Process
- ○ Completed

Bd Mtg Question: 2 Requests

Bd Mtg Question: Completed: 2 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.003	Richard Gehrs	Who will own Dash Cams RMA gives us? The District has purchased its own dash cam, the footage from which will be stored on a District server.

Mimi
Assigned To

2/1/2024
Date Requested

2/5/2024
Date Finalized

Status
- ○ NRR
- ○ In Process
- ◉ Completed

ID	Name of Requester	Requested Information, Abbreviated
2024.004	Richard Gehrs	Where will Dash Cam Footage be stored?

Mimi
Assigned To

2/1/2024
Date Requested

2/5/2024
Date Finalized

Status
- ○ NRR
- ○ In Process
- ◉ Completed

Other: 2 Requests

Other: Completed: 2 Requests

ID	Name of Requester	Requested Information, Abbreviated
2024.013	Mike Martel	How is the water augmentation reduction calculated and from where did it originate?

Amelia
Assigned To

5/13/2024
Date Requested

5/21/2024
Date Finalized

Status
- ○ NRR
- ○ In Process
- ◉ Completed

2024.014

Mike Martel

What are the current rates?

Amelia

Assigned To

5/21/2024

Date Requested

5/22/2024

Date Finalized

Status

- ○ NRR
- ○ In Process
- ◉ Completed

MEMORANDUM

Date: October 16, 2024
To: Board Meeting
From: Mark Matulich, Director of Finance and Administration
Subject: Finance Report

FINANCIAL RESULTS Q1 – FY 24-25:

All budget comparisons are to a prorated portion of the annual budget.

Results from Operations:

The District's net operating income in Q1 was $213k primarily due to operating results of the Water Fund ($187k net operating income). Water revenues were $315k over plan driven by higher than average water use in three of the hottest months of the year, July, August, and September. This was offset by a major repair to a 30" pipe (estimated cost at $200k) which drove operating expenses $145k over plan. The Drainage Fund had a net operating income of $19k due primarily to lower than anticipated operating expenses. Administrative overhead came in $19k favorable to plan.

STATE OF ACCOUNTING:

Significant progress towards cleaning up and improving the District's accounting was made. Due to the poor state of the District's FY 21-22 accounting records, the amount of time and effort expended to complete the FY 20-21 audit (18-monhs, outside consultants, additional part-time help in-house), and numerous comments made by the auditors, staff decided to start the accounting records over from scratch starting on July 1, 2021. This is no small task, in fact, it is a major undertaking. Doing this in conjunction with tightening up, correcting, and establishing current accounting procedures and controls is an even bigger task. That said, the District's accounting has turned the corner and is on the right track. The following is a summary of important milestones:

1. Utility Billing: Beginning in April, staff conducted a comprehensive review of utility billing, corrected problem areas, and implemented procedures to increase accuracy and efficiency.
    a. Corrected the way nearly 200 meters talk to the billing system. Staff instituted procedures for the timely identification of and corrective action to address problem meters.
    b. Corrected the way installment plans are set up in the billing system.
    c. Implemented procedures to identify unbilled/underbilled accounts and a process to notice and collect from customers who fall into this category.
    d. Implemented a monthly calendar to streamline processes and increase consistency in results.
    e. Conducted a rate audit and restructured rate setup consolidating over 80 rate codes into one rate code.
    f. Established procedures for posting utility billing transactions to the general ledger (i.e. the accounting records).

2. Monthly Accounting Procedures: Standard monthly accounting procedures were established, staff are trained, and duties have been delegated. This went live Q1 FY 24-25.
    a. Capture all transactions
    b. Consistency in coding transactions
    c. Organized methodology to coding transactions will lead to more timely, accurate financial reporting

    d. Began using the new general ledger. FY 24-25 will be accounted for in the new GL and the prior open years will be posted to, closed, and audited in the new GL.

3. Accounts Receivable Aging Review: Now that the monthly billing process is more organized, Staff are reviewing accounts receivable aging reports and preparing to reinstitute late fees and collection efforts on past due accounts. Timely collection of cash from monthly service bills is critical to the District's ongoing operations and this will be a priority for Staff going forward. Late fees will begin on November 1, 2024.

4. Prior Years Accounting (general): It is important to get the accounting done correctly prior to scheduling the audit for each year. The District's annual audit should take about 3-weeks.
    a. Set up a new general ledger.
    b. Learned the fixed assets module in Great Plains and initiated a full inventory of fixed assets.
    c. Created reports to review large batches of transactions.
    d. Created a process to correct coding on large batches of transactions and upload to the general ledger.
    e. Posted nearly 22,500 lines of transactions which were vetted for accurate coding to fiscal years 21-22, 22-23, 23-24, and 24-25.

5. Prior Years Accounting (FY 21-22 specific):
    a. Evaluated the condition of the existing GL and identified significant challenges including: "audit clearing" account with a large balance, none of the funds were in balance, the total GL was not in balance. This led to the decision to start the accounting over in a new GL.
    b. Designed process and methodology for big data analytics, GL coding, and reposting the year to a new GL setup.
    c. Nearly 8,600 accounts payable transactions batched
    d. Scheduled out and coded every bank statement transaction from all bank statements 1,382 lines of data (ACHs, non-utility bill related transactions, etc…).
    e. Tied cash activity to Utility Billing software (needed to learn old Utility Billing system).
    f. Payroll transactions to the GL that tie to actual payroll and tied cash activity to Payroll.
    g. Reconciled LAIF and CAMP investment accounts.
    h. Reconciled and coded credit card transactions.

6. Audits: As work began to prepare for the audit of the District's FY 21-22 accounting records, it became apparent that a significant amount of work needed to be done to get those records into shape to be audited. This began the process noted above and while this expanded process (i.e. "do over" vs. "clean up") is a departure from the audit schedule proposed several months ago it will result in a strong foundation of clean financial records and institutional knowledge of what is in those financial records. An advantage to the do over process is that large amounts of data can be reviewed, organized, and posted to the GL. A process that works for one year will work for all the years so multiple years can be worked on at a time. Once the accounting is completed and reviewed for accuracy for each of the open years, the District will schedule audits of those years. An audit of complete and accurate financial records should take about three weeks. Staff remain optimistic that fiscal years 21-22, 22-23, and 23-24 will be completed and audited by the April/May 2025 time frame.

RMCC LOAN STATUS:

RMCC has made all loan payments due to date, - i.e. 39 payments due and 39 payments made. The outstanding balance of the note is $41,387.65, and the final payment of $2,007.17 is due on 6/25/2026.

ANNUAL BAR CODE RENEWAL FEE PROPOSED:

The District proposes an annual renewal fee per bar code sticker. The current bar code sticker price of $10 has not increased in over 20 years (since the inception of the bar code), and it is a one-time fee. Conversely the costs of Security have risen each year and reoccur each year. There are currently over 8,000 active bar code stickers. An annual renewal fee of $25 per sticker at 8,000 would add $200k per year to the Security budget.

CASH AND INVESTMENTS:

Balances of Cash and Investments:

As of 9/30/2024, the balances in the District's cash and investment accounts totaled approximately $15.2 million, and the District recognized interest and investment earnings of nearly $200k.

Rancho Murieta CSD
Cash and Investments
9/30/2024

	Balance	Earnings
Bannner - CDs	$ 3,076,539	$ 42,931
Banner - Money Market and Checking	$ 2,414,107	$ 28,812
CAMP	$ 711,891	$ 8,746
CA CLASS	$ 8,996,320	$ 118,484
Total	**$ 15,198,857**	**$ 198,974**

CONNECTION FEES:

Rancho Murieta CSD
Connection Fees
January 1 to December 31, 2024

*Connection Fees**	Calendar Year 2024	Authorizing Document
Capital Improvement - Water	2,162	Ordinance # 2017-02
Capital Improvement - Sewer	3,011	Ordinance # 2017-02
Capital Improvement - Security	82	Ordinance # 2017-02
Water Supply Augmentation	7,421	Ordinance # 2017-02
TOTAL "Connection Fee"	**12,677**	
Other Fees (paid at time of connection)		
Security Impact Fee	1,200	District Policy 2016-02; 670 / Rancho North FSAs
Installation/Inspection Fees	653	Ordinance # 2017-02
670 FSA Obligation		
Previously Funded Infrastructure	5,900	670 FSA

* Annual increase pegged to a 20 U.S. Cities National Engineering New Record Construction Cost Index

RANCHO MURIETA CSD
BUDGET TO ACTUAL REPORT
As of September 30, 2024
All Funds

	Budget 2024-2025	100 Admin	200 Water	250 Wastwater	260 Drainage	400 Solid Waste	500 Security	Total Year to Date	% of Budget	Remaining Budget 2024-2025
Operating Revenue										
Residential fees	**7,700,394**	-	982,139	477,481	51,120	402,131	328,636	**2,241,508**	29%	**5,458,886**
Commercial fees	**1,266,350**	-	154,693	51,461	7,505	-	65,197	**278,856**	22%	**987,494**
Late fees and penalties	**41,000**	-	-	-	-	-	-	**-**	0%	**41,000**
Interest and investment earnings	**108,333**		24,357	17,798	2,676	1,331	3,581	**49,744**	46%	**58,589**
Other charges	**75,000**	2,096	32,115	2,999	-	-	2,110	**39,320**	52%	**35,680**
Total operating revenue	**9,191,077**	2,096	1,193,304	549,740	61,301	403,463	399,523	**2,609,427**	28%	**6,581,650**
Operating Expenses										
Salaries	**2,870,098**	249,854	142,308	133,362	20,857	-	187,420	**733,800**	26%	**2,136,298**
Benefits and pension	**1,909,131**	115,869	74,664	69,337	5,753	-	122,507	**388,130**	20%	**1,521,001**
Insurance	**276,456**	-	51,402	17,918	2,654	-	10,618	**82,593**	30%	**193,863**
Professional services	**400,900**	5,463	84,430	13,001	-	-	497	**103,391**	26%	**297,509**
Materials and supplies	**570,150**	16,048	58,639	52,753	-	-	1,775	**129,215**	23%	**440,935**
Maintenance and repairs	**724,100**	3,007	249,391	67,326	149	-	7,996	**327,869**	45%	**396,231**
Contract sub-hauler	**1,439,361**	-	-	-	-	362,716	-	**362,716**	25%	**1,076,645**
County surcharge	**94,680**	-	-	-	-	23,500	-	**23,500**	25%	**71,180**
Utilities	**446,900**	5,649	35,977	65,460	-	-	2,631	**109,718**	25%	**337,182**
Other expenses	**383,452**	34,110	86,750	8,854	-	-	5,357	**135,072**	35%	**248,380**
Total operating expenses	**9,115,228**	430,001	783,562	428,012	29,413	386,216	338,800	**2,396,005**	26%	**6,719,223**
Budgeted expenses by fund YTD	**25%**	446,638	639,034	419,118	52,242	383,510	338,266	**2,278,807**		
Budgeted expenses by fund FY 24-25	**100%**	1,786,551	2,556,134	1,676,473	208,967	1,534,041	1,353,062	**9,115,228**		
Net Income (Loss) from Operations										
PRE-Allocation of Admin Overhead	**75,849**	**(427,905)**	**409,742**	**121,728**	**31,888**	**17,247**	**60,723**	**213,422**		
Allocation of admin overhead		427,905	(222,511)	(115,534)	(12,837)	(17,116)	(59,907)	**-**		
Indirect cost rate (ICR# 2)			52%	27%	3%	4%	14%	**100%**		
Net Income (Loss) from Operations w/ OH	**75,849**	**-**	**187,231**	**6,194**	**19,051**	**130**	**817**	**213,422**		
Non-operating Revenue (Expenses):										
Property tax assessments	**925,000**		115,625	113,313	2,313	-	-	**231,250**	25%	**693,750**
Interest and investment earnings	**424,287**		73,071	53,395	8,028	3,994	10,742	**149,231**	35%	**275,056**
Total Non-operating Rev/Exp	**1,349,287**	-	188,696	166,708	10,340	3,994	10,742	**380,481**	28%	**968,806**
Net Income (Loss) Pre-Capital Contrib.	**1,425,136**	-	375,927	172,901	29,391	4,125	11,559	**593,903**		
Capital Contributions										
Capital replacement reserve fees	**990,415**	-	135,041	124,547	-	-	-	**259,588**	26%	**730,827**
Debt reserve fees	**188,496**	-	47,266	-	-	-	-	**47,266**	25%	**141,230**
Debt reserve fees	**(188,496)**									
Water augmentation fees	**118,973**	-	116,475	-	-	-	-	**116,475**	98%	**2,498**
Capital improvement fees	**84,400**	-	39,832	45,207	-	-	1,520	**86,559**	103%	**(2,159)**
Security impact fees	**25,200**	-	-	-	-	-	28,152	**28,152**	112%	**(2,952)**
Total Capital Contributions	**1,218,988**	-	338,614	169,754	-	-	29,672	**538,039**	44%	**869,445**
Total Net Income (Loss)	**2,644,124**	-	714,541	342,655	29,391	4,125	41,231	**1,131,942**		
Capital Expenditures										
Water and rate studies		-	-	-	-	-	-	**-**	#DIV/0!	**-**
Capital improvement		-	83,605	31,950	-	-	-	**115,556**	#DIV/0!	**(115,556)**
Total Capital Expenditures	**-**	-	83,605	31,950	-	-	-	**115,556**	#DIV/0!	**(115,556)**
Total Results	**2,644,124**	**-**	**630,935**	**310,704**	**29,391**	**4,125**	**41,231**	**1,016,387**		

Director of Operations - Utility Staff Report

Date: October 16, 2024
To: Board of Directors
From: Travis Bohannon, Chief Plant Operator
Subject: September Utility Report

WATER

Water Treatment Facility

Both plants are currently in operation and the plant is producing about 2.45 MGD to meet demand

Water Consumption

As of October 1, 2024, the total potable water production for 2024 is 432 MG or 1326.2 acre-ft.

Raw Water Storage & Delivery

As of October 2, 2024, the total water currently stored between Clementia, Chesbro, and Calero is 983.9 Mgal or 3020.5 acre-ft.

Table 1. Current water and wastewater storage as of October 2, 2024

	acre-ft September 2024	**acre-ft full**	**MGal September 2024**	**MGal Full**	**%full**
Clementia Storage	869.5	907.1	283.3	295.5	95.9%
Chesbro Storage	745.2	1027.0	242.8	334.6	72.6%
Calero Storage	1405.4	2323.2	457.9	756.9	60.5%
Total of all Raw Water Reservoirs	**3020.1**	**4257.4**	**984.0**	**1387.0**	70.9%
Wastewater Storage Reservoir available for production	136.3	796.3	44.4	254.6	17.1%

Figure 1. Cumulative Raw Water Pumping and Cosumnes River Flow Water Year 23-24'

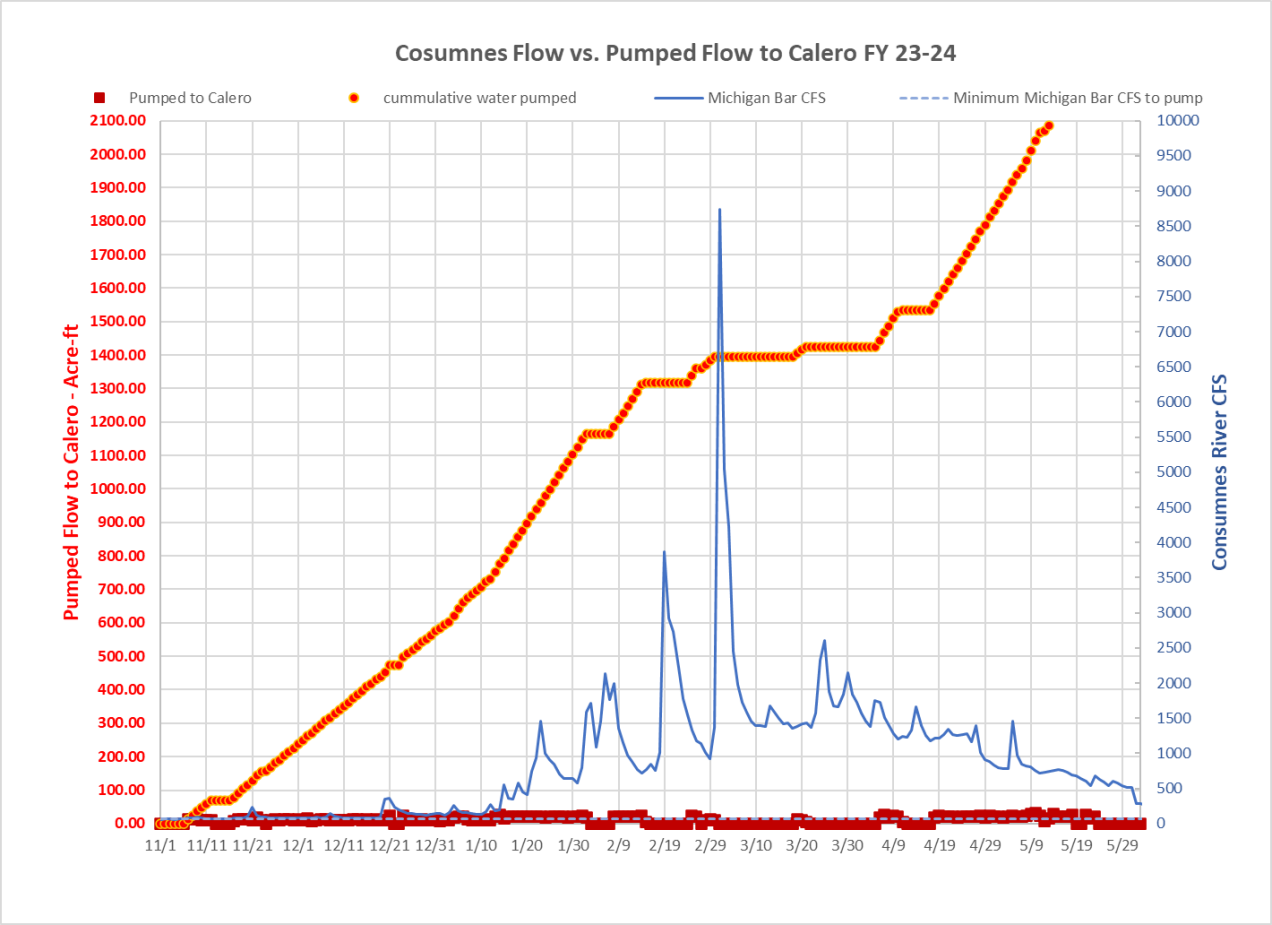


Figure 2. Five-year Combined Chesbro / Calero Storage Curves

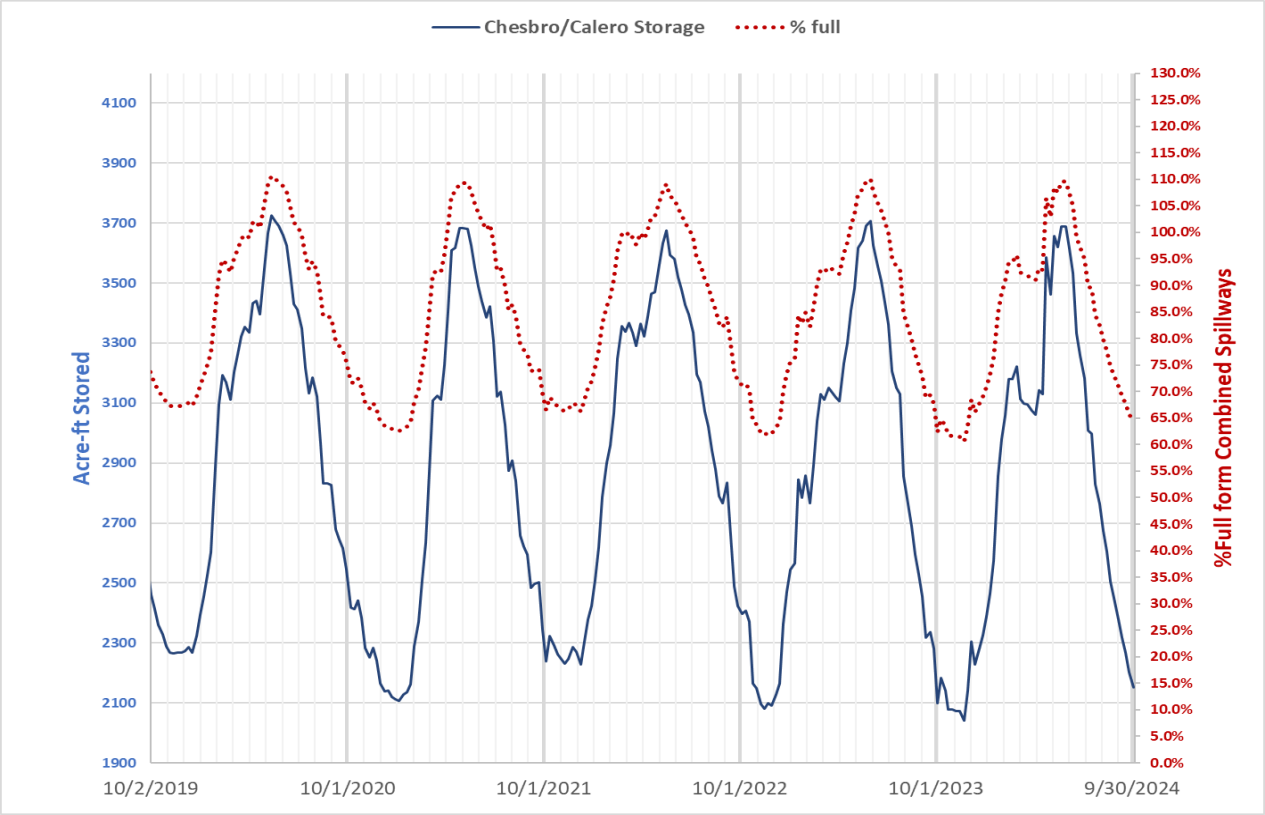
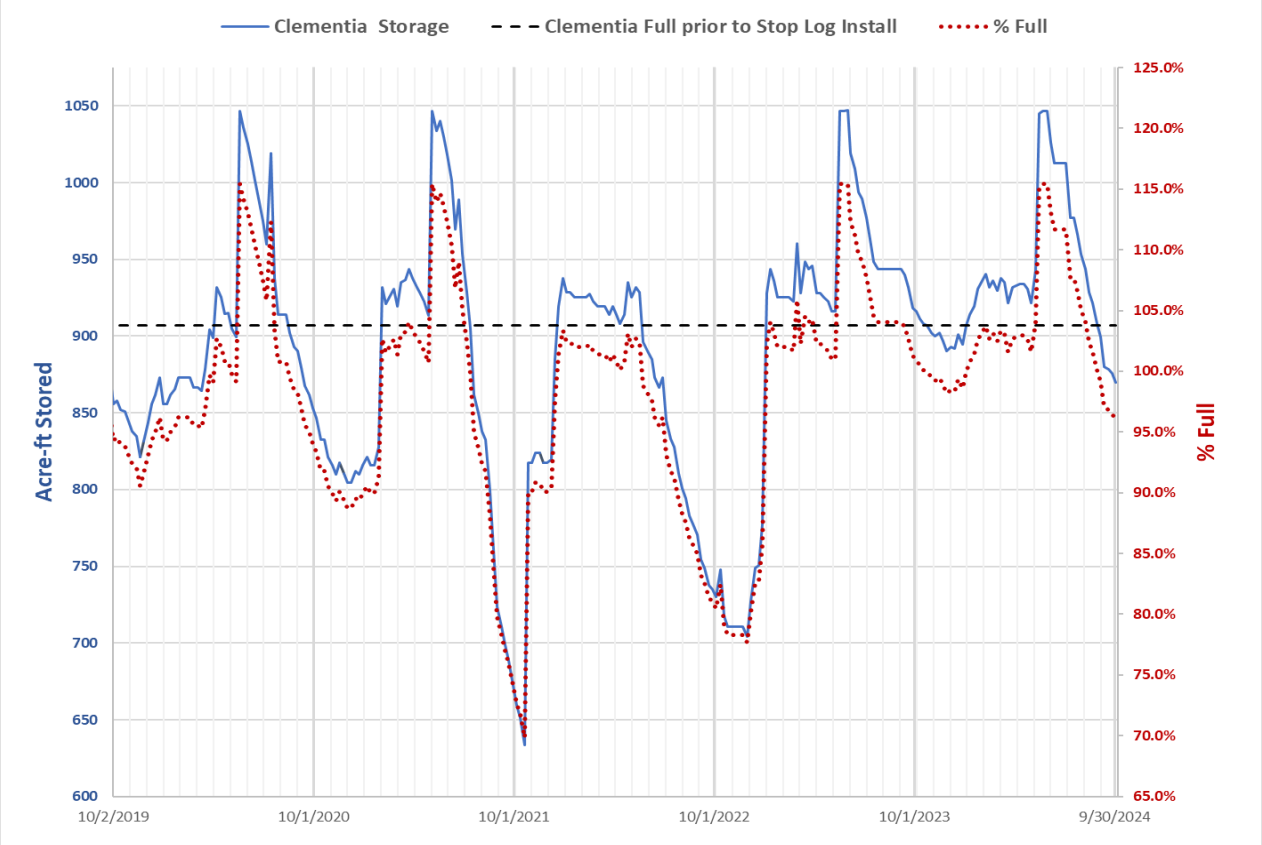


Figure 3. Five-year Clementia Storage Curves



33” Raw Water Line Update:

The broken pipe has been repaired and tested. It is currently being backfilled and is ready for operation.

State and Federal Regulatory Compliance Issues:

The district is required to do certain regulatory compliance reporting every 3 and 5 years on certain things in the district. The district is currently not in compliance with our CalARP/RMP/PSM reporting. These issues have to do with the chlorine system for the water and wastewater facilities. The district has always had these reports completed by an outside consultant. The person that did this reporting in the past had to abruptly retire due to medical reasons and our last completion of these reports was due during the change of Director of Operation staff and was not completed. I was made aware of this issue during our most recent state inspection of our chlorine system. The district has hired Condor Earth to help us get back into compliance with overdue reporting and I am currently working on the deficiencies that were denoted in the most recent inspection report. Due to not being in compliance with reporting, the district could possibly be subject to fines. It is not known at this time if that will happen or not. It is being brought to the board to keep you informed.

SEWER

Wastewater Facility

The tertiary process of the wastewater facility is currently running at about .9 Mgd and is currently sending water to the golf course. The current average influent flow to the wastewater facility for September was 0.375 million gallons per day.

UTILITY CREW WORK

Utility activity report for September 2024

Utility field service crew responded to and completed the following.

1) Tyler work orders are generated by the front office for information or a call from a resident with a complaint, we had 10 work orders in the month of September. Tyler work orders are for final reads, rebates, meter swaps request, issues with homeowner water usage concerns and water lock offs and or restore a water service.
2) USA North, we had 11 field markings for 811 USA locations completed. This is to mark RMCSD utilities before any dirt work is completed.
3) Water Issues H/O, we had three homeowner calls for high water use complaints. Both of these were because they had water leaks and high usage in their irrigation.
4) District Water Issues, we had 5 water leaks that had new service lines installed along with 2 other service lines replaced because they were in the same location of a leaking service line. One of the service water line leaks was located under some very large Redwood trees and we had to move the lines to a new location. This small project took several days to complete because we were dealing with Redwood tree roots and had to trench for the new service lines. This was located off Murieta Pkwy.
5) Sewer Issues, Utilities crew had no sewer issues this month. We have scheduled EDCO to come out to finish the NSCCO rating in unit six

6) Drainage, about five to six days were spent cutting weeds, removing cat-tails and debris from the drainage basins in Murieta south located on Colbert Dr. (basin 12), Bent Grass Ct., and Topspin Way.

SB 170 Projects Update

Water Treatment Facility Sodium Hypochlorite Conversion – (**No change since last month)**

Recycled Water Disinfection Project – The bids were received and looked at and will be discussed later during the meeting.

Granlees Safety Improvements – This project has started. NMI is in the process of fabricating the valves that will be installed. I am working with the ranchers and the equestrian center to schedule the flow of the CIA ditch to be able to complete the work.

DEVELOPMENT

Retreats

West – This project was completed back in 2019.

Total build out lots: 22 Total Existing Connections: 22

North & East – The District has come to an agreement with the developer for the last 17 service connections based on the terms of the Interim Security Agreement.

Total build out lots: 62 Total Existing Connections: 45

Residence of Murieta Hills East & West – The Developer is finished with the rough grading. Veerkamp started doing the underground sewer line input throughout the whole development and started installing water main lines on 8/12/24. The sewer and storm drain system for Residence East are installed but not tested. Veerkamp will then move into installing the potable water pipes for Residence East. Veerkamp will be working through September to install their SWPP (Storm water pollution prevention) Program.

Total build out lots: 198 Total Existing Connections: 0

Riverview – Phase 1B is in the current construction phase for new homes. Phase 2 underground water and sewer and storm lines are installed and still need to be tested. Dry utilities are currently being installed and should be completed by 10/11/24. Final grating will be started the week of 10/14/24 The developer will be starting to install their SWPP Program this month.

Phase 1A/1B

Total build out lots: 30 Total Existing Connections: 26

Phase 2

Total build out lots: 110 Total Existing Connections: 0

Rancho North –Currently there are no outstanding review items.

Total build out lots A-H: 697 (multiple phases) Total Existing Connections: 0

Total build out lots 39-acre Parcel: 248 units including 160 multi-family units and 88 single family lots

Total Existing Connections: 0

Murieta Gardens Commercial – No Update

Total build out lots: 14

Total existing connections: 10

INFORMATION TECHNOLOGY MANAGER'S REPORT TO THE BOARD OF DIRECTORS
OCTOBER 16, 2024

Information Technology is currently working to renovate and improve the computing environment at RMCSD to provide better service, a better computing experience for staff, reduce cost, mitigate cybersecurity risk, and guarantee operational continuity and efficient recovery in the event of a potential disaster or other serious event. To this aim, the following is being implemented:

MOVEMENT AWAY FROM VENDOR-CONTRACTED TECHNOLOGY SERVICES, SOFTWARE AND SUPPORT

Since its inception, RMCSD has utilized external managed service providers to provide day-to-day technology services, software, and support for the District. These costly services have not been efficient in providing good service nor timeliness in fulfilling the technology needs of staff. Being remote, their eyes are not always on our systems and we are certainly not their top priority. We are still working on shifting to independently procured software but have stopped buying replacement hardware from them.

EVALUATION AND DOCUMENTATION OF THE RMCSD TECHNOLOGY ENVIRONMENT

Documentation for IT systems is an important component of a resilient information technology system. There is no documentation for the RMCSD IT systems. The technology environment at RMCSD has never been evaluated using a holistic approach nor has it been documented beyond the bare essentials required just to keep things running. This presents continuity of operation risks due to the inherent interoperability of systems.

RENOVATION AND UPDATES OF TECHNOLOGY INFRASTRUCTURE AND PRACTICES

The Department is working to get all IT systems fully operational and to best leverage technology to improve efficiency. The District requires 24-7 reliability in our network infrastructure and the functionality of all individual devices to ensure that the necessary services we utilize in providing and treating water, operating the community gates, providing accounting and billing services, and guaranteeing security for the citizens of our community can continue unimpeded.

To this end, we have recently established a regular replacement/upgrade plan for hardware and software such that systems remain current and supported while efficiently distributing replacement costs over time to minimize the budgetary impacts incurred each year.

CYBERSECURITY PRACTICES AND AUDIT PREPARATION

Threats posed by bad actors in the cybersecurity realm are ever-present. Being a water services provider, we are among a group of core infrastructure operators who are at particular risk of attack. We are working to ensure that our standards are up to par and providing the necessary security to both ward off attacks and pass audits.

DEVELOPMENT OF TRAINING PROGRAMS FOR STAFF

Our staff and their knowledge of our operations remain our greatest asset. I will be working to develop training programs for staff to both assist them in using technology to do their jobs efficiently and to promote standards of cybersecurity that will reduce the possibility of attack. The threat of an attack that could take down our water operations, disrupt our billing services, or encrypt our network files from a ransomware attack looms large and always will in today's world.

DEVELOPMENT OF DISASTER RECOVERY AND BUSINESS CONTINUITY PLANS

I am currently working to develop detailed disaster recovery and business continuity plans that will ensure that in the event of a catastrophic event, we will know what to do, when to do it, and how best to return our systems and operations to full functionality as quickly as possible.

Rancho Murieta Community Services District

Integrated Water Master Plan

October 2024

ADKINS
ENGINEERING & SURVEYING

1435 Esplanade Ave, Klamath Falls, OR 97601

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Appendices

Executive Summary

Introduction

The purpose of this Integrated Water Master Plan (IWMP) is to perform a comprehensive analysis of the Rancho Murieta Community Services District's (District) water system, to identify system deficiencies, to determine future water system supply requirements, and to develop water system facility improvements that correct existing deficiencies and that provide for future system expansion. The District's existing IWMP was completed in 2010. This new IWMP meets the requirement for the District to maintain a current IWMP.

Existing and Future Demands

Demand projections are estimated for existing and buildout scenarios. Demands are based on existing and future land uses and demand factors for each lot type in the District. Maps showing existing and future lot types in the District were prepared using information from the District and its developers and reviewed with the District for accuracy. Demand factors are derived from historic usage data and reflect current consumption patterns, with adjustments made for anticipated changes in usage behavior and the effects of climate change.

The current average day demand is around 1.5 MGD and maximum day demand is around 2.8 MGD, based on production and consumption records. At buildout, the average day demand is projected to increase to 3.0 MGD and maximum day demand to 5.5 MGD.

The areas of anticipated future growth are the Rancho North Villages A through G, Riverview, Residences East and West, the Retreats, and new commercial developments in Murieta Gardens. The buildout timeline of these developments is unknown at this time, and depends on many factors.

System Evaluation

Water system evaluations determined the adequacy of the existing system to meet existing and future demands. The evaluations included raw water sources, raw water storage reservoirs,

water treatment plants, booster pumps, treated water transmission pipelines, treated water storage tanks, water distribution networks, reclaimed water treatment facilities, reclaimed water booster pumps, reclaimed water storage, and reclaimed water distribution networks.

Based on the evaluation results, required improvements were formulated to address identified deficiencies at the existing and buildout timeframes. Hydraulic models were created for the District's domestic water and reclaimed water systems, for both the existing conditions and projected buildout conditions. These were used to assist in the water system analysis. The alternatives consider buildout needs to ensure that facility upgrades will be adequately sized to avoid future upsizing projects.

Future growth areas will be served by extending the existing distribution system. Future growth within the existing pressure zones will be served through new waterline extensions. Additional supply, pumping, and storage capacity will be required for these new areas. Improvements to existing pipelines will also be needed to provide adequate hydraulic capacity to convey supply from storage facilities to new customers.

The alternatives developed in this IWMP may differ from the projects that the District ultimately selects. There could be other project options that would meet the same performance goals as the alternatives in this IWMP aim to meet.

Summary of Improvement Alternatives

The Capital Improvement Program (CIP) includes the costs of improvements required for all major facilities, including improvements to existing pipelines but excluding pipeline extensions to future areas. The CIP does not include the cost of new pipeline extensions to areas that are currently undeveloped and not served by an existing pipeline. These pipeline extensions will be constructed by developers as part of the new developments. Developers may also be required to contribute to the cost for new water production, storage and pumping facilities as required by District standards.

Types of improvements included in the CIP are:

- New groundwater wells to provide supply resiliency

- Upgrades to allow for the use of Clementia Reservoir for domestic system storage
- New domestic treated water tanks
- Improvements to existing pipelines to improve fire protection capabilities
- A new potable water booster station to provide pressure to new developments
- Improvements to the Wastewater Reclamation Plant (WWRP) to increase capacity
- Improvements to reclaimed water transmission pipelines and pump station

Figure ES-1-1 below shows water system improvement alternatives to meet existing and future needs. Table ES-1 summarizes required capacities and costs. CIP projects are staged by timeframe needed as a guideline for District staff in determining specific priorities and timing for project implementation based on future development schedules and overall District needs. The recommended timeframe for each improvement group is also included in Table ES-1. There also may be other project options and timelines that will allow the District to meet performance goals.

PROPOSED IMPROVEMENTS

(1) ALTERNATIVE 1A – 3 NEW WELLS, NO TREATMENT, CONNECT TO EXISTING SYSTEM.
ALTERNATIVE 1B – 5 NEW WELLS, NO TREATMENT, CONNECT TO EXISTING SYSTEM.

(2) ALTERNATIVE 2A – 3 NEW WELLS, CONSTRUCT NEW WTP TO TREAT PORTION OF STREAM TO MEET MCL REQUIREMENT, CONNECT TO EXISTING SYSTEM.
ALTERNATIVE 2B – 5 NEW WELLS, CONSTRUCT NEW WTP TO TREAT PORTION OF STREAM TO MEET MCL REQUIREMENT, CONNECT TO EXISTING SYSTEM.

(3) ALTERNATIVE 3A – 3 NEW WELLS, USE PORTABLE WTP TO TREAT WELL WATER DURING EMERGENCY, CONNECT TO EXISTING SYSTEM.
ALTERNATIVE 3B – 5 NEW WELLS, USE PORTABLE WTP TO TREAT WELL WATER DURING EMERGENCY, CONNECT TO EXISTING SYSTEM.

(4) ALTERNATIVE 4A – 3 NEW WELLS, CONSTRUCT NEW WTP TO TREAT ALL WELL WATER, CONNECT TO EXISTING SYSTEM.
ALTERNATIVE 4B – 5 NEW WELLS, CONSTRUCT NEW WTP TO TREAT ALL WELL WATER, CONNECT TO EXISTING SYSTEM.

(5) ALTERNATIVE 5A – 3 NEW WELLS, NEW 12" PIPELINE TO EXISTING WTP.
ALTERNATIVE 5B – 5 NEW WELLS, NEW 14" PIPELINE TO EXISTING WTP.

(6) ALTERNATIVE 6 – USE CLEMENTIA FOR RAW WATER STORAGE AND PUMP TO CALERO.

(7) ALTERNATIVE 7 – NEW 1.0 MG TANK IN VILLAGE C.

(8) ALTERNATIVE 8 – NEW 1.0 MG TANK IN VILLAGE H.

(9) ALTERNATIVE 9 – NEW 1.4 MG TANK AT VAN VLECK.

(10) ALTERNATIVE 10 – NEW BOOSTER STATION IN VILLAGE C.

(11) ALTERNATIVE 11 – FIRE SUPPRESSION IMPROVEMENTS (DISTRICT WIDE AND AT KEYNOTES).

(12) ALTERNATIVE 12 – WWRP IMPROVEMENTS.

(13) ALTERNATIVE 13 – RECLAIMED DISTRIBUTION IMPROVEMENTS.

LEGEND

EXISTING WATER LINE

PROPOSED PROPERTY LINE/LOT

PROPOSED WATER LINE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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ENGINEERING - SURVEYING - PLANNING - TESTING

DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
ALL PROPOSED IMPROVEMENTS

SCALE	SHOWN
DATE	08/08/2024
DRAWN BY	BAG
PROJ. NO.	3971-02

FIGURE
ES-1

Table ES-1: Summary of Alternatives and Cost Estimates

Summary of Alternatives and Cost Estimates			
#	Description	Existing/Buildout	Estimated Cost
1A	3 New Wells, No Treatment	Existing	$6,349,000
1B	5 New Wells , No Treatment	Buildout	$10,455,000
2A	3 New Wells, Partial Treatment	Existing	$12,533,000
2B	5 New Wells, Partial Treatment	Buildout	$21,284,000
3A	3 New Wells, Portable Treatment	Existing	$6,349,000
3B	5 New Wells, Portable Treatment	Buildout	$10,455,000
4A	3 New Wells, Full Treatment	Existing	$17,184,000
4B	5 New Wells, Full Treatment	Buildout	$29,579,000
5A	3 New Wells, Treat at 3 New Wells WTP	Existing	$11,987,000
5B	5 New Wells, Treat at Existing WTP	Buildout	$16,855,000
6	Use Clementia for Domestic Storage	Buildout	n/a[1]
7	New Tank in Village C	Buildout	$3,272,000
8	New Tank in Village H	Buildout	$3,438,000
9	New Tank at Van Vleck	Buildout	$4,254,000
10	Village C Booster Station	Buildout	$1,678,000
11	New Hydrants and Pipeline Upsizing	Existing	$8,397,000
12	WWRP Improvements	Existing	$376,000
13	Reclaimed Transmission Improvements	Buildout	$5,547,000
[1]Since the cost for this alternative is primarily for pump rental, the capital cost is not comparable and is not included in this table.			

Implementation Considerations

Sizing, location, and estimated costs of master plan projects are at a conceptual level. Project implementation will require predesign studies, including specific routing and siting studies, environmental review, and detailed design of specific projects. Timing for specific projects will be determined based on development needs, coordination with other construction projects, such as those for other utilities and street improvements, or for other District needs.

CHAPTER 1. Introduction

This section describes the purpose, organization, and scope of the IWMP, identifies acronyms and abbreviations used in the report, and lists acknowledgements.

1-1. Purpose

The District prepared this master plan update to ensure adequate water system capacity for existing and future customers, and to plan for water system improvements in developing areas. The study area for this master plan update encompasses all lands within the District boundary.

Since the last IWMP in 2010, significant changes have transpired in the District's plans for development, resulting in the need for an updated IWMP. This IWMP includes current and future development information to more accurately reflect current levels of development and enable District staff to respond effectively to new water system demands. An up-to-date IWMP enables the District to proactively set appropriate developer requirements and fees to address improvements needed for new development as it occurs.

The planning timeframe extends to buildout within the District boundary. Water demands projections were based on current planning information regarding future land uses during the planning horizon. Due to the long-range nature of buildout conditions, the buildout scenario will be re-evaluated in future master plan updates as more information becomes available.

The California Water Code requires all urban water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers (or supply more than 3,000 acre-feet of water annually) to prepare an Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). While the District does not qualify under either of those criteria, it is projected to have significantly more than 3,000 customers at buildout. This IWMP will support an UWMP at the time when it becomes required.

1-2. Organization of the IWMP Report

Chapters 2 through 4 of the IWMP report describe the existing water system facilities, water system performance objectives, and water demand projections. Chapter 5 describes the water system analysis conducted to determine required supply, treatment, storage, pipeline, and reclaimed system capacities for existing and future demands. Chapter 6 develops improvement alternatives to meet existing and future water system needs, including estimated costs and phasing. Chapter 7 summarizes and concludes the report.

1-3. Scope of Services

The District retained Adkins Engineering & Surveying, Inc (Adkins) and Maddaus Water Management, Inc (MWM) to prepare the IWMP. The following major elements comprise the scope of work for the IWMP:

- Existing and Future Demand Analysis – Study area features and land use assumptions have been compiled for use in the overall IWMP effort. Water demand projections have been developed based on development projections provided by the District. Demand factors and peaking factors have been derived from historic usage data.
- Existing Water System Features; Performance Objectives – Information on existing water system facilities has been updated to use as a basis for the system analysis. Performance objectives have been established to define levels of service for the water system evaluation.
- Hydraulic Model Development and Calibration – The District did not have a model of its domestic water system prior to this IWMP. This effort included developing a EPANet2.2 model of the District's domestic water system and calibrating it using system operating data. Models including future demands and recommended improvements were also developed. This effort also included developing existing and buildout models for the reclaimed water system.

- Water System Analysis and Recommended Improvements – Water system evaluations have been conducted to determine adequacy of capacity of existing supply, treatment, transmission, storage, and distribution facilities for both domestic and reclaimed water systems. Based on the analysis results, improvement recommendations have been formulated to address identified deficiencies.
- IWMP Report – This report has been prepared to document the key assumptions, findings, and recommendations of the IWMP analyses.

1-4. Distribution of Work

This masterplan was completed by the combined efforts of Adkins and MWM. In general, Adkins was responsible for the development of hydraulic models, evaluation of physical infrastructure, and development of alternatives. In general, MWM was responsible for evaluating the reliability of water supplies, developing demand projections, and modeling water supply availability under different future scenarios.

Michael Moser, P.E. of Adkins is responsible for the following sections and sub-sections:

- Executive Summary - all
- Chapter 1: Introduction – all
- Chapter 2: Existing Facilities – all
- Chapter 3: Performance Objectives – all
- Chapter 4: Water Demands– sections 4-4 and 4-5
- Chapter 5: System Analysis – section 5-1, and sections 5-3 through 5-6.
- Chapter 6: Improvement Alternatives – all
- Chapter 7: Summary, Recommendations, and Conclusions – all

Lisa Maddaus, P.E. of MWM is responsible for the following sections and sub-sections:

- Chapter 4: Water Demands – sections 4-1 through 4-3
- Chapter 5: System Analysis – section 5-2

1-5. Acknowledgements

This report would not be possible without the valuable assistance and participation of the following District staff:

Travis Bohannon	Interim Director of Operations
Ron Greenfield	Utilities Supervisor
Michael Fritschi	Former Director of Operations
Mimi Morris	General Manager

1-6. Acronyms and Abbreviations

Below are abbreviations and acronyms used in this report.

AACE	American Association of Cost Engineering
ACP	asbestos cement pipe
ADD	average day demand
Adkins	Adkins Engineering & Surveying, Inc.
ADU	accessory dwelling unit
ADWF	average dry weather flow
AF	acre-feet
AFY	acre-feet per year
ASR	aquifer storage and recovery
AWWA	American Water Works Association
CCB	chlorine contact basin
CCP	chlorine contact pipe
CCR	California Code of Regulations
cfs	cubic feet per second
CHW	Hazen-Williams coefficient
CIP	Capital Improvement Plan
CT	contact time
DAF	dissolved air floatation
DE	Dunn Environmental, Inc.
District	Rancho Murieta Community Services District
DO	dissolved oxygen
DWP	Drinking Water Program
DWR	California Department of Water Resources

EDU	equivalent dwelling unit
ELAP	Environmental Laboratory Accreditation Program
fps	feet per second
FSA	financing and services agreement
ft	feet
gal	gallons
gpcd	gallons per capita per day
GPDA	gallons per day per account
GPM	gallons per minute
HP	horsepower
I/I	infiltration and inflow
IFC	International Fire Code
in	inches
IWMP	integrated water master plan
LF	linear feet
MCL	maximum contaminant level
MDD	maximum day demand
MG	million gallons
MGD	million gallons per day
MMD	maximum month demand
MPN	most probable number
MWM	Maddaus Water Management, Inc.
NCPS	North Course Pump Station
NPDWR	National Primary Drinking Water Regulations
NPV	net present value
NRW	non-revenue water
NSDWR	National Secondary Drinking Water Regulations
NTU	nephelometric turbidity unit
O&M	operation and maintenance
PHD	peak hour demand

PIP	plastic irrigation pipe
pph	persons per household
psi	pounds per square inch
PVC	polyvinyl chloride
RII	rainfall induced infiltration
RMCC	Rancho Murieta Country Club
RWQCB	Regional Water Quality Control Board
SCADA	supervisory control and data acquisition
sf	square feet
SVM	shared vision model
SWTR	surface water treatment rules
TDH	total dynamic head
UWMP	Urban Water Management Plan
USGS	United States Geological Survey
VFD	variable frequency drive
WSCP	water shortage contingency plan
WTP	water treatment plant
WWRP	wastewater reclamation plant

CHAPTER 2. Existing Facilities

2-1. Overview

This chapter describes the study area, history, and present conditions of the District's water systems, both domestic and reclaimed, which serves as a baseline for planning and analysis. This chapter outlines the domestic water system and the reclaimed water system, including:

1. Study Area
2. System History
3. Raw water sources
4. Water rights
5. Water treatment facilities
6. Treated water storage facilities
7. Treated water distribution facilities
8. Wastewater reclamation facilities
9. Reclaimed water transmission and distribution facilities

These parameters are incorporated into design criteria, modeling, and analysis of existing and buildout conditions, described more in following chapters.

2-2. Study Area

Figure 2-1 shows the general location of Rancho Murieta. It is located on the eastern boundary of Sacramento County, with Amador County to the east. It is approximately 23 miles southeast of the City of Sacramento along Highway 16.

The study area is comprised of rolling terrain. Ground elevations in the District range from about 140 feet in the southwestern portion to 350 feet along the east side of Calero Reservoir.

The climate is classified as Mediterranean-Hot Summer. Rainfall averages 21 inches annually. In July, the average daily temperature ranges from a high of about 97 degrees Fahrenheit to a low of about 61 degrees. In January, the average daily temperature ranges from a high of about 58 degrees to a low of about 40 degrees.

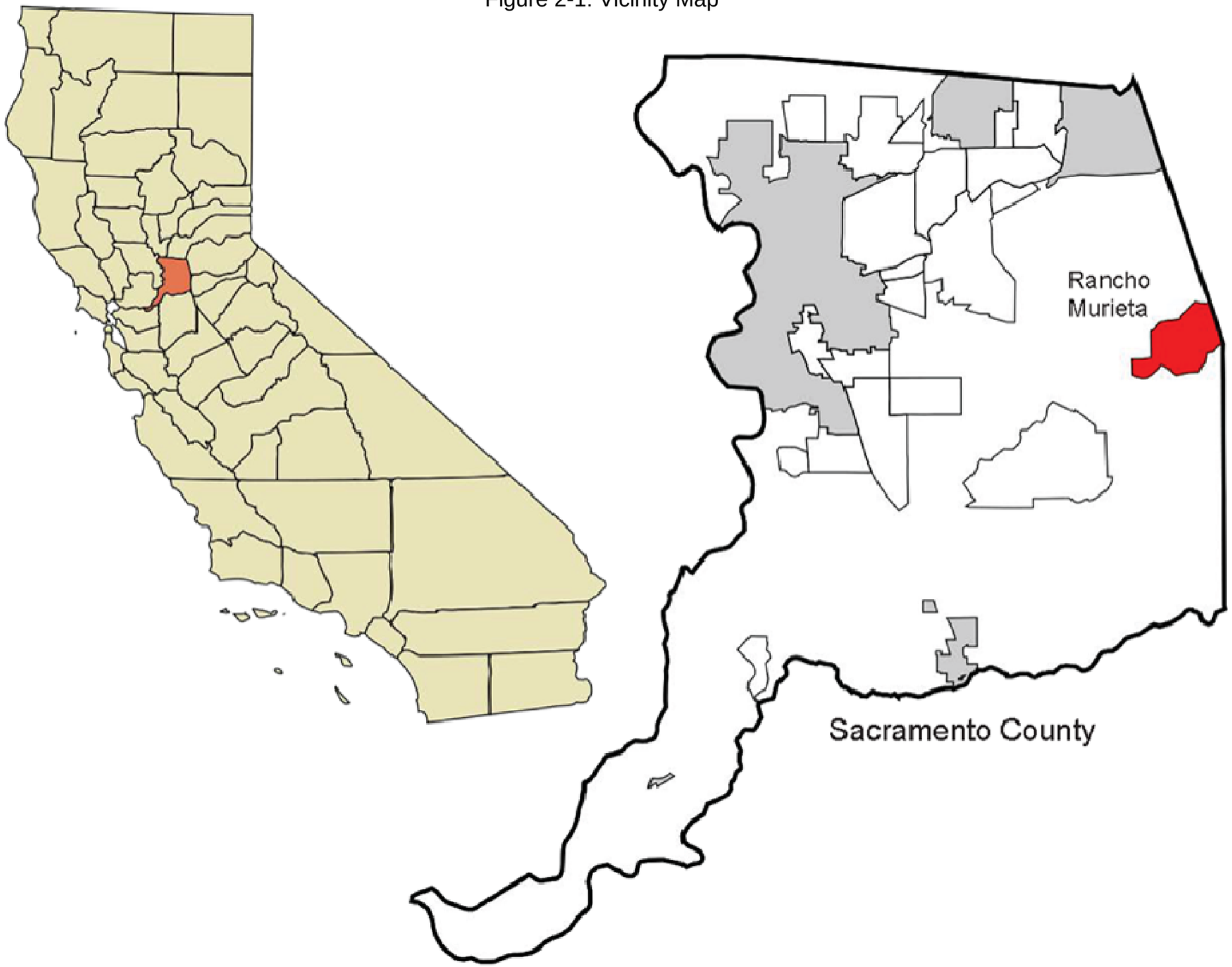
The current population in the study area is about 6,900 residents. At buildout, the population is projected to be about 10,500 residents. Figure 2-2 shows the study area for this IWMP, as defined by the District boundary. The study area includes all lands within the District boundary.

The study area is comprised of rolling terrain. Ground elevations in the District range from about 140 feet in the southwestern portion to 350 feet along the east side of Calero Reservoir.

The climate is classified as Mediterranean-Hot Summer. Rainfall averages 21 inches annually. In July, the average daily temperature ranges from a high of about 97 degrees Fahrenheit to a low of about 61 degrees. In January, the average daily temperature ranges from a high of about 58 degrees to a low of about 40 degrees.

The current population in the study area is about 6,900 residents. At buildout, the population is projected to be about 10,500 residents.

Figure 2-1: Vicinity Map



Legend

- Roads
- Highway
- District Service Area

1,500 Feet 0 1,500 Feet

H:\3971-02 2023 Integrated Water Master Plan\GIS\3971-02 Rancho Murieta Vic.mxd

ADKINS ENGINEERING & SURVEYING

RANCHO MURIETA
RECLAIMED WATER CONVEYANCE SYSTEM

FIGURE
2-2

2-3. System History

2-3.1. Domestic Water System History

The District was formed in 1982 to provide water supply, wastewater, storm drainage and flood control services to the master-planned community of Rancho Murieta. The area served by the District encompasses approximately 3,500 acres. Land uses within this service area include the development of approximately 2,000 acres for single-family residences, townhouses, apartments, duplexes and manufactured homes, in addition to two golf courses and light commercial. The Cosumnes River is the primary source of water for the District, from which water is seasonally diverted to three storage reservoirs (Calero, Chesbro, and Clementia).

The Rancho Murieta Master Plan (1984) specifies that "the reservoirs shall be maintained as integral parts of the water supply system, the drainage system or the wastewater system as established in the project water budget." The water budget described in the 1984 Master Plan follows the “One Water” approach, a nationally recognized approach that envisions managing all water in an integrated, inclusive, and sustainable manner. Rancho Murieta has long embraced the concept of “One Water” to optimize their available water resources, including using their off-stream storage reservoirs and reuse of reclaimed water for irrigation.

2-3.2. Reclaimed Water System History

The District owns and operates the Wastewater Reclamation Plant (WWRP) which receives domestic wastewater from the community of Rancho Murieta and currently provides secondary- and tertiary-level treatment to reclaim water for irrigation. Throughout the history of the WWRP, it has provided water for irrigation to the two golf courses in the District, as well as to the Van Vleck ranch south of the District.

2-4. System Inventory

2-4.1. Sources

The District's potable water supply consists of surface water diversions from the Cosumnes River, along with a small amount of precipitation runoff that naturally flows into the reservoirs. These diversions are seasonal and dictated by water rights permit 16762, which allows for diversions between the dates of November 1st and May 31st into the District's three storage reservoirs: Calero, Chesbro, and Clementia.

The Cosumnes River watershed encompasses nearly 1,300 square miles. The watershed begins at the western slopes of the Sierra Nevada mountains at an elevation of nearly 8,000 feet. The Cosumnes River drops to 130 feet in elevation as it passes through Rancho Murieta. Only 4% of the watershed upstream from Rancho Murieta is controlled by dams or reservoirs.

The Cosumnes River is an 80-mile-long river with relatively natural, unregulated stream flows that vary from higher winter-spring flood flows to reduced or intermittent summer flows. The upper reaches of the Cosumnes River are in the Eldorado National Forest, while the lower reaches, on its way to the confluence with the Mokelumne River and the San Joaquin Delta, flow through one of the most biologically rich regions in California's Central Valley, consisting of riparian forests, wetlands, vernal pool-dotted grasslands, and blue oak woodlands as well as productive row-crop agriculture, pasture lands, and rural homes and businesses. See Figure 2-5 for a map of the Cosumnes watershed.

The diversion from the Cosumnes River is located at the Granlees Dam and includes a diversion structure and three pumps. Two of these pumps are 125 horsepower (HP), and the third is 500 HP. The third pump is only operable when flows in the Cosumnes exceed 175 cfs. Raw water is conveyed to Calero or Chesbro via a 33-inch pipeline, or to Clementia via a 21-inch pipeline. Clementia's water level is maintained independently of Calero and Chesbro. Calero is at the highest elevation of the three reservoirs and is the first to be drawn from for use. Raw water is delivered to the Water Treatment Plant (WTP) through a 30-inch siphon between Calero and Chesbro, and a 36-inch supply line from Chesbro to the WTP. These reservoirs and their

storage capacities are summarized in Table 2-1. Adkins performed a bathymetric survey of Chesbro and Calero Reservoirs in 2023 to develop depth-to-volume relationships, or stage-storage curves. Figure 2-3 shows the volume curve for Calero Reservoir and Figure 2-4 shows the volume curve for Chesbro Reservoir.

Figure 2-3: Calero Stage-Storage Curve

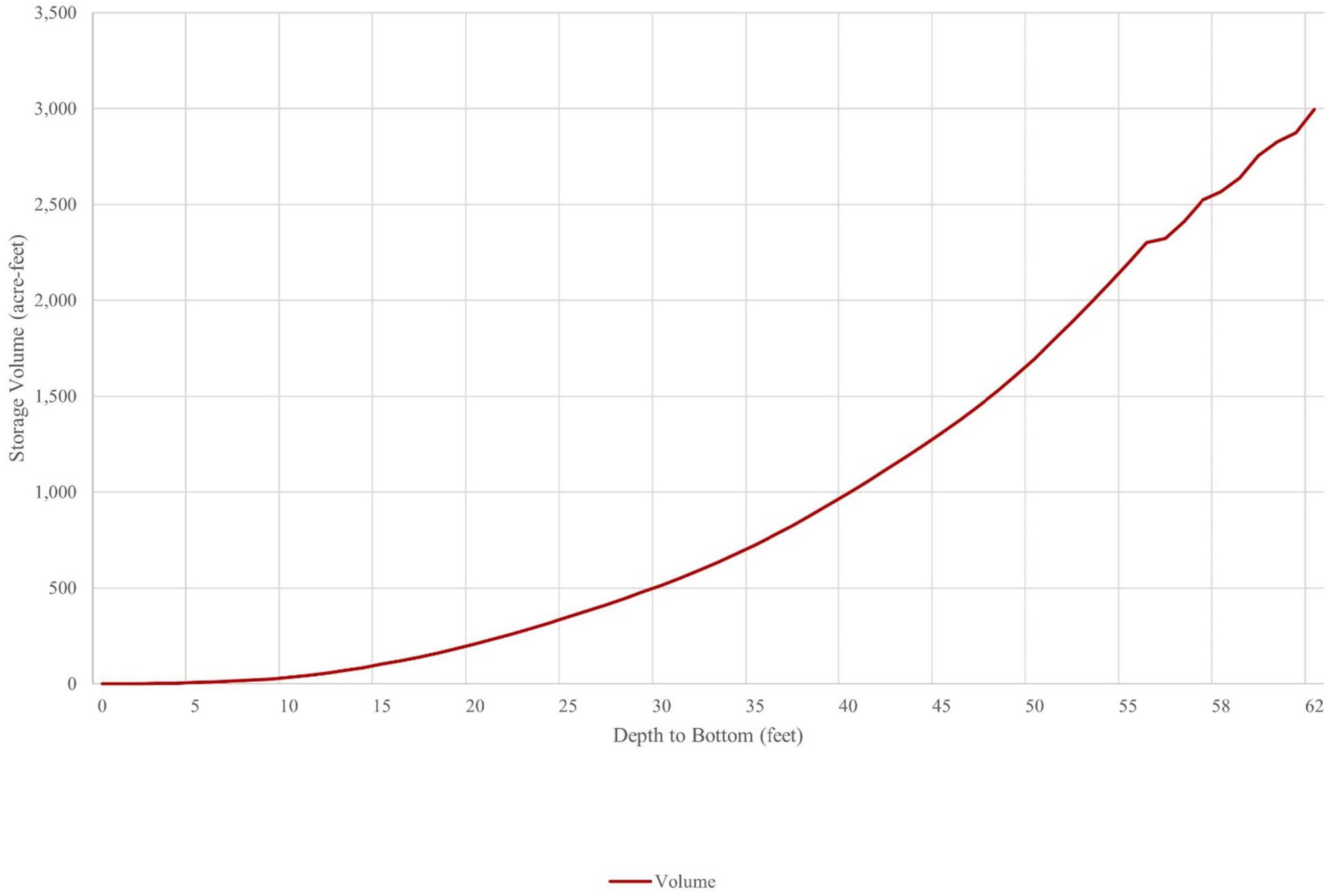


Figure 2-4: Chesbro Stage-Storage Curve

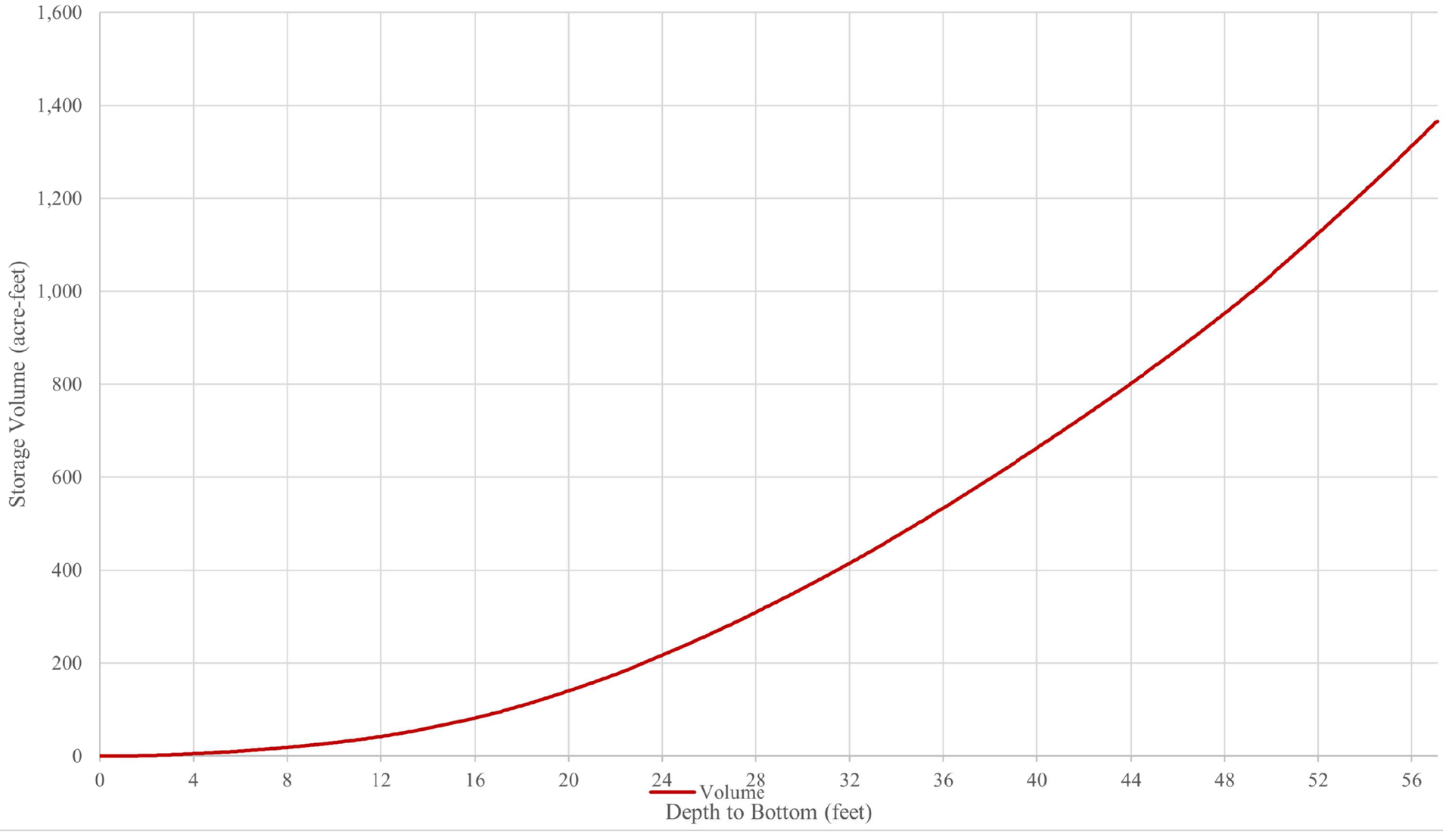


Figure 2-5: Cosumnes River Watershed

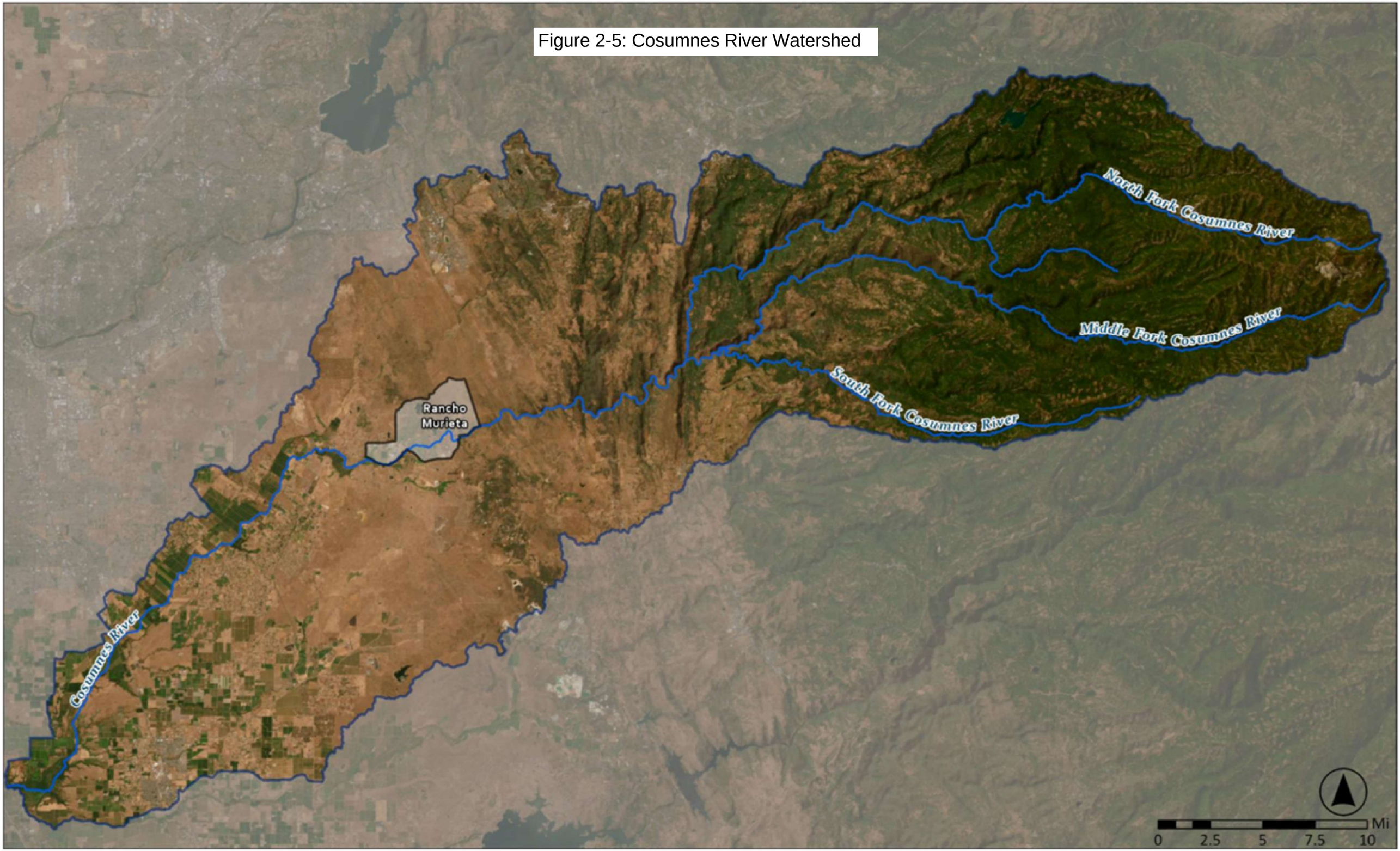


Table 2-1: Raw Water Reservoir Capacities

Raw Water Storage Reservoir Capacity						
Reservoir	**Bottom Elevation (ft)[1]**	**Spillway Invert Elevation (ft)[1,3]**	**Top Flashboard Elevation (ft)[2]**	**Dead Storage (AF)[2]**	**Storage w/o Flashboards (AF)[1]**	**Storage w/ Flashboards (AF)[1]**
Calero	221.65	277.68	279.84	304	2,323.36	2,565.30
Chesbro	210.24	260.04	262.64	11	1,027.03	1,142.97
Clementia	162.00	182.50	184.50	50	907.10	1007

[1]Calero and Chesbro elevations and volumes verified by bathymetric survey. Clementia not verified by survey. Elevations are measured to the NGVD 1929 datum.
[2]Dead storage is unusable storage at the bottom of the reservoirs, below pumping or pipeline capabilities.
[3]Top elevation measured at top of road crest.

2-4.1.a. Calero Reservoir

Calero Reservoir stores raw water for drinking water production. This reservoir is bound by the 55-foot tall Calero Dam, constructed in 1982. Water is gravity fed or siphoned from Calero Reservoir into Chesbro Reservoir as needed for drinking water production via a 30-inch pipeline. Due to the active use of Calero Reservoir for drinking water production, no bodily contact or motorized boats are allowed. See Figure 2-6.

2-4.1.b. Chesbro Reservoir

Chesbro Reservoir stores raw water for drinking water production. The reservoir is bound by the 79 foot tall Chesbro Dam, constructed in 1972. Raw water needed to meet the community's needs is routed from Chesbro Reservoir to the WTP through a gravity-fed, 36-inch raw water supply pipeline. Aeration is used to keep the reservoir mixed and to oxidize iron and manganese. Due to the active use of Chesbro Reservoir for drinking water production, no bodily contact or motorized boats are allowed. See Figure 2-7.

2-4.1.a. Clementia Reservoir

Clementia Reservoir stores 907 AF of raw water. The reservoir is bound by the 33-foot tall Clementia Dam, constructed in 1976. A watershed of approximately 1,100 acres drains into Clementia.

In addition to raw water storage, Clementia Reservoir can be used to route water to several other areas within the community. Clementia Reservoir is also used for irrigation supply and recreational uses. Clementia Reservoir is a permitted source for domestic purposes under the District's water right, but the current drinking water permit does not allow it to be used as a source of public drinking water without first restricting body contact, as approved by the California Department of Public Health. See Figure 2-8.

Figure 2-6: Calero Reservoir

Figure 2-7: Chesbro Reservoir

Figure 2-8: Clementia Reservoir

2-4.2. Water Rights

Water right permit 16762 was issued in 1969 and has since been amended in 1980, 2000, and 2006. In 2006, the permit was renewed and extended with no new permit requirements through 2020 in consideration that the community was not at full buildout. The District requested another extension of the permit in 2020 as it had still not reached full buildout. The permit states the following:

- Between the dates of the allowable diversion period (November 1 and May 31), surface water can be diverted from the Cosumnes River at Granlees Dam into the District's water storage reservoirs.
- Diversions are limited as follows:

1. No water may be diverted when river flows are less than 70 cfs at Michigan Bar gauging station.
2. For river flows between 70 and 175 cfs, a maximum diversion rate of 6 cfs is allowed provided this diversion does not reduce downstream flow below 70 cfs.
3. When river flows exceed 175 cfs, diversion of up to 46 cfs is allowed for direct use plus an additional 3,900 acre-ft for storage as follows:
    a. 1,250 acre-ft to Chesbro Reservoir.
    b. 2,610 acre-ft to Calero Reservoir.
    c. 850 acre-ft to Clementia Reservoir.
    d. 40 acre-ft to South Course Lake 10.
4. The combined amount of items b, c, and d above cannot exceed 2,650 AFY
5. The maximum allowable diversion rate to storage is 46 cfs.
6. If at least 400 AF has not been diverted by February 1st, up to 46 cfs may be diverted during February if the river flow is above 70 cfs.

7. If on March 1st at least 2,000 AF has not been diverted; up to 46 cfs may be diverted during the month of March if the river flow is above 70 cfs.
8. If on April 1st at least 4,400 AF has not been diverted; up to 46 cfs may be diverted for the rest of the season if the river flow is above 70 cfs.
9. The equivalent of the continuous flow allowance by direct diversion for any 7-day period may be diverted in a shorter time if there is no interference with vested rights.
10. No water shall be diverted during the allowable period (November 1-May 31) except during such time as there is visible surface flow in the bed of the Cosumnes River from point of diversion to the McConnell gauging station at Highway 99.
11. The total amount of water taken from the river cannot exceed 6,368 AFY from October 1 to September 30.
12. Only water that originates from the river and is pumped into a reservoir can be used for municipal purposes, except for a small allowance for storm runoff into Calero and Chesbro reservoirs.

This permit authorizes the diversion to storage in all three reservoirs referenced above. The charts below show the volumetric historical diversion of water from the Cosumnes River to both the Calero/Chesbro Reservoir combination and Clementia Reservoir. A technical memorandum published in June 2023 by Wagner and Bonsignore summarizes the District's water rights and is attached as Appendix G.

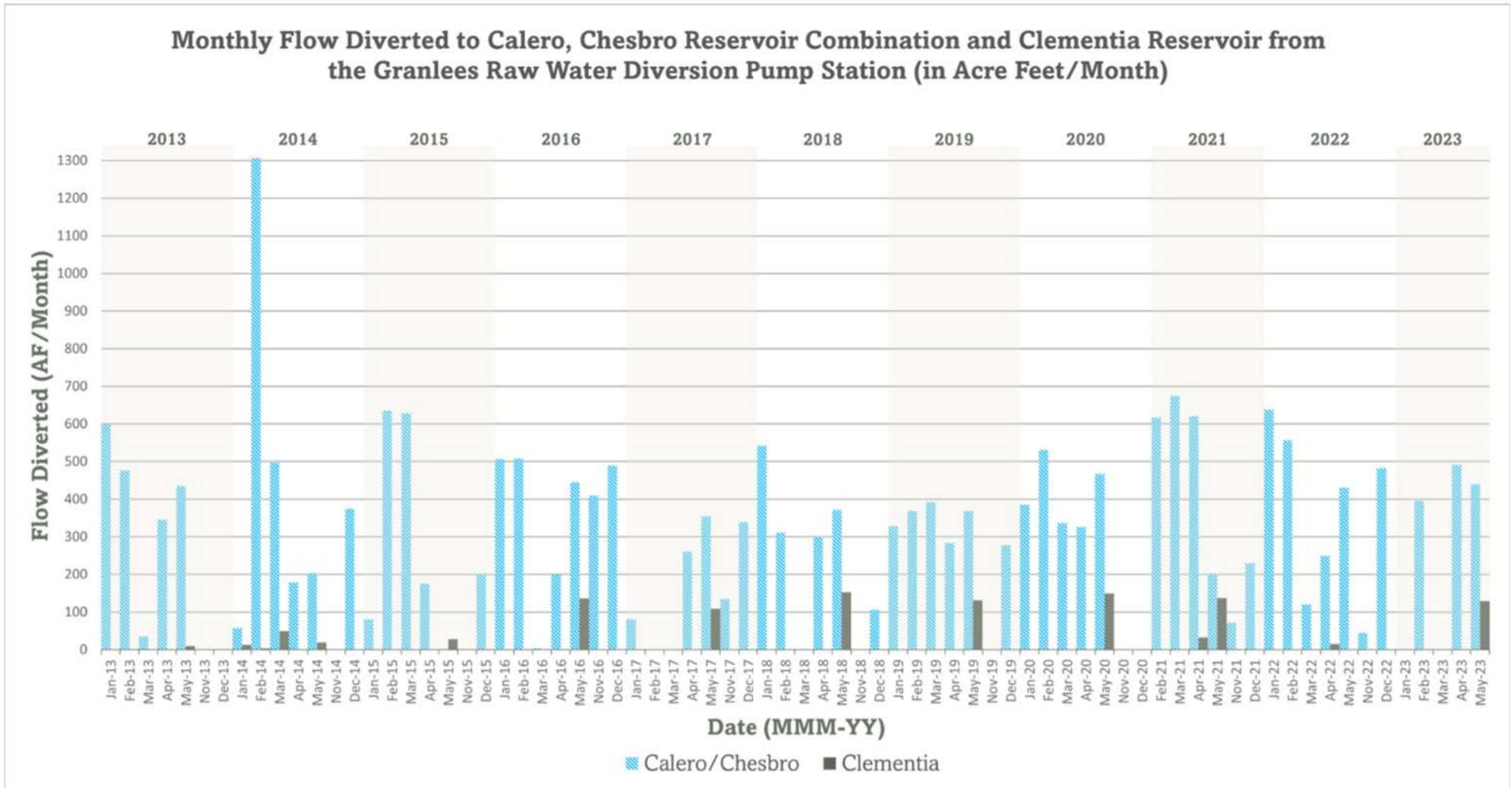


Figure 2-9: Historic Diversions in AF/month

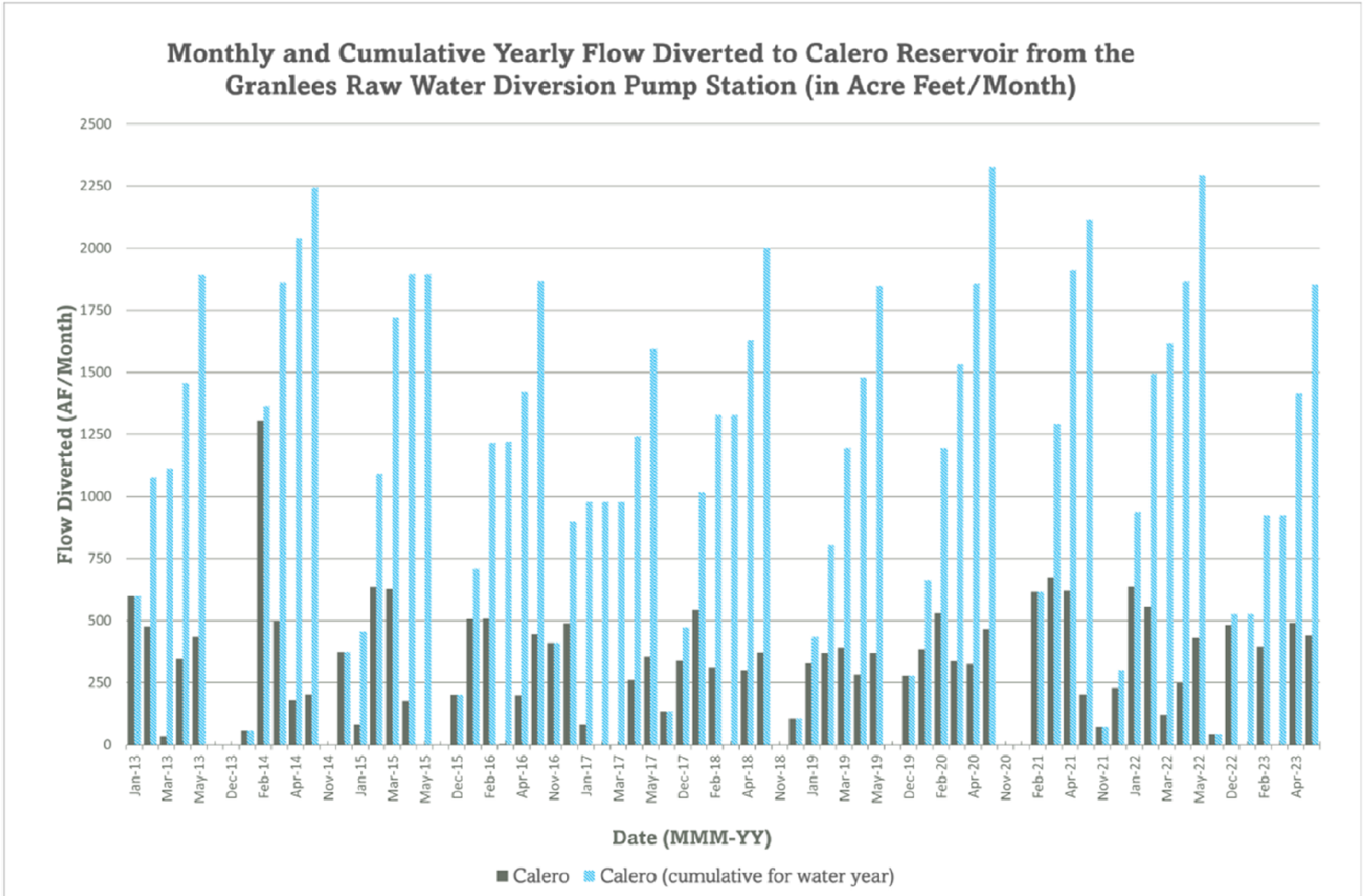


Figure 2-10: Historic Diversions to Calero

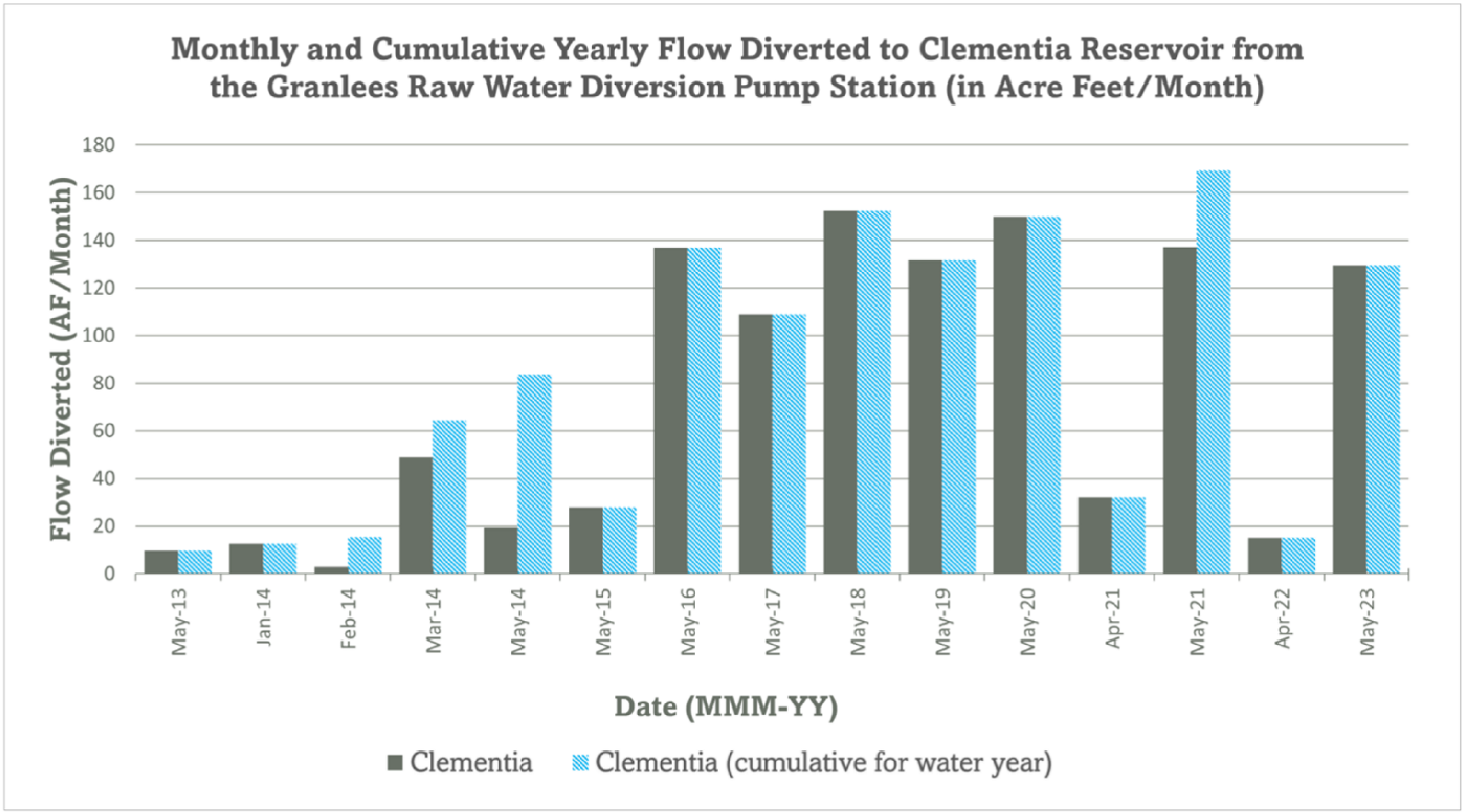


Figure 2-11: Historic Diversions to Clementia

2-4.3. Treatment

The WTP is divided into two plants based on treatment type: WTP1 is an ultra-filtration membrane treatment system with a 4.0 million gallon per day (MGD) capacity, and WTP2 is a traveling bridge filter treatment system with a 2.0 MGD capacity. Both plants disinfect via chlorine contact chambers and pump treated water to storage at the Rio Oso and Van Vleck tanks. See Figure 2-13 for a schematic of the existing water system. Figure 2-12 shows the transmission network from the raw water diversion through water treatment and to the treated water storage tanks.

In California, water is treated under the State Department of Health Services requirements as specified in Title 17 and Title 22 of the California Health and Safety Code and Chapter 7 of the California Safe Drinking Water Act. The State requires the District to periodically test the water and report the results to its customers.

WTP1 was constructed in 1975 with an original capacity of 1.5 MGD as a conventional treatment plant. In 2015, WTP1 was upgraded to its current 4.0 MGD capacity with ultra-filtration membrane treatment. It could be upgraded to 6.0 MGD capacity with the addition of more filters. WTP1 has a 10,960-gallon clearwell. Five pumps at this plant operate based on clearwell levels and pump water to the storage tanks Rio Oso and Van Vleck.

WTP2 was constructed in 1988 as a traveling bridge filter treatment plant with an original capacity of 2.0 MGD. In 1995, both plants were retrofitted to meet the new Surface Water Treatment Rules (SWTR). WTP2 has a 6,586-gallon clearwell; three pumps move water to the storage tanks using set points in the clearwell to govern operation.

RANCHO MURIETA EXISTING TRANSMISSION SYSTEM

700 0 350 700
(FEET)

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

POTABLE WATER LINE

RAW WATER LINE

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
RAW WATER, TREATMENT, AND STORAGE

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE
2-12

RMCSD Existing Water Schematic

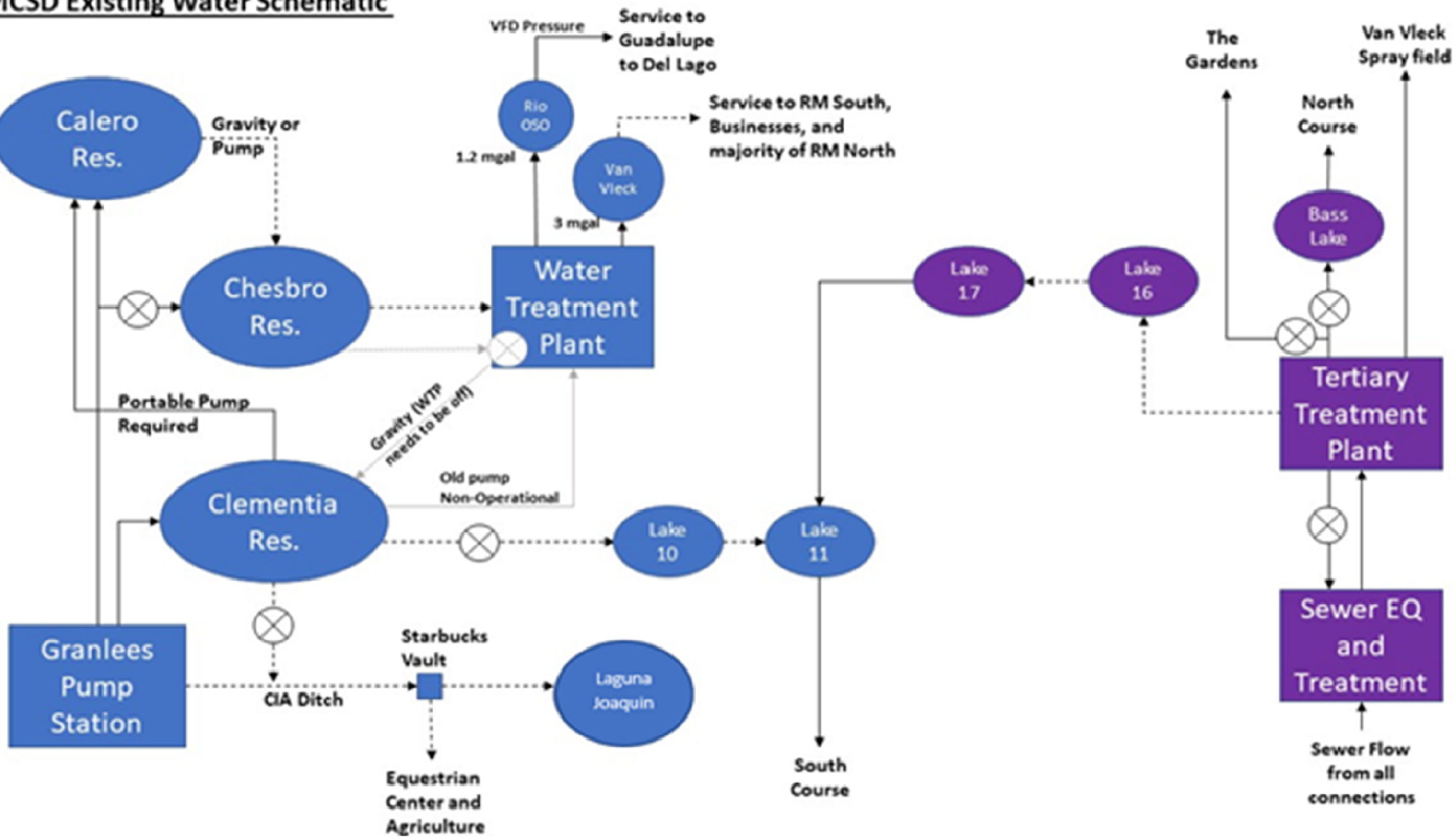

Figure 2-13: System Schematic

2-4.4. Storage

Two potable water storage tanks receive treated water from the WTP. These are Rio Oso and Van Vleck.

2-4.4.a. Rio Oso Tank

Rio Oso receives water from the WTP via a 14-inch pipeline and has a capacity of 1.2 million gallons (MG). It supplies water to the Rio Oso pressure zone, which accounts for approximately 25% of the total system demand. See Figure 2-14. The operational range for Rio Oso is currently 25 feet to 27 feet. Flows to Rio Oso are controlled by an altitude valve. When water levels fall below 25 feet in Rio Oso, this valve opens and allows water to flow through the 14" transmission pipe. When the WTP pumps are on, the water comes from the WTP. When the WTP pumps are off, water comes from Van Vleck through the same 14" transmission line. When water rises above 27 feet this valve closes. Two 125 HP pumps boost water from Rio Oso into the Rio Oso pressure zone. Pressures in the Rio Oso zone are relatively high, with hydrant tests showing upwards of 95 pounds per square inch (psi) across the pressure zone. Additionally, there is a gravity-fed pipeline that connects Rio Oso to the Van Vleck gravity zone. This pipeline is controlled by manual operation of a valve which opens and closes it. When the valve is open, Rio Oso can supplement Van Vleck's storage capacity. The normal status of the valve was unknown at the time of this IWMP.

Figure 2-14: Rio Oso Tank

2-4.4.b. Van Vleck Tank

Van Vleck has its base at approximately 311 feet. Since this is higher than much of the district, it provides pressure to its zone via gravity. Van Vleck receives water through a 16-inch pipeline. See Figure 2-15. Water can flow to Van Vleck from the WTP through this pipeline, and water can also flow out of this pipeline to Rio Oso when the WTP pumps are off and Rio Oso's altitude valve is open. Van Vleck has a capacity of 3.0 MG and has no pumps. The operational range for Van Vleck is currently 25.5 feet to 27.5 feet, and this tank's operational range controls the operation of the WTP; when the water level falls below 25.5 feet in Van Vleck, the WTP turns "on" and when the water level rises above 27.5 feet in this tank, the WTP turns "off."

Figure 2-15: Van Vleck Tank

2-4.5. Distribution System

The existing distribution system consists of over 45 miles of treated water pipelines ranging from two inches to 20 inches in diameter. This information comes from the District's GIS system. Generally, the largest diameter pipelines in the treated water distribution system are transmission lines moving water from the WTP to the storage tanks, and the smaller diameter pipelines are for moving water from the storage tanks to water users across the District. These are summarized in Table 2-2 below and visualized in Figure 2-16.

The Rancho Murieta community was formed in 1982, and many of the community developments have occurred in phases. As such, some pipelines throughout the District are much older than others. Further, it is likely that existing pipe material varies based on when they were installed. This information was not available for review at the time of developing this report, so reasonable assumptions will be made about material, age, and design life for pipes that do not have reliable data.

Table 2-2: Distribution Pipeline Inventory

Distribution Pipeline Inventory	
Pipe Diameter (in)	**Total Length (LF)**
2	742
3	314
4	19,308
6	47,660
8	86,483
10	31,081
12	19,434
14	21,767
16	15,127
18	2,035
20	343

RANCHO MURIETA EXISTING DISTRIBUTION SYSTEM

700 0 350 700
(FEET)

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

EXISTING WATER LINE

EXISTING FIRE HYDRANT

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
EXISTING DISTRIBUTION SYSTEM

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE
2-16

2-4.6. Reclaimed Water System

Reclaimed water is tertiary treated wastewater which is suitable for uses other than potable use. There are various types of reclaimed water depending on the source and level of treatment. In the District, reclaimed water is tertiary treated and used for irrigation to reduce potable water use. Tertiary treated water has been oxidized, filtered and disinfected to meet stringent criteria for reclaimed use and must satisfy CA Title 22 regulations related to reclaimed water. This water is also suitable for dual-plumbed residential irrigation use.

2-4.6.a. Raw Wastewater

The sources of raw wastewater for the WWRP are residential homes and commercial facilities (stores, restaurants, offices, etc.). There are no industrial users that discharge wastewater to the WWRP. Current influent flows are approximately 0.40 MGD, and projected flows at buildout are expected to be approximately 0.84 MGD based on the anticipated development. A detailed discussion of these projections is included in Chapter 4.

The wastewater generated at Rancho Murieta is a combination of domestic and commercial contributions. It is expected that future developments will continue to discharge domestic and commercial strength wastewater. The District's Sewer Code prohibits the discharge of toxic chemicals and other harmful compounds to the sewer. Residents and businesses routinely receive written materials describing substances that are prohibited from discharge into sewers for the protection of the wastewater treatment processes or cause the reclaimed water to be unsuitable for irrigation. See Figure 2-17 for a map of the existing reclaimed water system.

EXISTING RECLAIMED WATER INFRASTRUCTURE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
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3. RANCHO MURIETA COUNTRY CLUB IS RESPONSIBLE FOR OPERATING AND MAINTAINING THE TRANSMISSION LINES BETWEEN THE WASTEWATER TREATMENT AND RECLAMATION PLANT AND THE NORTH AND SOUTH GOLF COURSES.
4. RANCHO MURIETA COUNTRY CLUB IS RESPONSIBLE FOR OPERATING AND MAINTAINING THE NORTH COURSE PUMP STATION, WHICH MOVES RECLAIMED WATER FROM THE WASTEWATER TREATMENT AND RECLAMATION PLANT TO THE NORTH COURSE.
5. THE TRANSMISSION LINE FROM THE WWRP TO LAKES 16/17 IS GRAVITY. THE RMCC OWNS AND OPERATES A PUMP STATION THAT LIFTS WATER FROM LAKES 16/17 TO LAKE 11.

LEGEND

- EXISTING BUILDING EDGE
- EXISTING RECLAIMED WATER LINE
- EXISTING RECLAIMED WATER PUMP

N

600 0 300 600

(FEET)

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RECLAIMED WATER ALTERNATIVES
FOR
RANCHO MURIETA CSD
EXISTING RECLAIMED DISTRIBUTION SYSTEM

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE
2-17

2-4.6.b. Wastewater Treatment

The WWRP consists of both a secondary wastewater treatment facility and a tertiary treatment plant. The secondary treatment system is designed to treat an average annual flow of 1.55 MGD and a peak flow of 3.00 MGD in the series of five aerated facultative ponds. Seasonal storage of the secondary treated wastewater during the non-irrigation months is provided in two storage reservoirs, which have a combined storage capacity of approximately 238 MG or 728 AF with two feet of freeboard. The major components of the WWRP are as follows:

- Five aerated facultative ponds
- Two secondary storage reservoirs,
- Two dissolved air flotation (DAF) units
- Two sand filtration units
- Chlorine contact detention facilities
- Equalization (EQ) basin
- North Course Pump Station (NCPS)

Raw wastewater is pumped to the WWRP through three lift stations in the District. Raw wastewater enters the WWRP at Pond 1, which is equipped with aeration. The effluent from Pond 1 flows by gravity through the remaining ponds in sequential order. Ponds 2 and 3 each contain three aerators, Pond 4 has two aerators, and Pond 5 has one aerator. The aerators are managed by District operations staff that set the timers to maintain proper dissolved oxygen (DO) levels. There is one solar-powered mixer in each of the five treatment ponds, and the ponds are equipped with piping such that any pond can be bypassed while keeping the plant in operation. All ponds except Pond 1 can be drained completely for sludge removal and/or repairs. See Figure 2-18 for a layout map of the existing WWRP.

250 0 125 250
(FEET)

WASTEWATER TREATMENT AND RECLAMATION FACILITY

LEGEND

- EXISTING BUILDING EDGE
- EXISTING RECLAIMED WATER LINE
- EXISTING RECLAIMED WATER PUMP

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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ENGINEERING - SURVEYING - PLANNING - TESTING

RECLAIMED WATER ALTERNATIVES FOR RANCHO MURIETA CSD EXISTING WWRP

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE 2-18

The secondary effluent flows into two storage reservoirs, which store the secondary treated wastewater during the winter months when reclaimed water is not being produced. The storage reservoirs have a combined capacity of 728 AF, with two feet of freeboard. The reservoirs have 860 AF of capacity without freeboard.

The tertiary treatment system consists of a tertiary water pump station, coagulation, DAF units, gravity sand filters, chlorine contact tank, chlorine contact pipe, and an EQ basin. The capacity of the tertiary filtration facilities is 3.0 MGD. However, the operating capacity of the overall tertiary treatment process is 2.3 MGD due to the undersized existing chlorine contact basin. A new chlorine contact basin is currently being designed.

After tertiary treatment, the reclaimed water is stored in an EQ basin prior to conveyance to the use areas. This basin has a capacity of 1.8 MG. Approximately 6,600 LF of 20-inch plastic irrigation pipe (PIP) was installed in the EQ basin to provide additional chlorine contact time. This will be removed upon the completion of the new chlorine contact basin. Water leaving the chlorine contact pipe (CCP) is stored in the EQ basin before used for reclaimed water irrigation. From the EQ basin, reclaimed water is conveyed through both a 12-inch gravity pipeline to Lake 16 and Lake 17 to supply South Course and a pressurized 14-inch pipeline to the North Course by the NCPS.

2-4.6.c. Supplemental Supply

Currently, the WWRP does not produce enough reclaimed water to meet the full irrigation demands of the golf courses. Therefore, supplemental water must be provided to satisfy golf course irrigation demands. The reclaimed water system for the golf courses is currently supplemented with raw water from the Cosumnes River and from Clementia. RMCC's river pumps divert water from the Cosumnes River to Bass Lake and Lake 10 where it is stored for future golf course irrigation in the spring. On average, reclaimed water production is estimated to be 468 AFY, and average golf course demands are 673 AFY. It is important to note that the District's current obligation to provide the golf courses with reclaimed water for irrigation is 550 AFY.

No residences use reclaimed water yet, but Murieta Gardens has reclaimed water infrastructure in place. For future developments, Villages A, B, and C, the Retreats, and new commercial developments in Murieta Gardens are planned to receive reclaimed water. It is likely that the new developments that have dual plumbing installed for reclaimed water will require supplementation with potable water to meet demands. Most likely, potable water supplementation will occur at the EQ basin located at the WWRP. This is discussed in Chapter 6.

2-4.6.d. Transmission and Distribution

Based on construction drawings, it appears that a minimum 10-foot separation has been maintained between reclaimed water and potable water pipelines. For example, there are three pipelines on the Yellow Bridge: sewer, potable water, and reclaimed water. The sewer and reclaimed water pipelines are mounted on one side of the bridge, with the potable water on the other side. The District, in association with the RMCC, has developed, submitted, and gained Regional Water Quality Control Board (RWQCB) approval of an operations manual describing the delivery and use of reclaimed water at the North and South Golf Courses (May 2010).

2-4.6.d.i. Golf Courses

The reclaimed water transmission and distribution systems associated with the two golf courses were installed in 1983. The NCPS pumps reclaimed water from the EQ basin to Bass Lake. This pump station consists of two vertical turbine pumps, each of which have 100 HP motors capable of delivering 1062 gpm at 323 feet of head. Reclaimed water is conveyed through a 12-inch asbestos cement pipe (ACP) from the WWRP, under Highway 16, over the foot bridge (Yellow Bridge), to the 10th hole of the North Golf Course. From this point, the pipeline is reduced to an 8-inch ACP and runs east along the golf course fairways to Bass Lake. Reclaimed water is also conveyed from the WWRP to Lake 16 of the South Golf Course by gravity through another 12-inch ACP pipeline. The water is pumped from Lake 16 to Lake 11 by a RMCC-owned pump station to supply the South Course. The RMCC is responsible for maintaining the reclaimed water transmission and distribution systems, including pumps, pipelines, and irrigation ponds.

2-4.6.d.ii.Van Vleck Ranch

Approximately 1,800 LF of above-ground 12- and 8-inch Certa-Lok™ PVC irrigation pipe is used to convey reclaimed water to the Van Vleck Ranch boundary and about 4,050 LF of above-ground 8-, 6-, 4-, and 3-inch Certa-Lok™ PVC irrigation pipe is used to convey reclaimed water to three spray irrigation systems. The 12- and 8-inch PVC pipeline was installed in 2007 and is owned and operated by the District with the words "RECYCLED WATER/RECLAIMED WATER" stenciled on top.

The distribution system consists of approximately 29 strings of K-line irrigation systems, which are in turn composed of movable sprinklers and 40 mm HDPE piping. Each movable sprinkler is housed within a plastic pod. The connecting piping is flexible, and the entire string of sprinklers can be moved from spray field to spray field.

The District has developed, submitted, and gained RWQCB approval of an operations and management plan describing the delivery and use of reclaimed water at the Van Vleck Ranch (August 2007). The District will continue to use the existing above-ground 12- and 8-inch Certa-Lok™ PVC pipeline in the future to serve the existing and proposed spray fields as described later in this report. The Van Vleck Ranch includes approximately 96 acres of land that can receive reclaimed water, and it is permitted to receive 215 AFY.

2-4.6.d.iii. Murieta Gardens

Murieta Gardens is a mixed-use development in Rancho Murieta, just south of Highway 16, constructed between 2017 and 2020. Approximately 36.5 acres are commercial developments, including the Murieta Inn and Spa, and 16.4 acres includes 78 single-family residences. Murieta Gardens has reclaimed water pipelines in place. Each residence has dual-plumbed irrigation systems, with reclaimed water infrastructure marked by purple coloring.

This development includes 12" pipelines that tee into the existing North Course transmission line and cross beneath Jackson Road. These 12" lines travel along the north side of Legacy Lane before terminating near the Murieta Inn and Spa. Several 6" lines branch from this mainline to serve each residence. An 8" line terminates near the intersection of Murieta Drive and Cantova

Way. Currently, there are no plans to serve the existing mobile home park in this area, but this line may be considered an ideal connection point at some time in the future should the District decide to provide reclaimed water in this area. See Figure 2-17 for a map of the existing reclaimed water distribution system.

2-4.6.e. Reclaimed Water Users' Responsibility

The District and the landowners of the RMCC golf courses entered into the *Agreement for the Use of Reclaimed Wastewater* (dated May 17, 1988) and an *Amendment to Agreement for the Use of Reclaimed Wastewater* (dated May 4, 1994). These agreements, as modified by the Waste Discharge Requirements 5-01-124 issued by the Regional Board for the use of reclaimed water at Rancho Murieta, set forth the operating principles and the respective responsibilities of the District and RMCC for the use of reclaimed water on the golf courses. In general, the District is responsible for the operation and maintenance of the collection system, wastewater and tertiary treatment facilities, whereas the RMCC is responsible for the operation and maintenance of the golf course irrigation systems, including transmission pipelines from the WWRP to RMCC facilities and irrigation storage ponds (e.g., Bass Lake and Lakes 10, 11, 16, and 17).

For new commercial and residential reclaimed water connections, additional responsibilities are required and are defined in the Reclaimed Water Standards (RMCSD, October 2013). These include:

- Obtaining all permits and payment of all fees required for the establishment, operation and maintenance of the User's reclaimed water system.
- Ensuring that all materials used during the design, construction and maintenance of the system are approved or recommended for reclaimed water use.
- Routinely monitoring and inspecting the reclaimed water system for any situation that may not be in conformance with the regulatory requirements. Problems such as irrigation controller malfunctions, irrigation schedule adjustments, excessive ponding or runoff of reclaimed water, broken or out-of-adjustment sprinkler heads, etc. must be corrected as soon as they become apparent.
- Maintaining the Use Area's reclaimed water system downstream of the Point of Connection.
- Reporting all violations and emergencies to the required local governing agencies.

- Obtaining prior written authorization from the District and any required regulatory agency before making any modifications to an approved reclaimed water system, or the potable water system if it is in close proximity to the reclaimed water system.

In addition to and in accordance with their easement agreement and WDR R5-2007-0109, the District manages the treatment, distribution, and use of reclaimed water at the Van Vleck Ranch for pasture irrigation. The use of reclaimed water at the Van Vleck Ranch is coordinated by the District with the Van Vleck Ranch manager to allow for movement of the K-line irrigation lines to accommodate periodic grass cutting and cattle rotation.

CHAPTER 3. Performance Objectives

3-1. Demographics, Timeframe, and Regulations

3-1.1. Planning Period

The planning period for the development of alternatives described herein is 20 years. While the exact development schedule is unknown at this time, it is expected that the District will reach buildout conditions before 20 years have passed. Currently, the District expects 4,102 total connections at buildout, with 3,991 being residential and 111 being commercial.

This plan should be revisited for an update after the following:

- The development assumptions listed in this report change such that the analysis in this report is affected.
- A weather station capable of measuring evapotranspiration and evaporation is installed near one of the raw water reservoirs and a seepage study is conducted. This will allow the District to update its water balance with better data which will affect the results of this report.
- The District collects several years of transducer water level data from the raw water reservoirs. This will also allow for a more precise water balance in conjunction with the new weather station and seepage study.

3-1.2. Regulatory Requirements

3-1.2.a. Water Planning Requirements

California does not require public water suppliers to maintain an active water master plan by law. However, California Water Code sections 10610-10656 and section 10608 require every urban water supplier that provides over 3,000 AFY or serves more than 3,000 urban connections to submit and maintain an UWMP. An UWMP involves the following:

- Assessing the reliability of water sources over a 20-year planning time frame
- Describing demand management measures and water shortage contingency plans

- Reporting progress toward meeting state-targeted 20% reduction in per-capita urban water consumption
- Discussion of the use and planned use of reclaimed water

The California Department of Water Resources (DWR) has published a guidebook with the detailed requirements of a UWMP and guidance for urban water suppliers who are developing a UWMP. This guidebook is available on the DWR website.

The District does not yet fall under the criteria that would make them an urban water supplier; they currently provide approximately 1,716 AFY to 2,729 connections, neither of which are above the 3,000 AFY or 3,000 connection thresholds. However, the District desired to complete an UWMP simultaneously with this IWMP since the efforts would use large amounts of the same data and analysis. However, the level of effort to complete the UWMP was in excess of the funds available to the District at the time of this IWMP. Further, since the District is not yet an urban water supplier, the UWMP was not essential at this time. However, with the completion of this IWMP, the District is very close to being able to complete an UWMP using the information from this IWMP. At the time when the District needs to complete a UWMP, this IWMP document, along with any new data or updated assumptions, will be critical to developing an UWMP.

3-1.2.b. Domestic Water Regulatory Requirements

Potable water quality in California is regulated by three sets of rules: The California Water Code, the California Health and Safety Code, and the California Code of Regulations (CCR). The Water Code and the Health and Safety Code are passed by the state legislature, and the CCR is established by state agencies rather than by legislation.

The regulations are extensive, so only those regulations that are discussed in this report are included in this section.

- CCR Title 22, Division 4, Chapter 15 § 64431 states the maximum contaminant levels (MCLs) for inorganic chemicals. This includes arsenic less than 0.01 mg/l.

- CCR Title 22, Division 4, Chapter 16 § 64585 (b)(4) states that distribution reservoirs must be equipped with at least one separate inlet and outlet (internal or external), and designed to minimize short-circuiting and stagnation of the water flow through the reservoir.
- CCR Title 22, Division 4, Chapter 16 § 64560 states that wells must be constructed in accordance with the community water system well requirements in California Department of Water Resources Bulletins 74-81 and 74- 90, which state that wells must be above the 100-year floodplain, and that if they are within the 100-year floodplain, they must be built up to avoid flooding.

3-1.2.c. Reclaimed Water Regulatory Requirements

Title 22 of the CCR (Water Recycled Criteria) sets the criteria for "disinfected tertiary reclaimed water." This designation allows for unrestricted use of reclaimed water for irrigation, which encompasses the current and proposed uses for reclaimed water at Rancho Murieta. The criteria are as follows:

- Contact time (CT) (the product of total chlorine residual and modal contact time measured at the same point) must be at least 450 milligram-minutes per liter at all times with a model contact time of at least 90 minutes.
- Coliform bacteria must not exceed:
    - Most probable number (MPN) of 2.2 per 100 mL (7-day median),
    - MPN of 23 per 100 mL (one sample in 30 days), and
    - Never exceed an MPN of 240 per 100 mL.
- Turbidity of filtered tertiary water must not exceed:
    - 2 Nephelometric turbidity units (NTU) (average),
    - 5 NTU (up to 5% of the time), and
    - Never exceed 10 NTU.

The District's reclaimed water meets all these criteria. Additionally, the District has a Title 22 Engineering Report published in December 2013 by AECOM. This report details how the District will meet state requirements for reclaimed water with its system.

The District adopted Reclaimed Water Standards (October 16, 2013) and the Reclaimed Water Code (January 18, 2012). District Code, Chapter 17 (Reclaimed Water Code) sets forth rules and regulations regarding the use of reclaimed water in the District. The Reclaimed Water Standards define District procedures, design, work, materials, capacities, facilities and other improvements pertaining to reclaimed water facilities or connections.

Together the Reclaimed Water Code and Reclaimed Water Standards establish and provide the means to enforce rules and regulations for reclaimed water users, design and construction of reclaimed water facilities, and the use of reclaimed water in accordance with federal and state reclamation criteria.

3-1.2.c.i. Monitoring and Reporting

The District currently monitors and reports in accordance with the requirements specified in Monitoring and Reporting Program Nos. 5-01-124 and R5-2007-0109-01, which were adopted by the Regional Board on December 1, 2006 and August 2, 2007, respectively. The water quality monitoring includes influent, secondary effluent, and tertiary effluent. In addition, the monitoring and reporting program includes monitoring of the treatment ponds, secondary storage reservoirs, golf course irrigation lakes, and reclaimed water use areas. It is anticipated that the monitoring and reporting requirements associated with the future reclaimed water uses would mirror those required for either the golf courses or the Van Vleck spray field.

The District operates a laboratory on site and performs some of the water quality analyses listed above, including chlorine residual, settleable solids, and turbidity. On-line continuous monitoring is conducted for flow, turbidity, and reclaimed water chlorine residual. The instrumentation used to perform this monitoring is calibrated regularly in accordance with manufacturer's specifications and recommendations. An Environmental Laboratory Accreditation Program (ELAP) Certified Laboratory, utilizing US EPA protocols and methods, performs all other required sample analyses.

3-1.3. Service Population

As of December 2022, the District served 2,629 residential connections and 100 non-residential connections, which include parks, commercial, and miscellaneous public uses. Local parks are currently being irrigated with potable water. According to Sacramento County's approved Planned Unit Development Plan at Buildout, the development of the District's service area represents roughly 5,189 residential units, though development plans for buildout estimate 3,991 residential units.

Existing population size was determined using data from the United States Census Bureau from 2020. This resulted in an existing population of 6,939 people. Buildout population size was estimated using developer estimates of total lots and lot types. Existing lot types were derived from District billing data. Lots smaller than 12,000 sf were assumed to have 2.36 persons per lot, lots larger than 12,000 sf were assumed to have 3.36 persons per lot, and ADUs were assumed to have 1.5 persons per unit. Using these lot occupancy estimates and the developer estimates of new lots resulted in a population of 10,492 people at buildout. Details of the methodology used to create person-per-lot estimates are included in Chapter 4.

3-2. Performance Objectives by Component

The design criteria shown below in 1 were developed in coordination with District staff and were used to evaluate the existing system and propose alternatives. Discussion of the system's ability to meet these criteria is included in Chapter 5.

Table 3-1: Summary of Performance Objectives

Summary of Performance Objectives	
Component	**Description**
Water Supply	- Able to provide adequate supply to meet buildout demands during historic drought - Must meet SB552 requirements for supply redundancy
Water Treatment	- Capacity must be greater than maximum day demand
Treated Water Storage	- Emergency storage = 1.75 times ADD - Fire storage = 4 hours @ 2,625 gpm = 630,000 gallons[1] - Operational storage = 2 feet in each reservoir[2] - Equalization storage = 4 times PHF – available supply - Each pressure zone able to provide its own required storage
Distribution System	- Pressure o Greater than 30 psi at peak hour on peak day o Greater than 20 psi at all times o Less than 105 psi at all times - Velocity less than 5 fps for normal conditions, less than 7 fps for fire flows - 8” minimum diameter for all pipelines that carry fire flows
Fire Protection	- Minimum 2625 gpm for 4 hours required at Murieta Inn - Minimum 1500 gpm for 2 hours required at all hydrants - All structures within 250 feet of a hydrant
Reclaimed System	- Secondary treated storage: able to store 0.84 MGD ADWF with 100-year high precipitation during non-irrigation season - Tertiary treatment & disinfection: 3.0 MGD - EQ storage: Max day irrigation demand minus tertiary production capacity - Pumping capacity greater than peak instantaneous irrigation demand - Pipe pressure/velocity: greater than 20 psi, less than 120 psi, less than 7 fps
	[1]Fire flow required for Murieta Inn, per its design planset. [2]Per District operations staff

CHAPTER 4. Water Demands

Water use planning is an essential component of a thriving community. It is similar to creating a budget for the water that can be used now and in the future to meet a community's needs. Evaluating past water demand data for usage trends and forecasting future water demands is a necessary component of accurate planning. Without an understanding of both existing and future water needs, it is difficult to create a water budget that can withstand either predicted or unanticipated events.

Similar to how individuals establish a "rainy day" fund to prepare for unexpected expenses, robust water plans consider "dry day" funds for drought scenarios and incorporate climate change and population growth expectations (among other factors). Budgeting water supplies requires predicting, as close as possible, how much the water demands of the community will change in the future so that the agency can responsibly and effectively administer the water budget of today. It is important to carefully plan for future demands without under or over-sizing the system, as oversized water storage and distribution systems are expensive to construct and operate, and undersized systems may not reliably meet customer demands when events like drought and fire occur. There are standard engineering practices like the *AWWA Manual of Practice, M50, Water Resources Planning,* that outline the proper approaches and methods to assist with planning for future community water needs. The following descriptions outline the background of approaches and methods used to assess historic, existing, and future District demands.

4-1. Historic Demands

Figure 4-1 below shows the annual billed consumption for the District (labeled "Water Use") in AF, active accounts, and rainfall between 1994 and 2022. Usage in this figure does not include system losses, which are discussed in a following section. The figure shows a decrease in billed consumption coinciding with the drought of 2013-2016 and a slight decrease in consumption coinciding with the COVID-19 pandemic.

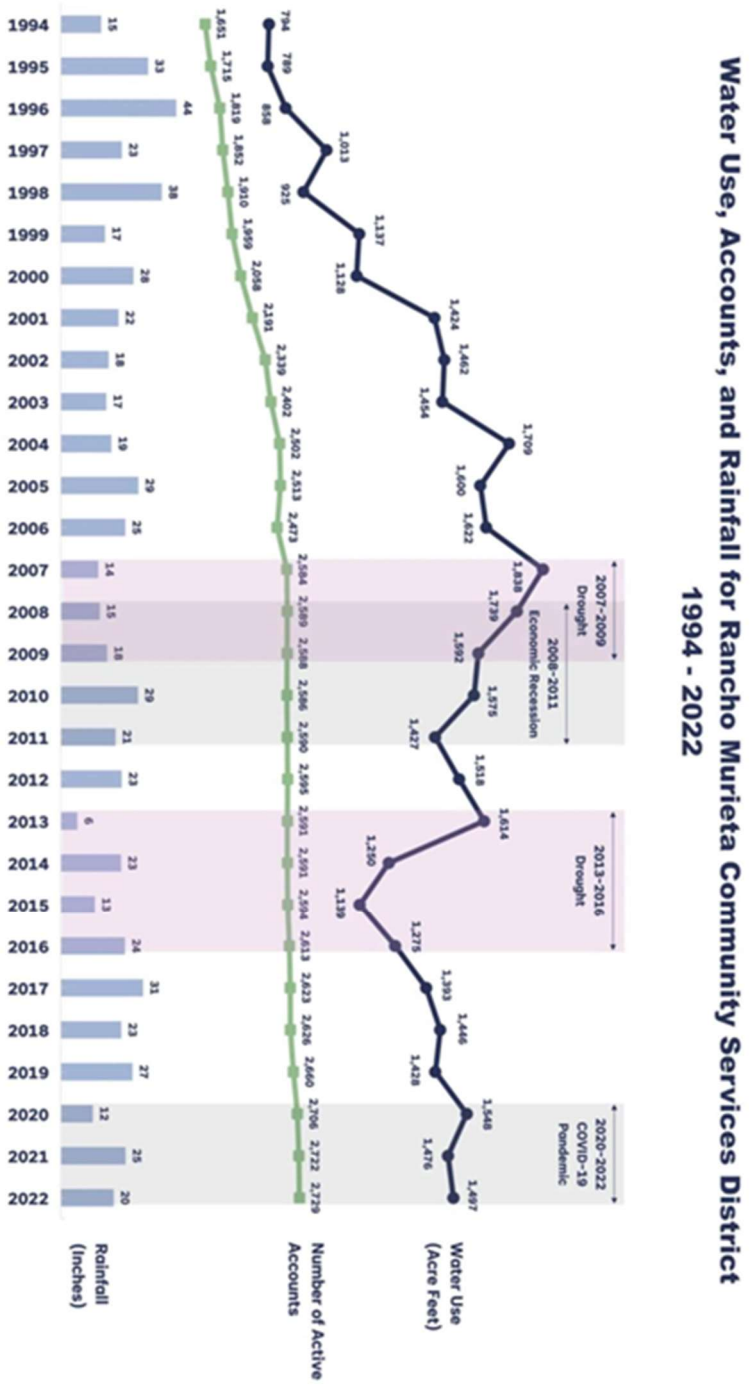


Figure 4-1: Historic Water Use (1994-2022)

4-1.1. Historic District Performance on Benchmarks

The California Water Conservation Act of 2009 (also referred to as Senate Bill X7-7) was enacted in November of 2009 and required urban retail water suppliers to develop water use targets that would achieve a 20% reduction in water use by December 31, 2020 (California Department of Water Resources - SB X7-7). Urban retail water suppliers are water suppliers that provide potable municipal water to more than 3,000 connections or provide more than 3,000 AFY.

As the District has not reached 3,000 connections, it is not yet required to comply with water use reduction targets under state law. The system had 2,729 active connections as of December 31, 2022. However, as the District expects to grow enough to be required to comply in the future, it has voluntarily implemented proactive plans in monitoring and tracking water use. The District has chosen to comply with state regulations applicable to larger systems and all permitted systems subject to the "beneficial use doctrine," to promote the efficient use of supplies to meet demands.

To monitor water use targets, the District developed the 2020 Compliance Plan, which determined that water use would have to be at or below 238.5 gallons-per-capita-per-day (gpcd) by 2020 to voluntarily comply with state regulations. The District adopted Policy 2011-06 which directed District staff to implement an efficiency program to help residents and businesses meet the state targets.

Part of the motivation behind the 2020 Compliance Plan and the District's proactive management of water use was to demonstrate good water management practices to support the District's application for a water right license. The District currently holds water right Permit #16762 which allows the District to use water as it continues development projects. Once buildout is completed, the State Water Board will determine how much water was used "beneficially" by the District and will issue a water right license. A water right license is a vested right that confirms actual water use and is awarded for the amount of water that has been reasonably and beneficially used by a community, up to the amounts listed in the permit.

Figure 4-2 below shows total water production, residential water use, and the 2020 Compliance Plan target for water use in gpcd. The figure shows that the District has successfully reached residential water use near or below the 2020 Compliance Plan target in recent years. The District was not required to comply with state mandated water use levels, but its proactive goal setting and achievement help make the case for more reliable water rights in the future. Additionally, higher water use efficiency will help to ensure more sustainable water supplies.

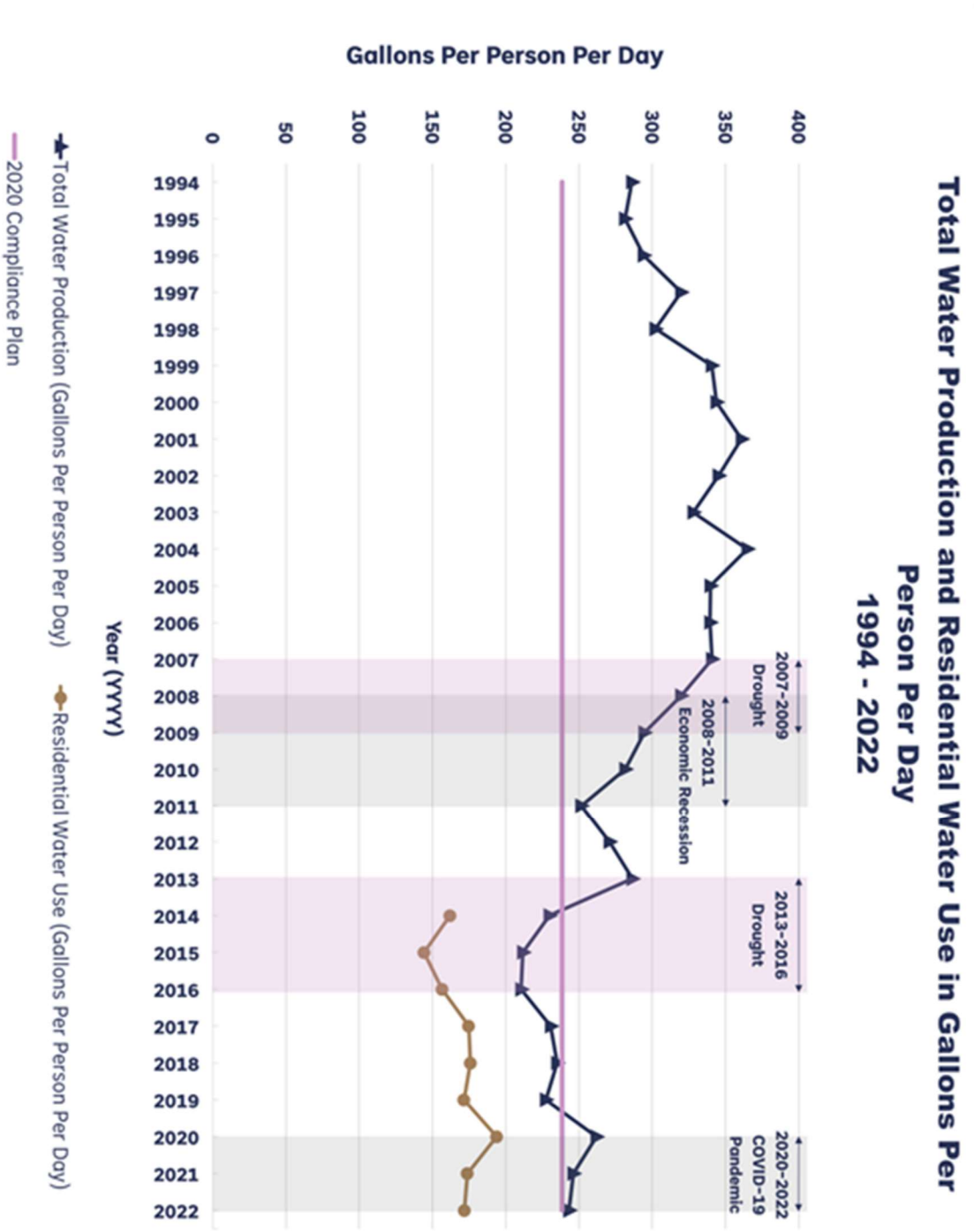


Figure 4-2: Total Production and Residential Use (1994-2022)

4-2. Existing Demands

The project team evaluated available datasets and developed an approach with District input to estimate existing water demands using an analysis of historic billing and production data between 2003 and 2022. Billed consumption data was aggregated to the address level, then grouped by lot type to generate an average gallons-per-day-per-account (gpda) by lot type by year.

Several ranges of years of data were explored alongside weather data and local knowledge to determine a year (or range of years) that would best represent average demand conditions. The 2020-2022 time period was selected for the existing demand input, as it reflects pandemic-related increases to indoor demands, is reflective of average (non-drought) weather conditions, and includes new accounts added during the last three years. The gpda by lot type was then applied to the number of lots with active billing as of 12/31/2022 to generate the existing demands. The average gpda by lot type, number of lots, and the existing demands are shown in Table 4-1 below.

Demands were divided into estimated indoor/outdoor demands based on the persons-per-household (pph) of 2.36 as reported by 2020 U.S. Census data and the observed indoor demands during winter months of 43.08 gpcd. One pph was added to estate lots larger than 12,000 sf, based on observations of higher indoor usage and the assumption that larger homes/lots are likely to contain larger households.

The technique used to estimate indoor demands is known as the minimum-month-method and was applied to all residential lot types as well as miscellaneous public uses lot types. The indoor/outdoor splits for commercial lot types were calculated based on a comparison of commercial irrigation volumes to total commercial volumes, since the commercial irrigation accounts are solely associated with outdoor use.

Additional consideration was given to system losses, which can be calculated as the difference between the production volume and consumption volume (as discussed in greater detail earlier in the following section). The observed system losses, also referred to as Non-

Revenue Water (NRW), averaged 12% from 2020-2022. 12% was added to the total estimated demand to account for system losses. NRW calculations and volumes are shown in Table 4-1 below.

Table 4-1: Existing Demands

Existing Demands by Lot Type								
Lot Type / User Class	**# of Acct**	**PPH**	**GPDA**	**In. GPDA**	**Out. GPDA**	**In. AFY**	**Out. AFY**	**Total AFY**
Residential								
Estate > 12,000 sf[1]	729	3.36	612	145	467	118	382	500
Estate < 12,000 sf[2]	577	2.36	398	102	296	66	192	257
Halfplex[2]	59	2.36	266	102	164	7	11	18
Circle[2]	454	2.36	486	102	384	52	195	8
Cottage[2]	292	2.36	369	102	267	33	87	248
Townhouses & Villas[2]	258	2.36	141	102	39	29	11	121
Murieta Village[2]	181	2.36	124	102	23	21	5	41
Murieta Gardens[2]	78	2.36	225	102	123	9	11	25
Van Vleck Ranch[2]	1	2.36	6,831	102	6,729	0.1	8	20
Residential Subtotal	**2,629**					**335**	**901**	**1,236**
Non-Residential								
Commercial (including commercial irrigation)	81	N/A	2,212	1,149	1,063	104	96	201
Park	5	N/A	7,849	-	7,849	-	44	44
Misc CSD Uses	14	N/A	1,872	712	1,160	11	18	19
Non-Residential Subtotal	**100**					**116**	**159**	**274**
Non-Revenue Water, estimated to be 12% (NRW)						61	145	206
Total Baseline Demands (with NRW)						**512**	**1,204**	**1,716**

[1]Assumed that these lots have 3.36 PPH

[2]Assumed that these lots have 2.36 PPH

[3]PPH multiplied by 43.08 indoor gpcd

Figure 4-3 shows percent of total demand by lot type. The details, demand factors, lot counts, and estimated demands for each residential lot type are shown in Figure 4-4 through Figure 4-10. In these images, parcel boundaries were obtained from the Sacramento County Assessor's office and enhanced to include additional data.

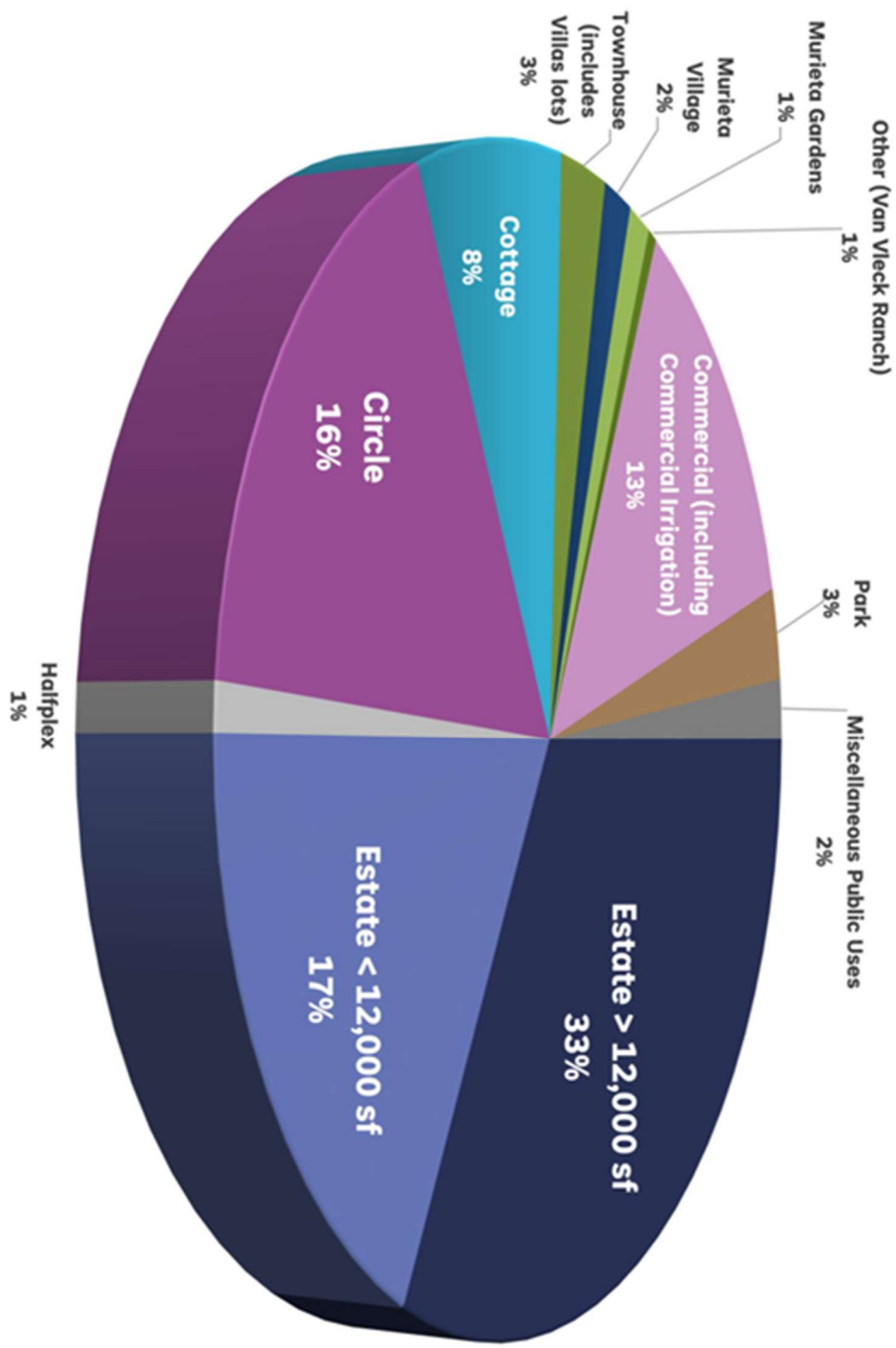
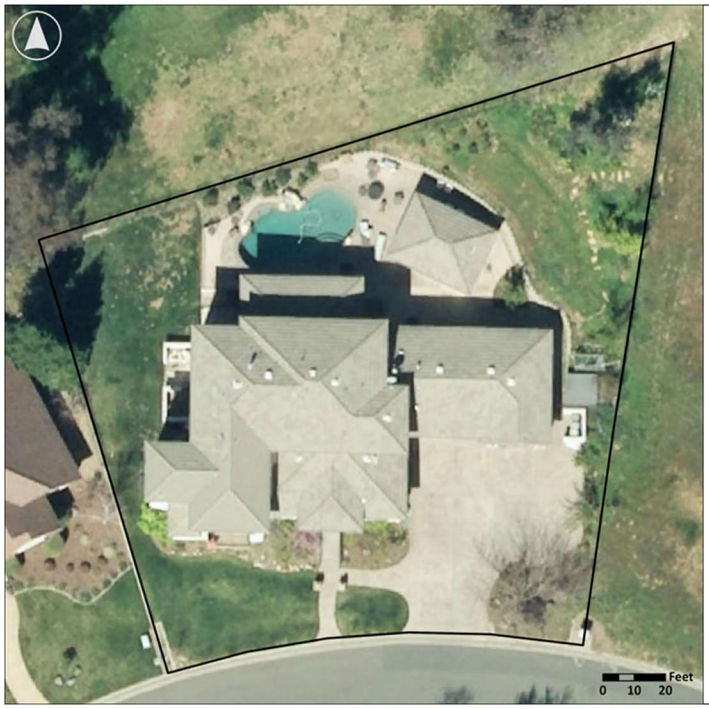


Figure 4-3: Percent of Total Demand by Lot Type



Estate Lots (over 12,000 Sq. Ft.)

- Average lot size: 14,544 square feet
- Demand Factor: 612 Gallons-per-day

Residential Lots	729*
Baseline Demand (Million Gallons per Year)	162.9
Baseline Demand (Acre Feet per Year)	500.0

*Current Active Accounts as of 12/31/2022

Figure 4-4: Estate Lots >12,000 sf Details

Estate Lots (under 12,000 Sq. Ft.)

- Average lot size: 8,161 square feet
- Demand Factor: 398 Gallons-per-day

Residential Lots	577*
Baseline Demand (Million Gallons per Year)	83.9
Baseline Demand (Acre Feet per Year)	257.4

*Current Active Accounts as of 12/31/2022

Figure 4-5: Estate Lots <12,000 sf Details

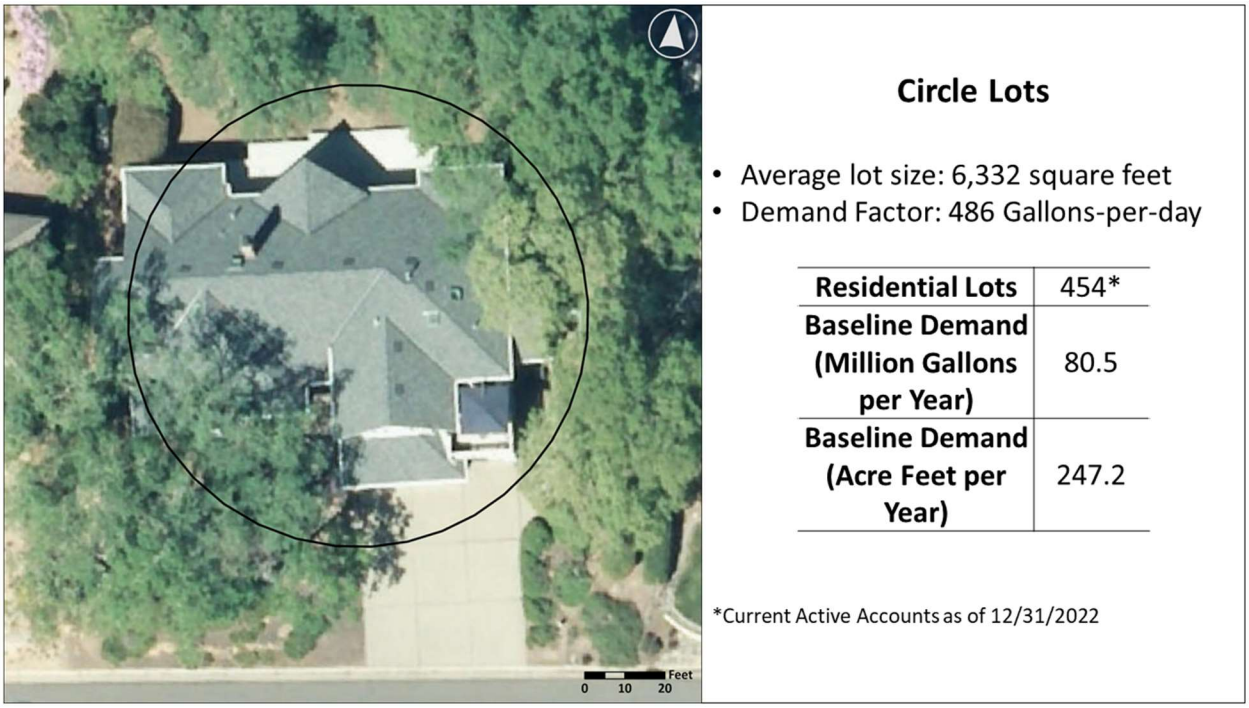


Figure 4-6: Circle Lots Details

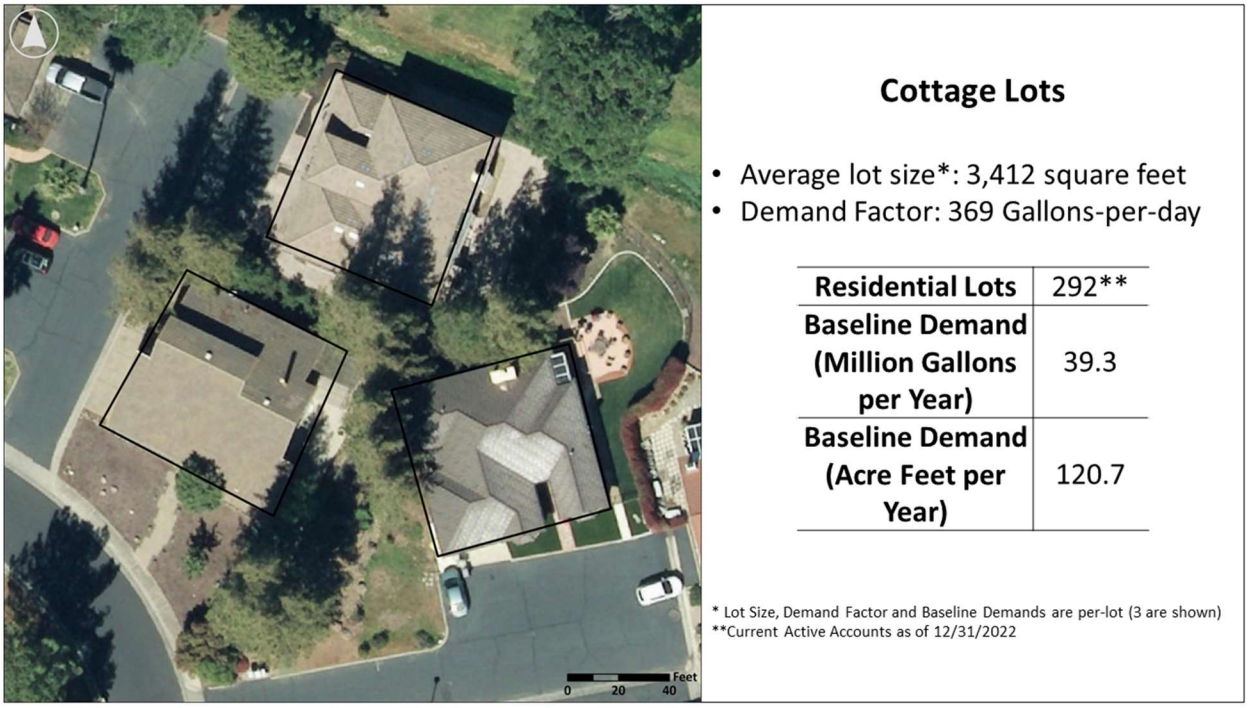
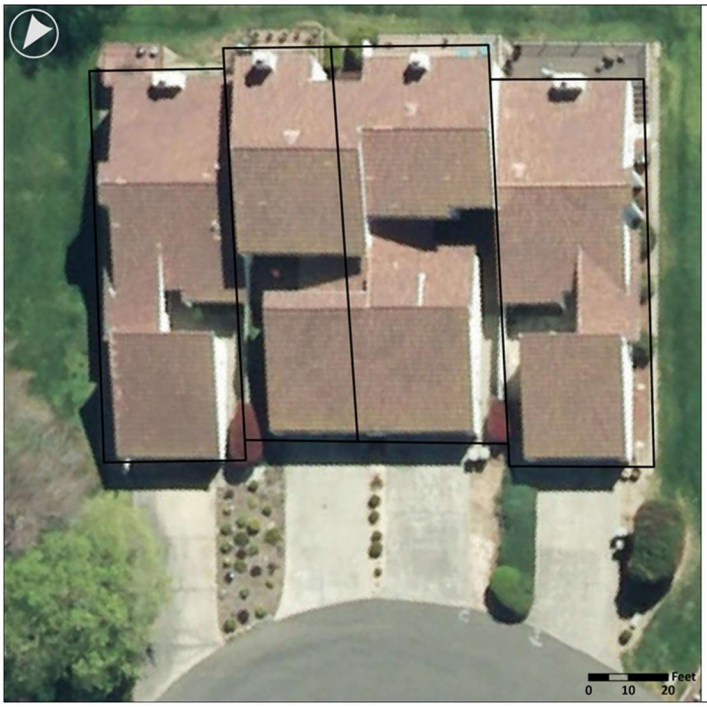


Figure 4-7: Cottage Lots Details



Townhouses/Villas

- Average lot size*: 2,277 square feet
- Demand Factor: 141 Gallons-per-day

Residential Lots	258**
Baseline Demand (Million Gallons per Year)	13.3
Baseline Demand (Acre Feet per Year)	40.8

* Lot Size, Demand Factor and Baseline Demands are per-lot (4 are shown)
**Current Active Accounts as of 12/31/2022

Figure 4-8: Townhomes/Villas Lots Details

Halfplex Lots

- Average lot size*: 5,212 square feet
- Demand Factor: 266 Gallons-per-day

Residential Lots	59**
Baseline Demand (Million Gallons per Year)	5.7
Baseline Demand (Acre Feet per Year)	17.6

* Lot Size, Demand Factor and Baseline Demands are per-lot (2 are shown)
**Current Active Accounts as of 12/31/2022

Figure 4-9: Halfplex Lots Details

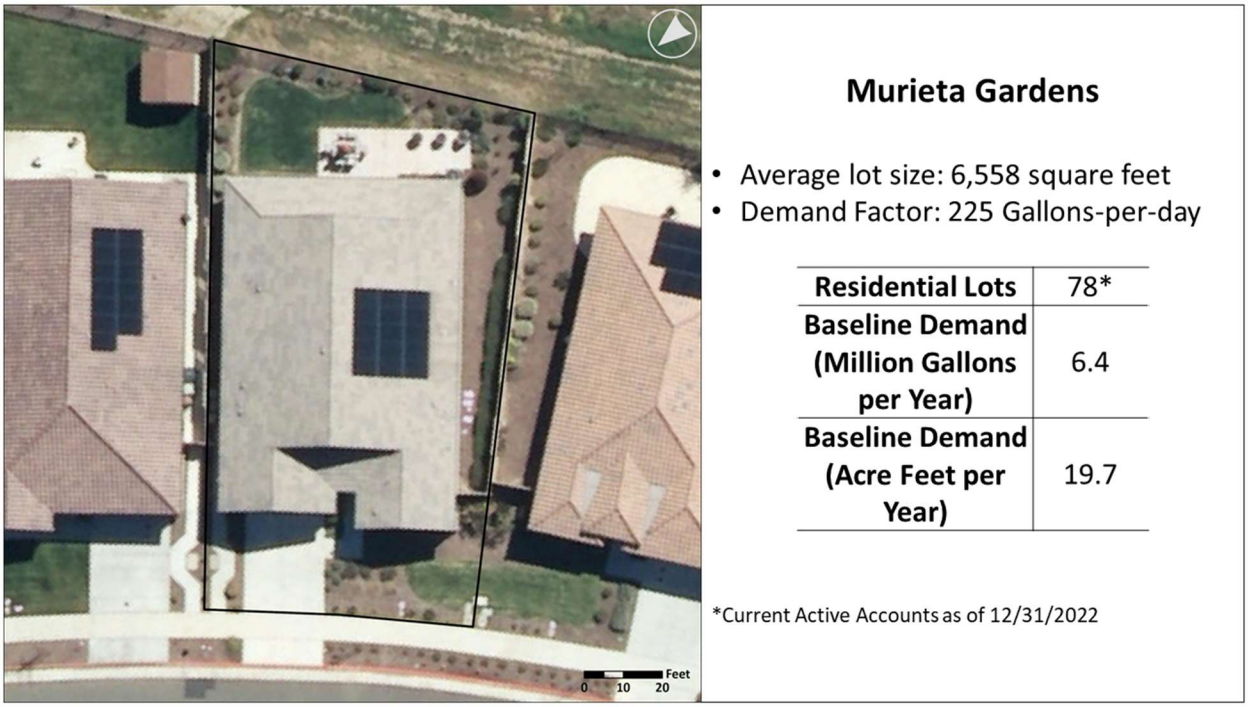


Figure 4-10: Gardens Lots Details

4-2.1. Incorporating Losses into Distribution System Demands

Some water is lost in the distribution system; this loss is referred to as "system losses." This is a natural occurrence in all pressurized pipe networks. Pressurization is especially important for drinking water systems, as it helps them comply with water quality regulations.

System losses are the difference between the produced volume and the consumed volume. System losses are caused by leaks in storage tanks, distribution and transmission mains, or service connections. Calculating system losses is important for water demand estimations because system losses need to be added to customer consumption to accurately represent water use. Additionally, reducing system losses increases the amount of available water without needing to increase the system's supply. An illustration of the District system, including system losses, is shown in Figure 4-11. As mentioned above, an analysis of the historic data led to an estimate of 12% for system losses or NRW. This percentage was added to the demands calculated from customer billing data to estimate the total water production required to meet demands.

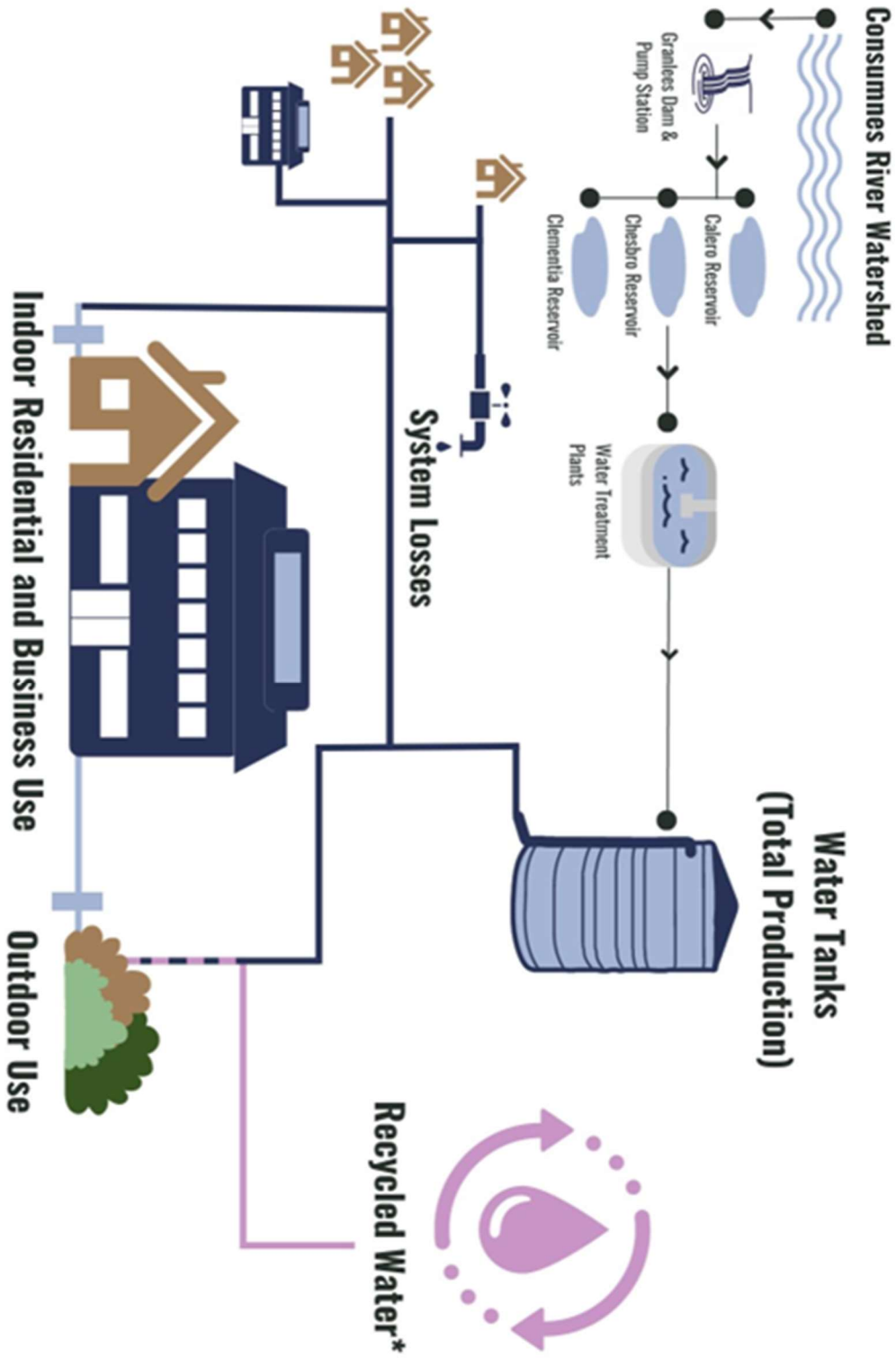


Figure 4-11: System Diagram with NRW

4-3. Future Demands

The purpose of this section is to present detailed information on the demand forecasting approach used in this IWMP and to compare this to the approach used in the 2010 IWMP.

Forecasting a water system's demands is a complex process that involves analyzing the water use with the best available data at the time of analysis. The demand forecasting analysis completed for this IWMP estimates future demands based on existing customer water use and anticipated future development as of September 2023. The development plans in the District have changed over time, as has the anticipated water use associated with these development plans. Figure 4-12 shows the changes in development plans since 2021, including the fact that several previously planned developments have been cancelled at the time of this report.

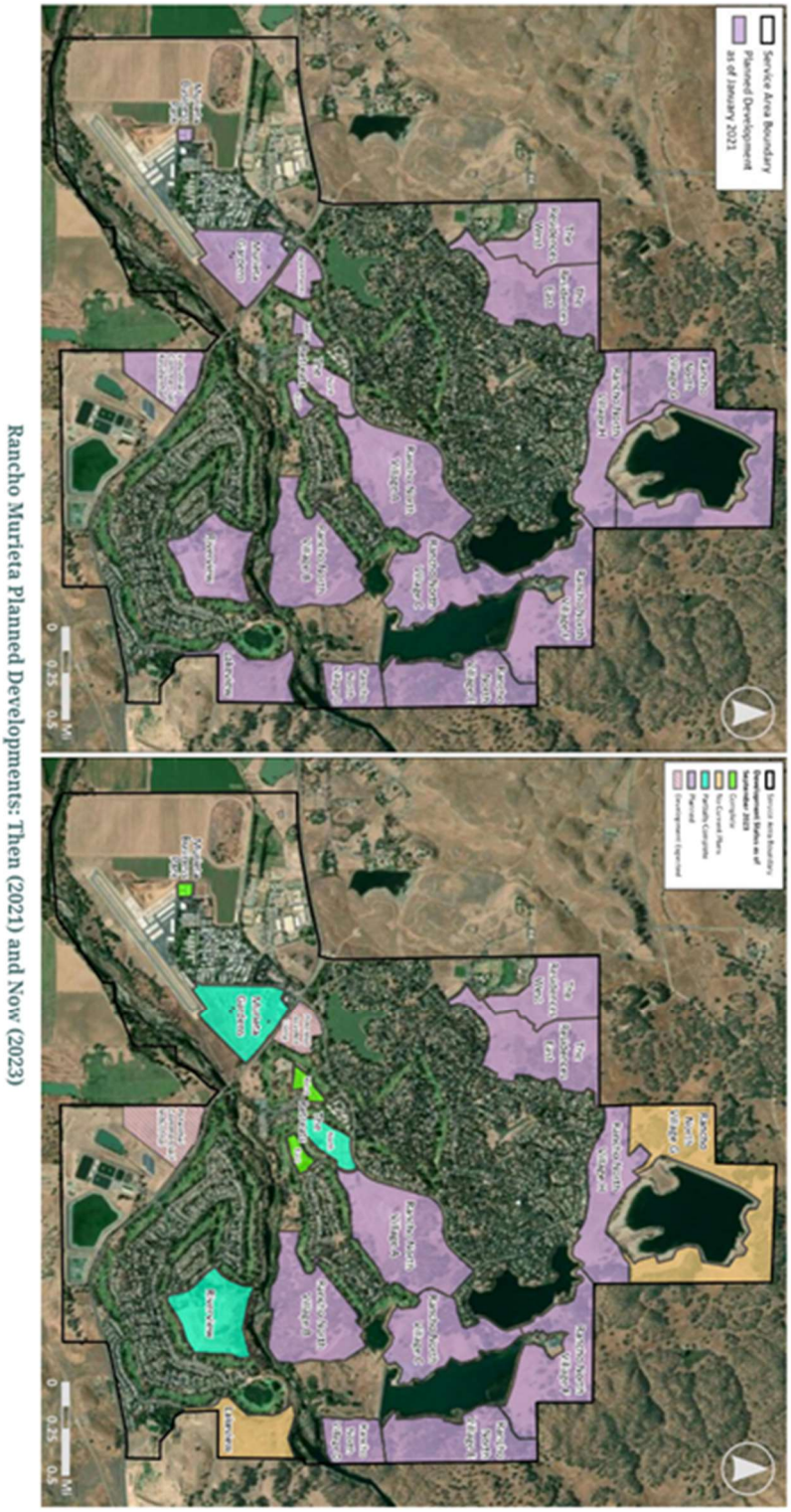


Figure 4-12: Planned Developments in 2021 vs 2023

4-3.1. Parcel-Level Demand Forecast Method

There are numerous methods to prepare demand forecasts for a community. These estimates combine existing uses and future uses of water. One of the most robust and detailed ways to estimate demand is to use the land area of planned future lots, analyzing them by type of land use and expected water use by lot type, otherwise known as demand factors. Future development data is provided to the District as detailed maps from developers (otherwise known as Tentative Maps provided to Sacramento County). Future demand estimates were generated by applying selected gpda values by lot type to the planned parcels.

Future demand estimates were generated using a modified version of the lot-specific gpda approach that was used to generate existing demands. Parcel boundaries from the Sacramento County Assessor's office were analyzed in combination with District billing data to determine the average lot size by lot type.

These average lot sizes were then used to categorize future lots, based on counts and measurements taken from drawings of future development layouts (obtained June-August 2023). For example, if a lot was between 8,500-12,000 sf, it was assigned the "Estate Lots, <12,000 sf" lot type. Demand factors by lot type (the 2020-2022 gpda previously discussed) were then applied to these counts by lot type to generate initial future demand estimates.

Additional categories were used for lots larger than 12,000 sf. Although these demand factors are substantially higher than those observed during the more recent billing data analysis, both the District and the project team believe that a conservative modeling approach is beneficial to ensure the integrity of future water supplies.

Future non-residential demands were estimated on a parcel-by-parcel basis, with research and analysis on each potential development conducted in close consultation with the District based on the latest planning documents (where available) from Sacramento County. Non-residential analysis was completed based on lot size, building square footage, percent building/parking/landscape, and landscape water budgets that model outdoor use. Demand factors representing the average water usage per square foot of building area were obtained and

applied from previous studies specific to each development type. The following studies were used:

- Castaic Lake Water Agency Commercial Demand Factor Study, published in 2016 by MWM.
- Santa Clara Valley Water District Commercial, Institutional, and Industrial (CII) Water Use and Conservation Baseline Study, published in 2008 by CDM.
- Methods for Estimating Commercial, Industrial, and Institutional Water Use, published in 2009 by the University of Florida.

4-3.2. Adjustments for Accessory Dwelling Units, Climate Change, and System Water Losses

Additional consideration was given to potential future increases in demands, including the following categories:

Accessory Dwelling Units. California State Law requires local acceptance of new housing, including ADUs. As a result, small additional living areas in a converted space or studio apartments added to both existing and new parcels were assumed to be possible. ADU demands were modeled based on lot size, with 10% of all larger lots and 2.5% of all smaller lots estimated to add ADUs between 12/31/22 and buildout. ADU demands were assumed to be indoor only, and demands were estimated using an occupancy of 1.5 pph. These estimates were developed with input from the District.

Higher Outdoor Demands. Gradual shifts to higher temperatures due to the impacts of climate change, particularly nighttime temperatures that increase the dew point, are expected to increase landscape watering requirements. Consequently, increased outdoor demands were modeled using a 10% increase in total gpda for both residential and non-residential properties with outdoor use. This approach represents a conservative estimate and is a planning practice that models additional unforeseen contingency demands to help safeguard future water supplies.

Accounting for System Losses. Future system losses were also built into future demand estimates and were modeled using the same 12% NRW estimate determined during the existing

demand analysis. This is slightly higher based on recent data; prior analyses estimated 10% NRW. The higher estimate was deemed appropriate given that aging system infrastructure can lead to higher losses over time, even with proactive loss control practices in place such as active pipe leak detection and repair programs.

4-3.3. Summary of Baseline Total Future Demand Forecast

The projected future demands, calculated as described above, are shown in Table 4-2 below. Figure 4-13 displays a combination of both historic, existing, and future demands, which are estimated to be 3,384 AFY.

Table 4-2: Future Demands

Future Demands by Lot Type							
Lot Type / User Class	**# of Acct**	**GPDA**	**In. GPDA[6]**	**Out. GPDA[7]**	**In. AFY**	**Out. AFY**	**Total AFY**
1: >24,500 sf[1,3]	95	2,431	145	2,286	15	243	259
2: 14,500-24,500[1,3]	248	979	145	834	40	232	272
3: 12,000-14,500[1,3]	221	910	145	765	36	189	225
4: Estate Lots <12,000 (8500-12K sf) [1,4]	235	438	102	336	27	89	115
5: Halfplex (4100 sf) [2,4]	82	293	102	191	7	13	19
6: 6500-8500 sf (Circle) [2,4]	99	534	102	433	11	48	59
7: <6500 sf (Cottage) [2,4]	140	405	102	304	16	48	64
ADU[5]	265	65	65	-	19	-	19
Residential Subtotal	**1,362**				**172**	**862**	**1,033**
Non-Residential							
New Commercial	11	35,240	26,991	8,249	333	102	435
Non-Revenue Water, estimated to be 12% (NRW)					69	131	200
Total New Demands (with NRW)					**573**	**1,095**	**1,668**

[1]Assumed that 10% of these lots will have ADUs

[2]Assumed that 2.5% of these lots will have ADUs

[3]Assumed that these lots have 3.36 PPH

[4]Assumed that these lots have 2.36 PPH

[5]Assumed that ADUs have 1.5 PPH

[6]PPH multiplied by 43.08 indoor gpcd

[7]Includes a 10% contingency above existing for climate change

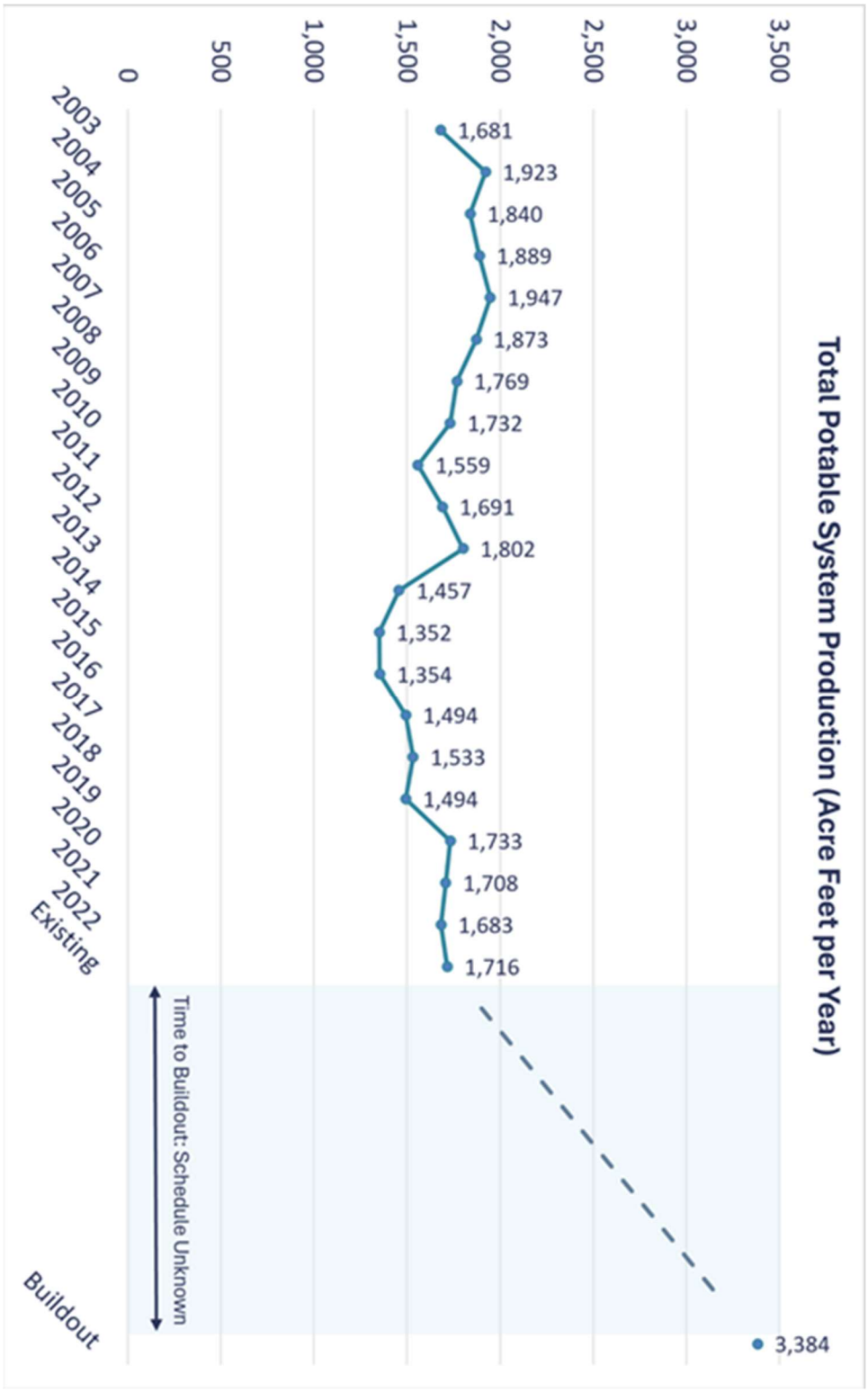


Figure 4-13: Historic, Existing, and Future Demands

4-3.4. Comparison to Legacy Forecast Methods

The following is a comparison of the forecast methods of this IWMP and the legacy forecast method completed in the 2010 IWMP, described in greater detail in Appendix A.

This method results in preliminary findings for existing demands of 1,716 AFY based on lot type demand factors derived from historic billing data and buildout estimate is 3,384 AFY based on the parcel-based lot type analysis described above. The 2010 IWMP previously found nearly identical existing demands of 1,710 AFY and higher buildout estimate of 3,659 AFY without demand curtailment and 2,927 AFY with demand curtailment. There are several factors that explain this difference, listed and described below.

More efficient customer water use habits: The 2010 IWMP was completed before the 20% by 2020 conservation targets were achieved as described above. Analysis of historic and current billing data shows a decrease in per-account water usage over time, likely driven by improvements in fixture efficiency and greater awareness and engagement with water conservation practices such as better water practices and plant selection with lower watering requirements. The effect is present for all lot types, as illustrated in the charts found in Appendix B.

More accurate and detailed inputs: The 2010 IWMP was completed using an Equivalent Dwelling Unit (EDU) basis, which applies a value of 750 gallons-per-day-per-EDU to all estimated current and future EDUs. Estimated future EDU equivalents were developed based on the best available information at the time, which did not include billing data by existing lot types or drawings of future development layouts at the parcel level. The current approach uses the parcel-level demand forecast method described above, which applies specific gpda values to known lot counts and sizes as taken from development drawings.

Future developments cancelled and/or downsized: Several future developments that were anticipated at the time of the 2010 IWMP have since been cancelled or substantially reduced. A comparison between planned developments in 2021 and the present is shown in Figure 4-12 above.

4-3.5. District Financial Services Agreements to Provide Water

Demand forecasts were also evaluated on a per-development basis to allow the District to evaluate how well projected demands align with the District's contractual obligations to serve certain properties that previously funded the District's WTP expansion. In 2013-2014, the District faced the need to expand its WTP and developed a plan for how to finance the design and construction costs. That effort resulted in the negotiation, preparation, and approval of two financing and services agreements (FSAs) among two different groups of District landowners: Financing and Services Agreement dated March 17, 2014 (670 FSA); and the Rancho North Properties and Murieta Gardens Financing and Services Agreement dated May 27, 2014 (Rancho North FSA). The 670 FSA covers the Residences West, Residences East, Retreats, Riverview, and Lakeview properties. The Rancho North FSA covers Rancho North Villages A-H (including the lands around the reservoirs), Murieta Gardens, and other properties. The FSAs generally obligate the District to provide water and sewer service to these properties, subject to the terms of the FSAs.

4-4. Peaking Factors and Diurnal Curve

Water systems do not have uniform demands during each hour of the day. Typically, in a system with mainly domestic users, there are peaks in demand during morning and evening hours, when residents are at home and using water, with corresponding drops in demand during other hours. The pattern of demands throughout the day is called a diurnal flow pattern. A custom diurnal flow pattern was developed by analyzing hourly production data as well as changes in tank levels. Typically, the generic diurnal flow pattern from AWWA is used for system modeling, but the custom pattern developed for the District is a more accurate representation than the generic pattern. The production flows and tank flows were combined to estimate the total water demand during each hour of the given day. The day of highest demand (peak day) was analyzed for the years 2016-2022. The demand during each individual hour was compared to the average demand for that day to calculate a multiplier for each respective hour. The average of these hourly multipliers was taken for the peak days analyzed to formulate an

hourly demand pattern for the model. The highest hourly demand factor of 1.87 occurs at 6:00 AM. This is the peak hour factor (PHF). The diurnal curve is visualized in Figure 4-14.

A maximum day demand (MDD) factor was also determined by review of peak flow data from 2020 to 2022, which was the time period selected by the MWM team to best represent the use patterns in the District. Peak day factors are the ratio of the MDD and the ADD. For this time period, the MDD factor was 1.82. This factor was applied to the average demands as discussed in the previous section to represent a peak day in the model. The ratio of the flow at the peak hour of the peak day to the average flow is 3.40. See Table 4-3 below.

Table 4-3: Peaking Factors

Peaking Factors	
Criteria	**Ratio**
MDD/ADD	1.82
PHF/MDD	1.87
PHF/ADD	3.40

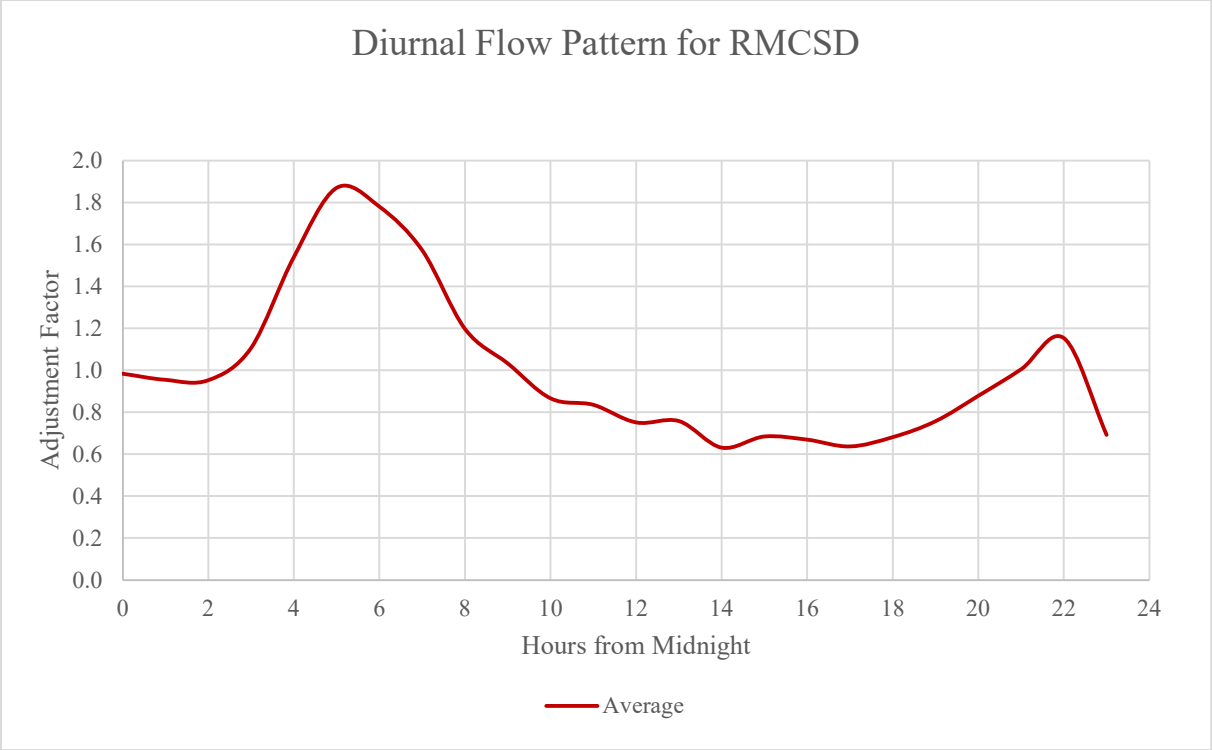


Figure 4-14: Diurnal Curve

4-5. Reclaimed Water System Demands

This section describes the existing and future demands for reclaimed water.

4-5.1. Existing Reclaimed Demands

To develop a basis of reclaimed water demands, a water balance of historic wastewater inflows, rainfall, reclaimed water production, and golf course demand was conducted. See Table 4-4 below.

Table 4-4: Historic Reclaimed Production and Golf Course Demand

Historic Wastewater Flow Data and Golf Course Demands				
Year	**Rainfall (in/year)**	**ADWF[1] (MG/month)**	**Reclaimed Water Sent to Golf Courses (AFY)**	**Total Golf Course Demand (AFY)**
2009	17.52	14.30	451.35	No Data
2010	29.32	13.66	418.18	No Data
2011	20.78	14.03	335.46	No Data
2012	23.08	12.39	416.30	681.37
2013	6.16	12.22	435.25	754.71
2014	22.86	11.01	390.22	708.85
2015	12.86	10.51	329.01	673.75
2016	24.30	10.61	368.58	629.89
2017	31.26	11.30	557.24	718.74
2018	22.92	11.36	475.43	683.68
2019	27.24	11.31	478.24	614.85
2020	12.04	12.54	413.25	673.31
2021	24.54	12.89	328.97	591.81
2022	20.02	11.30	449.96	No Data
average	21.06	12.10	417.67	673.10
minimum	6.16	10.51	328.97	591.81
maximum	31.26	14.30	557.24	754.71

[1]ADWF assumed to be June 1 through September 30.

For the analysis in this IWMP, the average golf course demand will be taken to be the average of the 10-year period analyzed, which is 673 AFY. Peak daily, weekly, and monthly demands will be discussed in Chapter 5.

4-5.2. Future Reclaimed Demands

Developments that are planned to receive reclaimed water are Murieta Gardens, the Retreats, and Villages A, B, and C. Using the demand criteria discussed in the prior sections, the outdoor uses of each of these developments were estimated using the numbers and sizes of lots currently

planned for development and associated demand factors for each. These are summarized in Table 4-5 below.

Table 4-5: New Developments Reclaimed Demand

New Developments Reclaimed Demand			
Development	**Approved # Accounts[1]**	**Outdoor Demands (AFY)**	**Existing/Future Infrastructure**
Murieta Gardens - Residential	78	11	Existing
Murieta Gardens – Commercial[2]	62	203	Existing
The Retreats	82	19	Existing
Village A	215	110	Future
Village B	136	120	Future
Village C	94	83	Future
	Total:	546	

[1]Combined existing and proposed accounts per development.

[2]An analysis was performed of existing commercial accounts and irrigation-only commercial accounts to determine which ones can be served in Murieta Gardens. This was combined with the projected new outdoor commercial demands to find this value.

The total estimated demand for reclaimed water from the proposed areas to be served is 546 AFY. With 673 AFY of golf course demand, this totals 1219 AFY of demand. Van Vleck does not have demand but can allow disposal of up to 215 AFY. This results in a total reclaimed water disposal capacity of 1434 AFY.

CHAPTER 5. System Analysis

5-1. Model Development and Calibration

5-1.1. Model Description

EPANet2.2 was the hydraulic modeling software used for this IWMP. This software performs extended period simulation of hydraulic and water quality behavior in pressurized pipe networks. It tracks the flow of water in each pipe, the pressure at each node, the height of water in each tank, and the concentration of a chemical species throughout the network during a simulation period comprised of multiple time steps. In addition to chemical species, water age and source tracing can also be simulated. EPANet2.2 provides an integrated environment for editing network input data, running hydraulic and water quality simulations, and viewing the results in a variety of formats. These include color-coded network maps, data tables, time series graphs, and contour plots. EPANet 2.2 is a free software developed by the EPA. Therefore, the District can use the models developed in this study to evaluate future developments without needing to maintain costly software licenses.

5-1.2. Physical Data

System geometry was imported from District GIS files into Civil3D and assigned elevations using publicly available LiDAR data. This was exported to the model in the form of links and nodes representing pipes and junctions, respectively. The Adkins team coordinated with District staff for relevant physical data including pump curves, stage-storage curves, pumping plant configuration and valve orientation, set points, and other system control rules.

For the potable water system, existing and proposed pipe networks were assumed to be two feet below the ground surface. For the reclaimed water system, existing and proposed pipe networks were assumed to be three feet below the ground surface.

System controls were determined through correspondence with District staff. These included the WTP pumps controlled by the clearwells at each of the WTPs, the Van Vleck tank levels turning the WTPs on and off, and a pressure node controlling the Rio Oso pumps. The flow

limits for WTP 1 and 2 were determined through review of historic production data. The maximum flow day observed over the past ten years was July 20, 2022. Using Supervisory Control and Data Acquisition (SCADA) data, which reports every minute throughout each day, the average inflow at WTP1 for this peak day was 939.9 GPM and the average inflow at WTP2 was 1047.6 GPM. These are summarized in the tables below. Table 5-1 shows the control set points for the WTP pumps, which are controlled by each plant's clearwell levels, and Table 5-2 shows the set points for Van Vleck and Rio Oso tanks.

Table 5-1: Set points for the WTPs 1 (left) and 2 (right) pumps.

WTP 1 Clearwell		
Clearwell Level (ft)	**Start**	**Stop**
Pump 1	5.5	4.5
Pump 2	6.0	4.6
Pump 3	6.2	4.7
Pump 4	6.4	4.8
Pump 5	6.5	4.9

WTP 2 Clearwell		
Clearwell Level (ft)	**Start**	**Stop**
Pump 1	6.5	3.0
Pump 2	7.5	3.5
Pump 3	8.2	4.0

Table 5-2: Set points for Van Vleck (left) and Rio Oso (right) tank controls.

Van Vleck Controls		
	Start	**Stop**
Van Vleck Tank Level (ft)	25.5	27.5
WTP1 Flow Limit (GPM)	939.9	0
WTP2 Flow Limit (GPM)	1,047.6	0

Rio Oso Pressure Control		
n313[1] pressure (psi)	**Start**	**Stop**
Rio Oso Pump 1	65	81
Rio Oso Pump 2	35	81
[1]Highest node in Rio Oso zone		
Rio Oso Tank Level (ft)	**Open**	**Closed**
Rio Oso Inlet	25	27
[1]n313 is the highest node in the Rio Oso zone		

5-1.3. Demand Nodes

Development of demands is discussed at length in Chapter 4. Average Day Demand (ADD) was the key criteria for model development. ADD by account type for existing and buildout conditions is summarized in Table 5-3.

Table 5-3: Existing and Future Demands by Lot Type

Existing and Future Demands by Lot Type					
Lot Type/User Class	**Current GPDA (Total)[1]**	**Future GPDA (Total)[2]**	**Existing Accounts**	**Planned Accounts**	**Total Accounts @ Buildout**
Residential					
Estate: >24,500 sf	n/a	2,431	n/a	95	95
Estate: 14,500-24,500	n/a	979	n/a	248	248
Estate: 12,000-14,500	n/a	910	n/a	221	221
Estate: > 12,000 sf	612	673	729	n/a	729
Estate: < 12,000 sf	398	438	577	235	812
Halfplex	266	293	59	59	118
Circle	486	534	454	99	553
Cottage	369	405	292	140	432
Townhouse (Villas)	141	155	258	0	258
Murieta Village	124	137	181	0	181
Murieta Gardens	225	248	78	0	78
ADU	0	65	0	265	265
Other	6,831	6,831	1	0	1
		Subtotal	2,629	1,362	3,991
Non-Residential					
Commercial	2,212	2,433	81	0	81
New Commercial	n/a	35,240	0	11	11
Parks	7,849	8,634	5	0	5
Misc. Public Uses	1,872	2,059	14	0	14
		Subtotal	100	11	111

[1]Based on analysis of water usage records. See Chapter 4.

[2]Adds 10% to existing demands for climate change contingency. See Chapter 4.

ArcMap 10.3 was used to process data and group adjacent lots by lot type and water use. This resulted in the existing accounts being condensed into 183 “demand nodes.” This was done to reduce the size and complexity of the model to increase ease of use. For example, if 15 Circle lots were in close proximity to a node in the model, that node would be assigned a demand corresponding to 15 Circle lots. The buildout model has 140 additional demand nodes to represent the future connections.

5-1.4. Sources of Information

Sources of information used to develop the hydraulic model are summarized in Table 5-4.

Table 5-4: Sources of Model Inputs

Sources of Information Used for Model Development		
Data	**Source**	**Purpose**
System GIS maps	District database	Pipe layout, size, and minor losses
Billing and use data	District staff	Demands, peaking factors, and demand node grouping
LiDAR	USGS online database	Elevations
Reservoir bathymetry	Adkins survey	Stage-storage curves for Calero and Chesbro
Reservoir loss equations	MWM	Losses due to seepage and evaporation
Pump curves	District staff	Pump flows and capacity
System set points	District staff	System controls for pumps, tanks, and the WTP
Hydrant testing records	District staff	Model calibration

5-1.5. Model Calibration

Hydrant testing data is a standard method used to calibrate and verify hydraulic software models. A hydrant test involves measuring the static pressure at two adjacent hydrants. One hydrant is then opened and allowed to flow fully. The static pressure at the non-flowing hydrant is measured, and the flow from the open hydrant is estimated with a pitot gauge. In the hydraulic

model, a demand equal to the flow measured is applied at the flowing hydrant, and the pressure drop in the model at the non-flowing hydrant is compared to the value measured in the field.

The District provided hydrant testing data from 2015 to 2023. The Adkins team used this data to calibrate the model. Calibration used both static pressures and the residual pressure at the non-flowing hydrant, iterating the model's hydraulic input parameters (pipe roughness and loss coefficients) until the modeled pressures deviated less than 15% from the in-field static and residual pressures. These are summarized in Figure 5-1.

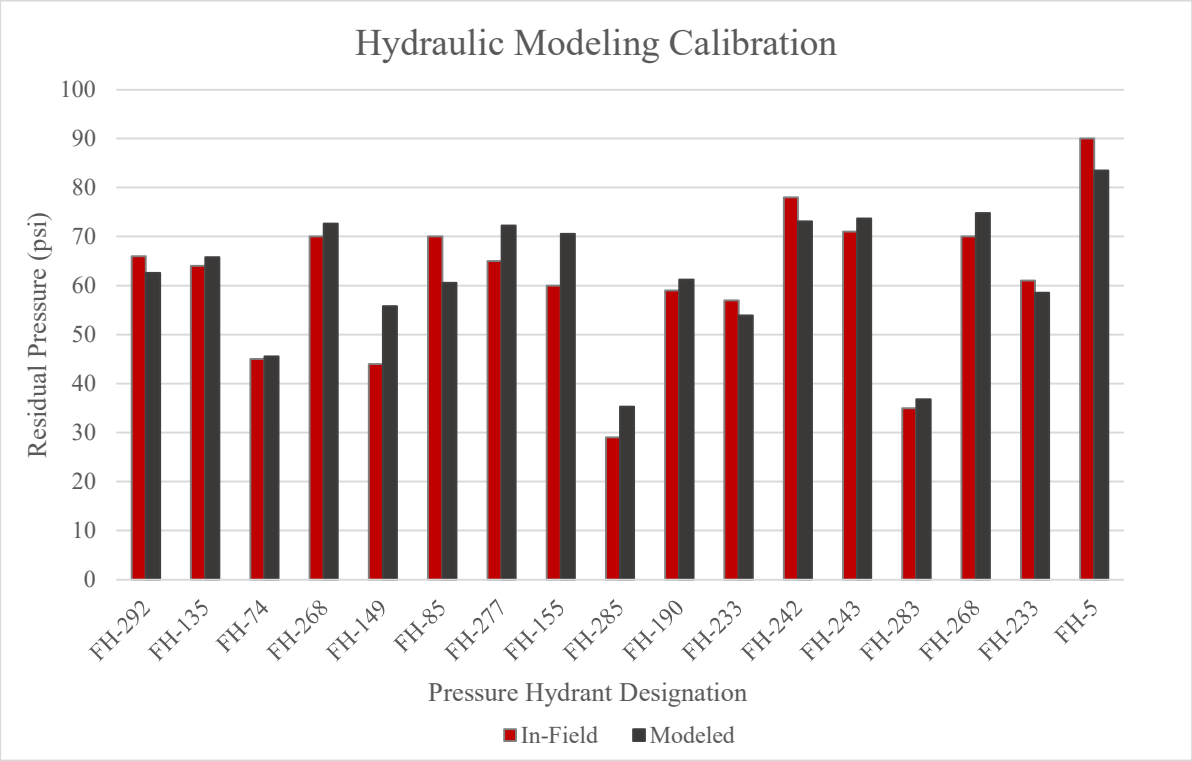


Figure 5-1: Hydrant Data for Calibration

5-1.6. Key Assumptions

- Pipes were assigned Hazen-Williams Coefficients (CHW) of 130-135 with loss coefficients ranging from 0.5 to 1.5 based on number of reducers, elbows, connections, valves, and other fittings. These were iterated during calibration, as discussed above, such that the loss coefficients ranged from 0.7 to 1.2. Some pipes were assigned a CHW of 125 to calibrate the model to the hydrant test data.

- Flow from Chesbro Reservoir into the WTPs was assumed to be limited by the observed peak day flows from 2015-2022. These were relatively consistent across the period, with maximum observed instantaneous flow rates of 1,664 GPM and 1,555 GPM for WTP 1 and 2, respectively. The plants have a larger design capacity than these flow rates, but neither reached that design capacity flow in the peak days reviewed.

5-2. Water Supply Evaluation

5-2.1. Water Supply Model Description

The water supply evaluation was performed using the Shared Vision Planning Model (SVM). The SVM is implemented as an Excel-based tool that allows testing of various supply, demand, and infrastructure scenarios. The tool includes all source data used in the simulated water balance exercise. The simulated water balance is computed in the Excel spreadsheet and is presented in over 60 columns that perform sequential calculations considering District pumping rights based on Cosumnes River flows and many other elements.

The ultimate goal of the modeling effort is to test the District's water supply system for resiliency under a variety of conditions as part of a thorough engineering exercise. These include normal baseline conditions, which reflect the supply and demands in a normal weather year with both current and future demands applied. The model also allows the District to simulate "worst-case" scenarios, based on conditions observed during historic droughts, with the impacts of climate change applied and with elements of the supply system offline. Additionally, the District can simulate potential supply augmentation options such as future expansion of the reclaimed water system and/or new supply wells. Note that the outputs of the model do not represent a predictive forecast that prescribes exactly what the District will do in the future, but rather provide a scenario testing tool to explore potential future conditions and potential options to meet water demands.

Detailed modeling steps were taken to accurately quantify all elements impacting District water supply availability under simulated current and future conditions, including demand

scenarios, hydrology/climate conditions, and reclaimed water availability. Individual elements in the model can be switched on and off, with simulated impacts to water supply availability shown in real time based on selections.

5-2.2. Modeling Components

A comprehensive list of potential scenario inputs were considered during model development as representative of current and future District demands and infrastructure. Model inputs were narrowed down based on data available from the District and other trusted sources. The final selected elements are listed and described in the next sections.

5-2.2.a. Demand Scenario

The Demand Scenario drop-down allows the District to select between current water demands (as of 12/31/2022) and buildout demands as modeled using billed consumption data grouped by lot type to generate an average GPDA by lot type by year. Development of future demand estimates is described in Chapter 4.

5-2.2.b. Hydrology/Climate Scenario

Historic flows were evaluated to select three time periods valuable to investigate for future scenario planning. Three hydrology scenarios were developed: Historic Drought (Nov ’75 to Dec ’78), Recent Drought (Nov ‘13 to Dec ‘16), and Average Recent Year (Nov ‘21 to Oct ’22). See Figure 5-2 for historic Cosumnes River flows.

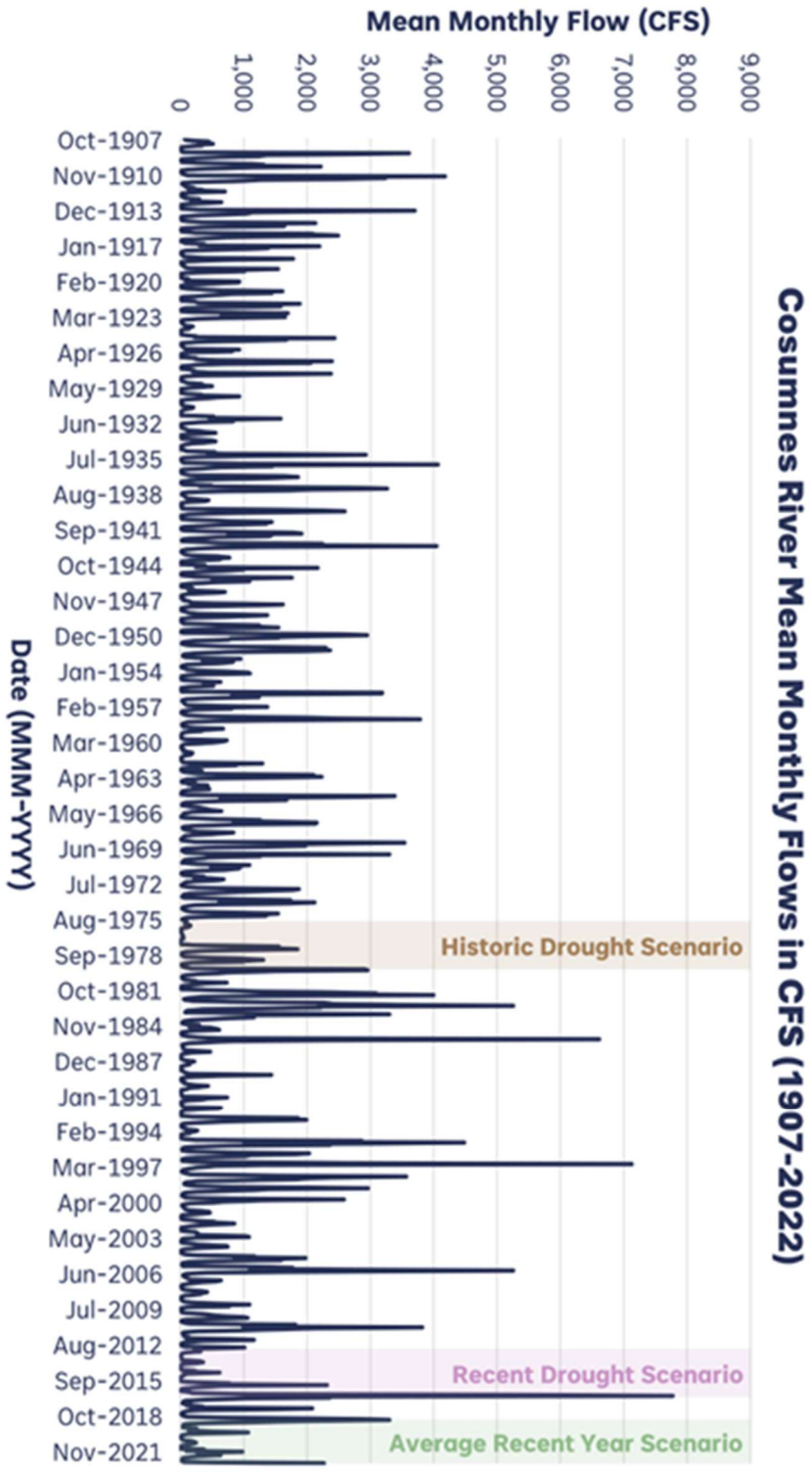


Figure 5-2: Cosumnes River Historic Flows

Figure 5-2 above shows the mean monthly flows for the entire hydrologic record for the Cosumnes River (as of 2023), as well as overlays to show roughly where the hydrology scenarios developed for the model fit into the hydrologic record. Monthly river flow data was obtained from the USGS website. See Figure 5-3 and Figure 5-4 below for smaller scale drafts of the drought scenarios used in the model.

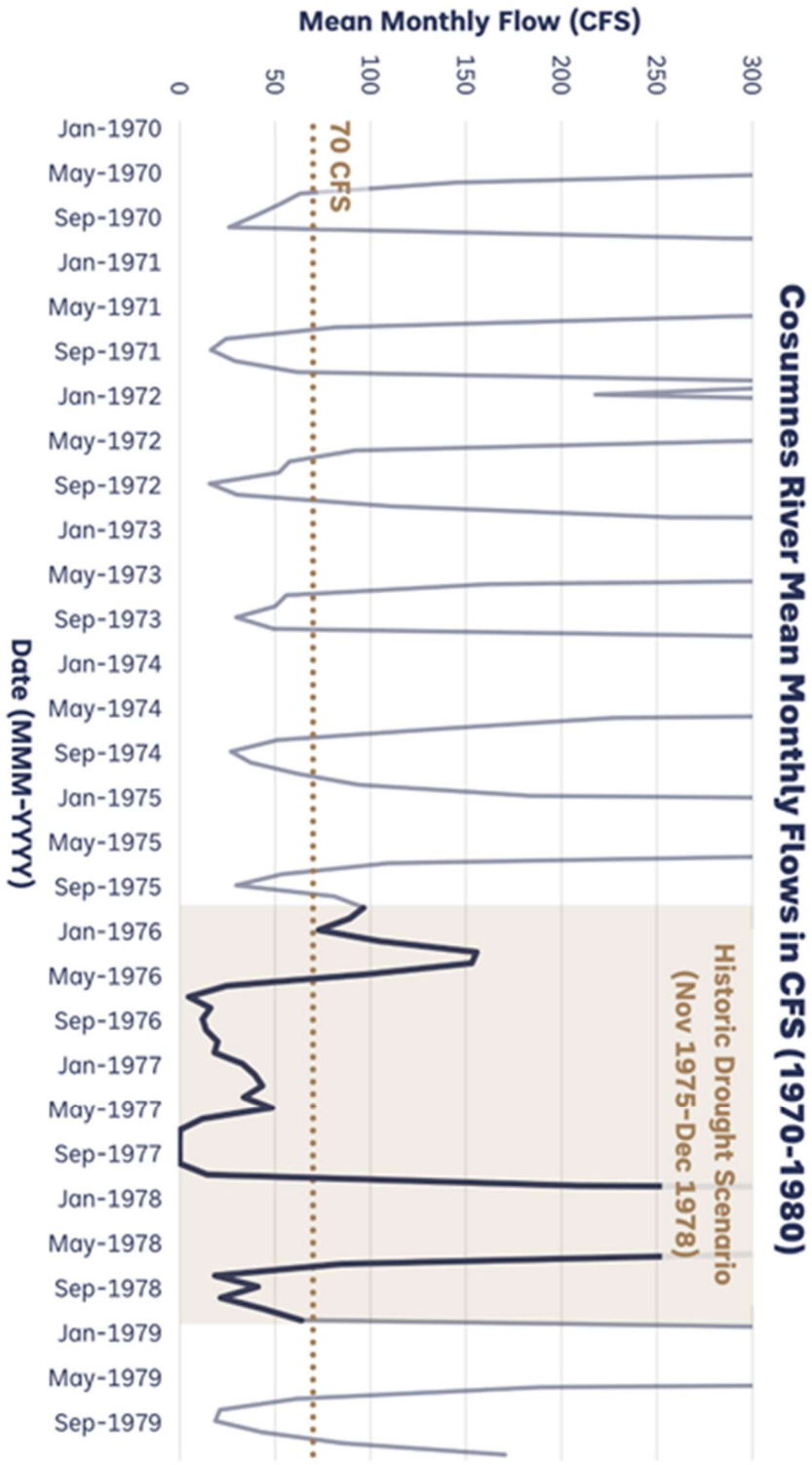


Figure 5-3: Historic Drought River Flows

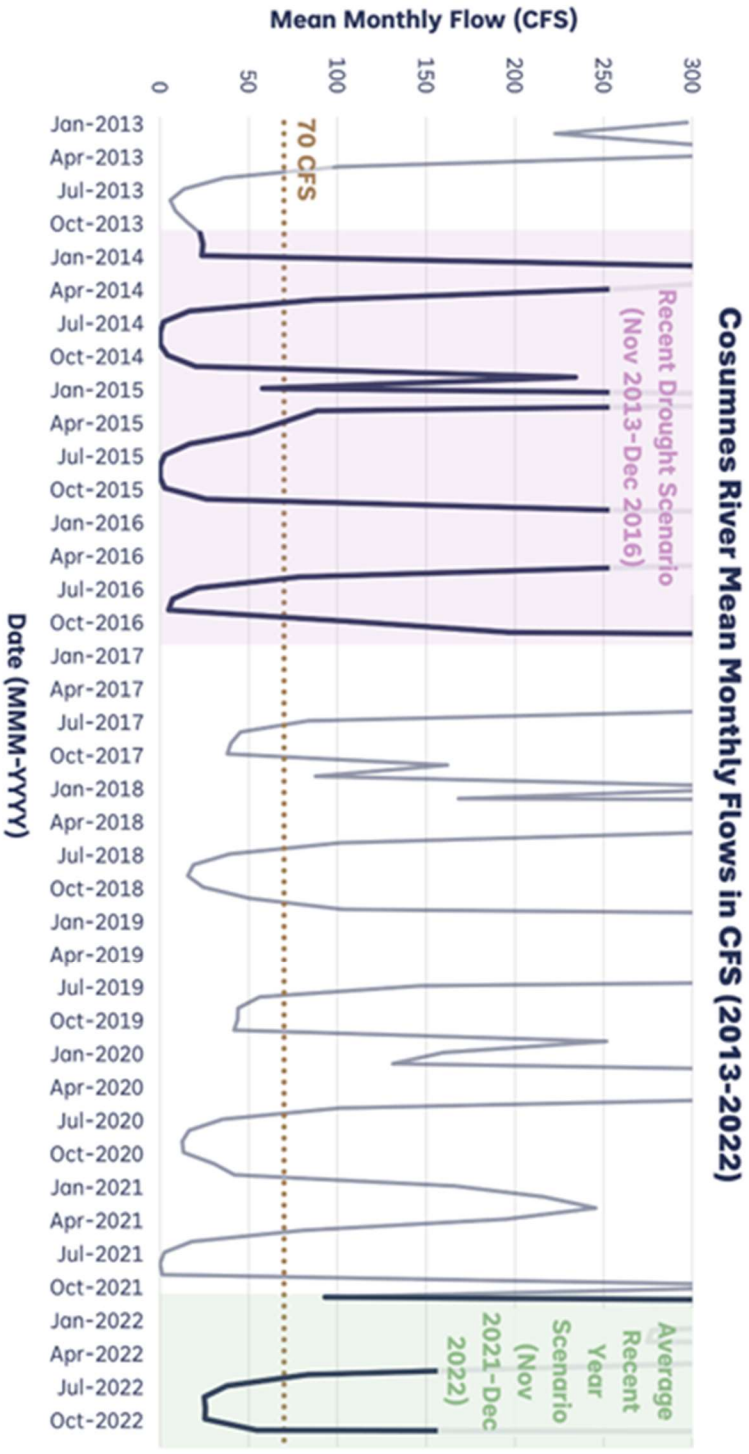


Figure 5-4: Recent Drought River Flows

Figure 5-3 shows the “Historic Drought” hydrology scenario and has a horizontal line at a 70 cfs flow. A 70 cfs flow is the minimum flow required for the District to pump water from the river. From May 1976 to November 1977, river flows did not reach the 70 cfs threshold and no pumping was allowed. This meant that the District went one entire water year without pumping, which stressed the water supply significantly. This is the period of the lowest flows recorded for the Cosumnes River and is used in the model as the "worst-case" scenario for this reason.

Figure 5-4 shows the “Recent Drought” scenario and the “Average Recent Year” scenario used in the model. The “Recent Drought” hydrology scenario coincides with the drought declared by the State of California during 2013-2016. During this period the District was able to pump sufficiently in the November 1 to May 31st pumping window to fill reservoirs enough to meet demands. There were months where flows were below the 70 cfs threshold in non-eligible months. It is important to note that although rainfall runoff has supported river flows in other dry years, the District's water rights have been stressed with curtailment at the direction of the Water Resources Control Board during dry years (such as individual days with curtailed pumping to better support downstream river flows into the Sacramento-San Joaquin Bay Delta). Reservoir supplies from Calero and Chesbro were still adequate to meet current demands in the most recent dry years of 2020-2022. These types of curtailments were considered in this assessment.

The “Average Recent Year” hydrology scenario was chosen after comparing mean and median river monthly flows in the last 10 years to the mean and median monthly flows for the entire Cosumnes River hydrologic record (115 years of data). In the past 10 years, the period of November 2021 to December 2022 most closely resembled the monthly flows of an average year for the Cosumnes River.

Additional climate change impacted versions of each hydrology scenario are also included, simulating future Cosumnes River flows under the influence of climate change. Per discussions with the consulting team (Woodard and Curran) on the American River Basin Study, the Variable Infiltration Capacity modeling results from the 2013 *Analysis of Climate Change Impact on Water Resources in the American River Basin (ARB) Region* study represent the most

current modeling efforts specific to the Cosumnes River and are recommended for use in the this IWMP.

5-2.2.c. Drought Plan and Settings

This modeling component simulates demand reductions based on the District's drought plan, including user-selected percent cutbacks for various drought stages. Drought triggers are also displayed within the model's Usable Supply chart, and are based on percent of monthly available storage based on an average recent supply year (November 2021 to October 2022). The following percentages are used for drought stages within the model:

- Stage 1: Normal. Full storage in reservoirs (>95%);
- Stage 2: Water Alert. 90-95% storage in reservoirs;
- Stage 3: Water Warning. 75-89% storage in reservoirs;
- Stage 4: Water Crisis. 50-74% storage in reservoirs;
- Stage 5: Water Emergency. Less than 50% storage in reservoirs.

The Drought Plan settings are informed by the District's 2012 Water Shortage Contingency Plan (WSCP). Within the engineering assessment performed using the model, demand curtailments have been capped at 30% cutbacks based on cutback percentages deemed feasible by the District and the consulting team. Note that the WSCP outlines options for up to 50% reductions. This is to provide for further emergency demand mitigation measures that may be required from a variety of emergency conditions (e.g., supply interruption due to a main break), and this level of planning to 50% reduction is needed to meet the requirements of California Water Code, Section 10632.

5-2.2.d. Early Pumping

This component simulates early use of the District's 500 HP pump. Due to operational costs, this pump is typically not engaged until later in the pumping season (February) but the District may want to engage as early as November in times of prolonged multi-year drought. Note that in all simulated scenarios the early use of the large pump did not result in substantial improvements

to water supply as filling the reservoirs earlier in the season results in higher seepage and evaporative losses.

5-2.2.e. Supply Reductions

Simulates reduced supply due to the following circumstances:

- Clementia Reservoir is not able to get licensed as a potable water reservoir.
- Calero Reservoir is offline due to any future extraordinary event,
- Raised stop logs (flashboards) are not able to be utilized. Raised stop logs are installed at the top of each reservoir's spillway or crest to increase the effective storage depth of each reservoir by two feet.

Simulating stop log removal, as well as the offline reservoir scenarios, is helpful for the District to simulate supply conditions under various potential operational situations.

5-2.2.f. Supply Augmentation

This component simulates increased water supply under conditions that reduce potable water demands by increasing the availability of reclaimed water for outdoor usage in current and future developments, or by increasing available potable supply by adding a new water supply well or series of wells. The model has four supply augmentation options that can be selected by the user.

1. Serve golf courses using Cosumnes River rather than Reclaimed Water: this option creates additional reclaimed water volume based on an existing water rights permit that would allow the golf courses to shift outdoor irrigation demands from reclaimed to direct Cosumnes River water use from May through October. This permit allows for direct diversion up to about 74 AF per month if river flows are sufficiently high.
2. Use Reclaimed Water for New Connections: simulates a reduction to potable demands if reclaimed water is used for outdoor irrigation in new (planned) developments with planned infrastructure suitable for reclaimed water, as identified by the District and modeled for this IWMP. Planned reclaimed water infrastructure improvements are included in Chapter 6. Developments planned to receive reclaimed

water include Murieta Gardens (which is already dual-plumbed), Retreats, Village A, Village B, and Village C.

3. Use Reclaimed Water for New Connections and Existing Dual-Plumbed Connections: simulates reduction to potable demands if reclaimed water is used for outdoor irrigation in both new (planned) and established dual-plumbed developments with infrastructure suitable for reclaimed water, as identified by the District and modeled for this IWMP. The current reclaimed water system produces about 437 AFY of reclaimed water. At buildout, reclaimed water availability is estimated to be about 987 AFY during an average year, 910 AFY during a recent drought year, and 858 AFY during a historic drought year.

4. Add a New Supply Well: adds additional volume to supply based on selected pumping capacity for new supply well(s). The District pursued potential groundwater wells in the years immediately following the 2010 IWMP. A test well was drilled with the results shown in the 2013 DE Memo previously referenced , which identified the potential for a 370 gpm well within the western portion of the confined alluvial basin within District boundaries. The required well flow rates to meet ADD at the 3,000-connection level and the buildout level are 1,169 gpm and 2,097 gpm, respectively. The model allows the user to select between well flow rates as part of this supply augmentation option.

5-2.3. Resilience Testing

The SVM was applied to test different scenarios and the options available to meet demands under different circumstances. This testing process involved running through different simulations by changing the components selected in the model (such as demand scenario, hydrology scenario, drought settings, potential supply reductions, and supply augmentation options described above) to identify circumstances that resulted in water stress and the options that could alleviate that stress. The results of the model will help the District in planning for system resiliency. Results from the scenarios that are most impactful to planning efforts are presented below. It is important to note that the outputs of the model provide a scenario testing

tool to explore potential future conditions and potential options to meet water demands, and are not a forecast to prescribe an exact course of action for the District. Note that the years presented in the charts are for simulation purposes and do not reflect actual hydrology and demands during past years (for charts labeled 2021-2024, or the "current demand" case) or any estimates on when buildout may occur.

5-2.3.a. Scenario 1: An Average Recent Year

In this scenario, hydrology is for the average recent year, reclaimed water serves planned connections and existing double-plumbed connections, the golf courses are served by raw river water, Clementia reservoir is not used for storage, and no drought plan is followed. See Figure 5-5 for model results under current demands and Figure 5-6 for results under buildout demands.

Figure 5-5: Scenario 1, Existing Demands

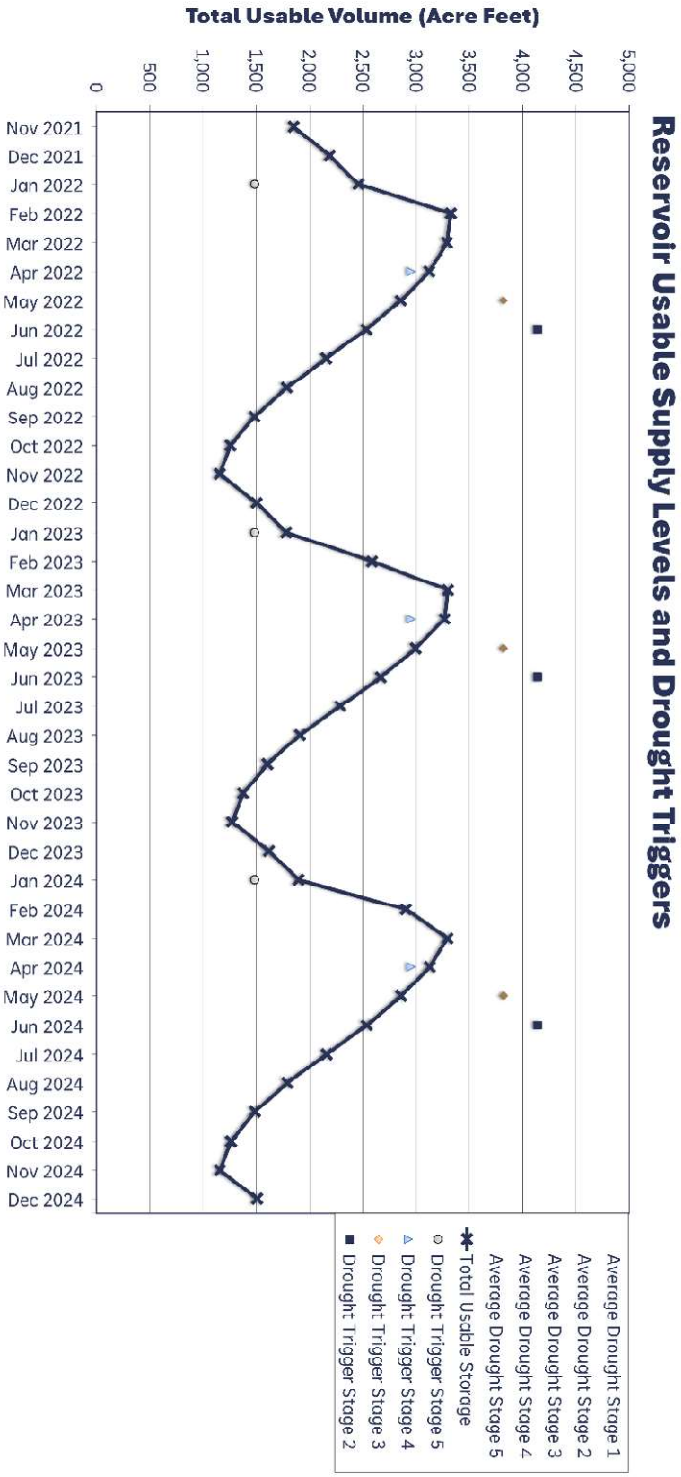


Figure 5-6: Scenario 1, Buildout Demands

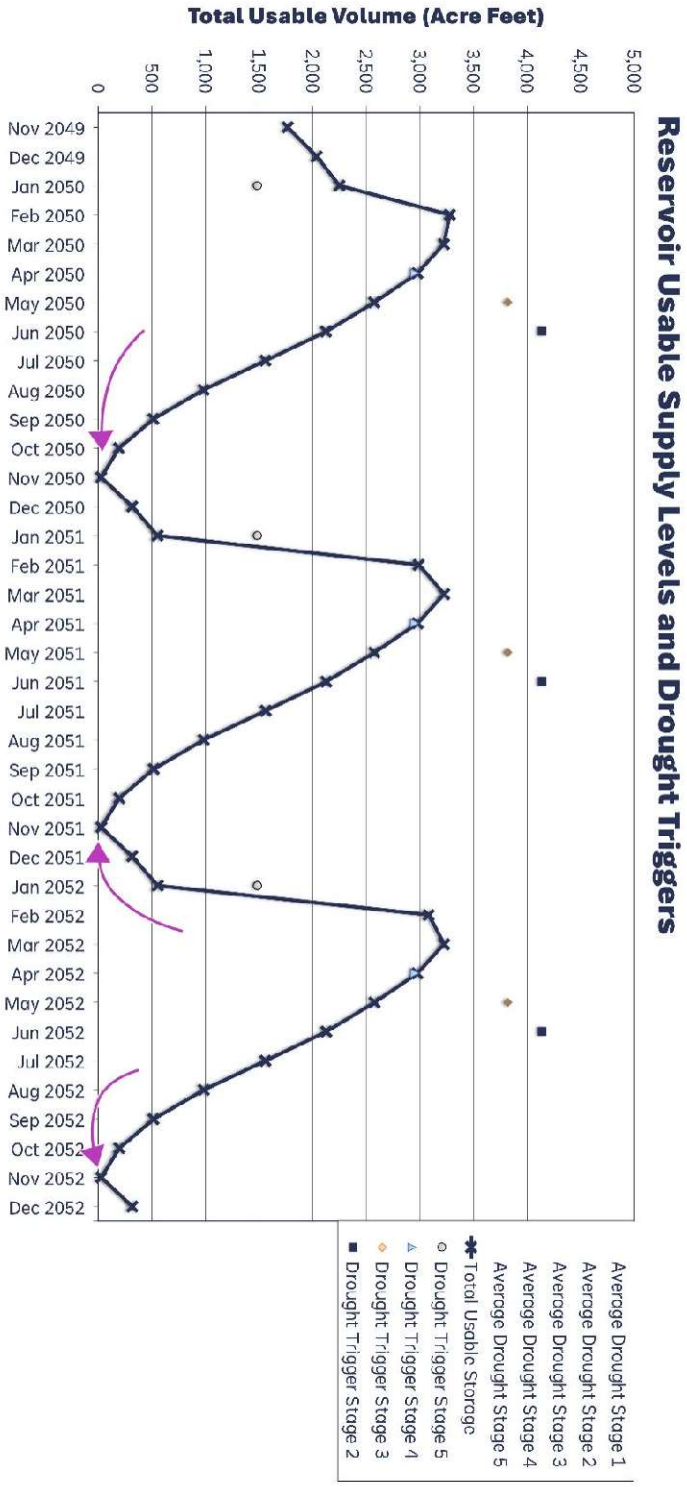


Figure 5-5 shows that there is adequate water to meet current demands under Scenario 1. Figure 5-6 shows that at buildout demand, there is less than 100 AF of remaining supply left under Scenario 1.

5-2.3.b. Scenario 2: Worst-Case Drought Year

In this scenario, hydrology is for the worst-case drought year, reclaimed water serves planned connections and existing double-plumbed connections, the golf courses are served by raw river water, Clementia reservoir is not used for storage, and a drought plan is implemented with 30% cutbacks at Stage 4 and Stage 5. See Figure 5-7 for model results under current demands and Figure 5-8 for results under buildout demands.

Figure 5-7: Scenario 2, Existing Demands

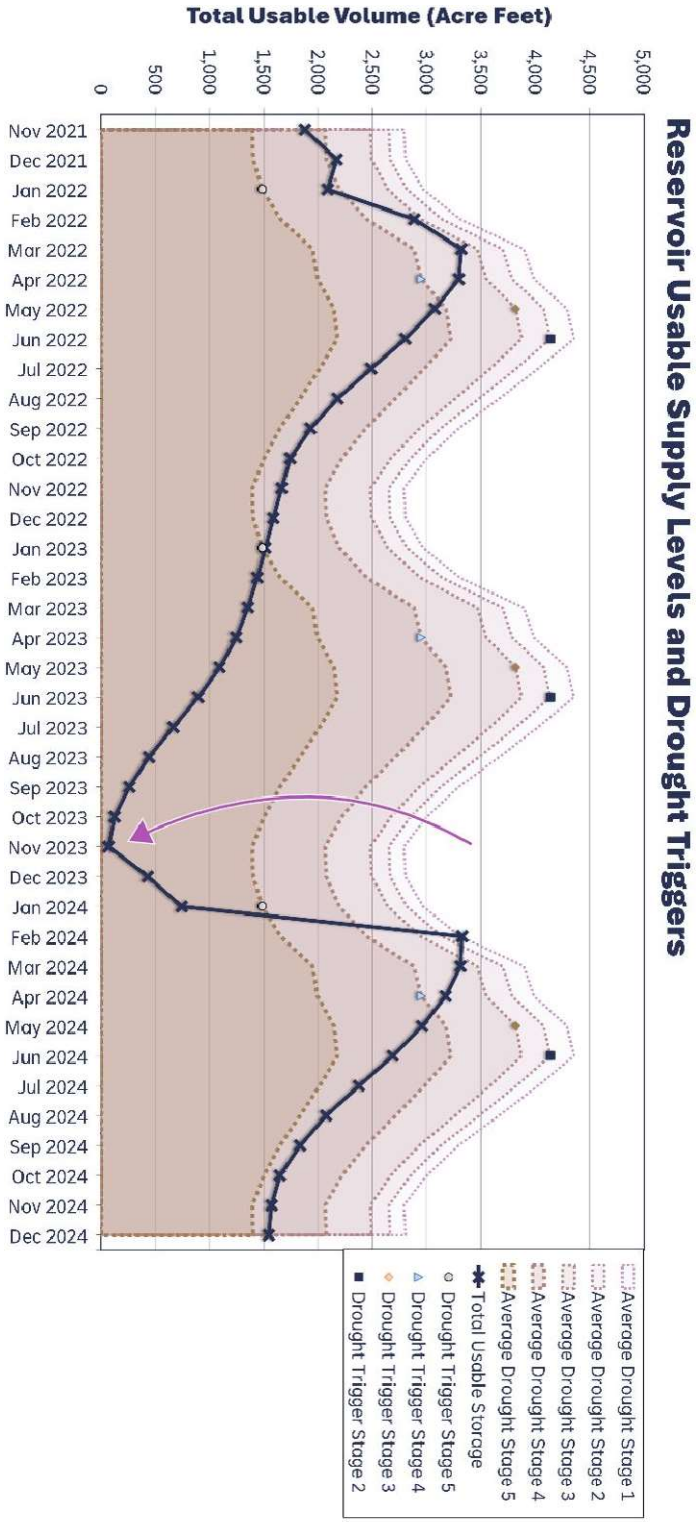


Figure 5-8: Scenario 2, Buildout Demands

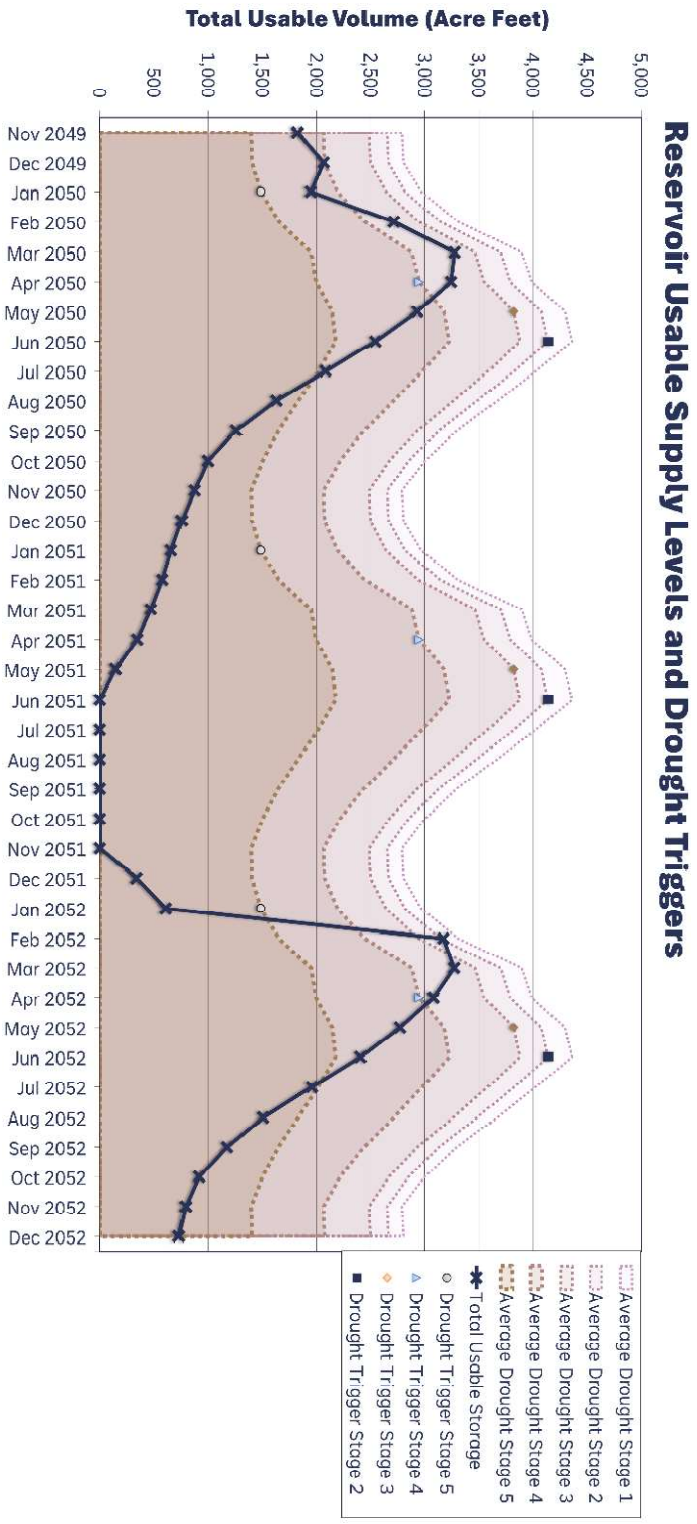
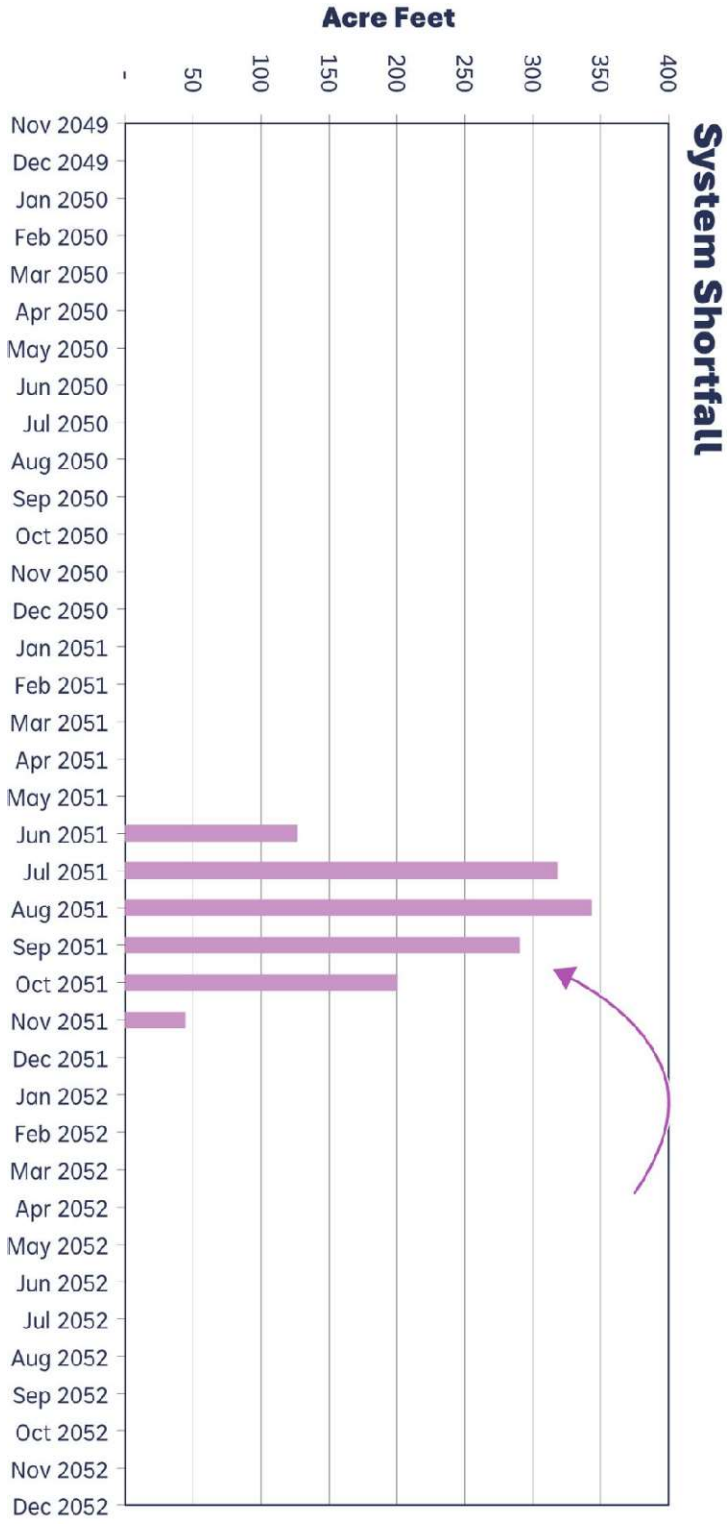


Figure 5-7 shows that at current demand under Scenario 2, the system reaches close to zero supply levels. Figure 5-8 shows that at buildout demand under Scenario 2, the system runs out of water with significant deficits. See Figure 5-9 for the system supply shortfall under this scenario.

Figure 5-9: Scenario 2, Buildout Demands Shortfall



5-2.3.c. Scenario 3: Worst-Case Drought with Supply Augmentation

The previous sections and figures identify water stress in an average year scenario and significant stress in a worst-case drought scenario. This section presents multiple scenarios with different supply augmentation options to address the water stress identified. These scenarios assume that the entire reclaimed water demand discussed in Chapter 4 is being met with reclaimed water, with no domestic water supplementation. Under this scenario, the golf courses would be pumping directly from the river to supplement their allotment of reclaimed water.

Figure 5-10: Scenario 3c, 2000 GPM Well & Clementia Offline

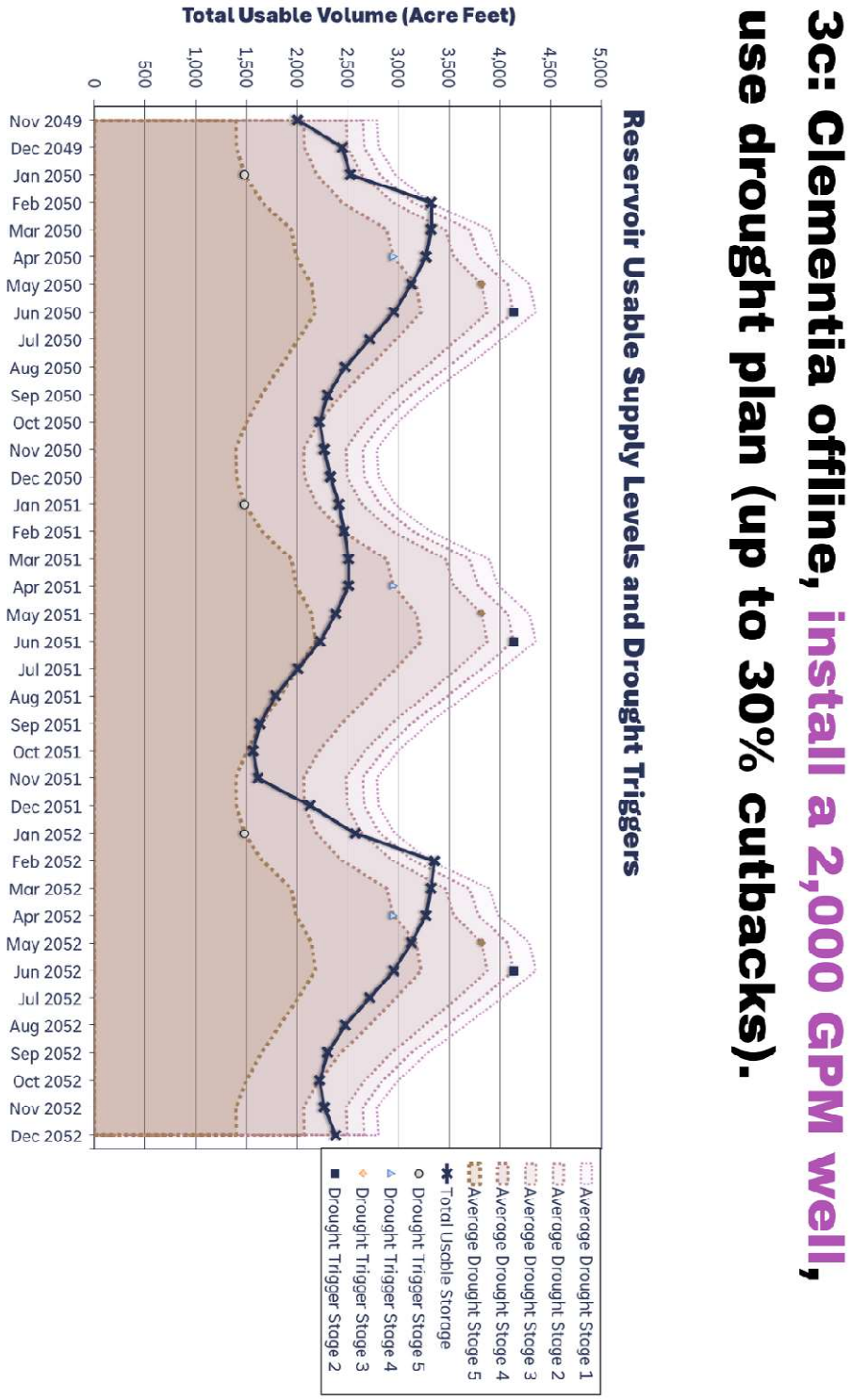


Figure 5-11: Scenario 3d, 1200 GPM Well & Clementia Online

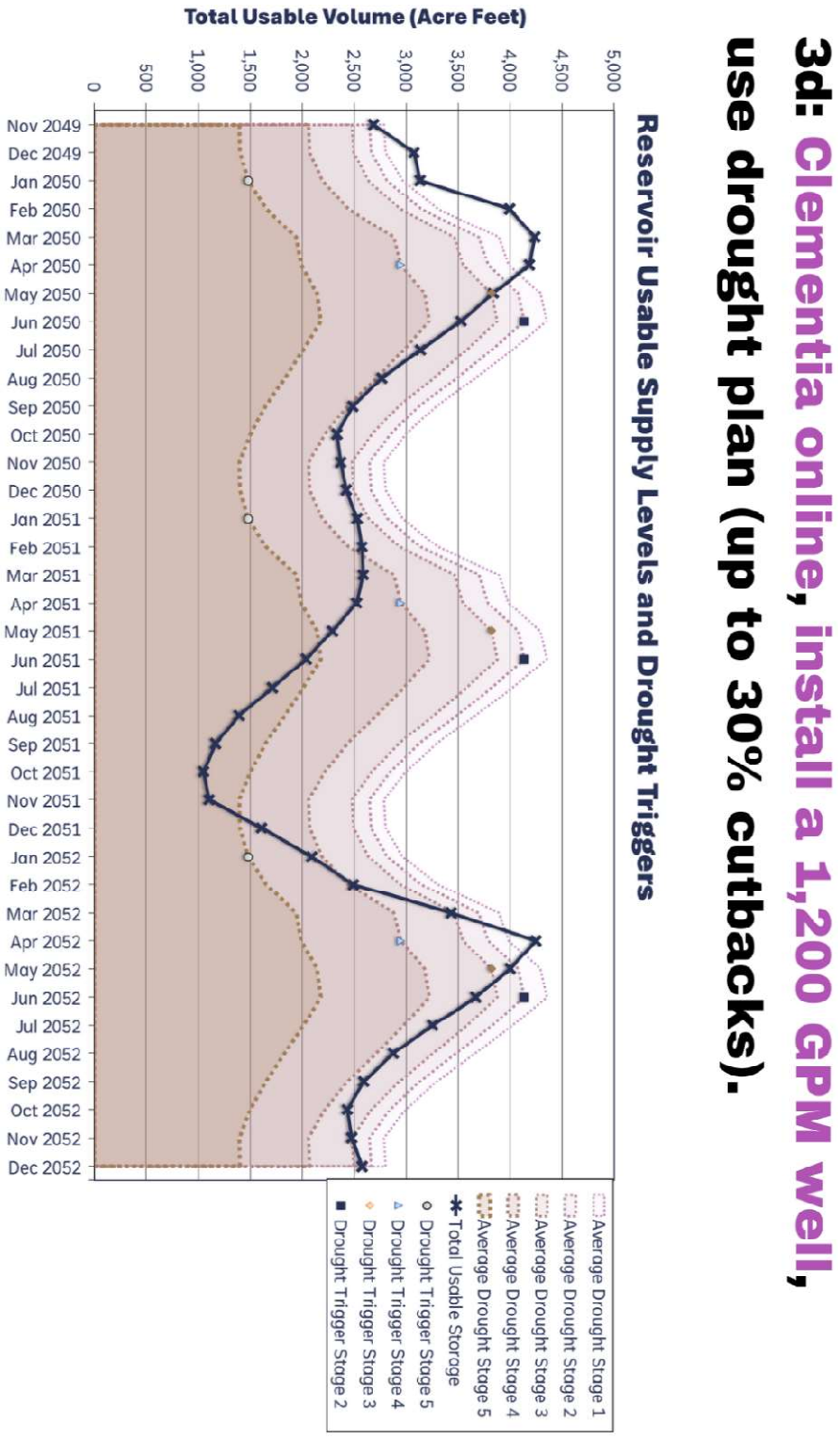


Figure 5-10 shows that installing wells capable of 2,000 gpm along with up to 30% usage cutbacks would meet the system's needs, without the need of Clementia's storage. Figure 5-11 shows that 1,200 gpm of well supply would be sufficient to meet supply needs if Clementia was used for storage.

5-2.3.d. Summary of Augmentation Options

The sections above presented the circumstances under which the water system would undergo stress and the potential solutions identified as part of the engineering assessment. What follows is a more detailed discussion of those solutions (i.e. installing wells, using Clementia for supply, and cutbacks).

- Clementia Option: If Clementia Reservoir is not able to be licensed as a potable water reservoir, there are two alternatives available to use water stored in Clementia Reservoir as part of the system supply. One of these is for the District to apply for a statutory exemption from the California Health and Safety Code. Other reservoirs that have obtained this exemption include Sly Parks Reservoir in El Dorado County, all the reservoirs in San Diego County, the Nacimiento Reservoir in San Luis Obispo County, and Canyon Lake Reservoir in Riverside County to name a few. The other alternative is to apply recreational use restrictions similar to Calero and Chesbro reservoirs.
- Groundwater Option: The option to increase supplies through the installation of wells provides flexibility in supply resources and helps meet the requirements of Senate Bill 552 Back-up supply law. In the scenarios depicted through the figures, the options mention "install a 1,200 GPM well" or install a "2,000 GPM well". This was done to keep the presentation of these options more streamlined, but the term "well" in the options slides refers to what may be a series of wells that need to be installed. See Chapter 6 for a further discussion of groundwater alternatives. Long term groundwater supply augmentation may be explored, including Aquifer Storage and Recovery (ASR) well construction.

- More Curtailment Option: In the extreme "worst-case" drought there is potential to conserve more water to increase supply availability. A 50% reduction in water use would save a total of about 850 AF throughout a drought year (roughly the usable storage volume of Clementia Reservoir which is ~900 AF) . This conservation effort would comprise achieving an indoor use of about 50 GPCD and an outdoor use of about 75 GPCD.

In summary, the scenario testing helped identify circumstances that stress the system at current demand and buildout demand. A summary of options to address the stress to the system is presented in Table 5-5 below.

Table 5-5: Summary of Water Supply Modeling Scenarios

Water Supply Modeling Scenarios								
Scenario	**1a**	**1b**	**1c**	**2a**	**2b**	**3a**	**3c**	**3d**
Hydrology	Avg Year	Avg Year	Avg Year	Hist. Drought	Hist. Drought	Hist. Drought	Hist. Drought	Hist. Drought
Demand	Current	Buildout	Buildout	Current	Buildout	Current	Buildout	Buildout
Use Clementia	No	No	Yes	No	No	No	No	Yes
Additional Source	No	Backup Needed	No	Backup Needed	Necessary	1,200 gpm	2,000 gpm	1,200 gpm
Outcome	Meets demand and SB552	Does not meet SB552	Meets demand and SB552	Does not meet SB552	Significant shortfall	Meets demand and SB552	Meets demand and SB552	Meets demand and SB552

This section demonstrates that for buildout demands and drought scenarios, the District needs to pursue additional supply sources, add Clementia as a storage facility, and/or consider extreme drought curtailment measures in order to ensure adequate water supplies for its customers. Project alternatives are discussed in Chapter 6.

5-3. Water Treatment Evaluation

5-3.1. Treatment Plant Capacity

The two WTPs have a total of 8 pumps (5 at WTP1 and 3 at WTP2) that move water from the clearwells to the two storage tanks. The current production capacity of WTP1 is 4.0 MGD or 2,778 gpm. The current production capacity of WTP2 is 2.0 MGD, or 1,389 gpm. The total WTP capacity is the combination of these two, or 6.0 MGD/4,167 gpm. Water supply pumps are generally designed to meet peak daily demands without having to provide 24-hour service. It is preferrable that pumps operate a maximum of 18 hours per day to allow for maintenance when necessary. The existing pumps at the two WTPs can meet the District's current MDD of 1,936 gpm by operating for just over 11 hours per day. The MDD at buildout is estimated to be 5.5 MGD/3,817 gpm. The combined pumps would need to operate for approximately 22 hours per day during the estimated peak demand at buildout. This suggests that the existing WTP operation and capacity are adequate but may not operate under ideal conditions during peak demand periods at buildout.

5-3.2. Groundwater 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 intertie to a neighboring system. Adkins evaluated the availability of groundwater as a part of the IWMP process and published a Technical Memorandum in May 2024 that summarizes the available literature on the topic. The memo concludes that groundwater is likely available, but any wells constructed are only feasible as backup or emergency sources, not for long-term supply for the District.

At 3,000 connections, the District's ADD was calculated to be 1,169 GPM. This is considered the existing conditions. At buildout conditions, the ADD is 2,097 GPM. Based on prior work by Dunn Environmental (DE) in 2013, test hole locations on the southwest side of the District could produce potential well yields ranging from 150 to 500 GPM. It is assumed that three wells are required to produce 1,169 GPM, and five wells to produce 2,097 GPM. Each of

these wells would need to be drilled to a total well depth of 500 feet to meet the appropriate depth within the water bearing zones. These are discussed as alternatives in Chapter 6.

5-4. Treated Domestic Water Storage Evaluation

Calculating required storage involves estimating the volume of several required storage components. These include operational, equalization, emergency, and fire reserve storage components. Required storage was calculated based on the District's design criteria, discussed in Chapter 3.

5-4.1. Fire Reserve Storage

Reserve storage for fire suppression is usually determined from either the recommendation of the Insurance Services Office Commercial Risk Services, Inc., the recommendation of a city's fire chief, or calculations from the building code. In the District, the largest required fire flow was used to determine the maximum required fire reserve storage. This was determined to be the Murieta Inn and Resorts, and its required fire flow is stated on its plans and designs. This flow is 2,625 GPM for 4 hours, resulting in a maximum theoretical fire reserve storage volume of 630,000 gallons.

5-4.2. Emergency Storage Reserve

Emergency storage is provided to supply water in the event of a power outage, mechanical problem, or other system failure that would interrupt the supply of water. This is intended to cover the amount of time required to repair the faulty component. While emergency storage reserves are not a regulated requirement for municipalities, it is generally reasonable to maintain between one- and three-days' supply of emergency reserves. This amount is decided by the water supplier. These reserves assume that a water supply source will be available to fill the tank within the decided timeframe after a water supply source failure. Maintaining emergency reserves could be critical due to the District's total reliance on WTP pumps to consistently meet water demands. The District has chosen 1.75 days of ADD as the emergency storage criteria. To provide an emergency reserve of 1.75 days of ADD, a total emergency storage volume of 2.68 MG would be required for the existing conditions and 5.28 MG for buildout conditions.

5-4.3. Operational Storage

Operational storage is generally provided to facilitate operation of pumps in a water system. For example, when water system demands result in the water level lowering in a tank, the water level will reach a certain point that triggers activation of pumps to refill the tank. The storage needed to activate water supply sources is typically referred to as operational storage. This zone of operation can be set as desired but is often set to facilitate tank mixing during each pump run cycle. This allows water to cycle through the tank to help maintain water quality by preventing stagnation, while keeping the tank as full as possible. The current zone of operation for each tank is 2.0 feet. Thus, the calculated operational storage volume for existing conditions is 255,858 gallons. The operational storage at buildout is dependent on the size and number of tanks at buildout. For the alternatives suggested in Chapter 6, the operational storage is 450,314 gallons.

5-4.4. Equalization Storage

Equalization storage must be provided to supply the difference between peak hour demand and water supply capacity during high flow periods. The method for estimating the required equalization storage uses the difference between the peak hour flow and the peak water supply availability for a specific number of peak hours per day. The District's current available supply flow of 4,167 GPM from the WTP exceeds the existing peak hourly flow, so the equalization storage for existing conditions is zero. Based on 2.5 peak hours for the estimated buildout peak flow of 7,370 GPM, the required buildout equalization storage would be 532,271 gallons.

5-4.5. Storage Mixing

An important part of storage performance is the ability for water to mix within a storage tank. This prevents water from becoming stagnant in the tank and prevents chlorine residuals from dropping below allowable levels. CCR Title 22, § 64585 (b)(4) states that storage tanks shall be "equipped with at least one separate inlet and outlet…designed to minimize short-circuiting and stagnation of the water flow through the [tank]." Van Vleck currently has a connection that acts as both an inlet and an outlet, receiving water from the WTP and also discharging water to Rio Oso during different demand scenarios. This is not in conformance to the CCR requirement for separate inlet and outlet ports.

5-4.6. Global Storage Evaluation

The design criteria developed in Chapter 3 indicate that the District has storage approximately equal to its requirement. To satisfy the storage design criteria under buildout conditions, the District would need approximately 3.1 MG of additional storage. These values represent the District's overall storage needs, or global storage. A summary of the global storage evaluation is shown below in Figure 5-12. See the following section for a discussion of the District's local storage requirements.

RANCHO MURIETA COMMUNITY SERVICES DISTRICT

WATER SYSTEM GLOBAL STORAGE EVALUATION

	Year 2023	Year 2043
Residential Service Connections	2,629	4,189
Commercial Service Connections	100	119
Design Population [1]	6,939	10,492
Supply		
Average Daily Volume (gpd)[2]	1,531,172	3,019,094
Average Daily Demand (gpcd)	221	288
Average Daily Flow Rate (gpm)	1,063	2,097
Max Daily Volume (gpd)[3]	2,788,264	5,497,769
Max Daily Demand (gpcd)	402	524
Max Daily Flow Rate (gpm)	1,936	3,818
Peak Hourly Flow (PHF)[4] (gpm)	3,913	7,715
Supply Flow Required[6] (gpm)	1,936	3,818
Estimated Available Supply Flow[7] (gpm)	4,167	4,167
Fire Flow[8]		
Residential (gpm)	1,500	1,500
Duration (hrs)	2	2
Murieta Inn (gpm)	2,625	2,625
Duration (hrs)	4	4
Storage		
Equalization Storage (gal)[9]	0	532,271
Operating Storage[5]	255,858	451,853
Fire Reserve (gal)	630,000	630,000
Emergency Reserve (gal)[10]	2,679,551	5,283,414
Total of Storage Components	3,565,409	6,897,537
Existing Storage Capacity	3,837,875	3,837,875
Potential Additional Storage Needed	**-272,466**	**3,059,662**

Notes:

[1]Existing design population by US Decennial Census (2020) with values interpolated using number of households, number of active accounts, and persons per household. Projected population based on number of approved accounts in development phases and persons per household by account/lot type.

[2]Average daily volume determined by billed water use for years 2020-2022, with 12% added for non-revenue water. Year 2043 adds estimated buildout demand, 10% to account for climate change based demand increases, and 12% for non-revenue water.

[3]Peak day factor of 1.82 determined by Max Day Demand and Average Day Demands for 2020-2022.

[4]Max hour, 7/20/2022, from SCADA report. 2043 max hour is the ratio of buildout ADD to existing ADD, multiplied by existing max hour.

[5]Equal to the volume of two feet of storage in the existing tanks and proposed tanks at buildout.

[6]Max daily volume conversion to gallons per minute.

[7]Max capacity of WTP1 and WTP2.

[8]RMCSD follows the California Fire Code on fire flows.

[9]Difference between peak hourly flow and available supply flow for a 2.5-hour period. If the available supply is higher than the peak hourly flow, 0 is used.

[10]42 hours (1.75 days) supply at average daily demand, per Director of Operations.

Abbreviations:

gal = gallons
gpcd = gallons per capita day
gpd = gallons per day
gpm = gallons per minute
hrs = hours

GLOBAL STORAGE EVALUATION for RMCSD

FIGURE 5-12

5-4.7. Local Storage Evaluation

The District's operating rules for the tanks allow Van Vleck to provide operational volumes to Rio Oso, and this happens regularly. However, the District does not want to rely on the tanks' ability to supplement each other, since this would not be possible if the transmission line that connects the tanks and the WTP were to fail. For this reason, storage requirements and capacity were evaluated for both the existing and proposed pressure zones individually. Each zone was evaluated for fire, emergency, operational, and equalization storage requirements. See Figure 5-13 and Figure 5-14 for maps of the existing and buildout pressure zones, respectively.

RANCHO MURIETA EXISTING DISTRIBUTION SYSTEM

700 0 350 700
(FEET)

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

EXISTING WATER LINE

EXISTING FIRE HYDRANT

EXISTING RIO OSO PRESSURE ZONE

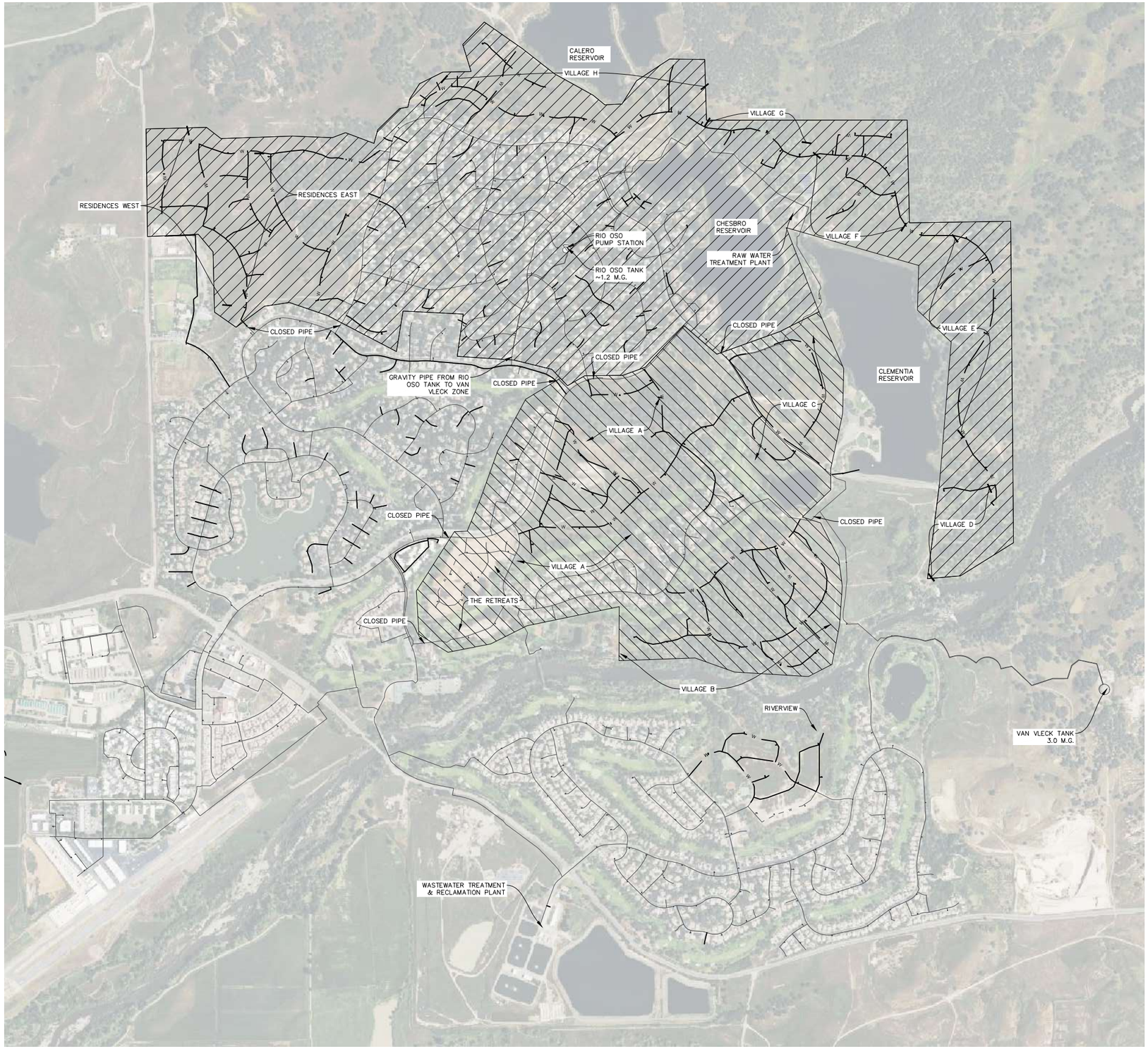
ALL AREAS OUTSIDE OF THE RIO OSO PRESSURE ZONE ARE PART OF THE VAN VLECK GRAVITY ZONE.

ADKINS ENGINEERING & SURVEYING
o / 541.884.4666
w / AdkinsEngineering.com
1481 ESPLANADE AVENUE, KLAMATH FALLS, OR 97601
SERVING S. OREGON & N. CALIFORNIA
ENGINEERING - SURVEYING - PLANNING - TESTING

DISTRIBUTION AND STORAGE ALTERNATIVES FOR RANCHO MURIETA CSD EXISTING PRESSURE ZONES

SCALE	SHOWN
DATE	08/08/2024
DRAWN BY	BAG
PROJ. NO.	3971-02

FIGURE 5-13



RANCHO MURIETA PROPOSED WATER DISTRIBUTION SYSTEM

700 0 350 700
(FEET)

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PRESSURE RELIEF VALVE
- PROPOSED RIO OSO PRESSURE ZONE
- PROPOSED NEW PRESSURE ZONE ABC

ALL AREAS OUTSIDE OF THE RIO OSO PRESSURE ZONE AND PROPOSED NEW PRESSURE ZONE ABC ARE PART OF THE VAN VLECK GRAVITY ZONE.

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DISTRIBUTION AND STORAGE ALTERNATIVES FOR RANCHO MURIETA CSD PROPOSED PRESSURE ZONES

SCALE	SHOWN
DATE	08/08/2024
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PROJ. NO.	3971-02

FIGURE 5-14

5-4.7.a. Local Storage Existing Conditions

Demands for the existing pressure zones were estimated by adding all the demand nodes in the model that are within the respective zones. Of the existing demand, 26% is estimated to be in the Rio Oso pressure zone, and the remaining 74% is estimated to be in the Van Vleck gravity zone. As described above, Van Vleck can supplement water to Rio Oso through the transmission line that connects them both to the WTP, and this happens regularly. Similarly, Rio Oso can provide water to the Van Vleck zone through a gravity discharge line that connects to the Van Vleck zone, if Van Vleck's level drops to Rio Oso's level. The operation of this gravity line from Rio Oso to Van Vleck is managed manually by District staff.

While it can be operationally advantageous to have the tanks supplement each other, the District has indicated that they want to move away from having the storage tanks be dependent on each other for adequate capacity. The current arrangement makes the system's storage capacity vulnerable to catastrophic failure; if the transmission line between the tanks and the WTP were to become compromised, the tanks would not be able to supplement each other. For this reason, the District wants each pressure zone to have all its storage requirements satisfied by a tank that is dedicated to that zone, without reliance on tanks in other zones. While the tanks will still be able to supplement each other unless something fails, this will limit the system's exposure to a catastrophic failure. See Table 5-6 below for an evaluation of the existing pressure zones' separate storage capacity.

Table 5-6: Storage Evaluation by Zone - Existing

Existing Zone Storage Evaluation (gallons)			
Storage Type	**Rio Oso**	**Van Vleck**	**Combined**
[1]Emergency	692,450	1,987,101	2,679,551
[2]Operational	75,197	180,661	255,858
[3]Fire	180,000	630,000	810,000
[4]Equalization	0	0	-
Total Required	947,647	2,797,762	3,745,409
Existing Capacity	1,127,957	2,709,918	3,837,875
Excess/(Deficiency)	180,310	(87,845)	92,466

[1]Emergency storage required was calculated based on 74% of existing demand in Van Vleck zone and 26% in Rio Oso zone. Existing customer demands were increased by 12% for NRW and another 10% for the climate change contingency, per Chapter 4. This value represents 1.75 days of ADD.

[2]Operational storage is the volume of 2 feet in the existing tanks.

[3]Rio Oso only serves residential customers, so 1500 GPM for 2 hours was used for the required fire storage.

[4]Since the available supply flow from the WTP exceeds the existing peak hour flow, no equalization storage is required.

The table shows that under existing conditions and the stated storage criteria, the Van Vleck zone needs 87,845 gallons of additional storage to be self-sufficient.

5-4.7.b. Buildout Conditions

As shown in Figure 5-14 above, Villages A, B, and C, along with the Retreats and some existing residences along De La Cruz Drive are proposed to comprise a new pressure zone, called Zone ABC in this IWMP. Villages D, E, F, G, and H, and the Residences East and West are proposed to be added to the existing Rio Oso pressure zone. Riverview and the new commercial developments anticipated in Murieta Gardens are proposed to be added to the Van Vleck gravity zone. The estimated storage needs for each of the three proposed buildout zones are shown in Table 5-7 below.

Table 5-7: Storage Evaluation by Zone - Buildout

Buildout Zone Storage Evaluation (gallons)				
Storage Type	**Rio Oso**	**Van Vleck**	**New Zone ABC**	**Combined**
[1]Emergency	1,632,352	2,920,429	707,227	5,260,008
[2]Operational	124,839	275,833	51,181	450,314
[3]Fire	180,000	630,000	180,000	990,000
[4]Equalization	165,181	295,524	71,566	532,271
Total Required	2,102,372	4,121,786	1,009,974	7,232,592
Existing Capacity	1,127,957	2,709,918	0	3,837,875
Existing Excess/(Deficiency)	(974,414)	(1,411,868)	(1,009,974)	(3,394,717)
[5]Proposed New Capacity	992,838	1,427,571	1,023,621	3,413,246
Proposed Total Capacity	2,120,795	4,137,489	1,023,621	7,251,121
Excess/(Deficiency)	18,423	15,703	13,648	18,529

[1]Emergency storage required was calculated based on demand estimates for each zone. These account for NRW and the 10% climate change contingency, per Chapter 4. These values represent 1.75 days of ADD.

[2]Operational storage is the volume of 2 feet in the proposed/existing tanks.

[3]Rio Oso and Zone ABC only serve residential customers, so 1,500 GPM for 2 hours was used for the required fire storage.

[4]The total system peak hour flow at buildout is estimated to be 7,715 GPM. The maximum supply flow from the WTP is 4,167 GPM. This results in a global equalization storage requirement of 532,271 gallons. This was prorated to each pressure zone by proportion of total demand.

[5]See Chapter 6 for proposed storage improvement alternatives.

The table above shows that under buildout conditions, the Rio Oso pressure zone requires approximately 1.0 MG of additional storage, the Van Vleck gravity zone requires approximately 1.4 MG of additional storage, and the new Zone ABC requires approximately 1.0 MG of storage. These storage volumes would provide the District with much greater storage resiliency, with each zone able to provide adequate storage for itself, independent of the rest of the system. Figure 5-12 shows the total required storage for the system as 6,895,998 gallons, while the table above shows the total required storage total as 7,251,121 gallons. The reason for this discrepancy is that the global evaluation only considers the maximum fire event for the entire system, which requires 630,000 gallons of storage, while the local evaluation considers the maximum fire in each zone. This results in 360,000 additional gallons being added to the local evaluation, with

Rio Oso and Zone ABC each having their own independent fire storage. The rest of the discrepancy is due to rounding in the demand calculations.

5-5. Water Distribution System Evaluation

5-5.1. Fire Flows

Generally, required fire flows follow the IFC based on building size, intended number of persons occupying the space, construction materials, availability of installed fire suppression technologies such as automatic sprinklers or foams, and more. For the sake of this IWMP, and without conducting a detailed fire engineering analysis which is outside of the scope of this analysis, 1,500 GPM for 2 hours was selected as the criteria for evaluating the distribution system's adequacy for a fire. 1,500 GPM for 2 hours is the fire flow requirement for residential areas. 2,625 GPM for 4 hours, which is the fire flow requirement for the hotel, was selected as the criteria for storage, since this is the largest fire flow required in the District.

Fire nodes were selected throughout the model based on global trends. For example, the residential area along De La Cruz Drive had consistently low pressures (below 30 psi) during normal modeling due to its relatively high elevation in the Van Vleck gravity zone. Four zones were identified as global concerns during normal modeling, and fire nodes were selected in these zones to observe the effects of fire flows. These are summarized in Table 5-8 below and the deficiencies identified were used to develop alternatives for improving the distribution system, discussed in Chapter 6.

Table 5-8: Zones Tested for Fire Flow

Global Areas of Concern During Fire Flows				
General Location	**Nodes Tested**	**Nearby Nodes**	**Pressure (psi)**	**Notes**
Top of De La Cruz Drive	n157 FH-283	FH-284 n157	8.5 6.4	Entire neighborhood drops below 20psi during fire flows.
Guadalupe Drive between Rio Oso and Murieta Parkway	n348	n375	16.6	4 nodes in this area drop below 20 psi during fire flows.
Top of hill near Equestrian Center	n192	n612	9.9	Only this node drops below 20 psi.
Stonehouse Park, Escuela Drive	n421	PARK_02	0.1	Hydrant node and park node drop below 20 psi.

5-5.2. Pressure and Service to Customers

The District currently has two pressure zones that serve the population: the Rio Oso pressure zone and the Van Vleck zone, which is controlled by gravity. Water levels in Van Vleck control the pressures in its zone, and the Rio Oso tank and booster station control the pressures in the Rio Oso zone.

A minimum pressure of 20 psi under all conditions is required by the California Water Resources Control Board (WRCB) Drinking Water Program (DWP) and the 2022 California Plumbing Code recommends a maximum pressure at point of service of no more than 80 psi. Typically, pressures in the distribution system should be higher than the minimum pressure suggested by the DWP and can be slightly higher than the maximum residential pressure suggested by the Plumbing Code. Minimum distribution system pressures are generally considered to be 20 psi at the customer's property line, as suggested by the DWP.

Hydrant testing shows that pressures are regularly above the 80 psi threshold in the Rio Oso pressure zone and in Murieta Gardens, the mixed-use commercial development in the southwestern part of District, which is part of the Van Vleck gravity zone. Pressures that exceed 80 psi can damage water infrastructure and often require pressure regulators installed at the home.

5-5.3. Fire Hydrant Coverage

Hydrant coverage rules come from the 2015 IFC, Appendix C, Sections 101 through 105. The minimum number of adjacent hydrants and maximum spacing for hydrants are dependent on fire flow requirements for individual buildings or areas containing many buildings. Because a detailed fire engineering analysis is outside the scope of this IWMP, it was assumed that all residential buildings require no more than 1,500 GPM fire flows and all commercial and industrial buildings are properly equipped to meet IFC standards regarding additional fire suppression technologies such as automatic sprinklers, foams, and more. Thus, the maximum distance between hydrants is 500 feet, or a 250-foot radius around each hydrant.

The existing District system has some gaps in fire coverage, especially along dead-end lines in the Rio Oso pressure zone. A map of existing fire hydrant coverage is provided in Figure 5-15. Additional hydrants are included in the alternatives developed to improve the existing distribution system, discussed in Chapter 6.

RANCHO MURIETA EXISTING FIRE HYDRANT COVERAGE AND DISTRIBUTION SYSTEM

600 0 300 600
(FEET)

FIRE COVERAGE NOTES

1. FIRE COVERAGE REQUIREMENTS FROM 2015 INTERNATIONAL FIRE CODE (IFC), APPENDIX C, SECTIONS 101 – 105.

1.1. SECTION 102.1 STATES THAT MINIMUM NUMBER OF ADJACENT HYDRANTS AND MAXIMUM SPACING FOR HYDRANTS ARE DEPENDENT ON FIRE-FLOW REQUIREMENTS FOR AN INDIVIDUAL BUILDING OR AREA CONTAINING MANY BUILDINGS.

1.2. THE SPACING DEPICTED HEREIN OPERATES UNDER THE ASSUMPTION THAT RESIDENTIAL BUILDINGS REQUIRE NO MORE THAN 1,750 GPM FIRE-FLOW, AND THAT INDUSTRIAL AREAS ARE PROPERLY EQUIPPED TO MEET IFC STANDARDS REGARDING INSTALLED FIRE SUPPRESSION TECHNOLOGIES.

1.3. SECTION 103.1 STATES THAT FIRE APPARATUS ACCESS ROADS AND PUBLIC STREETS PROVIDING REQUIRED ACCESS TO BUILDINGS IN ACCORDANCE WITH SECTION 503 OF THE INTERNATIONAL FIRE CODE SHALL BE PROVIDED WITH ONE OR MORE FIRE HYDRANTS, AS DETERMINED BY SECTION C102.1.

1.4. SECTION 104.1 STATES THAT EXISTING FIRE HYDRANTS ON PUBLIC STREETS ARE ASSUMED TO BE CONSIDERED AS AVAILABLE TO MEET THE REQUIREMENTS OF SECTIONS C102 AND C103.

2. THUS, THIS MAP DEPICTS HYDRANTS WITH A SPACING REQUIREMENT OF 500-FEET, WITH A MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT OF 250-FEET.

3. THE SPACING DEPICTED SHOULD ONLY BE USED FOR CONCEPTUAL AND PRELIMINARY DESIGNS. ACTUAL SITE CONDITIONS AND FIRE CODE REQUIREMENTS MAY VARY FROM THOSE USED IN THE DEVELOPMENT OF THESE FIGURES.

LEGEND

EXISTING WATER LINE

EXISTING FIRE HYDRANT

EXISTING FIRE HYDRANT COVERAGE RADIUS – 250 FEET

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.

2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
EXISTING FIRE HYDRANT COVERAGE

SCALE	SHOWN
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FIGURE
5-15

5-6. Reclaimed System Evaluation

5-6.1. Supply

The population of Rancho Murieta is expected to increase from 6,939 to 10,492 by the end of the planning horizon in 2044. Reclaimed water supply evaluations developed in this section utilize the District's current and projected wastewater production.

As developed in Chapter 2, the supply for reclaimed water at the District is wastewater returned to the WWRP. The amount of wastewater estimated is based on the indoor residential and commercial uses of the community and historic influent measurements, which include infiltration and inflow (I/I) contributions. Based on analysis of historic inflow data and projections of future production, the existing ADWF is about 0.39 MGD with a buildout estimate of 0.84 MGD.

When determining the amount of potential reclaimed water that can be produced by a WWRP, both user-generated wastewater flows and I/I flows should be considered. Infiltration refers to water other than sanitary wastewater that enters a system through pipes, joints, connections, and manholes that may be defective; inflow refers to water other than sanitary wastewater that enters the system from point sources such as roof, cellar, and foundation drains, manhole covers, connections to storm sewers, and catch basins that are connected to the sewer system. For many systems, I/I coincide with high rainfall events, indicating rainfall induced infiltration (RII) which results from rainfall saturated soils causing infiltration into the collection system through defective joints or pipes.

To estimate the amount of I/I that the WWRP will receive along with normal wastewater inflows, the Average Dry Weather Flow (ADWF) was determined. This flow represents the dry season; therefore, the measured inflows at the WWRP are assumed to include little to no I/I. For the purposes of this IWMP, the months of June through September were considered the dry weather months. Measured inflows during these months were averaged over time and determined to be 11.6 MG/month between 2012 and 2022.

I/I was estimated by comparing the wet weather months to the dry weather months and calculating the difference in flows as a percentage. From 2012-2022, average I/I was estimated to be 9.3% with a median value of 6.5%. 2017, an exceptionally wet year, had an estimated I/I of 29.5%, while the exceptionally dry years of 2013-2014 had a combined estimated I/I of 2.7%. The correlation between I/I and rainfall is an expected phenomenon. For the purposes of this IWMP and estimating future wastewater flows, I/I was estimated to be 9.06%. This will vary on a yearly basis depending on rainfall and other conditions.

Using a water balance approach that considered average rainfall, I/I estimates, pan evaporation, and drought modifiers to adjust these inflows and outflows in the water balance, a series of scenarios were evaluated for the global availability of reclaimed water in terms of annual supplies. These are summarized in Table 5-9 below.

Table 5-9: Reclaimed Water Balance Results

Reclaimed Water Balance Under Planning Scenarios				
Scenario	**Variable(s)[1,2]**	**ADWF (MGD)**	**Total Reclaimed Water Produced (AFY)**	**Max Secondary Storage Volume (AF)**
Base (Existing)	GPCD	0.402	437	277
Buildout, 1[3]	GPCD, Precipitation	0.840	1124	670
Buildout, 2[4]	GPCD, Precipitation	0.840	987	580
Buildout, 3[5]	GPCD, Precipitation	0.840	910	530
Buildout, 4[6]	GPCD, Precipitation	0.840	858	495

[1]Existing GPCD=43.08, Buildout target GPCD=42.0
[2]Average year precipitation, recent drought modifier=62.7%, historic drought modifier=37.3%, 100-year highest precipitation modifier=167%
[3]Buildout conditions under 100-year highest precipitation, assumes I/I=15.13%
[4]Buildout conditions under average precipitation years, assumes I/I=9.06%
[5]Buildout conditions under recent drought years, assumes I/I=5.68%
[6]Buildout conditions under historic drought years, assumes I/I=3.38%

A key takeaway from this table is that buildout conditions during an average year provide just over double the existing wastewater inflows, which in turn results in a greater availability of reclaimed water. Under average precipitation conditions for buildout, the potential amount of reclaimed water produced is 412 AFY greater than the District's obligations to provide 550 AFY to the golf courses. This indicates that the current supply of reclaimed water is adequate to meet the District's current obligations.

5-6.2. Storage

5-6.2.a. Secondary Treated Storage

As mentioned in Chapter 2, the WWRP includes two reservoirs to store secondary treated wastewater during the non-irrigation months. These reservoirs have a combined capacity of 728 AF with two feet of freeboard. Since the inflows to the WWRP are projected to be more than double the existing conditions at buildout, the adequacy of the existing storage capacity for secondary treated wastewater was evaluated. To perform the evaluation, a water balance spreadsheet was created for the WWRP. A water balance considers all inflows and outflows from a closed system, with the difference representing the change in storage. This water balance was based on the water balance included in the report titled *Recycled Water Program Preliminary Design Report*, published by Kennedy/Jenks Consultants in June 2017 (2017 PDR). The water balance in that report was updated to reflect current data and projections and is included in Appendix C. See Table 5-10 for a summary of the inputs for the water balance.

Table 5-10: Reclaimed Water Balance Inputs

Reclaimed Water Balance Under Planning Scenarios	
Inflows	
Wastewater ADWF	0.840 MGD per previous sections
Infiltration and Inflow	Average year = 9.06% of ADWF, multiplied by precipitation modifiers for each scenario (15.13% for 100-year high precip, 3.38% for worst drought)
Direct Pond Precipitation	Product of total pond surface area and precipitation (secondary treatment lagoons, secondary storage ponds, and RMCC irrigation lakes)
Site Runoff	Product of tributary area, runoff coefficient, and precipitation. WWRP = 7.5 acres & 0.9 coefficient, secondary storage reservoirs = 40 acres – current water surface area & 0.9 coefficient, irrigation lakes = 15 acres & 0.2 coefficient
Outflows	
Direct Pond Evaporation	Product of total pond surface area, pan evaporation, and pan evaporation coefficient (secondary treatment lagoons, secondary storage ponds, and RMCC irrigation lakes)
Seepage	Assumed to be negligible due to ponds being lined
Irrigation	Sum of golf courses, proposed new residential/commercial, and Van Vleck. For storage "worst-case" (100-year high precip), assumed 550 AF to GCs, 215 AF to Van Vleck, and remainder to residential/commercial. Monthly percentages of total annual developed from historic GC demands.
Other Data	
Average Precipitation	Historic data provided by the District.
100-Year Precip	Log-Pearson Type III analysis of 112 years of data at station Sacramento 5 ESE and 28 years of data at WWRP site. Both resulted in ~35 inches.
Evaporation	Historic data provided by the District
Areas	As-built data and Google Earth

Using the inputs summarized above, the water balance analysis suggests that the existing secondary treated effluent storage capacity is sufficient for the 100-year highest precipitation. The highest effluent storage anticipated in the 100-year scenario is 670 AF, as shown in Table 5-9 above. The existing storage capacity with two feet of freeboard is 728 AF.

The primary reason that this water balance resulted in different maximum storage requirements from the 2017 PDR is the different estimate for 100-year precipitation. The 2017 PDR estimated 45.3 inches of precipitation in the 100-year scenario. There is no documentation in that report explaining the method used to estimate this value. For this IWMP, the 100-year precipitation amount was estimated using the Log-Pearson Type III method and two separate data sets. The first data set used was the historic precipitation at NOAA Station Sacramento 5 ESE for the past 112 years. The Log-Pearson method estimated 34 inches to be the amount with a 1% exceedance probability. The second data set used was the rainfall data measured at the WWRP site during the past 28 years. The Log-Pearson method estimated 35 inches to be the amount with a 1% exceedance probability. 35 inches of precipitation was used for the water balance scenario, which resulted in much less water being stored during non-irrigation months than the 2017 PDR estimate with 45.3 inches of precipitation. See Appendix D for Log-Pearson calculation results.

5-6.2.b. Tertiary Treated Equalization Storage

In addition to storage of secondary treated effluent, the reclaimed system also has storage of tertiary treated effluent. This allows the system to balance the periods of high irrigation demand and the tertiary treatment plant's production capacity. Currently, this equalization storage is comprised of a 1.8 MG EQ basin, which the tertiary treatment plant discharges into. The NCPS draws from this basin, and the gravity line to Pond 16/17 and the South Course drains from it as well. The adequacy of the existing equalization storage under buildout conditions was analyzed for this IWMP.

The golf course demands were analyzed on several different time steps. See Table 5-11 for these values. The equalization storage required for each time step is shown in Table 5-12, along with the adequacy of the available golf course storage. These available storage values are from the capacities of the golf course irrigation lakes. Bass Lake provides storage for the North Course, and Lakes 10, 11, 16, and 17 provide storage for the South Course.

Table 5-11: Golf Course Max Demands

Golf Course Max Demand Periods						
# of Days	**North Course (GPD)**	**Start Date**	**South Course (GPD)**	**Start Date**	**Both Courses (GPD)**	**Start Date**
1	2,394,749	5/6/2018	1,741,175	7/1/2019	3,042,090	5/6/2018
2	1,409,736	6/30/2015	1,741,175	7/1/2019	2,401,855	7/6/2017
3	1,371,821	7/4/2017	1,416,240	7/1/2019	2,315,777	7/4/2017
7	1,263,712	7/3/2017	1,058,035	7/1/2019	2,208,987	7/3/2017
14	1,138,331	7/3/2017	960,643	6/23/2017	2,014,265	7/3/2017
30	**1,064,625**	7/3/2017	**904,570**	6/23/2017	**1,925,036**	6/29/2017
60	911,688	7/3/2017	799,123	6/14/2017	1,694,514	6/14/2017

Table 5-12: Golf Course Required Equalization

Golf Course Equalization Required[1]			
# of Days	**North Course (gal)**	**South Course (gal)**	**Both Courses (gal)**
1	1,330,124	836,605	1,117,054
2	690,221	1,673,209	953,637
3	921,589	1,535,008	1,172,222
7	1,393,613	1,074,252	1,987,658
14	1,031,888	785,020	1,249,201
Available Storage:	12,121,657	15,559,385	27,681,042
Adequate?	Yes	Yes	Yes

[1]Required equalization is calculated by subtracting the 30-day max GPD from the GPD at each time interval and multiplying that difference by the number of days. This assumes that the 30-day max GPD is available from the supply.

For the analysis below, it is assumed that the WWRP must be able provide the maximum month GPD value to the golf courses. This equates to 1,064,625 GPD to the North Course via the NCPS and 904,570 GPD to the South Course. The irrigation lakes are able to provide equalization storage to balance between these values and the peak single-day demands for the courses, as shown in Table 5-12.

To estimate the reclaimed MDD for the new residential and commercial developments to be served by the WWRP, the ADD was calculated and then multiplied by an outdoor-specific peaking factor. This peaking factor was calculated by removing the estimated indoor demands from the max day and average day, respectively, and re-calculating the ratio of one to the other. This resulted in an outdoor-specific peaking factor of 2.66, as shown in Table 5-13 below. It is reasonable for the outdoor-specific peaking factor to be higher than the general peaking factor of 1.82 because the difference between average and peak outdoor demands is higher due to its seasonal nature, whereas indoor demand typically remains more consistent throughout the year and results in a lower peaking factor.

Table 5-13: Outdoor-Specific Peaking Factor

Outdoor-Specific Peaking Factor		
Usage	**7/20/2022**	**Entire Year Average**
Total Use (gal)	2,882,497	1,335,161
Estimated Indoor Use (gal)[1]	402,009	402,009
Calculated Outdoor Use (gal)	2,480,488	933,152
Peaking Factor	2.66	

[1]Required equalization is calculated Indoor use was estimated using the existing accounts and GPCD estimates developed in Chapter 4.

This allowed for the calculation of a total MDD for the reclaimed system. This is summarized below in Table 5-14.

Table 5-14: ADD and MDD/MMD for Reclaimed Users

ADD and MDD/MMD for Reclaimed Users		
Development	**ADD**	**MDD/MMD**
Village A	98,080	260,713[2]
Village B	106,816	283,936[2]
Village C	73,855	196,319[2]
Retreats	16,521	43,915[2]
Mur. Gar Res	9,633	25,606[2]
Mur. Gar Comm	180,912	480,896[2]
North GC	327,625	1,064,625[1]
South GC	273,236	904,570[1]
Residential/Commercial Subtotal	485,816	1,291,386
Golf Course Subtotal	600,861	1,969,195
Total	1,086,677	3,260,582

[1]This value is the maximum month demand (MMD) from the real demand data analyzed in Table 5-11.

[2]This is calculated by multiplying the ADD by the peaking factor calculated in Table 5-13.

The tables above show the total MDD/MMD for the reclaimed system to be 3.26 MGD. As previously discussed, the current capacity of the WWRP is 2.3 MGD, which is limited by the capacity of the disinfection system. The design capacity of the WWRP is 3.0 MGD. The capacity of the disinfection system is currently in the process of being expanded to match the overall WWRP capacity. After this upgrade is completed, the WWRP will be nearly able to meet the MDD/MMD for the proposed developments to be served in addition to the golf courses.

The last step in determining the storage adequacy is evaluating the daily equalization required. As shown above in Table 5-14, the total estimated MDD for all the reclaimed water users is 3.26 MGD. With the required disinfection upgrades, the production capacity of the WWRP is 3.0 MGD. The required additional supply for the MDD is estimated to be 0.26 MG.

For the golf courses, it is assumed that the WWRP will supply the MMD/MDD over a 16-hour period to refill the storage lakes. This results in a total of 2051 gpm leaving the EQ basin to

the golf courses on the maximum day, 1,109 gpm of which will be supplied by the NCPS to the North Course, and the rest by gravity to Lake 16 and the South Course.

For the residential and commercial users, two different demand scenarios were evaluated. Scenario 1 assumes that the demand will occur during eight hours, presumably during the night when most users irrigate, and that the golf courses do not receive water during those eight hours. The residential/commercial MDD over an eight-hour period results in a flow rate of 2690 gpm. Scenario 2 assumes that demand will occur over 24 hours, and that 16 of those hours will coincide with the filling of the golf course lakes. This scenario respects the fact that the District's Reclaimed Water Standards requires that reclaimed water always be available to its users. The MDD over 24 hours results in a flow rate of 896 gpm. Adding this to the golf course flow results in 2947 gpm leaving the EQ basin, 2005 gpm of which will be pumped by the NCPS (942 gpm goes to the south course by gravity). At 3.0 MGD, the supply flow available from the WWRP is 2083 gpm, resulting in a flow deficit of 864 gpm over the 16-hour period, or 0.83 MG. Therefore, Scenario 1 controls the sizing of the NCPS, with a maximum required flow of 2690 gpm, while Scenario 2 controls the required equalization storage, with a required equalization flow of 864 gpm for 16 hours, or 0.83 MG. The EQ basin has 1.8 MG of storage, so it has sufficient storage to equalize the maximum flows at buildout. Further, the existing 8" potable water line at the WWRP can provide approximately 0.8 MGD during max day while maintaining adequate residual pressures throughout the system. This additional flow can help equalize peak days as well. See Table 5-15 below for a summary of the equalization scenarios.

Table 5-15: Reclaimed High Flow Scenarios

Reclaimed High Flow Scenarios			
Scenario	**GPD**	**GPM**	**NCPS GPM**
Scenario 1: Residential/Commercial Demand spread over 8 hrs	1,291,386	2,690	2,690
Scenario 2: Residential/Commercial Demand spread over 24 hrs plus Golf Course Demand spread over 16 hours	3,260,582	2,947	2,005

5-6.3. Distribution

The NCPS has two vertical turbine pumps, each capable of delivering 1062 gpm at 323 feet of head. At buildout, the highest anticipated flow through the pump station is 2690 gpm, as shown in Table 5-15. Therefore, the current pump station is not sufficient to deliver the required flows at buildout.

5-6.3.a. North Course Transmission Pipeline

As described in Chapter 2, the transmission line from the NCPS to Bass Lake consists of some 12" ACP and some 8" ACP. See Figure 2-17 for a map of the existing system. The existing pipeline reduces to 8" after the branch to Murieta Gardens. Therefore, the pipeline beyond that point is responsible for carrying flows to Villages A, B, C, the Retreats, and the North Course. The estimated MDD for Villages A, B, C, and the Retreats is 784,884 gallons, which equates to 1635 gpm over an 8-hour irrigation period. In the existing 8" pipeline, this would result in a velocity of 10.4 fps and excessive head loss. Further, the existing ACP pipe is not able to handle the high operating pressures anticipated in the system. Therefore, the pipe needs to be replaced with a larger diameter PVC pipe.

CHAPTER 6. Improvement Alternatives

This chapter presents water system improvement alternatives, capital cost estimates, project phasing, and implementation considerations. As a part of implementation, the District should include capital improvements from this IWMP in its overall capital planning efforts. The results of the overall capital improvement planning will allow the District to appropriately update its user rates and developer charges. Detailed cost estimates for the alternatives are included in Appendix E.

6-1. Overview

Figure ES-1-1 shows water system improvement alternatives. Alternatives include new wells, pipelines, tanks, pump stations, reclaimed water treatment improvements, and new operational practices. The alternatives are based on water system analyses described in Chapter 5 and the performance objectives in Chapter 3.

Alternatives are summarized in a Capital Improvement Program (CIP). The CIP includes the costs of improvements required for all major facilities, including improvements to existing pipelines. The CIP does not include the cost of new pipeline extensions to areas that are currently undeveloped and not served by an existing pipeline. It is assumed that these facilities would be constructed by developers as a part of the new developments. However, major pipeline extensions are described in this section for planning purposes. Developers may also be required to contribute to the cost for new water production, storage, and pumping facilities as required by District standards.

Projects included in the CIP are:

- New groundwater supply wells
- Expanded surface water storage (use of Clementia)
- New treated water storage tanks
- A new booster pump station

- Improvements to existing pipelines
- Improvements to fire suppression infrastructure
- WWRP improvements
- A new reclaimed water pump station
- Reclaimed water distribution improvements

CIP projects are staged by timeframe needed:

- Existing – to correct existing deficiencies and provide some capacity for future growth
- Buildout of the remaining lots to be developed within the District boundary which will occur on an unknown timeline.

Project staging information is intended as a guideline for District staff. Specific implementation priorities and timing for projects will be determined by District staff considering the timing of development and overall District needs, such as coordination with other projects.

6-1.1. Basis of Cost Estimates

Planning-level capital cost estimates were developed for improvements. Estimated capital costs include construction costs, construction contingencies, and project implementation costs. The accuracy of the estimates is consistent with AACE class 5 standards, which allow for -50% to 100% variability to actual construction costs.

Construction contingencies were estimated as 20% of construction costs to account for additional work identified during design, uncertainties in the bidding climate, and change orders during construction. Project implementation costs were estimated as 25% of construction costs, and include project management, design, construction management, environmental work, and inspection.

Construction costs are based on cost data from other Adkins projects, publicly available bid results, estimates used in past District planning publications, and direct input from District staff. The unit costs assume a normal (average) construction environment and do not include circumstances such as significant rock excavation or dewatering, unusual working hours, or

exotic construction methods. Pipeline unit costs include valves and appurtenances, as well as pavement removal and replacement and a general allowance for correction of utility interferences where applicable. Pump station costs are based on an expandable above ground enclosed building and standby pump, backup power, and telemetry. Tank costs include average site work, valve vault, telemetry, piping, and appurtenances. Well costs include standby power and disinfection. See Appendix E for detailed cost estimates for each of the alternatives below.

6-2. Supply Improvements

6-2.1. Groundwater Supply

The alternatives developed for the purpose of this IWMP differ based on water treatment needs of the well water. As summarized in the previously referenced Adkins' groundwater literature review tech memo (see Appendix F), groundwater from test wells evaluated in 2013 had elevated arsenic levels. However, it is typical for water quality to improve after well development is completed. Therefore, it is possible that no water treatment would be needed after new wells are fully developed, but this section explores alternatives for a range of different required treatment levels. These required levels cannot be known for certain until the new wells are developed. The following five alternatives for treatment were developed:

1) No water treatment required
2) Treating a portion of the water from the wells at a new WTP and blending with the remaining water
3) Leased portable water treatment units as needed
4) Treating all water from the wells at a new WTP
5) New pipeline to send water from all wells to the existing WTP

Each of these alternatives are explored for existing conditions (the 3,000 connections threshold for SB 552) and buildout conditions.

For each alternative, pump motors and pipelines were sized using EPANet2.2. Pump power was balanced with motor size to maintain best efficiency points, resulting in 75 HP pumps and

motors for all existing and buildout conditions. Pipelines were sized using a maximum allowable velocity of 5 fps to optimize function and cost. This resulted in mostly 8" diameter transmission lines, with some 10" lines for the combined flows of multiple wells returning to the distribution system.

For Alternative 2, for both existing and buildout conditions, the new WTP performs side-stream treatment on the well water to achieve quality standards. To estimate the amount of mixing required for Alternative 2, the three proposed wells for existing conditions were assumed to have the largest observed arsenic concentration from test hole A from the 2013 DE investigation, 0.018 mg/L. For buildout conditions, all five wells were assumed to have this higher arsenic concentration. Well development may determine that different arsenic concentrations are present; this alternative is therefore conservative. A mass balance approach was used to calculate the portion of the stream that should be treated to dilute the arsenic to below the EPA MCL, 0.01 mg/L with a 20% margin of safety, bringing the maximum expected concentration of the blended water down to 0.008 mg/L. The reduction of arsenic from 0.018 mg/L to 0.008 mg/L represents a 56% reduction in concentration. See the general form equation below:

$$Untreated\ Stream = \frac{Total\ Stream\ \times\ C_{MCL} \times (1 - \sigma)}{C_{AS}}$$

$$Treated\ Stream = \ Total\ Stream - Untreated\ Stream$$

Where:

C_{AS} *= measured concentration of Arsenic (mg/L)*

σ *= margin of safety, 20%*

C_{MCL} *= EPA Maximum Contaminant Level for Arsenic (0.01 mg/L)*

Flows are given in GPM

Stated simply, 56% of the well water stream must be treated to reduce the arsenic concentration by 56%. For existing conditions, the treated stream was calculated to be 655 gpm,

which allows for an untreated stream of 514 gpm. For buildout conditions, the treated stream was calculated to be 1,174 gpm, which allows for an untreated stream of 923 gpm.

The five existing conditions alternatives consider meeting the 3,000-connection ADD of 1,169 gpm via three wells. These wells are proposed to be drilled approximately 500 feet deep with 12" diameter casings. Installation of the wells includes full well development and test pumping, installation of 75 HP pumps and motors, shafts, columns, pump house including necessary piping, valves, flowmeters, chlorination equipment, Variable Frequency Drives (VFDs), panels, SCADA controls, power distribution, and access roads. To connect the wells to the distribution system, approximately 410 LF of 10-inch C-900 PVC and 2,680 LF of 8-inch C-900 PVC are proposed. Three gate valves with thrust blocks are proposed to allow the District to isolate one or more of the transmission lines from the distribution system.

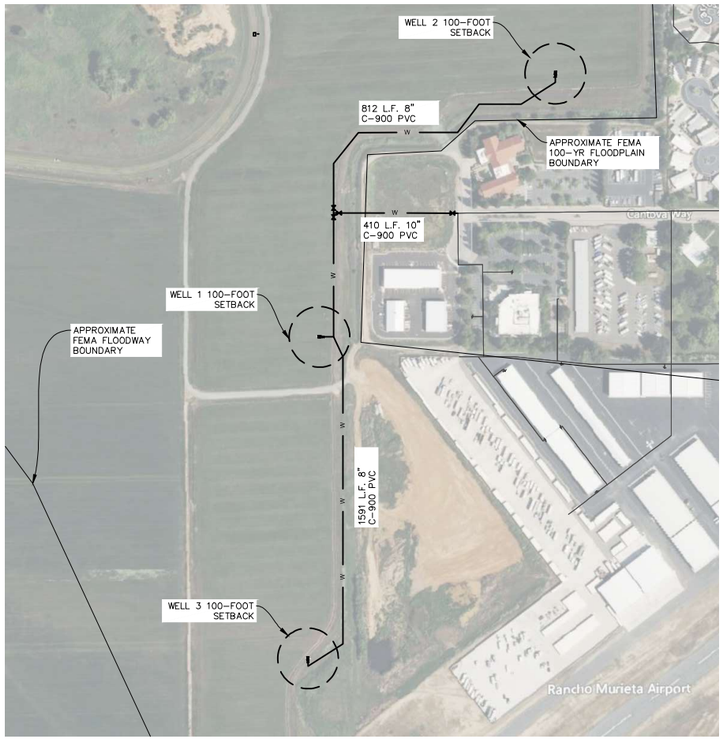
The five buildout conditions alternatives consider meeting the buildout ADD of 2,097 GPM via five wells. These wells are proposed to be drilled approximately 500 feet deep with 12-inch diameter casings. Installation of the wells includes full well development and test pumping, and installation of 75 HP pumps and motors, shafts, columns, pump house including necessary piping, valves, flowmeters, chlorination equipment, VFDs, panels, SCADA controls, power distribution, and access roads. To connect the wells to the distribution system, approximately 638 LF of 10-inch C-900 PVC and 4,382 LF of 8-inch C-900 PVC are proposed. Three gate valves with thrust blocks are proposed to allow the District to isolate one or more of the transmission lines from the distribution system.

For both existing and buildout conditions, isolated aquifer testing should be conducted during the well construction process. This will allow the District to determine if the arsenic in the groundwater is coming from an isolated depth range. If this is the case, then this contaminant source could be avoided altogether by strategically placing the casing screen at a different depth than the contaminating section of the well.

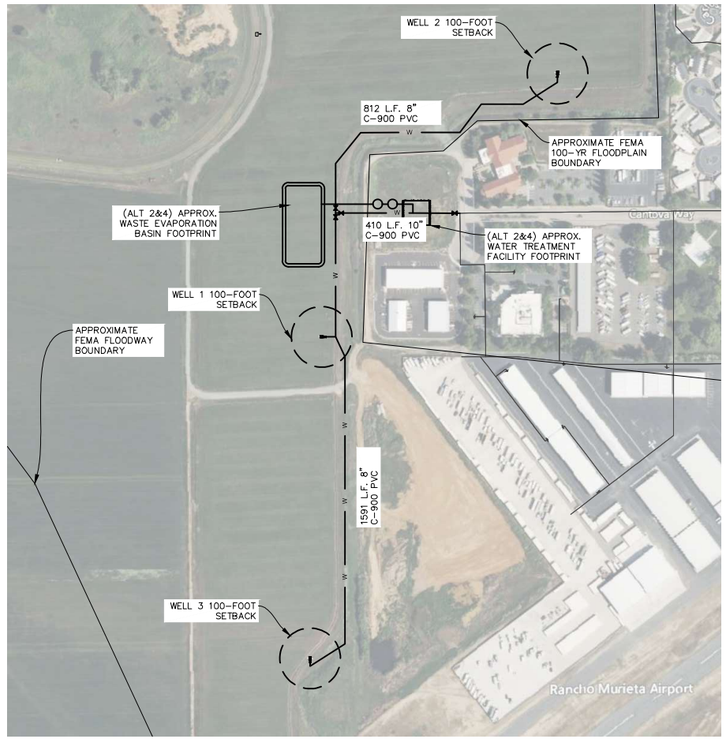
Estimated costs for well development and necessary components are the same for each alternative. The alternatives vary based on potential water quality, which will be determined during well development. The test holes investigated by DE in 2013 indicated that arsenic was

present in test hole A, while iron and manganese were present in test hole B. As it is difficult to determine water quality of a specific well site without drilling and developing the well, the following alternatives are analyzed to determine a range of costs based on water quality and treatment needs for the District.

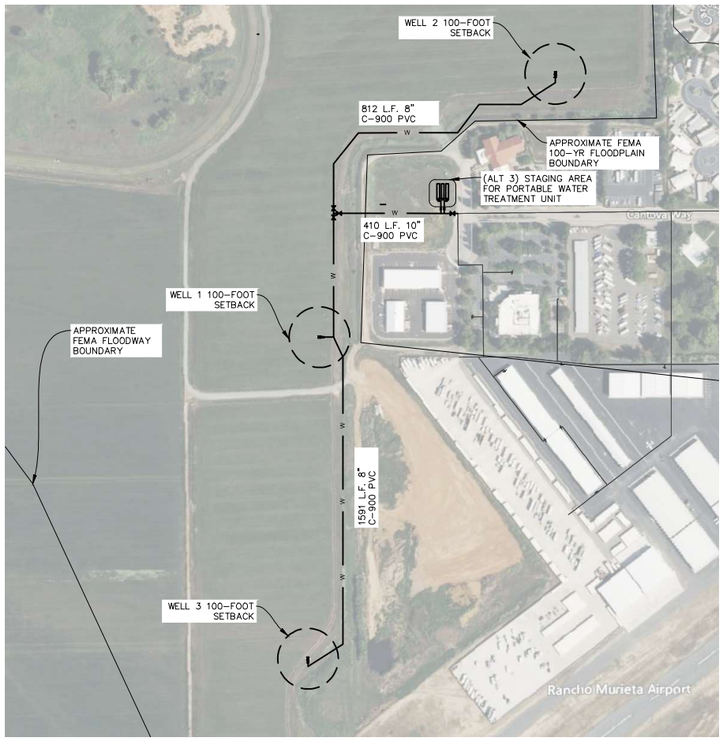
Based on State Water Board standards, the wells need to be located outside of the 100-year flood plain, or elevated above the floodplain using acceptable structural fill. However, the proposed well locations are all within the FEMA 100-year floodplain. While this is not an ideal scenario, this wellfield location is the only one that has been studied previously and that has somewhat predictable outcomes. To comply with state regulations for wells within the 100-year floodplain, each well site should have structural fill added to the site to raise the wellhouse and well casing above the 100-year flood elevation, along with any other protection measures that the state may require for the specific sites. It is estimated that 1-3 feet of structural fill would be needed to elevate the well sites above the 100-year floodplain. Base flood elevation surveys would be required to establish these elevations precisely prior to design. These alternatives consider the use of the wells for backup or emergency use only. See Figure 6-1 for a concept map of well placement for existing conditions alternatives and Figure 6-2 for buildout demands alternatives.



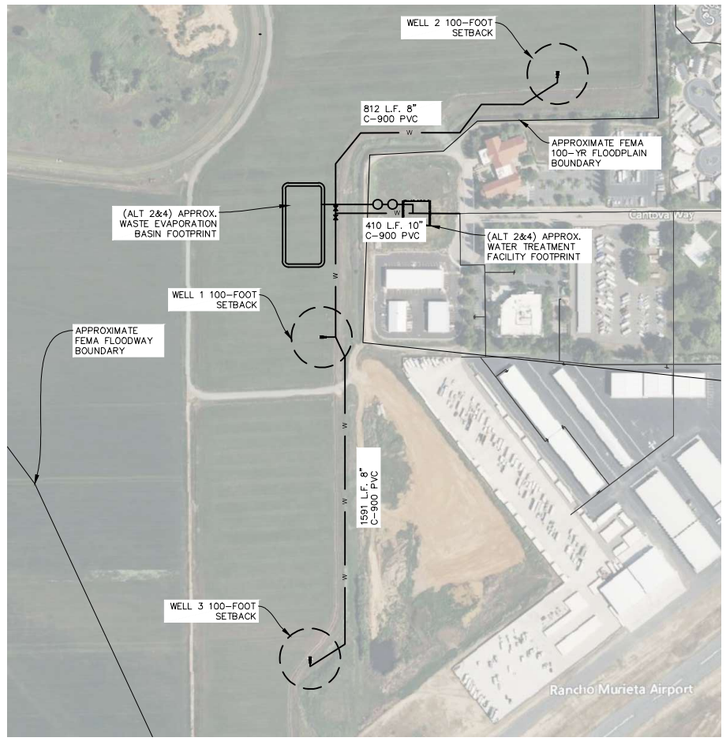
SITE PLAN FOR ALTERNATIVE 1: 3,000 CONNECTIONS



SITE PLAN FOR ALTERNATIVE 2: 3,000 CONNECTIONS



SITE PLAN FOR ALTERNATIVE 3: 3,000 CONNECTIONS



SITE PLAN FOR ALTERNATIVE 4: 3,000 CONNECTIONS

250 0 125 250
(FEET)

LEGEND

- EXISTING WATER MAIN
- PROPOSED WATER TRANSMISSION LINE
- PROPOSED WATER VALVE
- PROPOSED WELL
- PROPOSED WELL HOUSE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES THAT WILL BE NEEDED FOR EACH ALTERNATIVE. ACTUAL SITE LAYOUT WILL BE DETERMINED IN THE 30% AND FINAL DESIGN PHASES OF THE PROJECT FOR THE SELECTED ALTERNATIVE.
3. 3,000 CONNECTION ALTERNATIVES ASSUME 3 WELLS, WITH 125 HORSEPOWER PUMPS AND MOTORS, EACH TO DELIVER 390 GPM AT 503 T.D.H.
   - 3.1. ALTERNATIVE 1 CONSIDERS NO WATER TREATMENT.
   - 3.2. ALTERNATIVE 2 CONSIDERS TREATING PART OF THE WELL WATER AT A PERMANENT WATER TREATMENT FACILITY.
   - 3.3. ALTERNATIVE 3 CONSIDERS LEASED PORTABLE WATER TREATMENT UNITS AS NEEDED.
   - 3.4. ALTERNATIVE 4 CONSIDERS THE INSTALLATION OF A PERMANENT WATER TREATMENT FACILITY.

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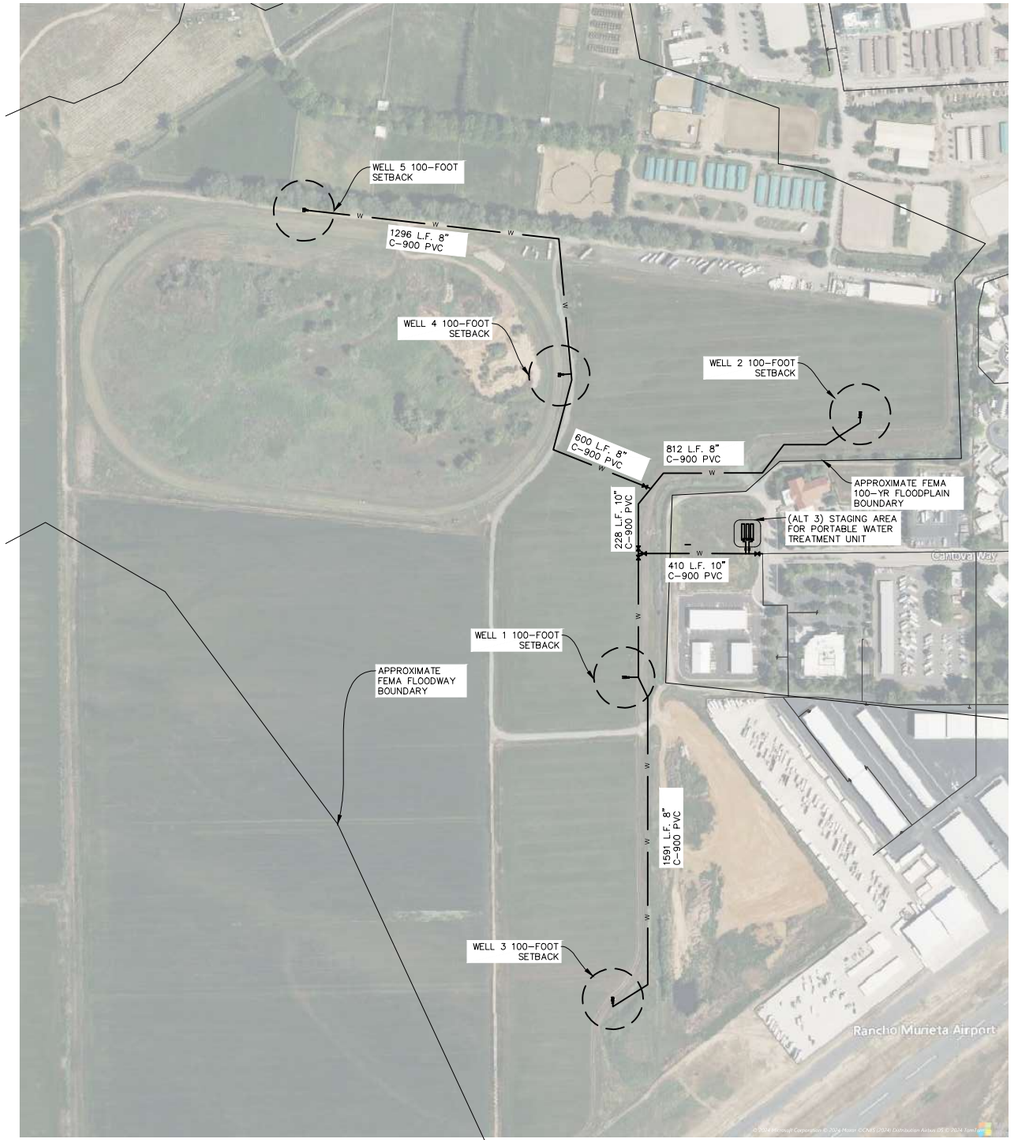
ENGINEERING - SURVEYING - PLANNING - TESTING

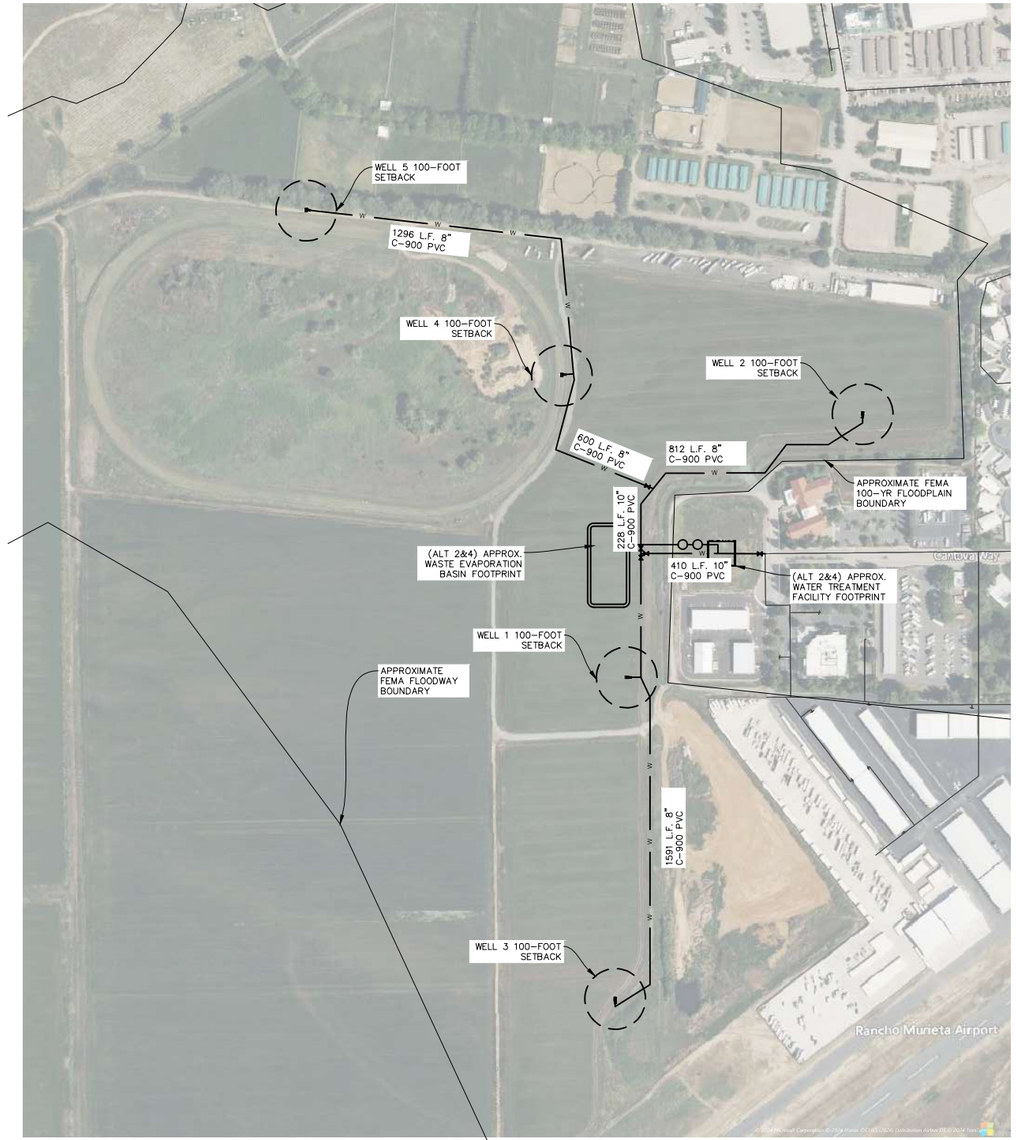
GROUNDWATER ALTERNATIVES FOR RANCHO MURIETA CSD 3000 CONNECTION GROUNDWATER ALTER

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE 6-1



SITE PLAN FOR ALTERNATIVES 1 & 3: BUILD OUT CONDITIONS



SITE PLAN FOR ALTERNATIVES 2 & 4: BUILD OUT CONDITIONS

250 0 125 250
(FEET)

LEGEND

- EXISTING WATER MAIN
- PROPOSED WATER TRANSMISSION LINE
- PROPOSED WATER VALVE
- PROPOSED WELL
- PROPOSED WELL HOUSE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES THAT WILL BE NEEDED FOR EACH ALTERNATIVE. ACTUAL SITE LAYOUT WILL BE DETERMINED IN THE 30% AND FINAL DESIGN PHASES OF THE PROJECT FOR THE SELECTED ALTERNATIVE.
3. BUILD OUT CONDITIONS ALTERNATIVES ASSUME 5 WELLS, WITH 125 HORSEPOWER PUMPS AND MOTORS, EACH TO DELIVER 420 GPM AT 503' T.D.H.
   - 3.1. ALTERNATIVE 1 CONSIDERS NO WATER TREATMENT.
   - 3.2. ALTERNATIVE 2 CONSIDERS TREATING PART OF THE WELL WATER AT A PERMANENT WATER TREATMENT FACILITY.
   - 3.3. ALTERNATIVE 3 CONSIDERS LEASED PORTABLE WATER TREATMENT UNITS AS NEEDED.
   - 3.4. ALTERNATIVE 4 CONSIDERS THE INSTALLATION OF A PERMANENT WATER TREATMENT FACILITY.

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GROUNDWATER ALTERNATIVES
FOR
RANCHO MURIETA CSD
BUILDOUT GROUNDWATER ALTERNATIVES

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE
6-2

6-2.1.a. Alternative 1: No Water Treatment Required

This alternative assumes that after well development, no water treatment is required for arsenic, iron, and/or manganese. Disinfection of well water is achieved by chlorine dosing at each well house, and the disinfected water is sent directly to the distribution system. A cost summary for the 3000-connection alternative is provided in Table 6-1, and a cost summary for the buildout alternative is provided in Table 6-2.

Table 6-1: Alternative 1A Cost Summary

Alternative 1A – Existing Conditions, No Water Treatment	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$246,100
3 New Wells, 75 HP Pumps & Motors, Well Development:	$1,826,000
Well Houses, Controls, Power, Access Roads:	$1,639,300
Install Pipelines and Connect to Existing:	$601,600
Subtotal:	$4,313,000
Construction Contingencies:	$863,000
Design, Engineering, Construction Admin:	$1,079,000
Environmental, Permitting, Legal, Land Acquisition:	$94,000
Total Estimated Project Cost:	$6,349,000

Table 6-2: Alternative 1B Cost Summary

Alternative 1B – Buildout Conditions, No Water Treatment	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$407,600
5 New Wells, 75 HP Pumps & Motors, Well Development:	$3,043,200
Well Houses, Controls, Power, Access Roads:	$2,728,800
Install Pipelines and Connect to Existing:	$963,200
Subtotal:	$7,142,800
Construction Contingencies:	$1,429,000
Design, Engineering, Construction Admin:	$1,786,000
Environmental, Permitting, Legal, Land Acquisition:	$97,000
Total Estimated Project Cost:	$10,455,000

6-2.1.b. Alternative 2: Permanent Water Treatment Plant for Partial Flow

This alternative assumes that after well development, there are arsenic concentrations in the water that can be addressed by treating a portion of the water and blending it with the remainder of the water to achieve dilution requirements.

Backwash water is a common byproduct to oxidation filtration methods of arsenic treatment. Backwash cycles continuously regenerate and clean filter media and must either be disposed of or reclaimed through a settling tank and pump-assisted return line. Another consideration of treatment is that the pH must be adjusted to less than 8.0 (ideally 7.5) to facilitate the coprecipitation of iron and arsenic. The test holes from DE (2013) showed a pH of between 6.5 and 8.2 between the two test holes. Thus, the pH of the well water likely needs to be pH adjusted. However, a lower pH significantly affects the oxidation rates of iron and manganese. These are important operational considerations to be weighed if well development indicates the need for treatment.

Treating a portion of the water includes the construction and implementation of a permanent WTP. The proposed WTP footprint is approximately 1 acre and utilizes oxidation and filtration methods. However, other treatment methods could also be used. Relevant components of a WTP

to dual-treat arsenic, iron, and manganese by oxidation and filtration include: a water treatment building large enough to house treatment equipment, chemical feed stations, chemical storage, instrumentation and controls, booster pumps, office spaces for operators, backwash recovery facilities that include backwash settling tanks, booster pumps, evaporation lagoons, sludge removal, disinfection treatment, back-up generator, and an automatic transfer switch. A cost summary for the WTP to treat 56% of the well water (for both existing and buildout conditions) is included in Appendix E.

It is proposed that the water from all the wells would enter the new WTP. From there, the appropriate portion of the flow would be redirected to be treated, while the remaining portion would bypass treatment. The treated stream would be blended with the untreated stream after treatment and the resulting stream would be within the MCL requirements.

The WTP could be located in the undeveloped parcel to the west of the existing Catholic Church. This is the only undeveloped parcel outside of the 100-year floodplain that is near the proposed wellfield. However, the WTP could possibly be located on the same parcel as the wellfield if acceptable structural fill was provided to elevate the WTP above the floodplain with State Water Board approval. For the conceptual site maps shown in Figure 6-1 and Figure 6-2, the WTP is shown on the undeveloped parcel west of the Catholic Church, outside of the floodplain.

A baseline cost estimate was developed for a WTP capable of treating the entire buildout flow of 2,097 gpm. This estimate was scaled for each respective flow requirement in each alternative. A cost summary for the 3000-connection alternative is provided in Table 6-3. A cost summary for the buildout alternative is provided in Table 6-4.

Table 6-3: Alternative 2A Cost Summary

Alternative 2A – Existing Conditions, Partial Treatment	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$481,400
3 New Wells, 75 HP Pumps & Motors, Well Development:	$1,826,000
Well Houses, Controls, Power, Access Roads:	$1,639,300
Construct Permanent WTP for 655 gpm:	$3,888,000
Install Pipelines and Connect to Existing:	$601,600
Subtotal:	$8,436,300
Construction Contingencies:	$1,688,000
Design, Engineering, Construction Admin:	$2,109,000
Environmental, Permitting, Legal, Land Acquisition:	$300,000
Total Estimated Project Cost:	$12,533,000

Table 6-4: Alternative 2B Cost Summary

Alternative 2B – Buildout Conditions, Partial Treatment	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$825,600
5 New Wells, 75 HP Pumps & Motors, Well Development:	$3,043,200
Well Houses, Controls, Power, Access Roads:	$2,728,800
Construct Permanent WTP for 1174 gpm:	$6,910,000
Install Pipelines and Connect to Existing:	$963,200
Subtotal:	$14,471,000
Construction Contingencies:	$2,895,000
Design, Engineering, Construction Admin:	$3,618,000
Environmental, Permitting, Legal, Land Acquisition:	$300,000
Total Estimated Project Cost:	$21,284,000

6-2.1.c. Alternative 3: Leased Treatment Unit

This alternative assumes that after well development, full water treatment for arsenic, iron, and/or manganese is required, but this is achieved through leased portable water treatment units as needed. The basis of design used for this IWMP is the portable Rapisand treatment unit leased

through WesTech Engineering, Inc. This portable unit is approximately 53 feet long, 8.5 feet wide, and 13.5 feet tall, and can be delivered to the site by truck. Each treatment unit can treat 700 gpm. The units use a combined flocculation and sedimentation process. They start by adding a coagulant to the raw water stream to destabilize suspended particles, followed by mixing with a polymer and recycled microsand. This allows rapid sedimentation and clarification of the water. The solids are then directed to waste while the separated sand is reintroduced into the initial flocculation tank. Each unit produces a constant waste stream of approximately 45 gpm. This waste could be piped to the District's sewer system via a connection to the gravity collection line at the end of Cantova Way. Two treatment units would be required for the 3000-unit alternative and three treatment units would be required for the buildout alternative. Each unit costs approximately $38,000/month to rent and $15,000 to ship to and from the site. Training and inspection cost approximately $20,000. This alternative considers a staging area for the portable water treatment unit west of the Catholic Church, in the same location that the new WTP proposed in Alternative 2 would be located. Since this alternative is identical to Alternative 1 with the exception of the leased treatment units, which are not capital expenditures, refer to Table 6-1 and Table 6-2 for cost summaries for this alternative. The methodology for comparing the net present value of this alternative with the other groundwater alternatives is discussed later in this section.

6-2.1.d. Alternative 4: Permanent Water Treatment Plant for Full Flow

This alternative assumes that after well development, full water treatment for arsenic, iron, and/or manganese is required for all wells, and this is achieved through the construction of a permanent WTP capable of treating the entire stream. The siting and treatment considerations for the WTP are the same as described above for Alternative 2. A cost summary for the 3,000-connection alternative is provided in Table 6-5 and a cost summary for the buildout alternative is provided in Table 6-6.

Table 6-5: Alternative 4A Cost Summary

Alternative 4A – Existing Conditions, Permanent Water Treatment Plant	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$662,400
3 New Wells, 75 HP Pumps & Motors, Well Development:	$1,826,000
Well House, Controls, Power, Access Roads:	$1,639,300
Install Pipelines and Connect to Existing:	$601,600
Installation of Permanent WTP for 1169 gpm:	$6,880,000
Subtotal:	$11,609,000
Construction Contingencies:	$2,322,000
Design, Engineering, Construction Admin:	$2,903,000
Environmental, Permitting, Legal, Land Acquisition:	$350,000
Total Estimated Project Cost:	$17,184,000

Table 6-6: Alternative 4B Cost Summary

Alternative 4B – Buildout Conditions, Permanent Water Treatment Plant	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$1,150,000
5 New Wells, 75 HP Pumps & Motors, Well Development:	$3,043,200
Well House, Controls, Power, Access Roads:	$2,728,800
Install Pipelines and Connect to Existing:	$958,200
Installation of Permanent WTP for 2097 gpm:	$12,277,000
Subtotal:	$20,157,000
Construction Contingencies:	$4,032,000
Design, Engineering, Construction Admin:	$5,040,000
Environmental, Permitting, Legal, Land Acquisition:	$350,000
Total Estimated Project Cost:	$29,579,000

6-2.1.e. Alternative 5: Send Well Water to Existing WTP

This alternative assumes that after well development, full water treatment for arsenic, iron, and/or manganese is required for all wells, and this is achieved through piping the well water to the existing WTP at Chesbro Reservoir. As the use of groundwater is considered only during circumstances when the surface water supply is compromised or unavailable, the existing WTP capacity is considered adequate to treat the required flows from the proposed wells. Thus, this alternative is identical to Alternative 1 in terms of well installation but adds a new 17,200 LF pipeline to deliver the well water across the District to the existing WTP. A 10-inch pipe would be required for the 3,000-connection flow of 1,169 gpm, and a 14-inch pipe would be required for the buildout flow of 2,097 gpm. A cost summary for the 3,000-connection alternative is presented in Table 6-7 and a cost summary for the buildout alternative is presented in Table 6-8.

Table 6-7: Alternative 5A Cost Summary

Alternative 5A – Existing Conditions, Treat at Existing WTP	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$466,000
3 New Wells, 75 HP Pumps & Motors, Well Development:	$1,826,000
Well Houses, Controls, Power, Access Roads:	$1,639,300
Install Pipelines to Connect Wells to Existing WTP:	$4,235,300
Subtotal:	$8,166,600
Construction Contingencies:	$1,634,000
Design, Engineering, Construction Admin:	$2,042,000
Environmental, Permitting, Legal, Land Acquisition:	$144,000
Total Estimated Project Cost:	$11,987,000

Table 6-8: Alternative 5B Cost Summary

Alternative 5B – Buildout Conditions, Treat at Existing WTP	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Construction Surveying:	$657,400
5 New Wells, 75 HP Pumps & Motors, Well Development:	$3,043,200
Well Houses, Controls, Power, Access Roads:	$2,728,800
Install Pipelines to Connect Wells to Existing WTP:	$5,092,800
Subtotal:	$11,522,200
Construction Contingencies:	$2,305,000
Design, Engineering, Construction Admin:	$2,881,000
Environmental, Permitting, Legal, Land Acquisition:	$147,000
Total Estimated Project Cost:	$16,855,000

6-2.2. Groundwater Regulatory Requirements

6-2.2.a. Arsenic

Arsenic is a contaminant listed by the National Primary Drinking Water Regulations (NPDWRs), which are outlined by the EPA as legally enforceable standards that apply to public water systems. The maximum contaminant level (MCL) for arsenic is 0.01 mg/L. Based on test well data, the assumed arsenic concentration in the groundwater is 0.018 mg/L.

6-2.2.b. Iron

Iron is part of the EPA's National Secondary Drinking Water Regulation (NSDWR) that are non-mandatory water quality standards for various contaminants in drinking water. Increased concentrations of iron can cause water to have a rusty color with visible sedimentation, have a metallic taste, and leave red or orange staining. The secondary MCL for iron is 0.3 mg/L. Based on test well data, the assumed iron concentration in the groundwater is 0.5 mg/L.

6-2.2.c. Manganese

The EPA established a NSDWR that set non-mandatory water quality standards for manganese. When manganese is present in drinking water at levels above the secondary MCL

(0.05 mg/L), it may cause a black or brown appearance, black staining, or a bitter metallic taste. Based on test well data, the assumed manganese concentration in the groundwater is 0.37 mg/L.

6-2.2.d. Well Siting

Title 22 of the California Code of Regulations (CCR), Section 64417 states that wells must be sited above the 100-year floodplain or elevated above the floodplain using acceptable structural fill. Section 16.06.040(a) of Sacramento County Design Code states that any groundwater wells must have a 50-foot setback from any sewer lines and surface waters, a 100-foot setback from septic tanks, leach lines, or animal enclosures, and a 150-foot setback from leaching pits or hazardous materials tanks.

The technical memorandum published by Dunn Environmental, Inc (DE) in 2013 recommended that wells be drilled within 50-feet of test holes A and B. However, the *Methods for Determining the Proper Spacing of Wells in Artesian Aquifers* (Lang, USGS 1962) recommends 500- to 1,500-feet of space between multiple wells in the same aquifer. For the purposes of this report, proposed wells are spaced 1,000 feet apart along the southwestern side of the District, spaced between test holes A and B as determined by DE in 2013.

6-2.3. Water Treatment Technologies

Arsenic removal can be achieved with technologies including ion exchange, adsorption, coagulation and filtration, oxidation and filtration, or reverse osmosis. To remove iron and manganese, oxidization of soluble forms of iron and manganese to insoluble forms followed by filtration is commonly used. Filtration of the oxidized precipitates can be achieved using either a synthetic membrane or filter media. The oxidation and filtration process to remove iron and manganese can also be used to remove arsenic when adequate iron is present to facilitate the co-precipitation of the two. A brief description of oxidation and filtration is described below.

Oxidation is commonly used to convert soluble forms of iron and manganese to insoluble forms prior to filtration. Either chlorine or potassium permanganate is injected and mixed into the stream to oxidize iron, manganese, hydrogen sulfide, and arsenic. When a sufficient iron to arsenic ratio is present (usually 20:1), the co-precipitation of iron and arsenic occurs, and

filtration effectively removes both constituents from the stream. Filtration can be achieved with pressure media filters or membranes. In both cases, the filters will become clogged as insoluble compounds are filtered, and periodic backwash cycles are needed to facilitate regeneration of the media or cleaning of the membrane. The backwash water is either disposed of or sent to a settling tank. After particulates settle, the clarified water (called supernatant) is recovered by returning to the beginning of the treatment facility while the concentrated sludge is disposed of.

Media filters utilize several different media types including silica sand, Greensand Plus, and pyrolusite. In addition to oxidation by means of a chemical feed upstream of the filters, these media also oxidize iron and manganese in place on the media surface. Because of this ability, a lesser amount of oxidation by chemical injection can be achieved.

6-2.4. Summary of Groundwater Improvements

Previous sections developed the need for a backup or emergency groundwater source for the District, discussed general considerations from prior studies, and outlined five alternatives for both existing and buildout conditions.

At 3,000 connections, the District's average day demand (ADD) was estimated to be 1,169 gpm. This is considered the existing conditions. At buildout conditions, the ADD estimated to be 2,097 gpm. Based on the study by DE in 2013, test hole locations on the southwest side of the District could produce potential well yields ranging from 150 to 500 gpm. To achieve 1,169 gpm, three wells are proposed. To achieve 2,097 gpm, five wells are proposed. Each of these wells would need to be drilled to a total well depth of 500 feet to meet the appropriate depth within the water bearing zones.

A life cycle cost analysis was performed to evaluate both the present and future costs for a 20-year timeframe to directly compare each of the technically feasible alternatives. The life cycle costs, or net present value (NPV), is a way to present the value of a project by summing the capital costs and operations and maintenance (O&M) minus the present worth of the salvage value. This analysis utilized a 20-year planning period with a 2.0% discount interest rate to determine straight-line depreciation of components.

The NPV equation and variables are defined as (Agriculture, 2013):

NPV = C + USPW (O&M) – SPPW (S)

C = Capital Cost

USPW (O&M) = Uniform Series Present Worth of Annual O&M

SPPW (S) = Single Payment Present Worth of Salvage Value

Of the components of each alternative in this project, any new transmission pipelines, well columns, shafts, pumps, and motors have a lifespan at or beyond the planning period used, meaning that they are components with a salvage value.

Other components of the alternatives, such as transmission line gate valves, wellhouse piping and valves, panels and controls are considered short-lived assets and thus will be included in the O&M. While it is difficult to accurately predict when various components will need servicing or replacing, general practice assumes that smaller components will have a relatively shorter life than larger components. The two time periods used to develop the short-lived asset reserve were a 5-year and a 15-year period, with the assumption that wellhouse piping and valves may need replacing in 5-year intervals and the panels, controls, and gate valves may need replacing in 15-year intervals.

O&M costs were estimated for each alternative by combining estimates of labor, utilities, supplies, parts, repairs, chemicals, and various equipment replacement costs. Labor costs were estimated based on median salary in the District and the number of hours an operator might work under each alternative. Since the wells would only be used under emergency or backup conditions, it was assumed that the number of hours dedicated to operations and maintenance of Alternatives 1 and 3 were relatively low compared to the permanent WTP in Alternatives 2 and 4. Utilities were estimated by calculating the amount of energy that running the pumps for two weeks at the current cost per kilowatt hour in California, $0.33. Costs for chemical supplies, miscellaneous repairs, and equipment replacement were estimated using a proportion of the capital costs for each item. For Alternatives 2 and 4, the WTP operational costs were assumed to include chemical feed pumps and equipment, controls and instrumentation, standby power

systems, tank cathodic protection systems, heating, electrical, air conditioning, ventilation, potassium permanganate for oxidation of the raw water stream, and filter media replacements.

O&M costs for Alternative 3 assume that the portable treatment units will be rented for 1 year out of every 10 years. The water supply assessment in Chapter 5 shows that the groundwater source will only be required during drought years if Clementia is used for domestic water storage. If Clementia is not used for storage, then groundwater would be required for the average year at buildout. This alternative assumes that Clementia will be used for domestic water storage and that groundwater supplementation will only be required in drought conditions.

Further, the NPV of Alternative 3 was evaluated in comparison to each of the other alternatives. An analysis was performed to determine what percentage of years the mobile treatment units would have to be rented in order to have an NPV equal to each of the other alternatives. For example, for the NPV of Alternative 3B (portable treatment, buildout conditions) to be as high as Alternative 2B (side-stream treatment, buildout conditions), the portable treatment units would have to be rented for 52% of the entire planning period. Since Alternative 3 can never have an NPV higher than Alternative 4 or lower than Alternative 1, percentages were not calculated with respect to these alternatives. These percentages are included in Table 6-9. For the NPV value shown for Alternative 3, it is assumed that the treatment units are rented for 10% of the planning period.

A summary of the present worth of the capital cost, annual and present worth O&M, and current and present worth salvage value is provided in Table 6-9. Detailed NPV analysis is included in Appendix E. A summary of these alternatives and their costs is presented in Table 6-9 below.

Table 6-9: Summary of Groundwater Alternative Costs

Summary of Groundwater Alternative Costs						
Alt #	**Description**	**NPV, Existing**	**NPV, Buildout**	**Capital Cost, Existing**	**Capital Cost, Buildout**	**Alt 3 Usage % for equal NPV**
1	No treatment	$7,212,200	$11,778,000	$6,349,000	$10,455,000	n/a
2	Side-stream treatment	$16,087,800	$24,177,000	$12,533,000	$21,284,000	54%[1] 52%[2]
3	Leased treatment (10% usage)	$9,480,200	$14,803,000	$6,349,000	$10,455,000	n/a
4	Full treatment	$24,204,000	$35,857,500	$17,184,000	$29,579,000	n/a
5	Use existing WTP	$11,376,700	$16,502,200	$11,987,000	$16,855,000	23%[1] 18%[2]
[1]Existing conditions alternative [2]Buildout conditions alternative						

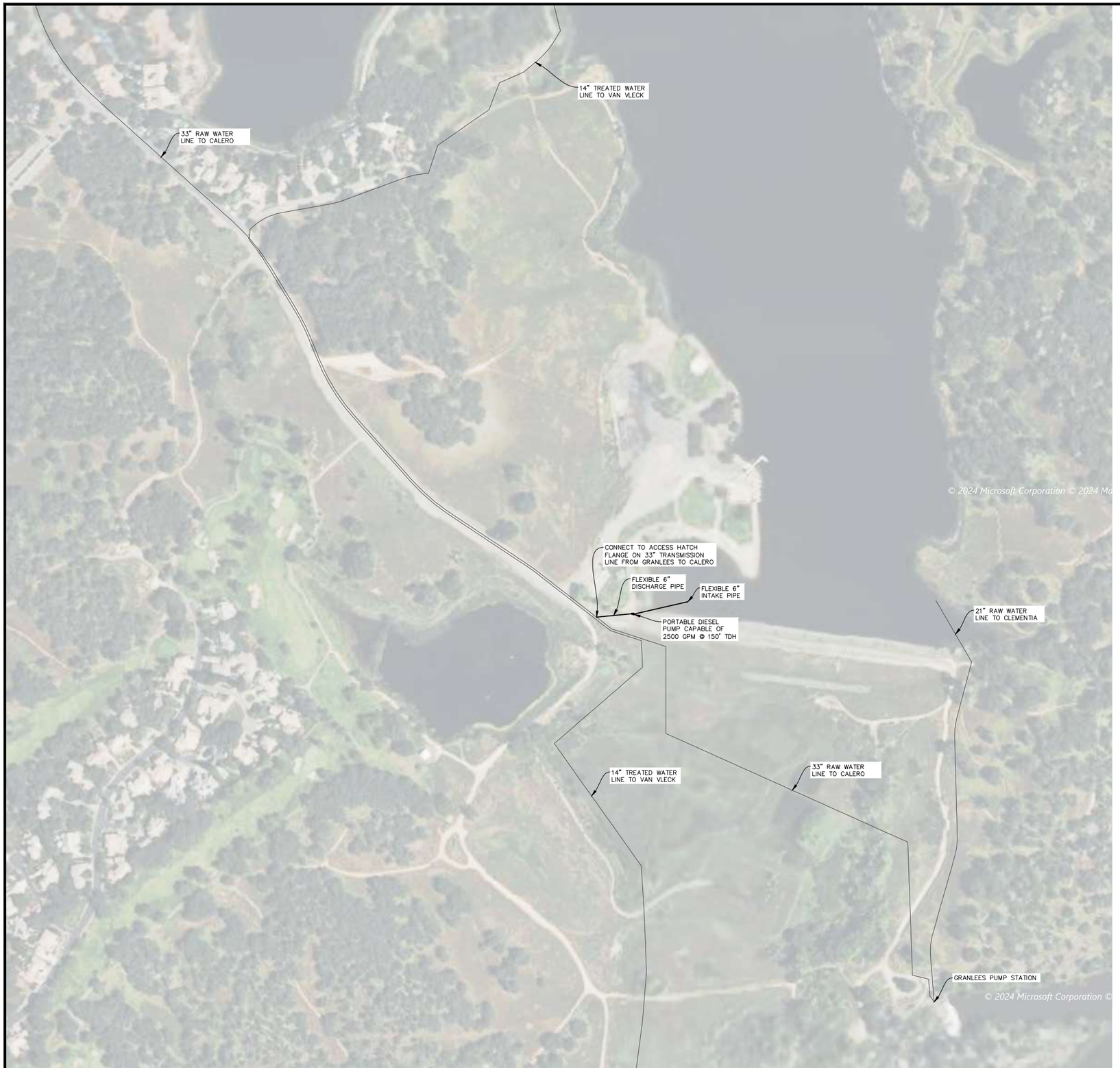
6-2.5. Use Clementia for Storage

This alternative considers making the improvements necessary to begin using the storage capacity of Clementia for domestic water storage. This would include both infrastructure improvements and legal changes.

6-2.5.a. Infrastructure Improvement

The necessary infrastructure improvements to allow raw water storage for the potable system in Clementia include a portable pump station to lift water from Clementia to Calero. This would be achieved by connecting the portable pump station's discharge to the existing 33-inch transmission line from Granlees to Calero. The existing 33-inch transmission line has an access hatch located close to the southwest corner of Clementia. District staff have indicated that this

hatch could be retrofitted to allow a pressurized connection to a pump station drawing water from Clementia. This would allow the use of the existing transmission line to transport water from Clementia to Calero, and then from Calero into the rest of the potable system. The pump should be sized for approximately the average day demand at buildout, which is nearly 2,100 gpm. It would need to be able to deliver between 100 and 150 feet of TDH depending on operating conditions and reservoir levels. The usable storage of Clementia is approximately 957 AF; it would take approximately 103 days for the pump to completely empty the reservoir. Therefore, the cost of renting the pump was estimated for approximately 100 days. See Figure 6-3 for a conceptual plan of this alternative.



200 0 100 200
(FEET)

LEGEND

- EXISTING WATER LINE
- EXISTING RAW WATER LINE
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED PUMP

GENERAL NOTES

1. PORTABLE PUMP TO BE RENTED AND OPERATED PER MANUFACTURER'S INSTRUCTIONS DURING SEASON WHEN PUMPING FROM CLEMENTIA IS REQUIRED. APPROXIMATE PUMP DUTY POINT WILL BE 2100 GPM AT 150 TDH.

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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DISTRIBUTION AND STORAGE ALTERNATIVES FOR RANCHO MURIETA CSD CONCEPTUAL SITE PLAN

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FIGURE 6-3

Figure 6-4: Access Hatch to 33" Raw Water Transmission Main

6-2.5.b. Legal Changes

Currently, Clementia is not allowed to be used to store water that will ultimately be used in the potable water system. This is due to the California Health and Safety Code (HSC) section 115825, subdivision b, which states that reservoirs that permit body contact recreation cannot use their water for domestic use, unless the reservoir is specifically exempted under one of the statutory exemptions spelled out in HSC sections 115840 through 115843.6. Clementia is currently used by District residents for a variety of recreational activities, including body contact activities like swimming and boating. A technical memorandum published by West Yost on March 15, 2024 lists two possible options that would allow for the use of Clementia as a drinking water supply:

1. Bring the recreational use restrictions of Clementia in line with Chesbro and Calero by prohibiting body contact and gas motors. This would allow the District to apply for a permit for domestic use of Clementia.
2. Pursue State legislation to obtain a statutory exemption for the reservoir to allow continued use of body contact simultaneous with domestic use.

To pursue option 1, the District would need to complete the necessary internal process to ban body contact recreation in Clementia. It could then begin the application process with the State Division of Drinking Water (DDW). The permitting process could include further lake and watershed studies to evaluate potential contaminants in Clementia that may not be present in Calero and Chesbro. DDW has indicated that they will detail the required studies at the time of the permit request.

To pursue option 2, the District would need to have further discussions with the California Office of Chief Counsel (OCC). The DDW Sacramento District Engineer has offered to facilitate these discussions as there is not a set process for evaluating and establishing an exemption. Once the process is better defined, DDW would work together with the OCC to make the determination and set the conditions for use. Finally, if the exemption is granted, the District

would still need to complete the permitting process and the DDW permit requirements discussed previously would still apply. See Table 6-10 for a cost summary.

Table 6-10: Alternative 6 Cost Summary

Alternative 6 – Use Clementia for Domestic Storage	
Project Component	**Estimated Cost**
Retrofit access hatch to allow 6-inch connection	$10,000
100-day rental of portable pump and suction/discharge pipes	$27,700
Diesel fuel for 100-day run time	$44,400
Legal fees to attain statutory exemption	$100,000

6-3. Treated Domestic Storage Improvements

6-3.1. Overview

As developed in Chapter 5, the District has a deficit in treated water storage in both existing and buildout conditions. Alternatives presented in this section aim to address the District's deficit in storage by installing three new storage tanks totaling 3.4 MG of storage. These tanks will operate in tandem with Van Vleck; the operating water levels in the proposed tanks will be at the same height as those in Van Vleck.

In each of these alternatives, it is assumed that the Rancho North developments (Villages D through H) and the Residences East and West will be annexed into the Rio Oso pressure zone and that a new booster station (described later) will provide pressure to a new pressure zone that will include Villages A, B, and C, along with the Retreats and parts of the existing system along De La Cruz Drive. The additional 3.4 MG of storage allows Rio Oso to be filled sufficiently by the WTP and the other storage tanks to meet the needs of its pressure zone without exceeding Rio Oso's pump capacities.

See Figure 6-5 for a concept map showing the proposed booster station (described later) and storage tank in Village C and Figure 6-6 for a concept map showing the proposed new tank in Village H and the proposed new tank at the existing Van Vleck tank site.

NEW TANK AND BOOSTER STATION AT VILLAGE C

PROPOSED IMPROVEMENTS

100 0 50 100
(FEET)

1. INSTALL NEW GLASS-LINED BOLTED STEEL 1.0 MG TANK.

   DIAMETER: 65 FEET
   HEIGHT: 40 FEET
   BASE ELEVATION: 301 FEET

   OPERATIONAL RANGE: 35.5 TO 37.5 FEET

   TANK OPERATIONAL RANGE IN TANDEM WITH VAN VLECK TANK.

2. TIE-IN TO EXISTING 16" ACP TRANSMISSION PIPELINE WITH 12" C900 PVC PIPE.
3. INSTALL APPROXIMATELY 850 LF OF 12" C900 PVC PIPE. VALVING SHALL BE SUCH THAT WATER CAN ONLY FLOW INTO THE TANK ALONG THIS PIPELINE.
4. INSTALL BOOSTER STATION AT TOP OF VILLAGE C.

   INSTALL TWO PUMPS: ONE LEAD AND ONE LAG.
   PUMPS TO DELIVER 1390 GPM AT 75 FEET TDH.
   PUMP MOTORS 40 HP.

5. INSTALL APPROXIMATELY 910 LF OF 12" C900 PVC PIPE.
6. TIE INTO NEW 12" PVC PIPE (FORMERLY 8" ACP).

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PUMP
- PROPOSED BUILDING EDGE

GENERAL NOTES

1. NEW TANK TO OPERATE IN TANDEM WITH VAN VLECK. IT SHARES OPERATIONAL LEVELS AND OPERATIONAL RULES WITH VAN VLECK.

   1.1. UNDER NORMAL OPERATION, WATER IS ONLY ALLOWED TO FLOW INTO THE NEW TANK FROM THE EXISTING VAN VLECK TRANSMISSION LINE. IN EMERGENCY CASES WHERE OTHER SYSTEM TANK LEVELS DROP SIGNIFICANTLY, THE TANK COULD BE CONFIGURED TO ALLOW REVERSE FLOW BACK INTO THE TRANSMISSION LINE TO THE WTP.

   1.2. IN THIS ALTERNATIVE, THE RANCHO NORTH DEVELOPMENTS (VILLAGES D, E, F, G, AND H) ARE SUPPLIED AS PART OF THE RIO OSO PRESSURE ZONE.

   1.3. THIS ALTERNATIVE PROVIDES LOCAL STORAGE FOR VILLAGES A, B, C, THE RETREATS, AND EXISTING CONNECTIONS ON DE LA CRUZ DRIVE.

2. BOOSTER STATION OPERATES USING PRESSURE AT THE HIGHEST ELEVATION NODE IN THE PRESSURE ZONE.

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
TANK AND BOOSTER IN VILLAGE C

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FIGURE 6-5

NEW TANK AT VILLAGE H

NEW TANK AT VAN VLECK

100 0 50 100
(FEET)

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED BUILDING EDGE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

GENERAL NOTES

1. NEW TANKS TO OPERATE IN TANDEM WITH VAN VLECK. THEY SHARE OPERATIONAL LEVELS AND OPERATIONAL RULES WITH VAN VLECK.
   - 1.1. THE TANK IN VILLAGE H HAS BOTH AN INLET AND DISCHARGE PIPELINE TO IT. THESE CONNECT TO THE 14" TRANSMISSION LINE FROM THE WTP TO RIO OSO. WATER IS ONLY ALLOWED TO FLOW INTO THE TANK VIA THE INLET LINE AND OUT OF THE TANK VIA THE DISCHARGE LINE. THE LINK OF TRANSMISSION PIPELINE BETWEEN THE INLET AND DISCHARGE CONNECTIONS SHALL BE CLOSED, SO THAT WATER FROM THE NEW TANK CANNOT FLOW BACK TOWARD THE WTP AND INTO VAN VLECK. UNDER NORMAL OPERATING CONDITIONS, ALL WATER DISCHARGED FROM THE TANK SHALL FLOW TO RIO OSO. IN EMERGENCY CONDITIONS WHERE OTHER TANKS IN THE SYSTEM DROP BELOW A CERTAIN POINT, THE VILLAGE H TANK SHALL BE ALLOWED TO PROVIDE WATER THROUGH THE TRANSMISSION LINE FROM THE WTP.
   - 1.2. THE NEW TANK NEXT TO VAN VLECK SHALL OPERATE IN TANDEM WITH VAN VLECK. THE GENERAL OPERATING CONDITIONS SHALL NOT ALLOW WATER TO FLOW BOTH DIRECTIONS, BUT SHALL HAVE ALL WATER DISCHARGED INTO THE VAN VLECK GRAVITY ZONE. IN EMERGENCY CONDITIONS WHERE OTHER TANKS IN THE SYSTEM DROP BELOW A CERTAIN POINT, THE VAN VLECK TANKS SHALL BE ALLOWED TO PROVIDE WATER THROUGH THE TRANSMISSION LINE FROM THE WTP.
   - 1.3. IN THIS ALTERNATIVE, THE RANCHO NORTH DEVELOPMENTS (VILLAGES D, E, F, G, AND H) ARE SUPPLIED AS PART OF THE RIO OSO PRESSURE ZONE.
   - 1.4. THIS ALTERNATIVE PROVIDES ADDITIONAL LOCAL STORAGE TO THE VAN VLECK GRAVITY ZONE AND THE RIO OSO PRESSURE ZONE.

PROPOSED IMPROVEMENTS

1. INSTALL NEW GLASS-LINED BOLTED STEEL 1.0 MG TANK.
   DIAMETER: 65 FEET
   HEIGHT: 40 FEET
   BASE ELEVATION: 301 FEET
   OPERATIONAL RANGE: 35.5 TO 37.5 FEET
   TANK OPERATIONAL RANGE IN TANDEM WITH VAN VLECK TANK.
2. INSTALL NEW GLASS-LINED BOLTED STEEL 1.4 MG TANK.
   DIAMETER: 90 FEET
   HEIGHT: 30 FEET
   BASE ELEVATION: 311 FEET
   OPERATIONAL RANGE: 25.5 TO 27.5 FEET
   TANK OPERATIONAL RANGE IN TANDEM WITH VAN VLECK TANK.
3. TIE-IN TO EXISTING 14" ACP TRANSMISSION PIPELINE WITH 12" C900 PVC PIPE.
4. PIPE LINK TO BE CLOSED.
5. INSTALL APPROXIMATELY 660 LF OF 12" C900 PVC INLET AND DISCHARGE PIPES. VALVING SHALL BE SUCH THAT WATER CAN FLOW ONE DIRECTION ALONG THESE PIPES.
6. INSTALL APPROXIMATELY 200 LF OF 12" C900 PVC INLET AND DISCHARGE PIPES. VALVING SHALL BE SUCH THAT WATER CAN FLOW ONE DIRECTION ALONG THESE PIPES IN NORMAL OPERATING CONDITIONS. VALVING SHALL ALLOW WATER TO FLOW BOTH DIRECTIONS IN EMERGENCY CONDITIONS.
7. TIE-IN TO EXISTING 16" ACP TRANSMISSION PIPE WITH 12" C900 PVC PIPE.
8. DO NOT CONNECT TO DISTRIBUTION SYSTEM.

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
NEW TANKS AT VILLAGE H AND VAN VLECK

SCALE	SHOWN
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FIGURE 6-6

6-3.2. Tank in Village C

This alternative considers the installation of a new 1.0 MG tank at the highest elevation in Village C, at the end of the proposed cul-de-sac in Village C just east of Camino Del Lago Drive. The tank would be located on proposed Lot A and Lot G, which share the top of the hill. Precise siting will be determined during the design phase. This tank's base should be near 300 feet, with a height of 40 feet and a diameter of 66 feet. In order to match its operational range with Van Vleck water levels, the new tank's operational range will be roughly between 35.5 feet and 37.5 feet. To receive flows, a 850 LF 12" C900 PVC pipeline is proposed to tie into the existing 16" transmission line between Van Vleck and the WTP. Approximately 15 LF of 12" C900 PVC pipeline is proposed to deliver water from the tank to the booster station, which will pump water into the new distribution system at the end of the proposed cul-de-sac. The new tank will operate in tandem with the existing Van Vleck tank and provide 1.0 MG of storage for the new ABC pressure zone, which is one of the requirements discussed in Chapter 5.

Installation of this tank includes the tank itself, site work and excavation, a concrete slab tank foundation, overflow piping, SCADA, telemetry, controls, and connecting to the existing distribution system. If selected, this tank should be installed at or near the time that the booster station at Village C is being constructed to optimize working schedules, road closures and traffic controls, and excavation work. A summary of estimated costs for this tank is shown in Table 6-11.

Table 6-11: Alternative 7 Cost Summary

Alternative 7 – Village C Tank	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$127,800
Site Work, Excavation, Tank Foundation:	$617,800
1.0 MG Tank, Piping, Valves, SCADA, Controls:	$1,277,600
Install Pipelines and Connect to Existing:	$215,400
Subtotal:	$2,239,000
Construction Contingencies:	$448,000
Design, Engineering, Construction Admin:	$560,000
Environmental, Permitting, Legal, Land Acquisition:	$25,000
Total Estimated Project Cost:	$3,272,000

6-3.3. Tank in Village H

This alternative considers the installation of a new 1.0 MG tank to the east of the proposed cul-de-sac in Village H . This tank's base should be near 300 feet, with a height of 40 feet and a diameter of 65 feet. To match its operational range with Van Vleck water levels, the new tank's operational range would be roughly 35.5 feet to 37.5 feet. To receive and discharge flows, two 650 LF 12" C900 PVC pipelines, one for incoming water and one for outgoing water, are proposed to tie into the existing 14" transmission line between Rio Oso and the WTP. The small section of transmission pipe between the connections to incoming line and outgoing line should be closed, and a check valve installed on the transmission line into the tank. This will cause water coming from the WTP to Rio Oso to pass through the new tank in only one direction. Effectively, this tank increases the storage in the Rio Oso pressure zone by 1.0 MG, which is one of the current deficiencies discussed in Chapter 5.

Installation of this tank includes the tank itself, site work and excavation, a concrete slab tank foundation, overflow piping, SCADA, telemetry and other controls, and connecting to the existing distribution system. If selected, this tank should be installed at or near the time that the new waterlines for Village H are being constructed to optimize working schedules, road closures and traffic controls, and excavation work. A summary of estimated costs for this tank is shown in Table 6-12.

Table 6-12: Alternative 8 Cost Summary

Alternative 8 – Village H Tank	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$134,300
Site Work, Excavation, Tank Foundation:	$617,800
1.0 MG Tank, Piping, Valves, SCADA, Controls:	$1,277,600
Install Pipelines and Connect to Existing:	$323,400
Subtotal:	$2,353,000
Construction Contingencies:	$471,000
Design, Engineering, Construction Admin:	$589,000
Environmental, Permitting, Legal, Land Acquisition:	$25,000
Total Estimated Project Cost:	$3,438,000

6-3.4. Tank at Van Vleck

This alternative considers the installation of a new 1.4 MG tank to the east of the existing Van Vleck Tank. This tank's base should be at the same elevation as the existing Van Vleck tank (approximately 311 feet), with a height of 30 feet and a diameter of 90 feet. To match its operational range with Van Vleck water levels, the new tank's operational range would be roughly 25.5 feet to 27.5 feet. To receive and discharge flows, two 200 LF 12" C900 PVC pipelines, one for incoming water and one for outgoing water, are proposed to tie into the existing 16" transmission lines from the existing Van Vleck tank. The tank supply line should tap into the 16" pipe from the WTP, and the tank discharge line should tap into the 16" pipe to Murieta South. The new tank will operate in tandem with the existing Van Vleck tank and increase the storage for the Van Vleck gravity pressure zone by 1.4 MG, which is one of the current deficiencies discussed in Chapter 5.

Installation of this tank includes the tank itself, site work and excavation, a concrete slab tank foundation, overflow piping, SCADA, telemetry and other controls, and connecting to the existing distribution system. A summary of estimated costs for this tank is shown in Table 6-13.

Table 6-13: Alternative 9 Cost Summary

Alternative 9 – New Van Vleck Tank	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$166,400
Site Work, Excavation, Tank Foundation:	$884,100
1.4 MG Tank, Piping, Valves, SCADA, Controls:	$1,748,700
Install Pipelines and Connect to Existing:	$116,600
Subtotal:	$2,916,000
Construction Contingencies:	$584,000
Design, Engineering, Construction Admin:	$729,000
Environmental, Permitting, Legal, Land Acquisition:	$25,000
Total Estimated Project Cost:	$4,254,000

6-3.5. Alternatives Not Considered

To address the global storage deficiency under the buildout conditions, providing a single storage tank to provide the required additional storage was considered. However, after further analysis, this option was rejected. As developed in Chapter 5, the District wants to improve the resiliency of its storage by providing sufficient storage within each zone. A single new tank would not provide the same level of resiliency as three tanks that each provide storage to their respective zone. Further, as mentioned in Chapter 5, the CCR requires tanks to have separate inlet and outlet connections. In order for a single storage tank to provide required storage, it would be required to have a single inlet/outlet connection to the system and would "float" its operating level based on Van Vleck, with water flowing in both directions through its supply pipe. This is not in accordance with the CCR and is not recommended. The proposed alternatives for storage allow the new tanks to operate in tandem with Van Vleck, but also maintain separation and one-directional flow through the system.

6-3.6. Operational Recommendations

The above discussion demonstrates the benefits of providing separate storage capacity for each pressure zone, as well as for preventing the flow of water in both directions from a tank. For those reasons, it is recommended that the bi-directional flow from Van Vleck be discontinued

after the new storage tanks are constructed. The new tank in Village H will provide adequate storage to the Rio Oso zone, so additional flows from Van Vleck should not be necessary. All flows that enter the Van Vleck tanks should be discharged to the Van Vleck pressure zone via the pipeline to Murieta South. Similarly, all flows to Rio Oso and the new Village H tank should be discharged to the Rio Oso pressure zone; the gravity connection from Rio Oso to the Van Vleck pressure zone should be closed during normal operating conditions. These operating conditions will allow the District to comply with the CCR by only allowing flow to enter its tanks via inlet pipelines and exit its tanks via discharge pipelines. This also will improve the accuracy of metering at the tanks.

However, the operating rules can still allow for the tanks to help each other in emergency scenarios. For example, if the level in Rio Oso drops below 15 feet due to a fire, the valves that would normally be closed to prevent bi-directional flow along the transmission line from the WTP to Van Vleck could open, allowing Van Vleck's capacity to assist the Rio Oso zone. In the opposite scenario, if Van Vleck's level dropped below a certain mark, the gravity pipe that connects Rio Oso to the Van Vleck gravity zone (normally closed) could open if a control valve was installed, allowing Rio Oso and the new Village H tank to assist the Van Vleck zone. The gravity line between Rio Oso and the Van Vleck pressure zone is currently operated manually. This operating strategy would allow the District to maintain adequate storage separately in each zone while also taking advantage of the global storage in the system in case of emergency.

6-4. Distribution System Improvements

6-4.1. Overview

As developed in Chapter 5, review of existing infrastructure and fire coverage rules were utilized to determine alternatives for distribution improvements. Only the distribution improvements that upgrade existing infrastructure or benefit the entire system are included in the CIP – distribution improvements that only serve new developments are assumed to be funded by the developers.

6-4.2. New Booster Station in Village C

To provide pressure and flow from the proposed new tank in Village C (see Alternative 7), a new pump station located adjacent to the new tank is proposed. The proposed pump motors for the booster station and pipelines were sized iteratively using EPANet2.2. Pump power was balanced with motor size to maintain appropriate price-points. For the regular duty pumps, two 25-HP pumps were determined to be sufficient to provide max day flow, with one pump operating as the lead pump and the second coming on to provide additional pressure during high points during the day. For fire flows, an additional 40-HP pump was determined to be sufficient to provide fire flows to the new pressure zone. For each of the three pumps, an efficiency of 60% was assumed. The pumps should also be equipped with VFDs to allow for a range of operating points. Pipelines were sized using target velocity of 5 fps during normal operation and a maximum velocity of 7 fps during a fire to optimize function and cost. This resulted in a 14" discharge pipeline from the pump station to the distribution system. See Figure 6-5 for a concept map of this alternative together with the adjacent new tank alternative.

Installation of the booster station includes two regular duty 25-HP pumps and one 40-HP fire pump station (which includes a backup 40-HP pump), motors, a pump house with necessary piping, valves, flowmeters, VFDs, panels, SCADA controls, and power distribution. The pump station location is proposed to be next to the new tank in Village C at the end of the proposed cul-de-sac, and the pipeline to serve this pump station is proposed to come out of the new tank. 850 LF of 12" C900 PVC pipe is required to connect the new tank to the transmission line from the WTP to Van Vleck. The cost of this pipeline is included in the estimate for the new tank. 54 LF of 14" C900 PVC pipe is proposed to deliver water from the booster station to the distribution system by tying into the new proposed distribution line along the proposed cul-de-sac in Village C. The cost for this pipeline is included in the estimate for this booster station. The distribution piping for the new villages will allow the booster to serve all the required areas.

This booster station should be installed near the time that the distribution system for Villages A, B, and C is being constructed to optimize working schedules, road closures and traffic

controls, and excavation work. A summary of estimated costs for this booster station is shown in Table 6-14.

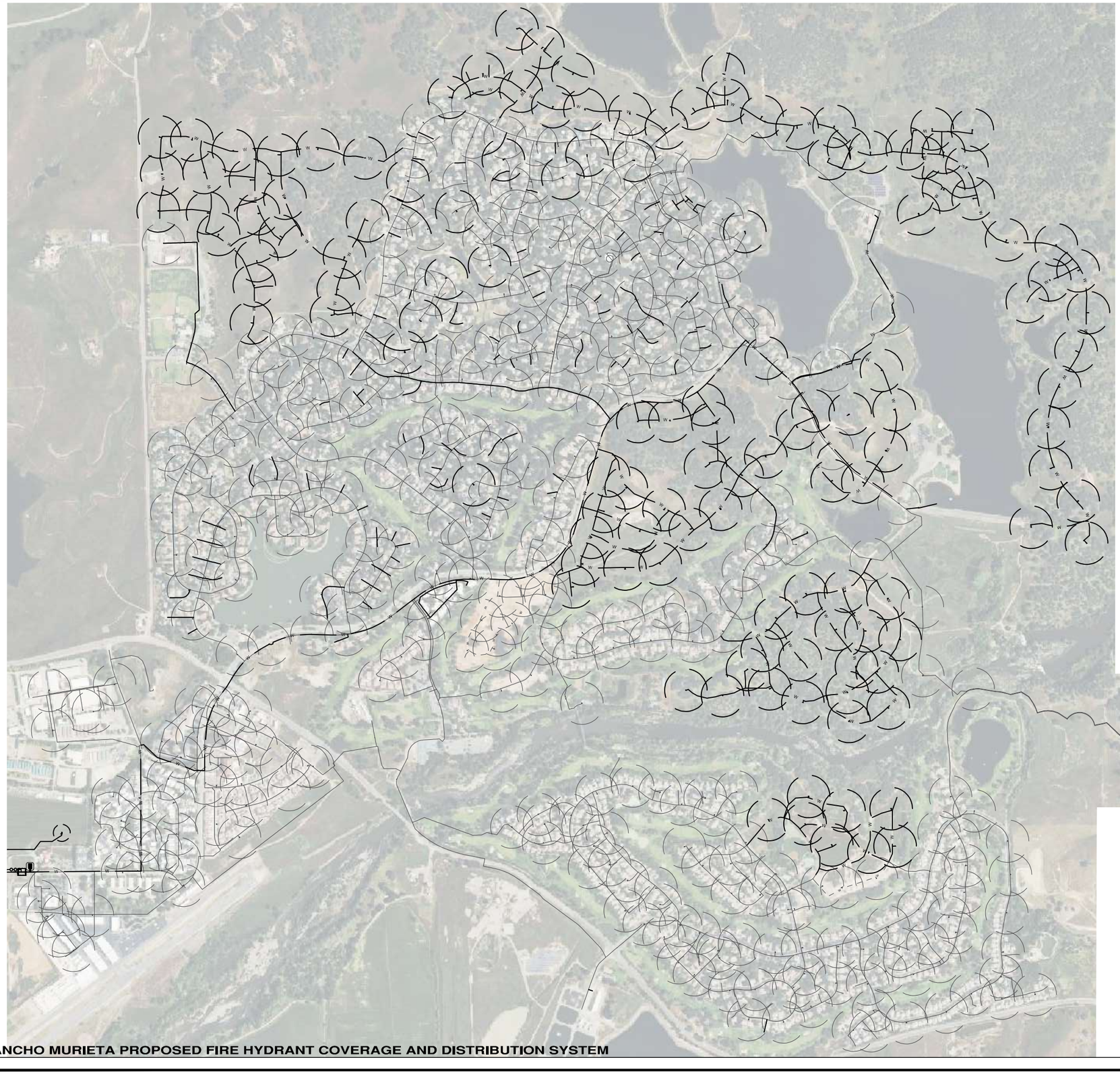
Table 6-14: Alternative 10 Cost Summary

Alternative 10 – Village C Booster Station	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$65,300
Install two 25-HP Pumps, two 40-HP Pumps, Motors, & Generators:	$304,800
Pump House, Controls, Power:	$529,300
Install Pipelines and Connect to Existing:	$32,500
Subtotal:	$1,143,000
Construction Contingencies:	$229,000
Design, Engineering, Construction Admin:	$286,000
Environmental, Permitting, Legal, Land Acquisition:	$20,000
Total Estimated Project Cost:	$1,678,000

6-4.3. Fire Suppression Improvements

As described above, the system's ability to provide fire protection during buildout conditions was evaluated. Four primary criteria were evaluated: fire hydrant coverage, pipeline velocities, available flow, and residual pressure during a fire event. Adequate fire hydrant coverage was determined by drawing 250-foot radius circles around each existing hydrant and determining which areas need new hydrants to achieve coverage.

Figure 6-7 shows the proposed fire hydrant coverage map, with proposed new hydrants in the new developments, as well as some new hydrants in the existing developments where insufficient coverage was discovered. In total, it was determined that 13 additional hydrants are required to provide sufficient coverage within the existing system, in addition to the 117 new proposed hydrants in the new developments, for a total of 130 new hydrants. See Figure 6-7 for a concept map of the proposed new hydrant locations, each with 250-foot radius circles around them.



RANCHO MURIETA PROPOSED FIRE HYDRANT COVERAGE AND DISTRIBUTION SYSTEM

600 0 300 600
(FEET)

FIRE COVERAGE NOTES

1. FIRE COVERAGE REQUIREMENTS FROM 2015 INTERNATIONAL FIRE CODE (IFC), APPENDIX C, SECTIONS 101 – 105.
   - 1.1. SECTION 102.1 STATES THAT MINIMUM NUMBER OF ADJACENT HYDRANTS AND MAXIMUM SPACING FOR HYDRANTS ARE DEPENDENT ON FIRE–FLOW REQUIREMENTS FOR AN INDIVIDUAL BUILDING OR AREA CONTAINING MANY BUILDINGS.
   - 1.2. THE SPACING DEPICTED HEREIN OPERATES UNDER THE ASSUMPTION THAT RESIDENTIAL BUILDINGS REQUIRE NO MORE THAN 1,750 GPM FIRE–FLOW, AND THAT INDUSTRIAL AREAS ARE PROPERLY EQUIPPED TO MEET IFC STANDARDS REGARDING INSTALLED FIRE SUPPRESSION TECHNOLOGIES.
   - 1.3. SECTION 103.1 STATES THAT FIRE APPARATUS ACCESS ROADS AND PUBLIC STREETS PROVIDING REQUIRED ACCESS TO BUILDINGS IN ACCORDANCE WITH SECTION 503 OF THE INTERNATIONAL FIRE CODE SHALL BE PROVIDED WITH ONE OR MORE FIRE HYDRANTS, AS DETERMINED BY SECTION C102.1.
   - 1.4. SECTION 104.1 STATES THAT EXISTING FIRE HYDRANTS ON PUBLIC STREETS ARE ASSUMED TO BE CONSIDERED AS AVAILABLE TO MEET THE REQUIREMENTS OF SECTIONS C102 AND C103.
2. THUS, THIS MAP DEPICTS HYDRANTS WITH A SPACING REQUIREMENT OF 500–FEET, WITH A MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT OF 250–FEET.
3. THE SPACING DEPICTED SHOULD ONLY BE USED FOR CONCEPTUAL AND PRELIMINARY DESIGNS. ACTUAL SITE CONDITIONS AND FIRE CODE REQUIREMENTS MAY VARY FROM THOSE USED IN THE DEVELOPMENT OF THESE FIGURES.

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- EXISTING FIRE HYDRANT COVERAGE RADIUS – 250 FEET
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED FIRE HYDRANT COVERAGE RADIUS – 250 FEET

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
PROPOSED FIRE HYDRANT COVERAGE MAP

SCALE	DATE	DRAWN BY	PROJ. NO.
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FIGURE 6-7

In addition to new fire hydrants, the system's ability to convey fire flows within the design criteria was evaluated. As discussed in the design criteria section, a value of 7 fps was determined to be the maximum allowable velocity within the system during a fire event. Excessively high velocities have several negative effects on a system, including excessive head loss, higher pumping costs, and decreased water quality from scale being dislodged from pipe walls. The simplest way to decrease the velocity is to replace the existing pipe with a larger one.

Pipe velocities above 7 fps were deemed unacceptable for fire performance. This includes all 4" and smaller diameter pipes. A 4" pipe is not capable of carrying fire flow volumes efficiently—1500 GPM through a 4" pipe results in a velocity of 38 fps. Many of the cul-de-sacs and other dead-end pipes in the system are 4". Therefore, it is recommended that all pipes with a 4" or smaller diameter be replaced with 8" diameter pipe. Additionally, there are several other pipes in the system that are undersized for fire flows. These include the 10" ACP pipe along Guadalupe Drive and the 8" and 6" pipe extending to Escuela Park. There are also existing pipes that should be upsized in anticipation of the new developments and their demands. These include the 8" pipe at the northeast end of De La Cruz Drive, which will serve as a key connection between Villages A and B, and the 8" pipe along Clementia Circle, which will be the primary discharge pipe from the new booster station in Village C. See Figure 6-8 below for a concept map of the pipes to be upsized and see Table 6-15 below for a summary of the estimated costs.

Table 6-15: Alternative 11 Cost Summary

Alternative 11 – Fire Suppression Improvements	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$528,300
4” and Smaller Pipeline Upsizing:	$3,578,400
13 New Fire Hydrant Assemblies:	$114,400
Upsizing for Current Deficiencies:	$1,332,900
Upsizing for Buildout Deficiencies:	$209,000
Subtotal:	$5,763,000
Construction Contingencies:	$1,153,000
Design, Engineering, Construction Admin:	$1,441,000
Environmental, Permitting, Legal, Land Acquisition:	$40,000
Total Estimated Project Cost:	$8,397,000

RANCHO MURIETA PROPOSED PIPELINE UPSIZING

600 0 300 600
(FEET)

PROPOSED IMPROVEMENTS

GUADALUPE DRIVE ZONE

REPLACE EXISTING 10" ACP WITH APPROXIMATELY 3,282 LF OF 12" C900 PVC.

REPLACE EXISTING 4" OR SMALLER PIPE OF UNKNOWN MATERIAL WITH APPROXIMATELY 2,910 LF OF 8" C900 PVC.

INSTALL 1 FIRE HYDRANT ASSEMBLY.

LAGUNA JUAQUIN ZONE

REPLACE EXISTING 4" OR SMALLER PIPE OF UNKNOWN MATERIAL WITH APPROXIMATELY 5,131 LF OF 8" C900 PVC.

REPLACE EXISTING 4" OR SMALLER PIPELINES AT THE VILLAS WITH APPROXIMATELY 1,507 LF OF 8" PVC.

ESCUELA DRIVE

REPLACE EXISTING 8" PVC WITH APPROXIMATELY 837 LF OF 10" C900 PVC.

REPLACE EXISTING 6" PVC WITH APPROXIMATELY 1,842 LF 10" C900 PVC.

RIO OSO DRIVE, WEST

REPLACE EXISTING 4" OR SMALLER PIPE OF UNKNOWN MATERIAL WITH APPROXIMATELY 4,651 LF OF 8" C900 PVC.

INSTALL 10 FIRE HYDRANT ASSEMBLIES.

RIO OSO DRIVE, EAST

REPLACE EXISTING 4" OR SMALLER PIPE OF UNKNOWN MATERIAL WITH APPROXIMATELY 3,990 LF OF 8" C900 PVC.

INSTALL 2 FIRE HYDRANT ASSEMBLIES.

DE LA CRUZ DRIVE

REPLACE EXISTING 8" PVC WITH APPROXIMATELY 585 LF OF 12" C900 PVC.

REPLACE EXISTING 4" OR SMALLER PIPE OF UNKNOWN MATERIAL WITH APPROXIMATELY 220 LF OF 8" C900 PVC.

CLEMENTIA CIRCLE

REPLACE EXISTING 8" PVC WITH APPROXIMATELY 280 LF OF 12" C900 PVC.

LEGEND

EXISTING WATER LINE

EXISTING FIRE HYDRANT

PROPOSED WATER LINE

PROPOSED FIRE HYDRANT

GENERAL NOTES

1. UNLESS OTHERWISE NOTED, THE PROPOSED PIPELINES SHOWN ARE TO REPLACE EXISTING DISTRIBUTION LINES 4" OR SMALLER

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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DISTRIBUTION AND STORAGE ALTERNATIVES
FOR
RANCHO MURIETA CSD
PROPOSED PIPELINE UPSIZING

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FIGURE
6-8

6-4.4. Developer-Funded Distribution Improvements

As a part of the modeling effort for this IWMP, it was necessary to model the projected buildout distribution system with the projected future demands to ensure that improvement alternatives were appropriate for the buildout conditions. This resulted in the development of a model of the distribution system at buildout. Pipelines were assigned a minimum size of 8" while larger transmission lines were sized in EPANet2.2. These are often 12" in size, though some smaller 10" lines were determined to be adequate. See Figure 6-9 and Figure 6-10 for concept maps of the probable layout of developer-funded distribution networks in the new developments. See Table 6-16 for a summary of estimated footages and sizes of new distribution networks in the new developments.

Table 6-16: Summary of Estimated Developer Distribution Improvements

Summary of Estimated Developer-Funded Distribution Improvements						
Development	**8" (LF)**	**10" (LF)**	**12" (LF)**	**14" (LF)**	**Hydrants**	**Pressure Zone**
Village A	7,750	0	4,300	0	19	ABC (new)
Village B	9,000	1,700	450	0	20	ABC (new)
Village C	4,375	0	450	910	7	ABC (new)
Residences	10,800	2,950	0	0	22	Rio Oso
Riverview	6,100	0	0	0	8	Van Vleck
Rancho North	9,450	3,900	8,050	0	41	Rio Oso
Total	**39,725**	**8,550**	**8,950**	**910**	**117**	**n/a**

VILLAGES A, B, AND C

THE RESIDENCES EAST AND WEST AT RANCHO MURIETA

RIVERVIEW

PROPOSED IMPROVEMENTS

VILLAGE A:

INSTALL APPROXIMATELY 7,750 LF OF 8" C900 PVC AND APPROXIMATELY 4,300 LF OF 12" C900 PVC.

INSTALL 19 FIRE HYDRANT ASSEMBLIES.

VILLAGE B:

INSTALL APPROXIMATELY 9,000 LF OF 8" C900 PVC, 1,700 LF OF 10" C900 PVC AND 450 LF OF 12" C900 PVC.

INSTALL 20 FIRE HYDRANT ASSEMBLIES.

VILLAGE C:

INSTALL APPROXIMATELY 4,375 LF OF 8" C900 PVC, 450 LF OF 12" C900 PVC, AND 910 LF OF 14" C900 PVC.

INSTALL 7 FIRE HYDRANT ASSEMBLIES.

THE RESIDENCES (EAST & WEST):

INSTALL APPROXIMATELY 10,800 LF OF 8" C900 PVC AND APPROXIMATELY 2,950 LF OF 10" C900 PVC.

INSTALL 22 FIRE HYDRANT ASSEMBLIES.

INSTALL 1 PRESSURE RELIEF VALVE ON NORTHEAST MAINLINE FROM RIO OSO PRESSURE ZONE.

RIVERVIEW:

INSTALL APPROXIMATELY 6,100 LF 8" C900 PVC.

INSTALL 8 FIRE HYDRANT ASSEMBLIES.

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PRESSURE RELIEF VALVE

N

300 0 150 300

(FEET)

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DISTRIBUTION AND STORAGE ALTERNATIVES FOR RANCHO MURIETA CSD VILLAGES A, B, & C, RESIDENCES, RIVERVIEW

SCALE	DATE	DRAWN BY	PROJ. NO.
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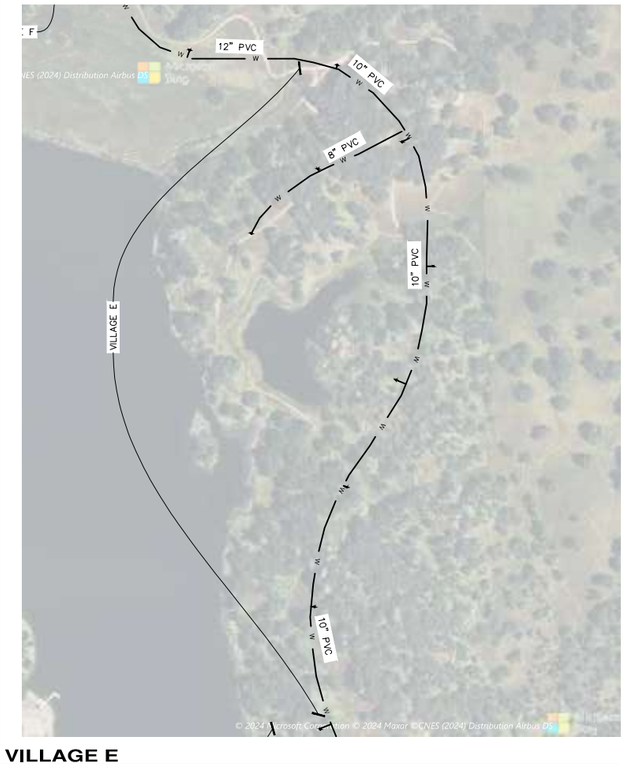
FIGURE 6-9

VILLAGES F, G, AND H



VILLAGE E

VILLAGE D

300 0 150 300
(FEET)

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

LEGEND

- EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED PROPERTY LINE/LOT
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PRESSURE RELIEF VALVE

PROPOSED IMPROVEMENTS

VILLAGE D:

INSTALL APPROXIMATELY 969 LF OF 8" C900 PVC AND APPROXIMATELY 812 LF OF 10" C900 PVC.

INSTALL 4 FIRE HYDRANT ASSEMBLIES.

VILLAGE E:

INSTALL APPROXIMATELY 748 LF OF 8" C900 PVC AND APPROXIMATELY 2,945 LF OF 10" C900 PVC.

INSTALL 8 FIRE HYDRANT ASSEMBLIES.

VILLAGE F:

INSTALL APPROXIMATELY 2,929 LF OF 8" C900 PVC AND APPROXIMATELY 2,505 LF OF 12" C900 PVC.

INSTALL 10 FIRE HYDRANT ASSEMBLIES.

VILLAGE G:

INSTALL APPROXIMATELY 652 LF OF 8" C900 PVC, AND APPROXIMATELY 1,529 LF OF 12" C900 PVC.

INSTALL 5 FIRE HYDRANT ASSEMBLIES.

INSTALL 1 PRESSURE RELIEF VALVE ON MAINLINE BETWEEN VILLAGE G AND VILLAGE H.

VILLAGE H:

INSTALL APPROXIMATELY 4,137 LF OF 8" C900 PVC, APPROXIMATELY 154 LF OF 10" C900 PVC, AND APPROXIMATELY 4,129 LF 12" C900 PVC.

INSTALL 14 FIRE HYDRANT ASSEMBLIES.

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FOR
RANCHO MURIETA CSD
RANCHO NORTH

SCALE	DATE	DRAWN BY	PROJ. NO.
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FIGURE 6-10

6-5.

6-5. Reclaimed Water System Improvements

6-5.1. WWRP Improvements

6-5.1.a. EQ Basin Potable Water Air Gap Connection

The dual plumbing installed for residential and commercial use of reclaimed water will likely mean that the reclaimed water users only have irrigation systems connected to the reclaimed system, so it is important that the NCPS can meet irrigation demands even when WWRP production is not sufficient. The connection to the potable water system at the EQ basin will make this possible. This improvement is required to supplement reclaimed water with potable water and meet peak reclaimed water demands while maximizing the use of reclaimed water. This improvement involves connecting to the existing 8" potable water pipeline located immediately north of the EQ basin at the WWRP, installing an 8" extension to the EQ basin, and installing an 8" air gap connection to deliver potable water to the EQ basin. The connection between the existing potable water pipeline and the air gap will require approximately 20 feet of 8" C900 PVC pipe, a flow meter, isolation and control valves, and elbows. Based on the buildout domestic model, the existing 8" potable water pipe can deliver 0.8 MGD to the EQ basin while maintaining 40 psi of residual pressure in the rest of the pressure zone during peak day demand. This flow will allow the EQ basin and the NCPS to provide sufficient flows to the residential and commercial reclaimed water users throughout the irrigation season.

6-5.1.b. Disinfection Facilities Upgrade

As mentioned in a previous chapter, the WWRP is currently limited in its capacity by the disinfection system, which has a capacity of 2.3 MGD. It is proposed that the existing CCP be removed, and an additional chlorine contact chamber be added to increase the disinfection facility's capacity to 3.0 MGD.

As described in *WWRP Modified Chlorine Contact Disinfection System Compliance Report* (HSe, July 2006), the chlorine contact basin (CCB) was tested in 2003 for actual modal contact time at flows of 1 and 3 MGD. The estimated modal contact time through the CCB at 3 MGD is 27 minutes. In accordance with Title 22, disinfected tertiary reclaimed water requires a minimum

90-minute modal contact time. Therefore, the proposed chlorine contact chamber is to have minimum modal contact time of 63 minutes.

A new concrete chlorine contact chamber next to the existing EQ basin at the WWRP is currently in the design phase. This will increase disinfection capacity. The water surface elevation of the new chlorine contact chamber will approximately match the elevation of the existing chlorine contact basin. The water surface elevation immediately downstream of the new chlorine contact chamber will approximately match the elevation of the existing EQ basin.

This improvement also includes the removal and disposal of the existing 20" CCP located inside the EQ basin.

6-5.1.c. Dechlorination System

The WDR for the WWRP requires at least 4.5 mg/L of chlorine residual at the discharge point of the reclaimed system. However, due to seasonal challenges with high temperatures and other variables, District staff often maintain chlorine residuals of 6-10 mg/L. These levels of chlorine are toxic to landscaping, which require water with less than 2 mg/L of chlorine. Currently, water from the WWRP is pumped to the golf course irrigation lakes before it is applied to the golf courses. The time that the water spends in the lakes allows the chlorine residual to dissipate and avoid damaging the landscaping. However, for the residential and commercial users, it is proposed that the reclaimed water be pumped directly from the EQ basin to the users. For this reason, a dechlorination stage is proposed to reduce the chlorine residuals to a safe level for irrigation. This improvement will involve a building, approximately 8 feet by 8 feet, adjacent to the NCPS, which will store the sodium bisulfate used for dechlorination and the feed pump. The pump will feed sodium bisulfate into the stream exiting the rehabilitated NCPS.

6-5.1.d. DAF Pump Improvements

The 2017 PDR mentions the need for improvements to the third DAF feed pump. This improvement should be completed along with the other recommendations in this chapter. See Table 6-17 below for a cost summary of the WWRP improvement alternatives.

Table 6-17: Alternative 15 Cost Summary

Alternative 15 – WWRP Improvement Cost Summary	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$14,100
EQ Basin Air Gap	$57,500
New Chlorine Contact Basin (project in progress)	n/a
Dechlorination Building	$45,300
DAF Pump Improvements	$128,000
Subtotal:	$245,000
Construction Contingencies:	$49,000
Design, Engineering, Construction Admin:	$62,000
Environmental, Permitting, Legal, Land Acquisition:	$20,000
Total Estimated Project Cost:	$376,000

6-5.2. Reclaimed Transmission Improvements

6-5.2.a. North Course Pump Station Upgrades

For buildout demands, the NCPS will need to be able to deliver 2,690 gpm of reclaimed water during peak demand. To achieve this need, it is proposed that three vertical turbine pumps be installed to replace the existing pumps (two duty, one standby). Each of these pumps will provide 1,500 gpm of flow at 300 feet TDH. This provides a firm capacity of 3,000 gpm, which is greater than the flow estimated during peak day demand. Each of these pumps will also have VFDs installed to allow them to operate efficiently through a wide range of demands. As with the existing NCPS, the rehabilitated NCPS will be able to deliver water to either the North Course and Residential/Commercial users, or to Van Vleck ranch, depending on the needs at the time.

6-5.2.b. North Course Transmission Pipeline

As discussed in Chapter 5, portions of the existing pipeline from the NCPS to Bass Lake are undersized for buildout demands. Further, the entire pipeline is aging ACP, which has a low maximum operating pressure. For these reasons, it is proposed that the entire pipeline from the

NCPS to Bass Lake be replaced with 12" C900 PVC. The existing pipeline can be abandoned in place, with the new pipeline alongside it, if that is the more affordable option. See Table 6-18 below for a cost summary of the reclaimed transmission alternatives.

Table 6-18: Alternative 16 Cost Summary

Alternative 16 – Reclaimed Transmission Improvement Cost Summary	
Project Component	**Estimated Cost**
Mobilization/Demobilization, Traffic Controls:	$276,800
North Course Transmission Replacement	$2,668,000
North Course Pump Station Rehabilitation	$862,700
Subtotal:	$3,808,000
Construction Contingencies:	$762,000
Design, Engineering, Construction Admin:	$952,000
Environmental, Permitting, Legal, Land Acquisition:	$25,000
Total Estimated Project Cost:	$5,547,000

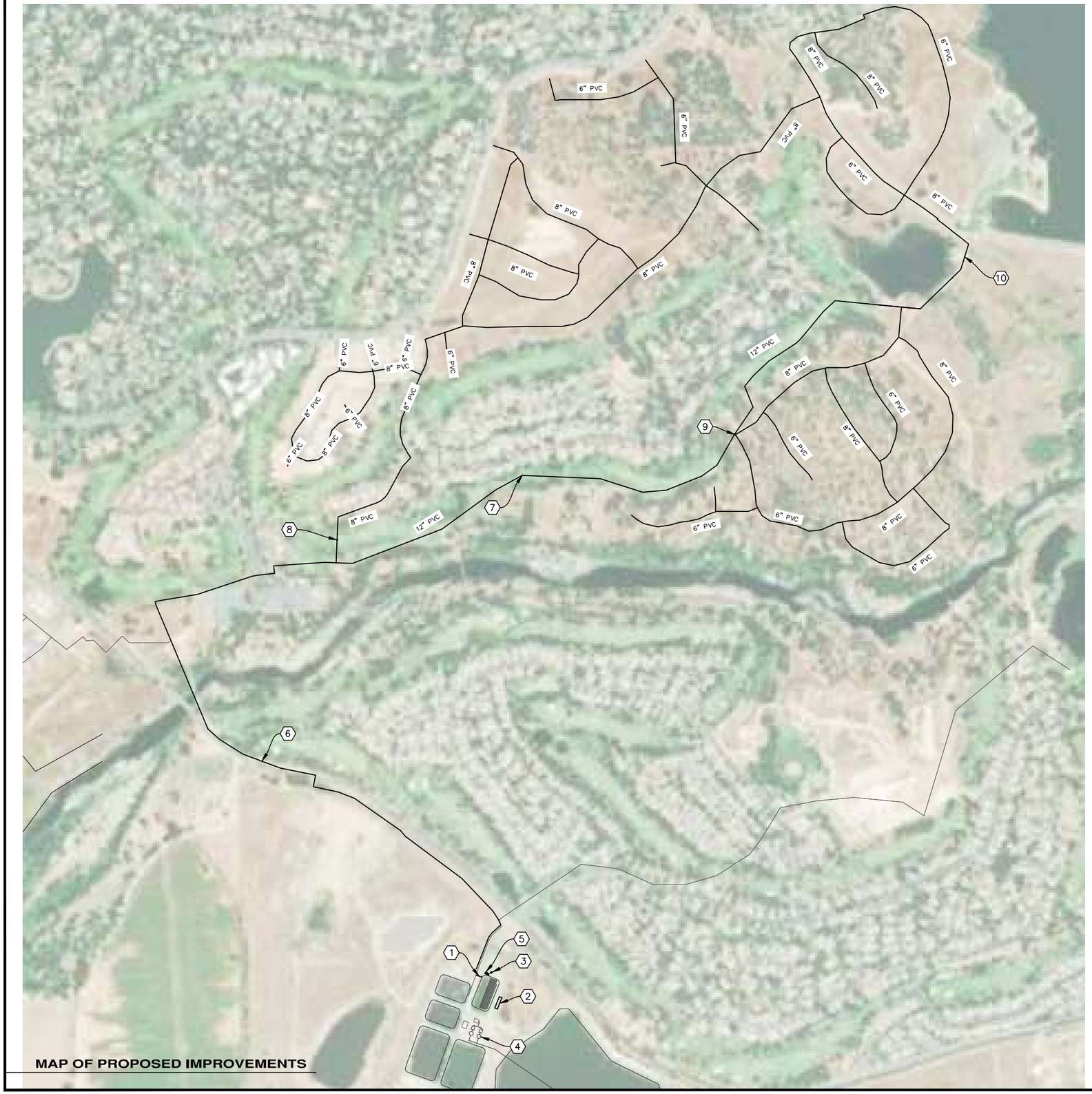
6-5.3. Reclaimed Distribution Systems for New Developments

As with the domestic distribution systems for the new developments, it was required that the networks be modeled to ensure that other improvements would be sufficient to provide adequate service at buildout. These reclaimed distribution improvements will be funded by the developers. See Table 6-19 for a summary of the estimated footage of different reclaimed distribution pipelines that will be installed by developers.

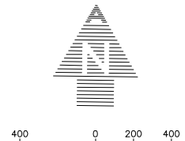
Table 6-19: Summary of Estimated Developer Reclaimed Distribution Improvements

Summary of Estimated Developer-Funded Reclaimed Distribution Improvements		
Development	**6" (LF)**	**8" (LF)**
Village A	2,800	9,150
Village B	5,800	4,700
Village C	5,300	1,600
Retreats	5,200	0
Total	**19,100**	**15,450**

See Figure 6-11 for a map of all proposed reclaimed system improvements.



MAP OF PROPOSED IMPROVEMENTS



PROPOSED IMPROVEMENTS

1. INSTALL 65 LF OF 8" PVC FROM POTABLE WATER SYSTEM TO EQ BASIN WITH AIR GAP CONNECTION.
2. INSTALL NEW CHLORINE CONTACT BASIN.
3. INSTALL DECHLORINATION BUILDING AND FEED.
4. REPLACE DAF FEED PUMP
5. REPLACE (2) EXISTING PUMPS WITH (3) PUMPS WITH VFDS PUMPS TO PROVIDE 1,500 GPM AT 300 FEET TDH
6. REPLACE EXISTING 12" ACP WITH APPROXIMATELY 4,824 LF OF 12" PVC.
7. REPLACE EXISTING 8" ACP WITH APPROXIMATELY 7,288 LF OF 12" PVC.
8. CONNECT RETREATS DISTRIBUTION SYSTEM TO NORTH COURSE MAIN WITH 353 LF OF 8" C900 PVC.
9. CONNECT VILLAGE B DISTRIBUTION SYSTEM TO NORTH COURSE MAIN WITH 10 LF OF 8" C900 PVC.
10. CONNECT VILLAGE C DISTRIBUTION SYSTEM TO NORTH COURSE MAIN WITH 613 LF OF 8" C900 PVC.
11. REMOVE EXISTING CHLORINE CONTACT PIPE.

LEGEND

- EXISTING BUILDING EDGE
- EXISTING RECLAIMED WATER LINE
- PROPOSED BUILDING EDGE
- PROPOSED RECLAIMED WATER LINE
- PROPOSED RECLAIMED WATER PUMP
- PROPOSED RECLAIMED WATER VALVE

SITE PLAN NOTES

1. NO TOPOGRAPHIC SURVEY WAS PERFORMED. ALL LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. ACTUAL SITE CONDITIONS AND LOCATIONS MAY VARY.
2. THIS IS A SCHEMATIC SITE PLAN FOR THE SOLE PURPOSE OF ILLUSTRATING THE GENERAL COMPONENTS AND FACILITIES. ACTUAL SITE LAYOUT AND LOCATIONS MAY VARY AND WILL NEED TO BE DETERMINED BY TOPOGRAPHIC SURVEY AND OTHER SITE INVESTIGATIONS AS REQUIRED.

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ENGINEERING - SURVEYING - PLANNING - TESTING

RECLAIMED WATER ALTERNATIVES
FOR
RANCHO MURIETA CSD
ALL PROPOSED RECLAIMED IMPROVEMENTS

SCALE	DATE	DRAWN BY	PROJ. NO.
SHOWN	08/08/2024	BAG	3971-02

FIGURE 6-11

6-6. Capital Improvement Plan

See Table 6-20 below for a recommended CIP for the District. This table summarizes all the alternatives outlined in this chapter. It includes the total estimated cost for each alternative and indicates if the project corrects a deficiency in existing or buildout conditions. The actual selection of projects and their timelines and funding are up to the discretion of the District. This CIP only represents the alternatives that resulted from the analysis performed to support this IWMP.

Table 6-20 Capital Improvement Plan

Capital Improvement Plan			
#	Description	**Existing/Buildout**	**Estimated Cost**
1A	3 New Wells, No Treatment	Existing	$6,349,000
1B	5 New Wells , No Treatment	Buildout	$10,455,000
2A	3 New Wells, Partial Treatment	Existing	$12,533,000
2B	5 New Wells, Partial Treatment	Buildout	$21,284,000
3A	3 New Wells, Portable Treatment	Existing	$6,349,000
3B	5 New Wells, Portable Treatment	Buildout	$10,455,000
4A	3 New Wells, Full Treatment	Existing	$17,184,000
4B	5 New Wells, Full Treatment	Buildout	$29,579,000
5A	3 New Wells, Treat at 3 New Wells WTP	Existing	$11,987,000
5B	5 New Wells, Treat at Existing WTP	Buildout	$16,855,000
6	Use Clementia for Domestic Storage	Buildout	n/a[1]
7	New Tank in Village C	Buildout	$3,272,000
8	New Tank in Village H	Buildout	$3,438,000
9	New Tank at Van Vleck	Buildout	$4,254,000
10	Village C Booster Station	Buildout	$1,678,000
11	New Hydrants and Pipeline Upsizing	Existing	$8,397,000
12	WWRP Improvements	Existing	$376,000
13	Reclaimed Transmission Improvements	Buildout	$5,547,000

[1]Since the cost for this alternative is primarily for pump rental, the capital cost is not comparable and is not included in this table.

CHAPTER 7. Conclusion and Recommendations

This report summarizes the analysis of the District's potable and reclaimed water systems. It evaluated the existing facilities, performance objectives, existing and future demands, and system adequacy. Finally, alternatives were recommended and cost estimates presented for improvements that will help the District select appropriate projects. The alternatives presented in this IWMP were developed to meet the system's performance objectives based on the guidance that was provided by the District. At this point, the District can review the alternatives and decide how to proceed by selecting one or more of the alternatives presented in the report. This final section summarizes the recommendations for the District going forward from this IWMP.

1. Conduct a seepage study. One of the limitations of the domestic water balance conducted as a part of this IWMP was the lack of real seepage data. Historic empirical equations were used to estimate seepage for this water balance, which allows for uncertainty that could be corrected with data from a real seepage study. The District should retain a licensed geotechnical engineer to perform a seepage study for the three raw water storage reservoirs.
2. Install new weather station near the raw water storage reservoirs. Collecting accurate precipitation, evaporation, and temperature data is essential for the District to continue planning its water resources properly.
3. Update water balance. After the seepage study is complete, the data should be used to update the domestic water balance. The evaporation data gathered from the new weather station can be used to conduct an accurate seepage study and ultimately for the District to update its water balance.
4. IWMP Update. At such a time as the assumptions used in this IWMP are out of date, i.e. the planned developments change, data from the new weather station is available, water usage trends change significantly, the District should update the document to ensure it continues to be a useful planning tool for its water infrastructure. The hydraulic models should also be updated in accordance with these changes.

Appendix A 2010 Demand Forecast Method

APPENDIX A: LEGACY EDU-BASED DEMAND FORECASTING APPROACH

At the time of the 2010 IWMP, the District estimated the number of lots by lot type served within the district area boundary. Estimated water per lot (divided into lots by type) then became an allocation of water for the District service area. Land use based forecasts are useful as they are tied to the potential land uses and typical water use per land use type (single family residential lots, etc.). There are other less detailed or sophisticated approaches; for example, a more basic approach using water use estimates based on growth factors (e.g., estimates of future population growth per household and an estimate number of households, and water use per person).

History of Equivalent Dwelling Units

Brown and Caldwell was directed to apply a "equivalent dwelling unit" or "EDU" method. This a common practice, where a typical single family home size and associated water use is determined by looking at the historical water use. The District had determined a "demand factor" by reviewing historical water demand data for a typical larger estate lot at the water use level of 750 gallons per account per day. As quoted from the 2010 IWMP, Section 2.1:

"The District projects water service demand using 750 gallons per day (gpd) per EDU as a conservative water demand factor for planning purposes. EDU is a unit measure for demand. It is used by water purveyors to equalize demand for various land use classifications and structure types. As shown in Table 2-1, various types of lots or user classes are assigned a ratio that converts a lot size or user class to an EDU value. For example, a large estate lot greater than 12,000 square feet is expected to have greater water demand than a smaller townhouse lot. A large estate lot is assigned a ratio of 1.0 EDU (750 GPD/unit) while the smaller townhouse lot is assigned ratio of 0.5 EDU (375 gpd/unit). The EDU value is used to project demands between development units in various types of lots and user classes. Commercial EDUs are derived by taking the total commercial connections' annualized water use and dividing by 750 gpd."

As different types of land uses have different types of water use, there is a ratio applied based on the 750 gallons per day, based on an EDU conversion factor, as shown in the 2010 IWMP Table 2-1 below:

Appendix Table 1 - 2010 IWMP Table 2-1

Table 2-1. Summary of 2010 Service Connections and EDUs				
Lot or User Class	**Planning Assumption for Use (gpd/DU)[1]**	**EDU Conversion Ratio [2]**	**Number of Connections[3]**	**Number of EDUs[4]**
Residential Units				
Estate > 12,000 sf	750	1.0	729	729
Estate < 12,000 sf	750	0.9	555	500
Circle	750	0.7	440	308
Cottage	750	0.7	274	192
Halfplex	750	0.5	59	30
Townhouse	750	0.5	256	128
Mobile Home	750	0.3	189	57
		Subtotal	**2,502**	**1,943**
Non-Residential Units				
Commercial/Industrial	750	NA[5]	97	272
Parks	750	NA	5	54
School	750	NA	0	0
		Total	**2,604**	**2,269**

[1] Gallons per day (gpd) per dwelling unit (DU) based on planning assumptions of 750 gpd/EDU. The 5-year average demand from 2005 to 2009 was 685 gpd/EDU

[2] Rounded to the nearest tenth.

[3] As of July 2010, there are 2502 occupied lots (units) and 45 vacant lot and 620 new approved lots and 50 EDU of connections yet to be constructed.

[4] Equivalent dwelling unit (EDU). Equal to the product of the EDU conversion and the number of lots based on data as of July 2010.

[5] Conversion ratio is not applicable for non-residential units given the actual demand is divided by the planning assumption of 750gpd/EDU to determine the number of equivalent dwelling units.

An estimated number of Residential and Non-Residential Units/EDUs are shown below as taken from 2010 IWMP Table 3-1 for the existing service connections at time of analysis. Additional analysis was completed for three potential growth levels (low, medium, and high) based on estimated future planned connections (e.g., assumed counts of lots of certain lot sizes).

Appendix Table 2 - 2010 IWMP Table 3-1

Table 3-1. Existing and Projected Number of Connections and EDUs at Buildout[1]								
Lot or User Class	Existing Service Area[2]		Low Growth Scenario		Medium Growth Scenarios[3]		High Growth Scenario	
	Number of Units (Connections)	Number of EDUs (EDUs)	Number of Units (Connections)	Number of EDUs (EDUs)	Number of Units (Connections)	Number of EDUs (EDUs)	Number of Units (Connections)	Number of EDUs (EDUs)
Residential Units								
Estate >12,000	729	729	1,453	1,453	1,953	1,953	2,796	2,796
Estate <12,000	555	500	1,091	982	1,091	982	1,091	982
Circle	440	308	440	308	440	308	440	308
Cottage	274	192	274	192	274	192	274	192
Halfplex	59	30	59	30	59	30	59	30
Townhouse	256	128	340	170	340	170	340	170
Mobile Home	189	57	189	57	189	57	189	57
Subtotal	**2,502**	**1,943**	**3,846**	**3,191**	**4,346**	**3,691**	**5,189**	**4,534**
Non-residential Units								
Commercial	97	272	120	372	120	372	120	372
Park	5	54	8	269	8	269	8	269
School	0	0	24	24	24	24	24	24
Subtotal	**102**	**326**	**152**	**665**	**152**	**665**	**152**	**665**
Total	**2,604**	**2,269**	**3,998**	**3,856**	**4,498**	**4,356**	**5,341**	**5,199**

[1] *For planning purposes, the 45 vacant are included as large estate lots in each of the three build out scenarios.*

[2] *Existing Service Connections based on 2009 data and assumed no development until 2015.*

[3] *Base scenario. Buildout projected timeframe is estimated in year 2030.*

Source: 2010 IWMP, Brown and Caldwell

The next step is to multiply planning assumption of the 750 gpd per EDUs by the appropriate conversion ratio (essentially scale from the large lot type down the smaller lot types) by the number of EDUs for each lot type (or user category). The results are then summarized by adding up lot type water use to provide an estimated total water needs for the existing conditions and then each of the growth. The District's buildout planning assumption was the medium growth scenario of 4,551 acre-ft per year. An acre foot is the amount of water volume to cover one acre in one foot depth of water, like the size of a large swimming pool (1 acre-foot per year is equal to 325,851 gallons per day multiplied by 365 days per year).

Appendix Table 3 - 2010 IWMP Table 3-2

Table 3-2. Estimated Treated and Raw Water Needs				
Raw Water Demand Component	Existing Conditions (acre-ft per year)	Projected Buildout Scenarios (acre-ft per year)		
		Low Growth	Medium Growth	High Growth
Residential and Non-residential Demands	1,906	3,239	3,659[1]	4,368
System Losses (10%)	190	324	366	436
Estimated Treated Water Production	**2,096**	**3,563**	**4,025**	**4,804**
Direct Rainfall and Runoff[2]	(287)	(287)	(287)	(287)
Reservoir Losses[2]	813	813	813	813
Total Estimated Water Supply Need	**2,622**	**4,089**	**4,551[1]**	**5,330**

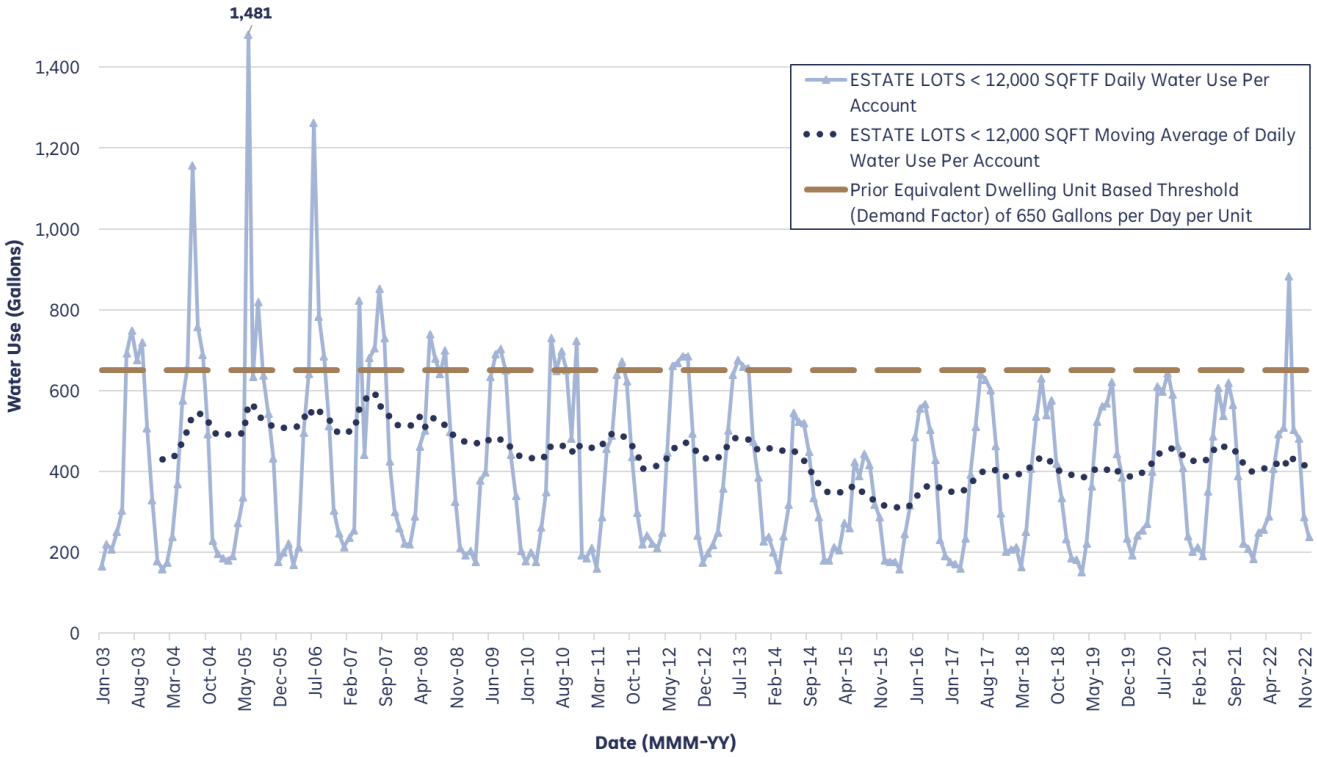
[1] *When assuming SB7 compliance will be achieved, raw water supply deliveries to the water treatment plant may lower by 20 percent on the order of 2,957 acre-ft/yr from the original estimate of 3,659 acre-ft/yr at buildout (medium growth scenario). The total estimated water supply need may also be reduced to 3,640 acre-ft/yr from 4,551 acre-ft/yr.*

[2] *Evaporation and seepage losses are dependent on storage volumes and surface area of each reservoir. Storage volume to surface area curves were developed using regression analysis for the 2006 IWMP based on historical data for each reservoir. These equations were reviewed and retained use for the 2010 IWMP Update. The minimum amount of total losses is experienced under extreme drought event when storage volumes and surface area is in critically low condition or at dead storage volumes. Total losses for the extreme drought event using 1977 hydrology was estimated at 492 acre-ft in both the 2006 IWMP and 2010 IWMP Update. .*

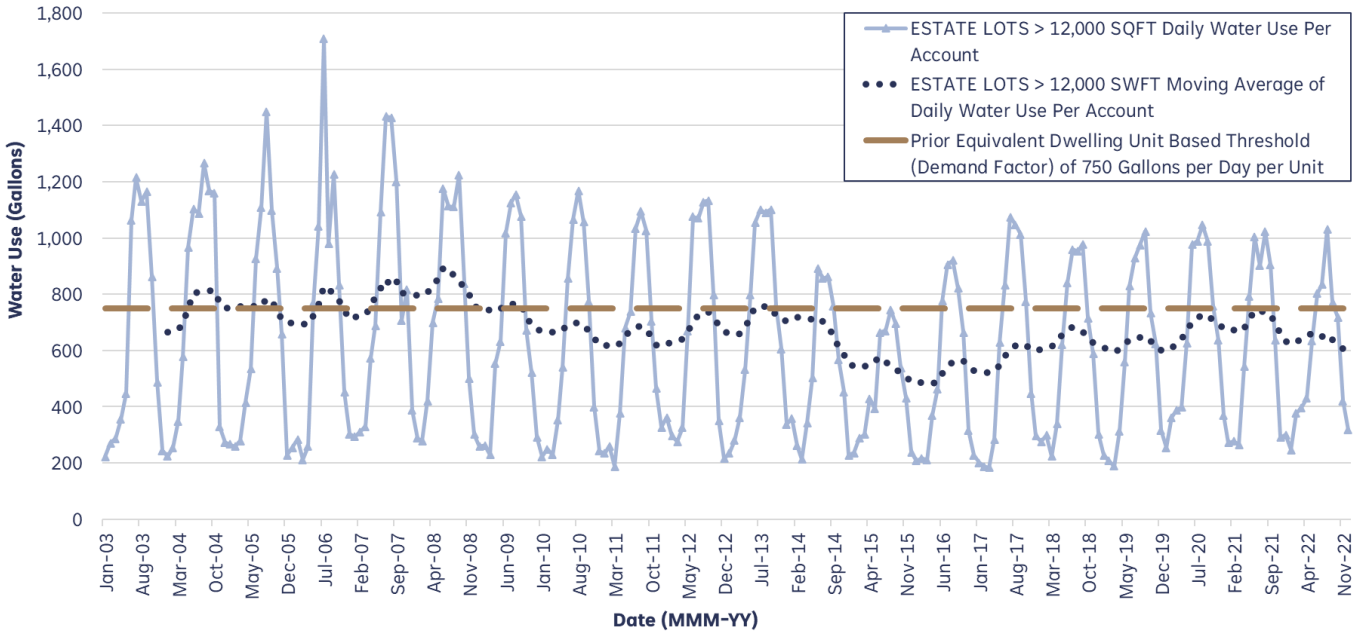
Source: 2010 IWMP, Brown and Caldwell

Appendix B Historic Demands by Lot Type

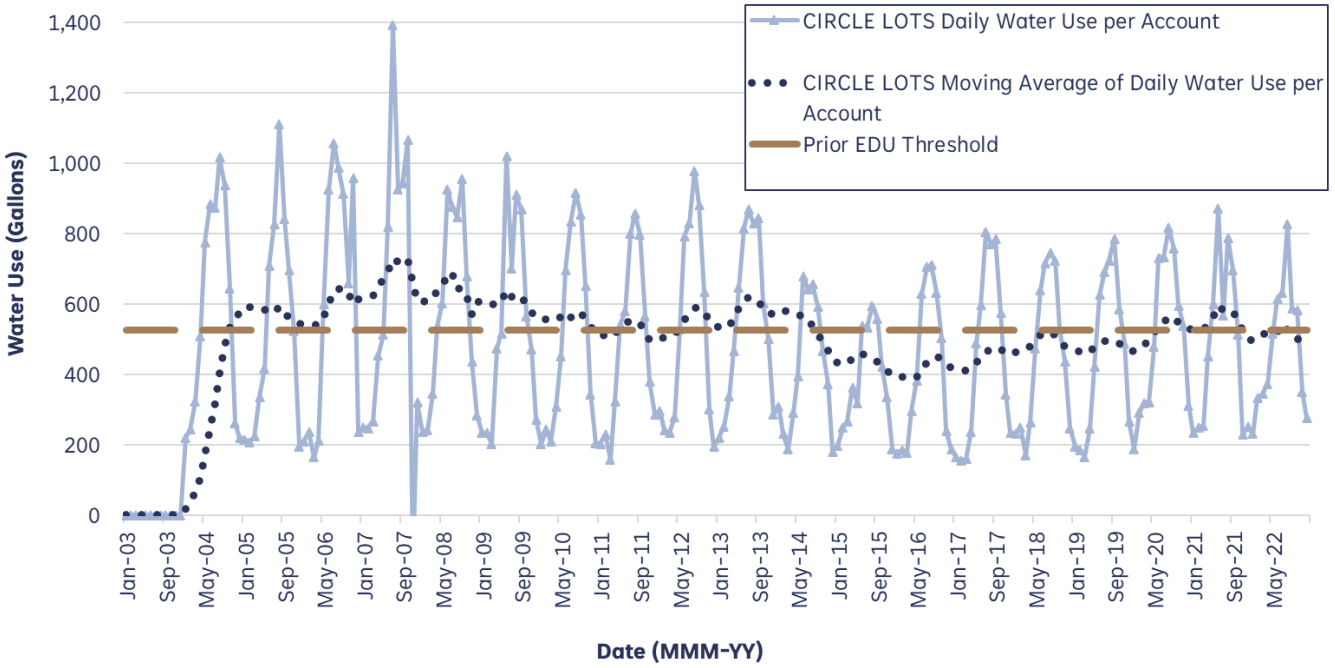
Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Estate Lots < 12,000 SQFT 2003 - 2022



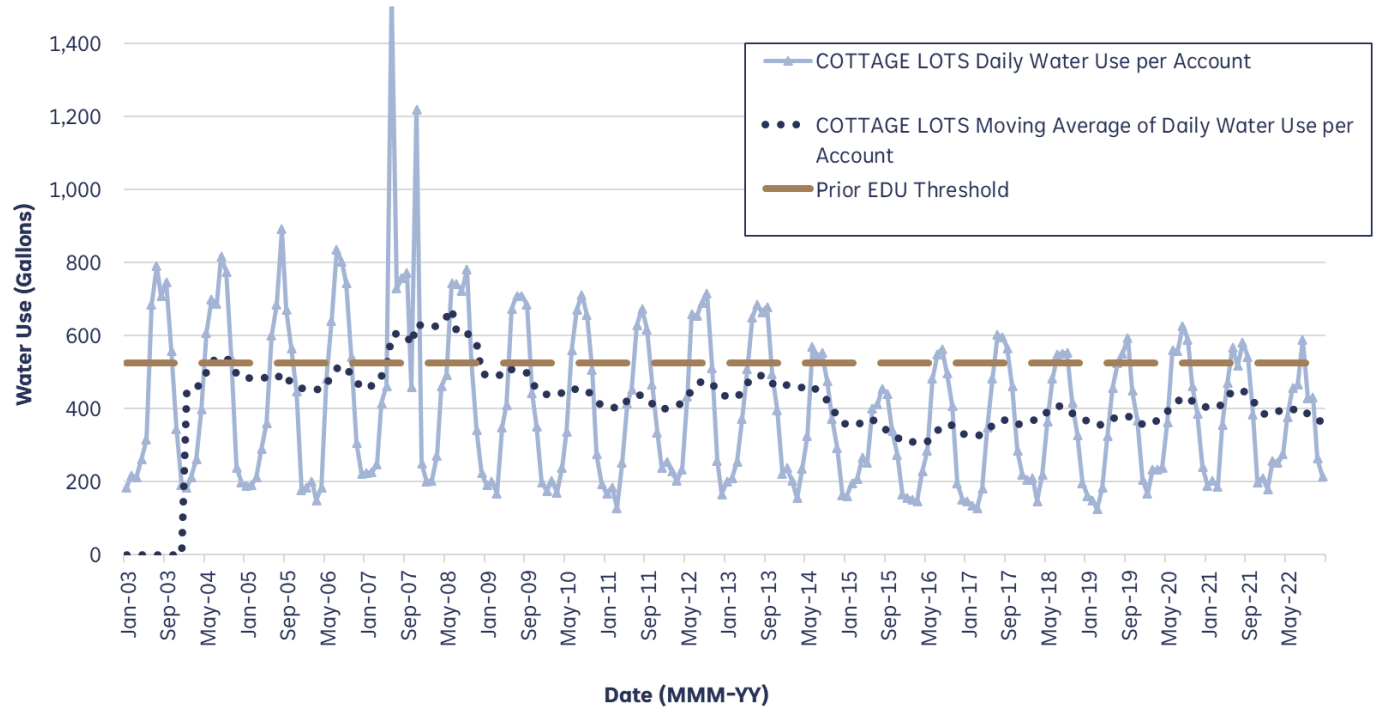
Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Estate Lots > 12,000 SQFT 2003 - 2022



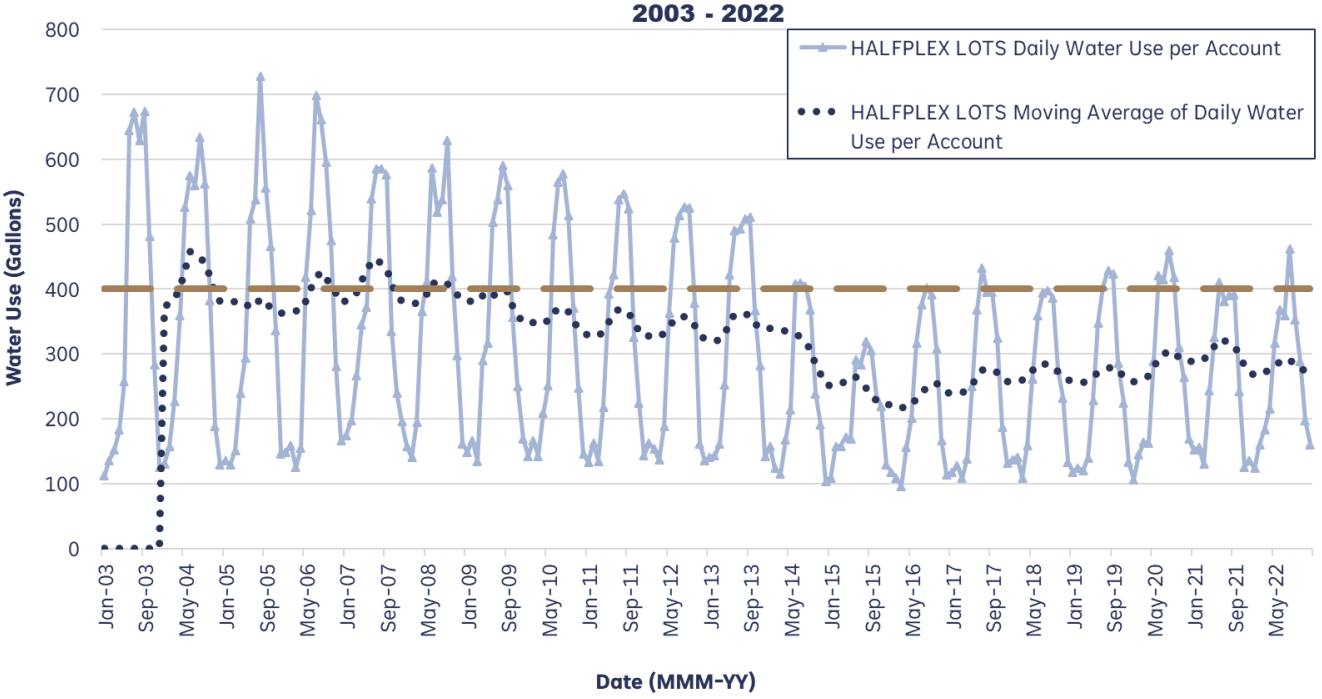
Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Circle Lots 2003 - 2022



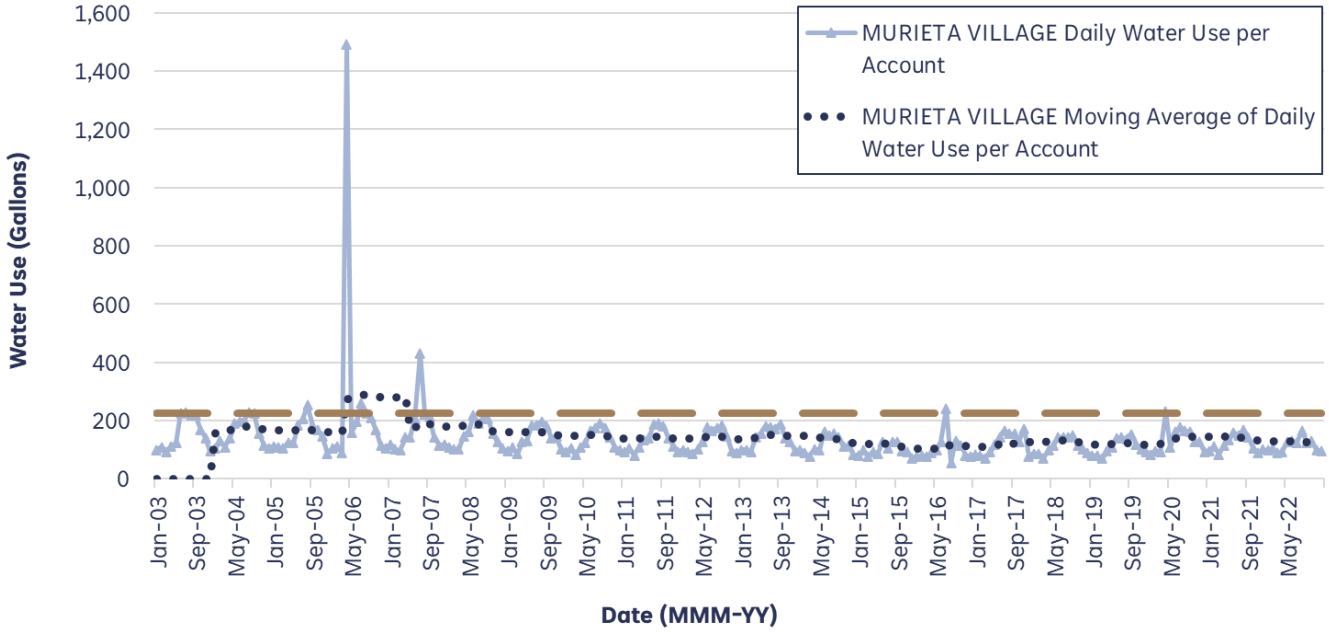
Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Cottage Lots 2003 - 2022

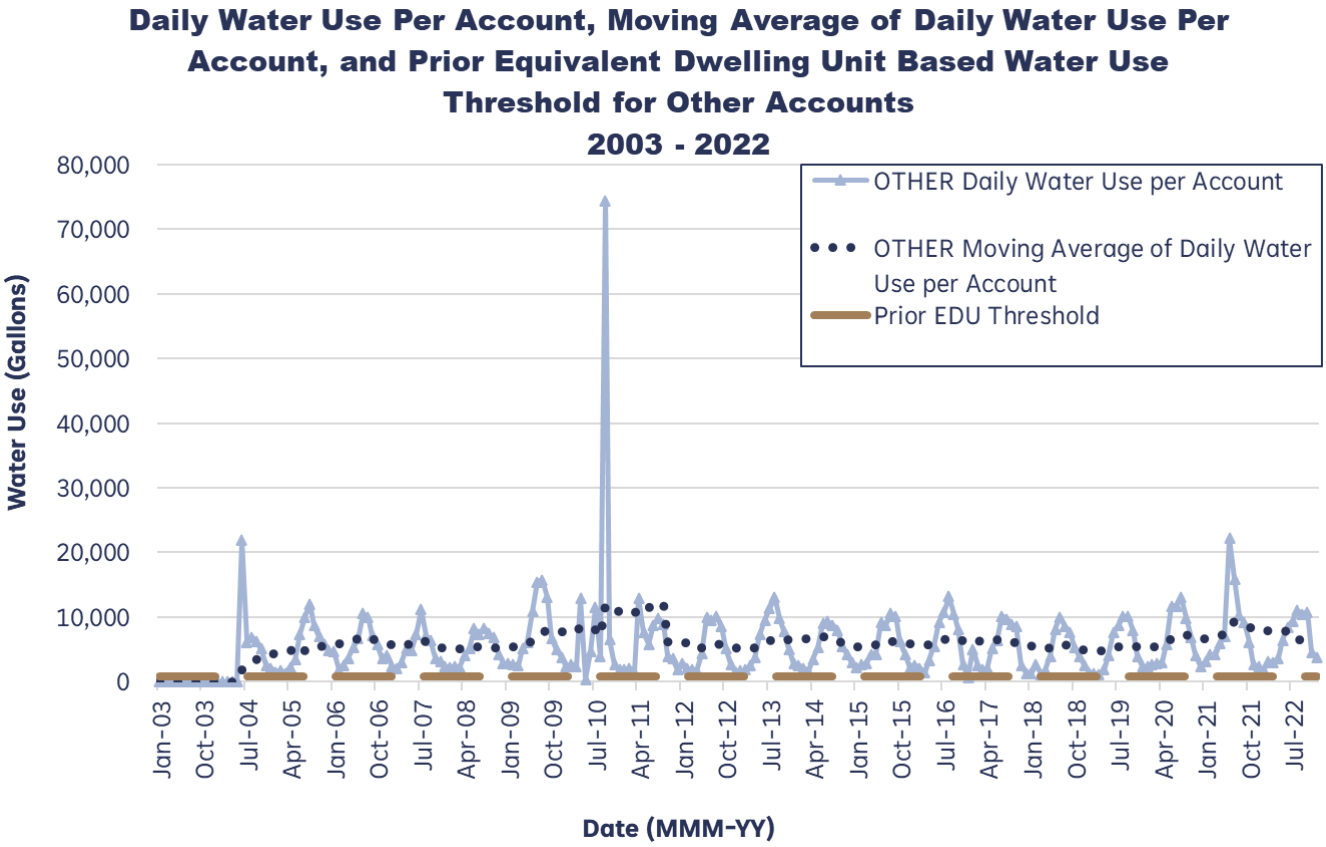


Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Halfplex Lots
2003 - 2022

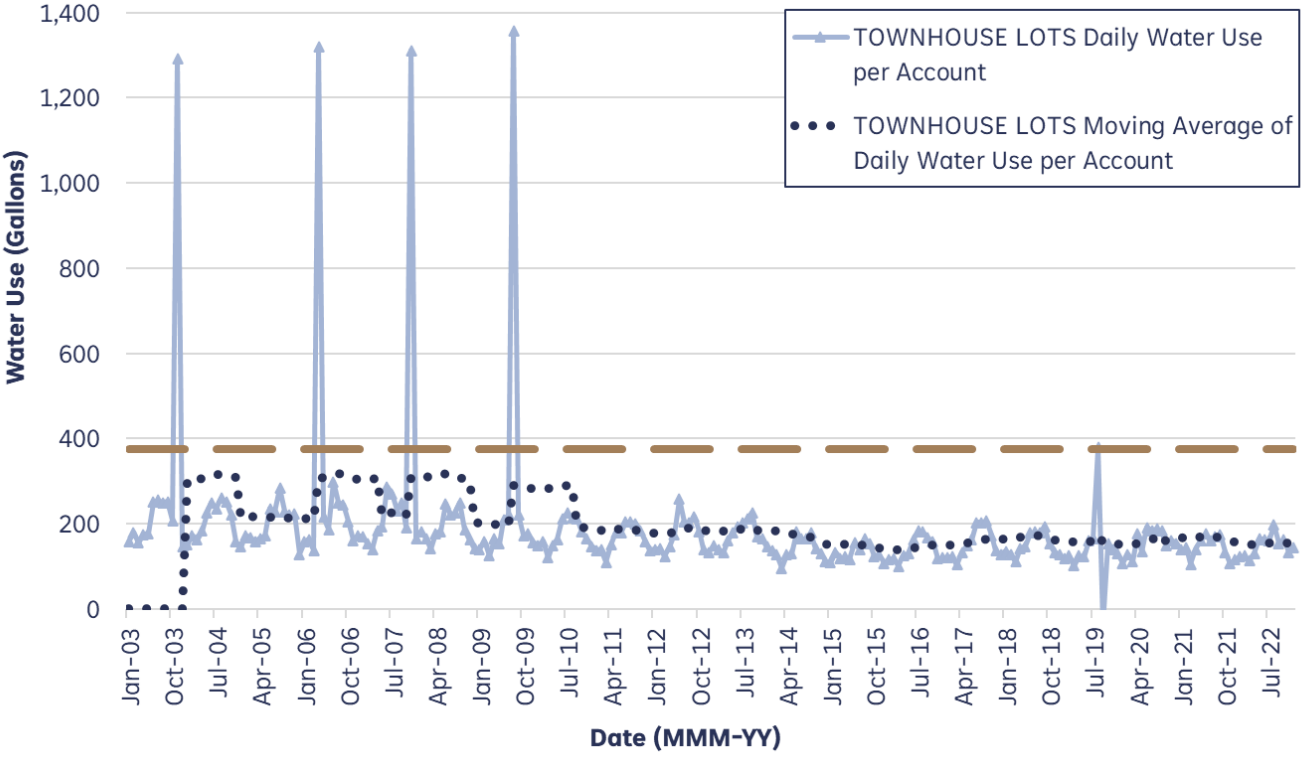


Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Murieta Village
2003 - 2022

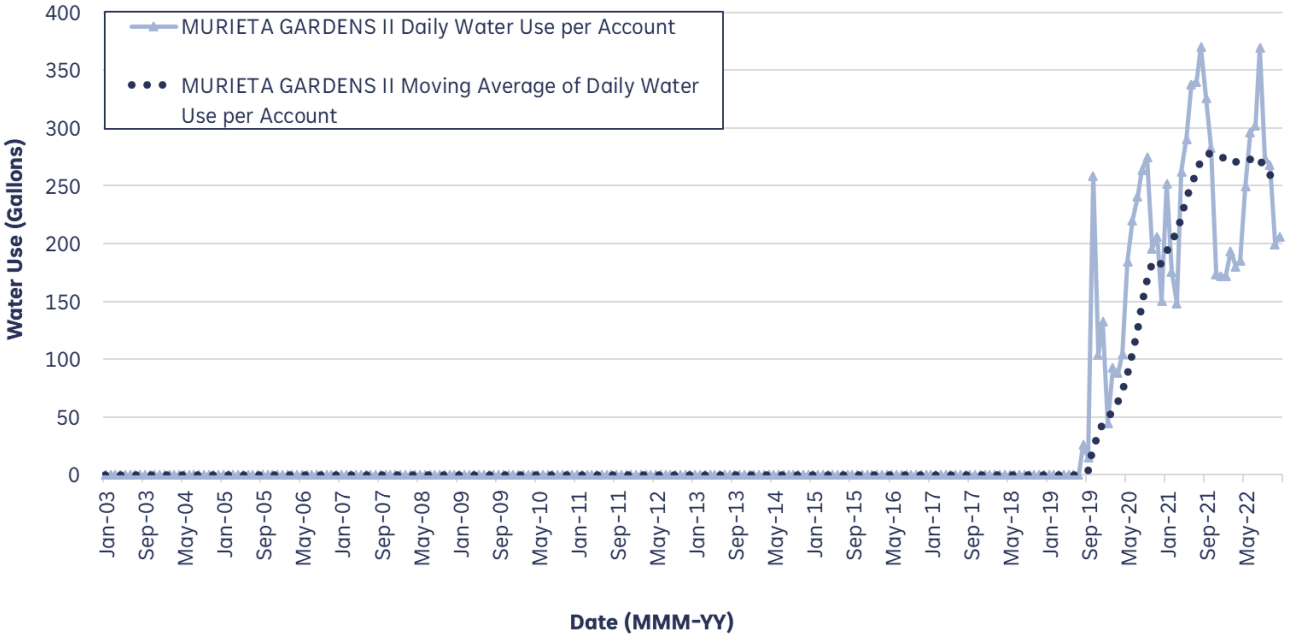


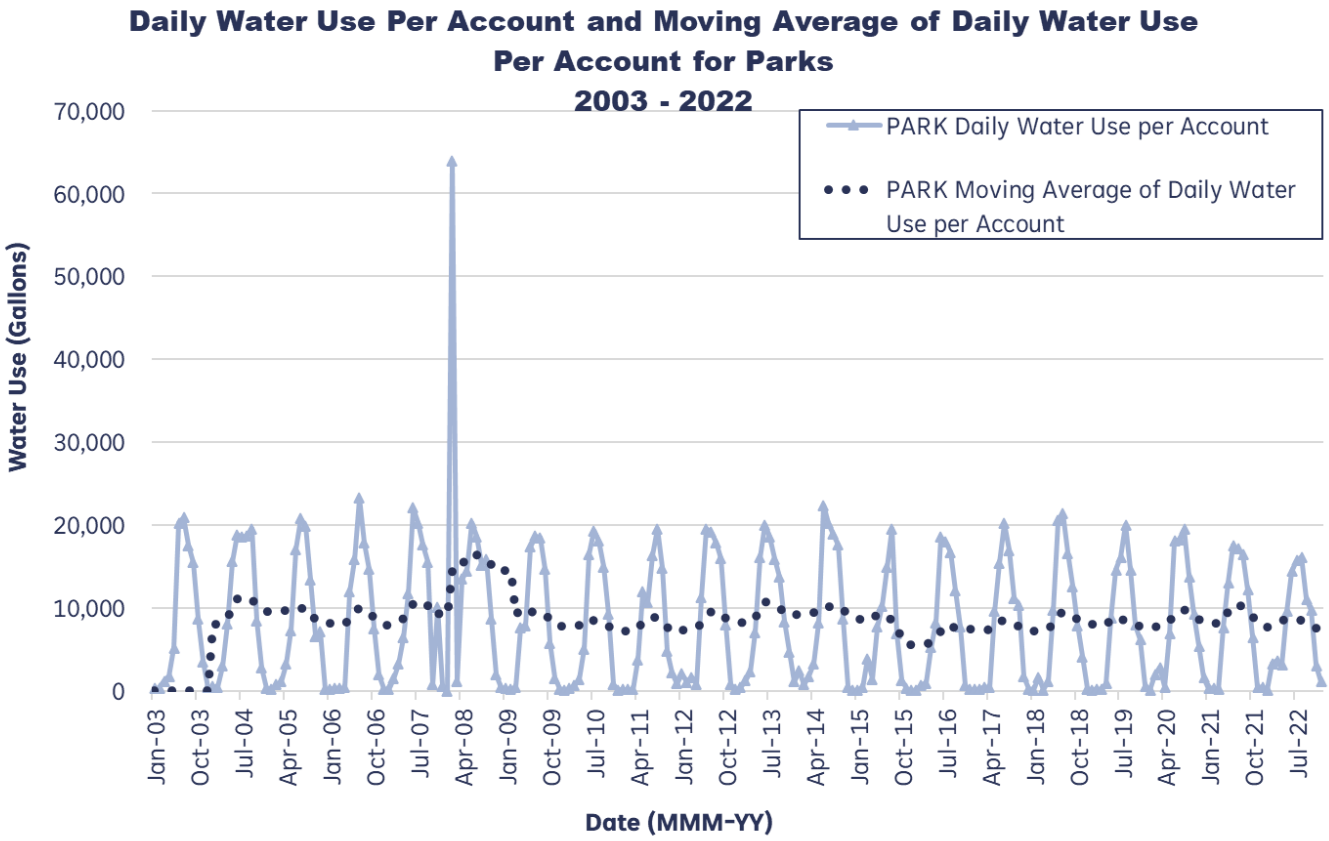

Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Other Accounts
2003 - 2022
Water Use (Gallons)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
OTHER Daily Water Use per Account
OTHER Moving Average of Daily Water Use per Account
Prior EDU Threshold
Jan-03
Oct-03
Jul-04
Apr-05
Jan-06
Oct-06
Jul-07
Apr-08
Jan-09
Oct-09
Jul-10
Apr-11
Jan-12
Oct-12
Jul-13
Apr-14
Jan-15
Oct-15
Jul-16
Apr-17
Jan-18
Oct-18
Jul-19
Apr-20
Jan-21
Oct-21
Jul-22
Date (MMM-YY)

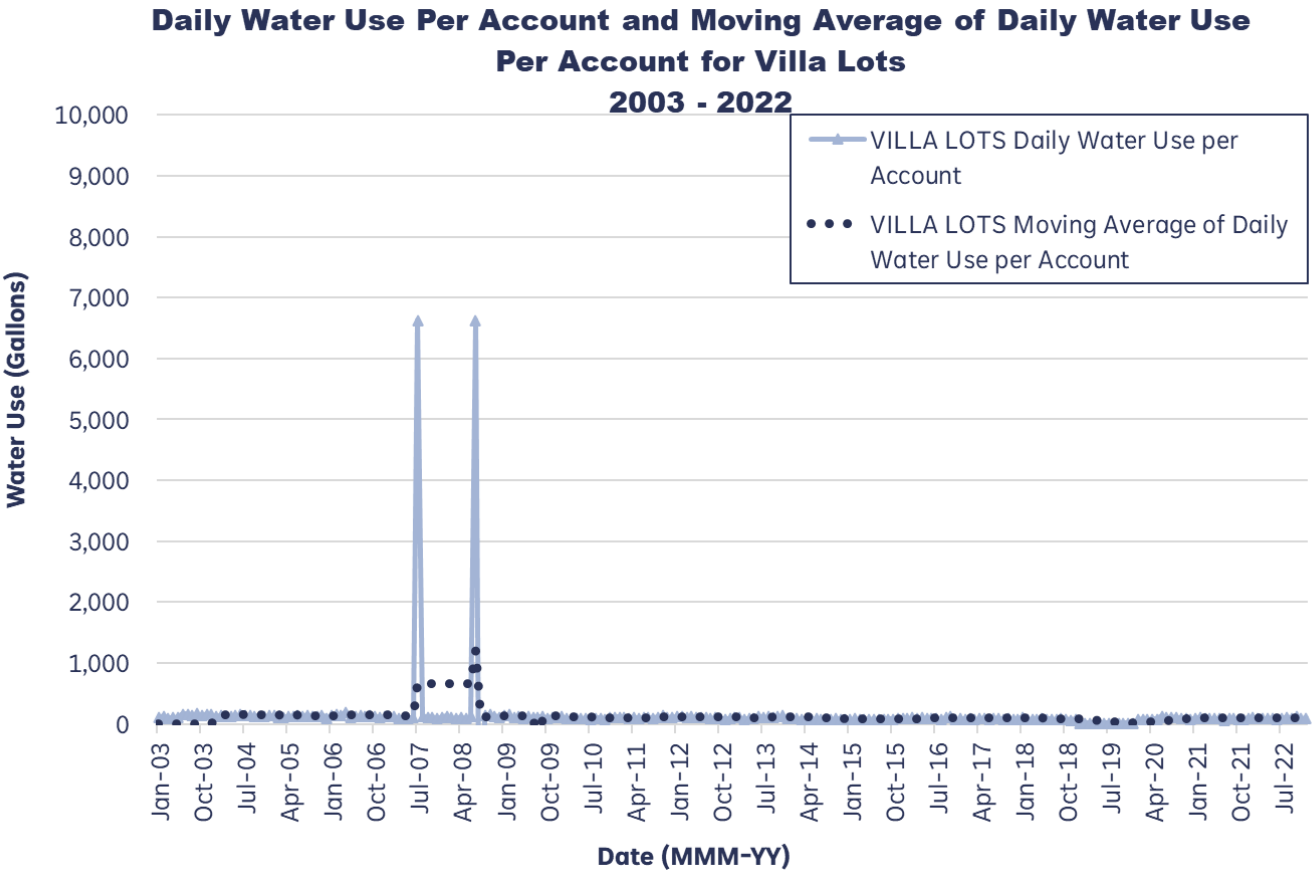
Daily Water Use Per Account, Moving Average of Daily Water Use Per Account, and Prior Equivalent Dwelling Unit Based Water Use Threshold for Townhouse Lots
2003 - 2022



Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Murieta Gardens
2003 - 2022




Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Parks
2003 - 2022
PARK Daily Water Use per Account
PARK Moving Average of Daily Water Use per Account
Water Use (Gallons)
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Jan-03
Oct-03
Jul-04
Apr-05
Jan-06
Oct-06
Jul-07
Apr-08
Jan-09
Oct-09
Jul-10
Apr-11
Jan-12
Oct-12
Jul-13
Apr-14
Jan-15
Oct-15
Jul-16
Apr-17
Jan-18
Oct-18
Jul-19
Apr-20
Jan-21
Oct-21
Jul-22
Date (MMM-YY)


Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Villa Lots
2003 - 2022
Water Use (Gallons)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
VILLA LOTS Daily Water Use per Account
VILLA LOTS Moving Average of Daily Water Use per Account
Jan-03
Oct-03
Jul-04
Apr-05
Jan-06
Oct-06
Jul-07
Apr-08
Jan-09
Oct-09
Jul-10
Apr-11
Jan-12
Oct-12
Jul-13
Apr-14
Jan-15
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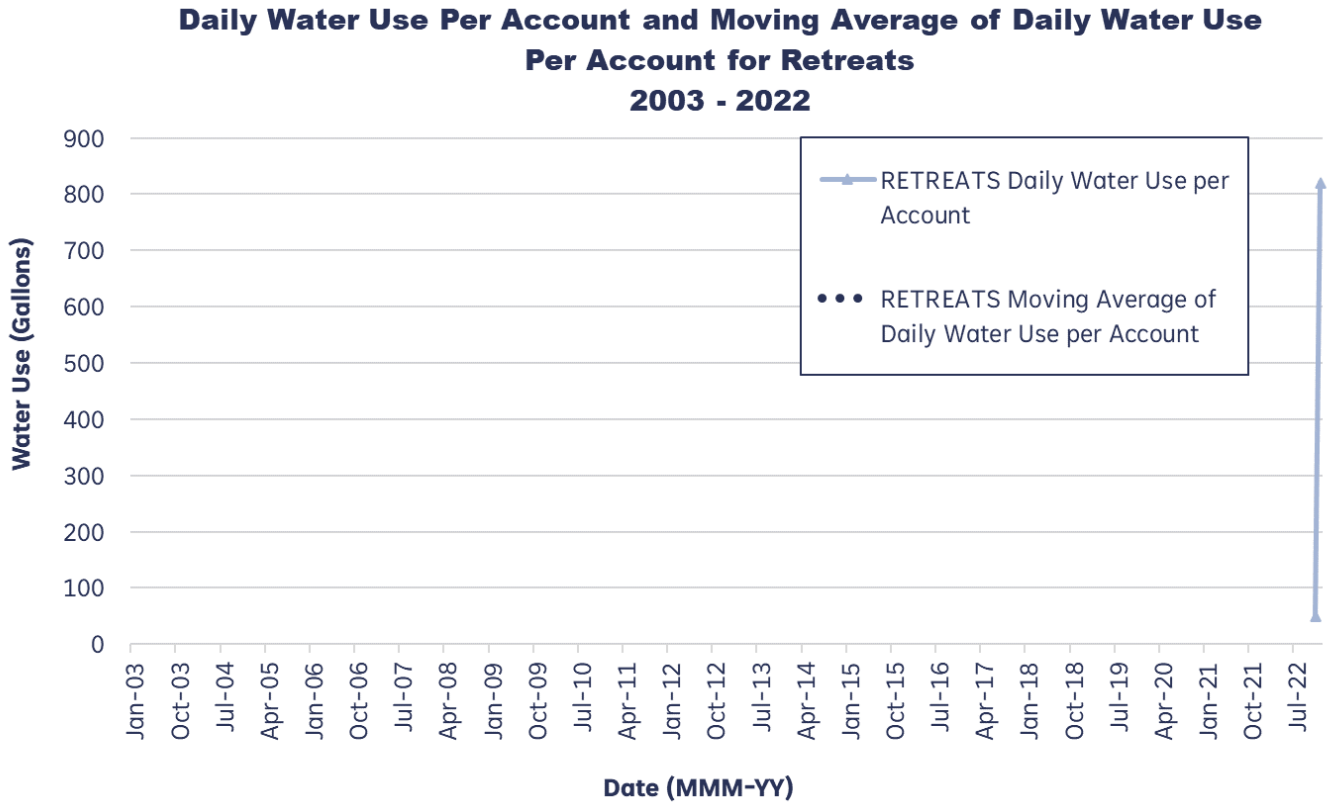
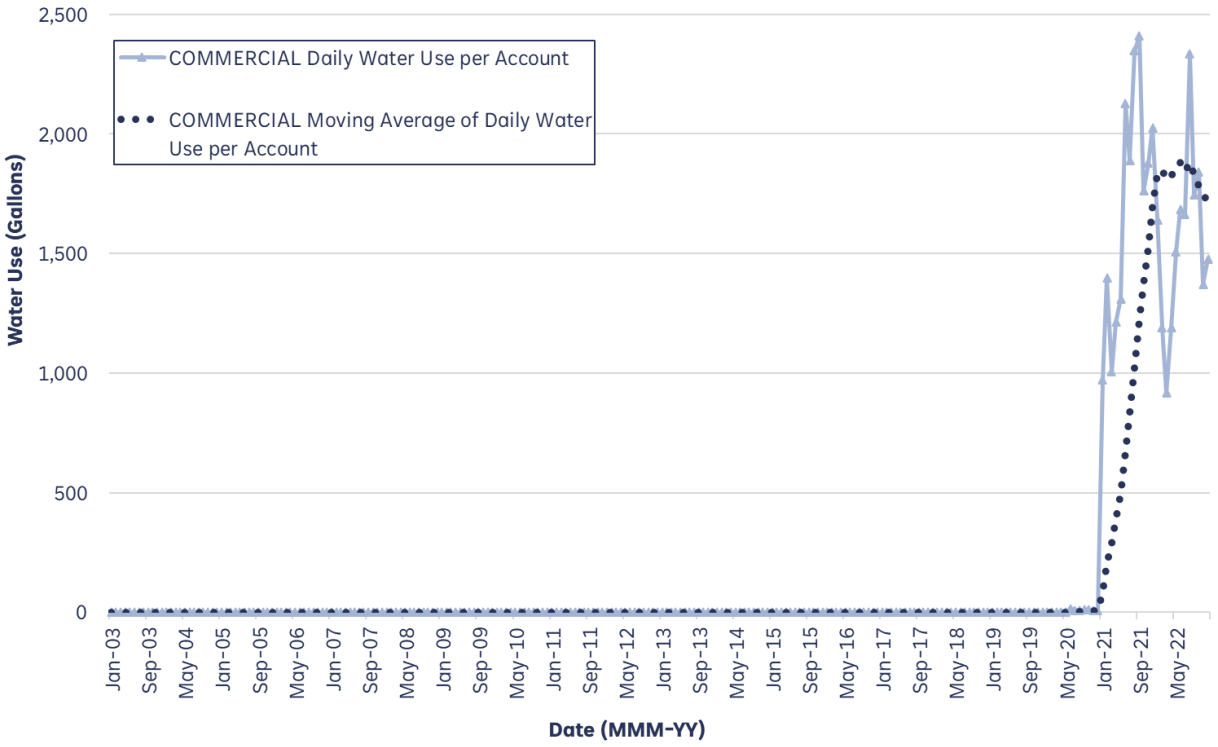
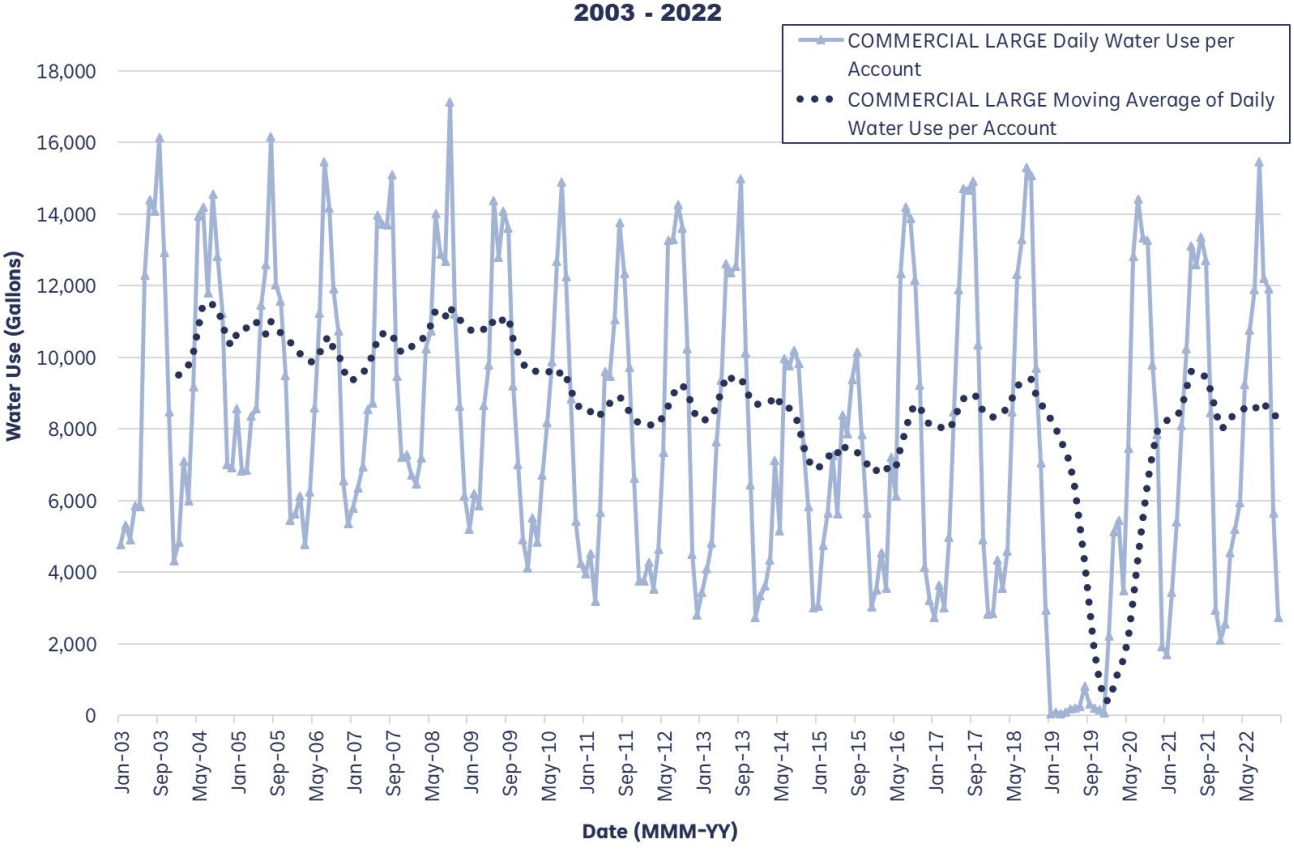
Oct-21
Jul-22
Date (MMM-YY)


Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Retreats
2003 - 2022
Water Use (Gallons)
900
800
700
600
500
400
300
200
100
0
RETREATS Daily Water Use per Account
RETREATS Moving Average of Daily Water Use per Account
Jan-03
Oct-03
Jul-04
Apr-05
Jan-06
Oct-06
Jul-07
Apr-08
Jan-09
Oct-09
Jul-10
Apr-11
Jan-12
Oct-12
Jul-13
Apr-14
Jan-15
Oct-15
Jul-16
Apr-17
Jan-18
Oct-18
Jul-19
Apr-20
Jan-21
Oct-21
Jul-22
Date (MMM-YY)

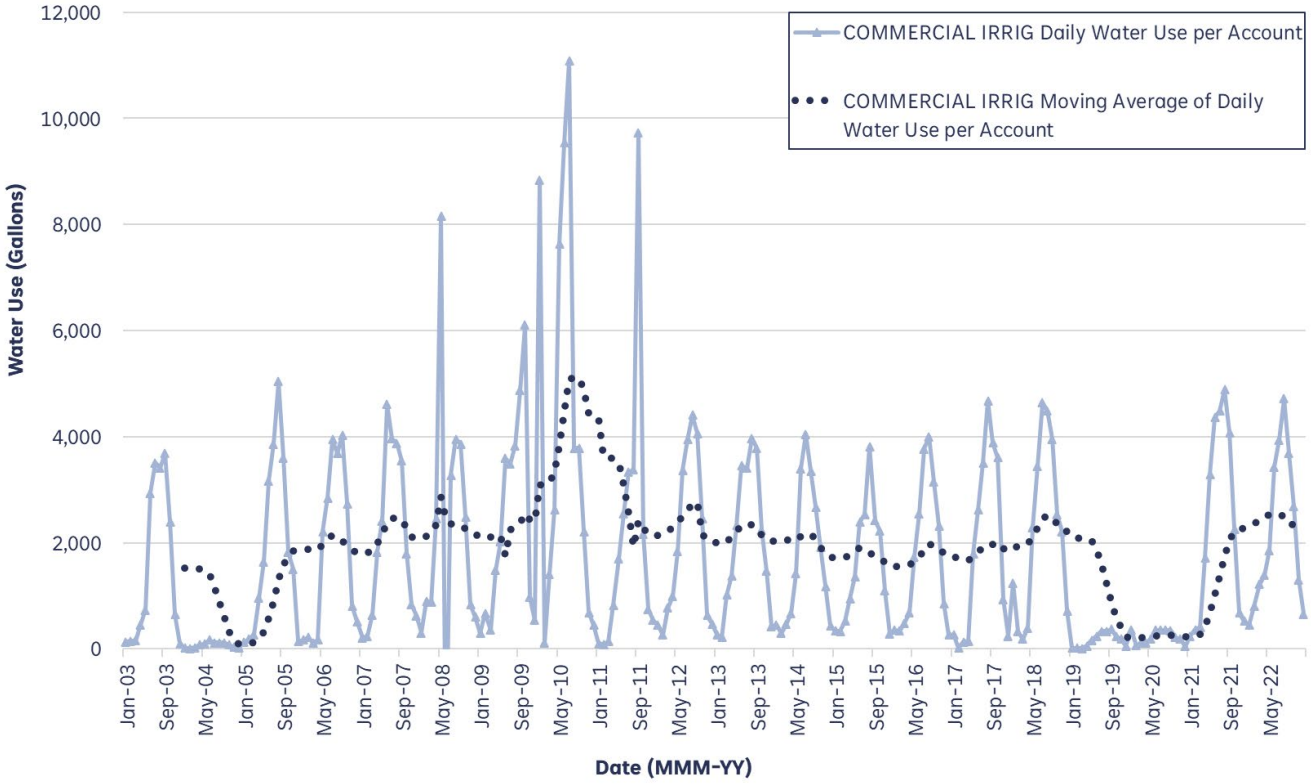
Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Commercial Accounts 2003 - 2022



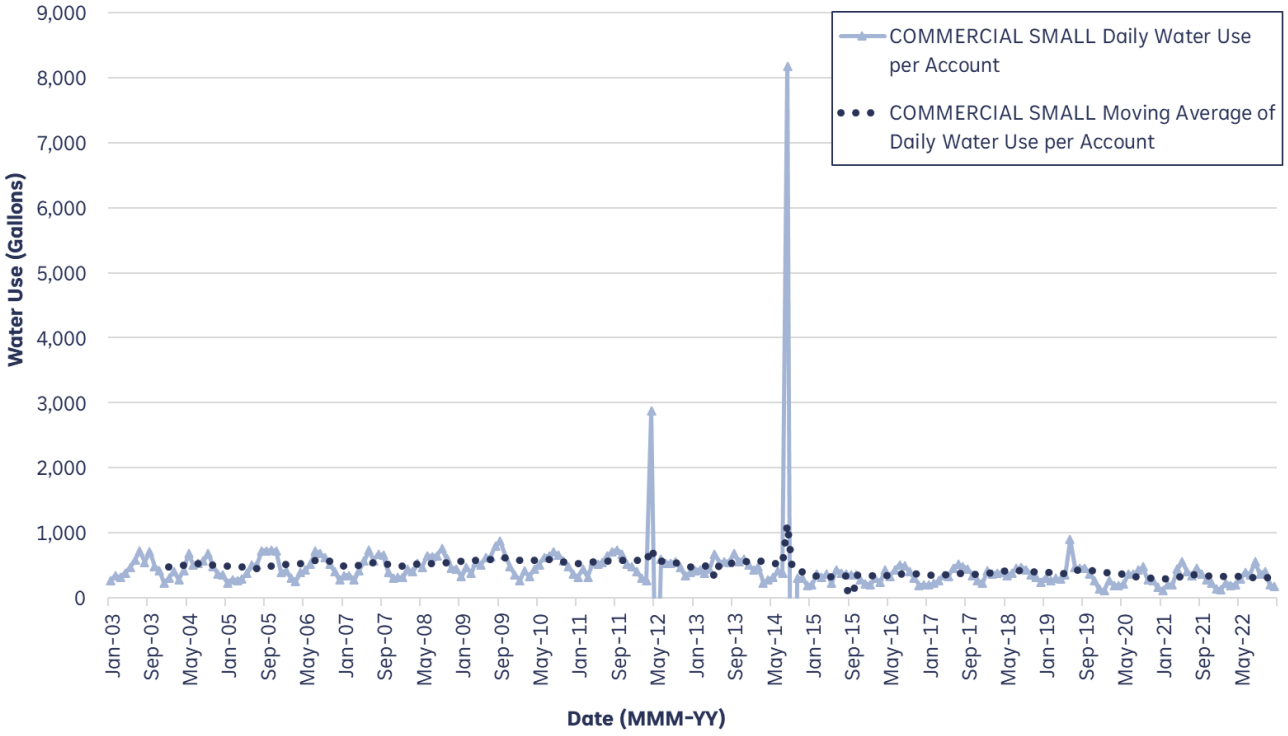
Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Commercial Large Accounts 2003 - 2022

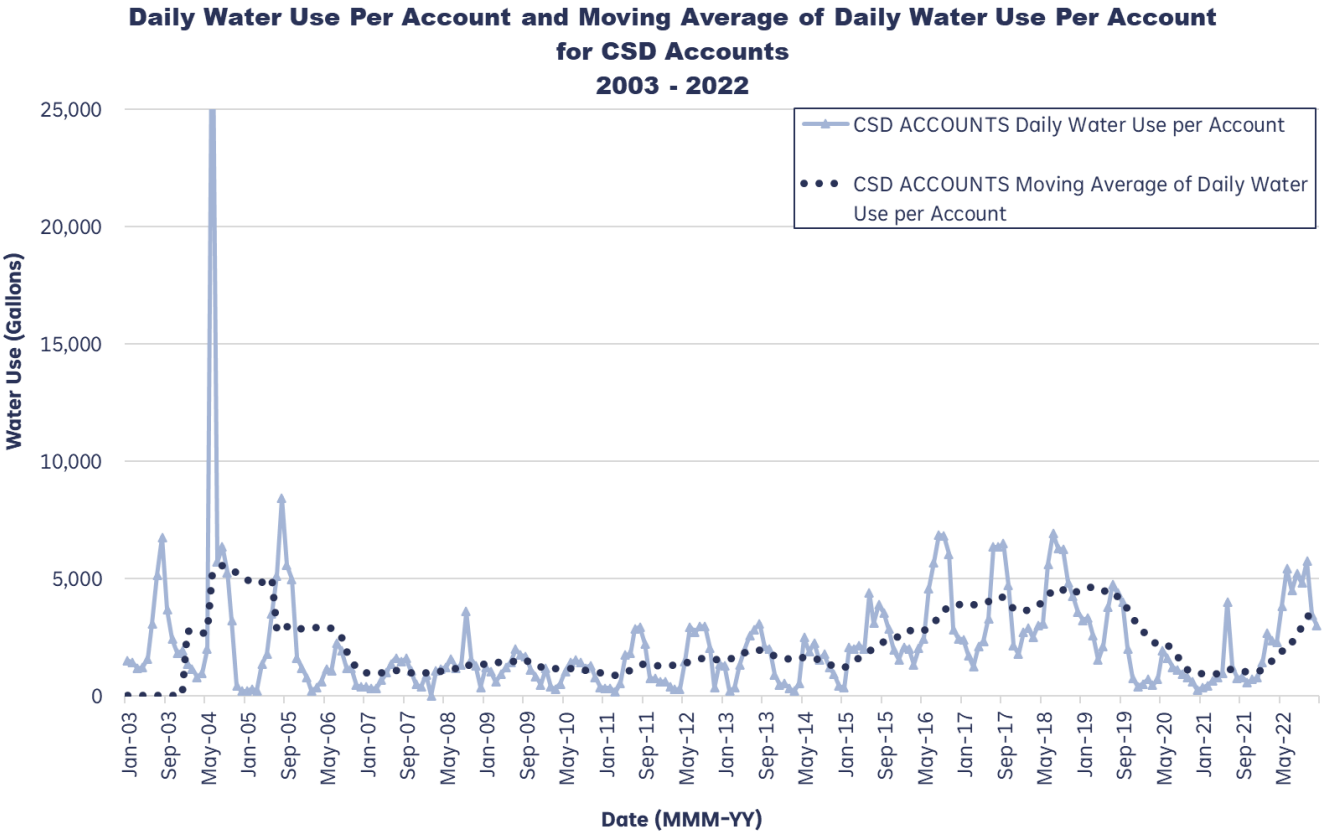


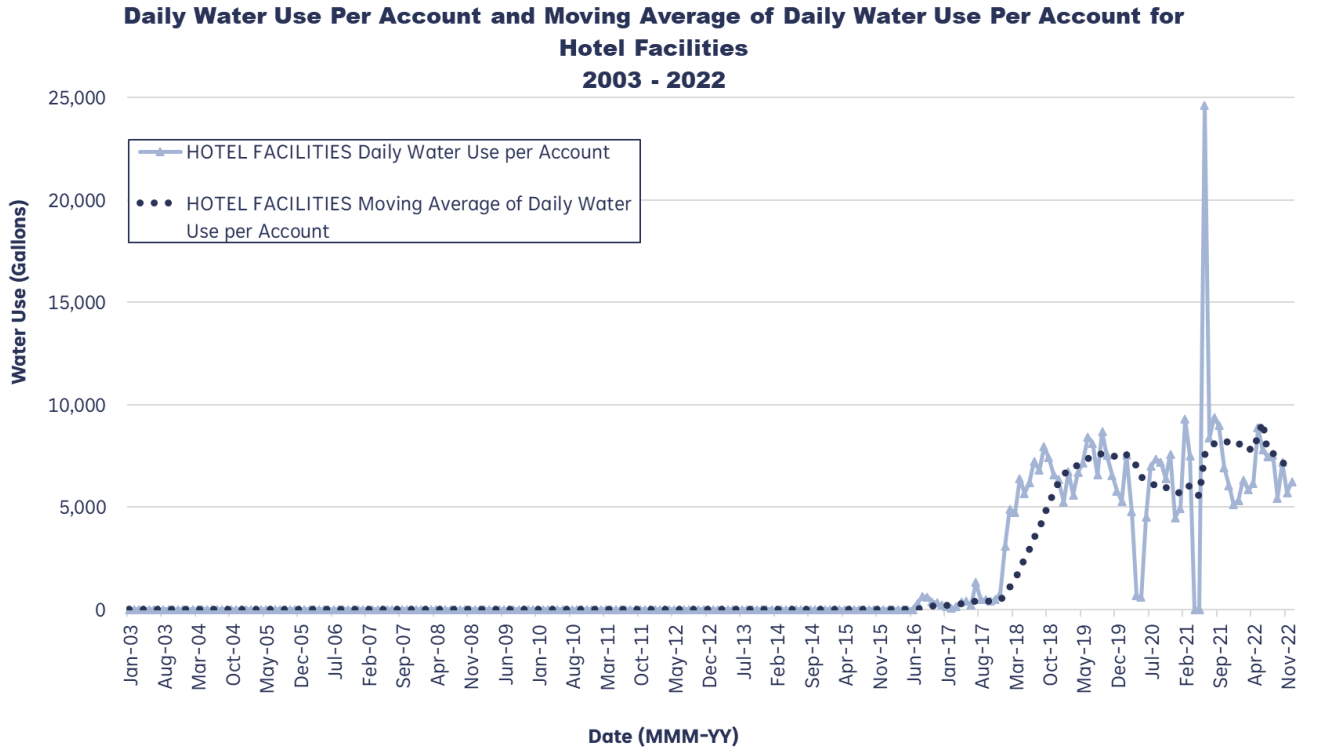
Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Commercial Irrigation Accounts 2003 - 2022

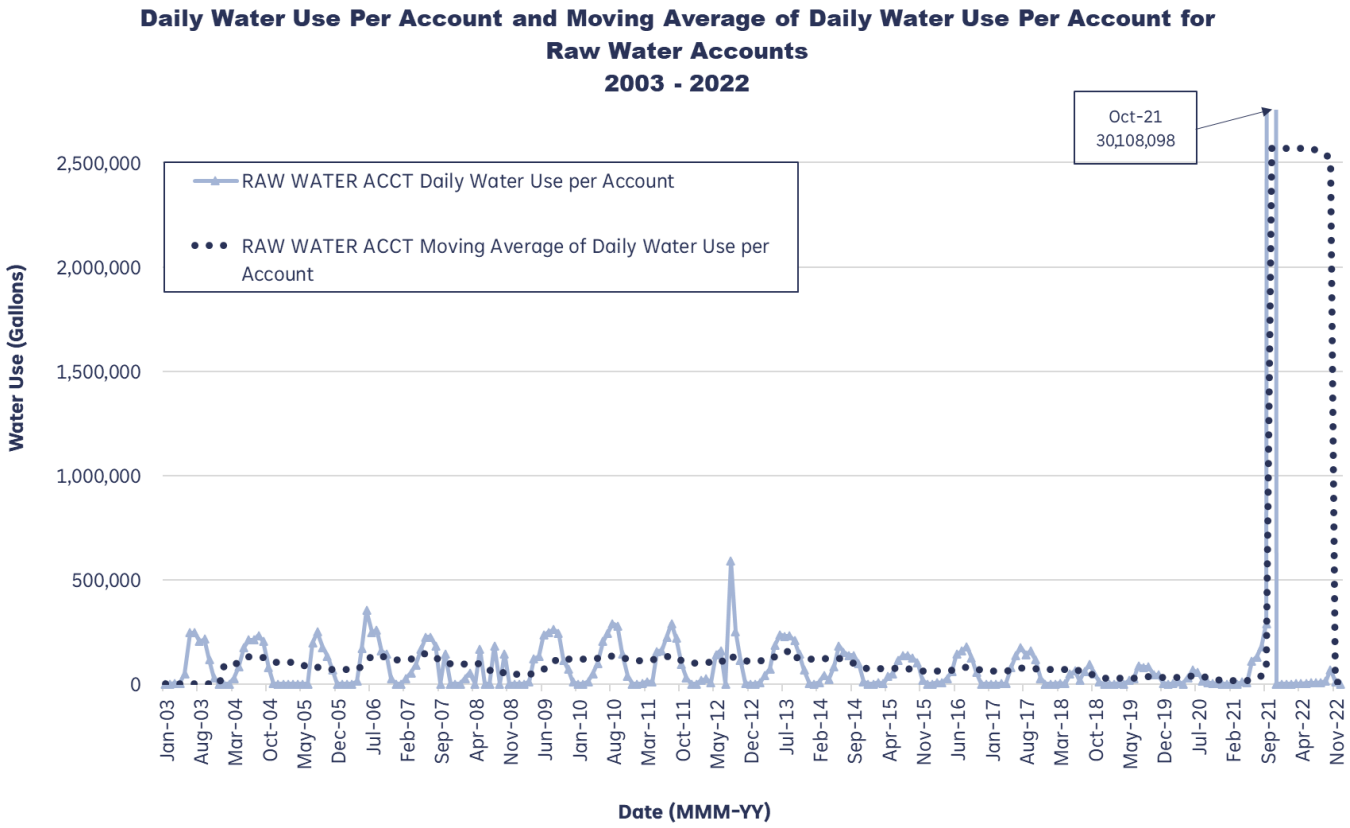


Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Commercial Small Accounts 2003 - 2022




Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for CSD Accounts 2003 - 2022
CSD ACCOUNTS Daily Water Use per Account
CSD ACCOUNTS Moving Average of Daily Water Use per Account
Water Use (Gallons)
25,000
20,000
15,000
10,000
5,000
0
Jan-03
Sep-03
May-04
Jan-05
Sep-05
May-06
Jan-07
Sep-07
May-08
Jan-09
Sep-09
May-10
Jan-11
Sep-11
May-12
Jan-13
Sep-13
May-14
Jan-15
Sep-15
May-16
Jan-17
Sep-17
May-18
Jan-19
Sep-19
May-20
Jan-21
Sep-21
May-22
Date (MMM-YY)


Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Hotel Facilities 2003 - 2022
HOTEL FACILITIES Daily Water Use per Account
HOTEL FACILITIES Moving Average of Daily Water Use per Account
Water Use (Gallons)
25,000
20,000
15,000
10,000
5,000
0
Jan-03
Aug-03
Mar-04
Oct-04
May-05
Dec-05
Jul-06
Feb-07
Sep-07
Apr-08
Nov-08
Jun-09
Jan-10
Aug-10
Mar-11
Oct-11
May-12
Dec-12
Jul-13
Feb-14
Sep-14
Apr-15
Nov-15
Jun-16
Jan-17
Aug-17
Mar-18
Oct-18
May-19
Dec-19
Jul-20
Feb-21
Sep-21
Apr-22
Nov-22
Date (MMM-YY)


Daily Water Use Per Account and Moving Average of Daily Water Use Per Account for Raw Water Accounts
2003 - 2022
Oct-21
30,108,098
RAW WATER ACCT Daily Water Use per Account
RAW WATER ACCT Moving Average of Daily Water Use per Account
Water Use (Gallons)
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Jan-03
Aug-03
Mar-04
Oct-04
May-05
Dec-05
Jul-06
Feb-07
Sep-07
Apr-08
Nov-08
Jun-09
Jan-10
Aug-10
Mar-11
Oct-11
May-12
Dec-12
Jul-13
Feb-14
Sep-14
Apr-15
Nov-15
Jun-16
Jan-17
Aug-17
Mar-18
Oct-18
May-19
Dec-19
Jul-20
Feb-21
Sep-21
Apr-22
Nov-22
Date (MMM-YY)

Appendix C Reclaimed Water Balance

Scenario 1: 100-Year Maximum Precipitation (35 inches)

Physical System Data												
RMCC Lakes Water Surface Area	11.2	acres	ADWF (Buildout)	0.840	MGD	Pan Evaporation Coefficient	0.75	unitless	Reservoir Watershed Area	40	acres	Maximum Storage of Reservoirs	859.9	AF
RMCC Lakes Contributing Watershed	15	acres	Beginning Water Volume in Res.	65	AF	WWRP Site Area	7.5	acres	Reservoir Run-off Coeff	0.9	unitless	Volume of Reservoirs w/ 2ft FB	728.2	AF
RMCC Lakes Run-off Coefficient	0.2	unitless	WWRP Pond Area Total	10.7	acres	Run-off Coefficient for WWRP	0.9	unitless	Proportion in Reservoir #1	81%				

Precip and I/I Inputs			Irrigation Inputs			Results		
Average I/I in Percent of Inflow	9.06%		Residential/Commercial	359	AF	Total RW Available	1124	AF
Scenario I/I in Percent of Inflow	15.10%		Golf Courses	550	AF	Max Volume in Reservoirs	670	AF
Scenario I/I Volume, Annual	46.34	MG	Van Vleck	215	AF	Res/Comm Available w/Van Vleck	359	AF
Scenario Precip Modifier	167%		Res/Comm Demand	440	AF	Res/Comm Available w/o Van Vleck	574	AF

Inflows
Outflows

Climate Inputs	Units	October	November	December	January	February	March	April	May	June	July	August	September	Annual Totals
Precipitation (Average)	in	1.26	3.36	2.94	4.41	3.36	3.15	1.47	0.42	0.21	0.00	0.00	0.42	21.00
Scenario Precipitation	in	2.10	5.60	4.90	7.35	5.60	5.25	2.45	0.70	0.35	0.00	0.00	0.70	35.00
Pan Evaporation	in	4.09	1.65	1.41	1.23	1.88	2.48	3.87	5.89	6.27	8.44	7.65	6.29	51.14
Effective Lake Evaporation	in	3.07	1.24	1.05	0.93	1.41	1.86	2.90	4.42	4.70	6.33	5.74	4.72	38.36
RMCSD WWRP														
# Days in Month	days	31	30	31	31	28	31	30	31	30	31	31	30	365
Wastewater Influent	MG	26.05	25.21	26.05	26.05	23.53	26.05	25.21	26.05	25.21	26.05	26.05	25.21	306.69
Wastewater Influent	AF	79.94	77.36	79.94	79.94	72.21	79.94	77.36	79.94	77.36	79.94	79.94	77.36	941.27
I/I Estimate (Average)	AF	7.24	7.01	7.24	7.24	6.54	7.24	7.01	7.24	7.01	7.24	7.24	7.01	85.28
Scenario I/I Estimate	AF	12.07	11.68	12.07	12.07	10.90	12.07	11.68	12.07	11.68	12.07	12.07	11.68	142.13
Site Run-off	AF	1.18	3.15	2.76	4.13	3.15	2.95	1.38	0.39	0.20	0.00	0.00	0.39	19.69
Pond Precipitation (direct)	AF	1.87	4.99	4.37	6.55	4.99	4.68	2.18	0.62	0.31	0.00	0.00	0.62	31.21
Pond Evaporation	AF	-2.74	-1.10	-0.94	-0.82	-1.26	-1.66	-2.59	-3.94	-4.19	-5.64	-5.11	-4.21	-34.20
RMCSD Secondary Storage Reservoirs														
Reservoir # 1 Vol	AF	52.65	55.54	138.61	232.88	337.47	424.55	508.56	543.00	512.16	412.61	267.18	130.43	
Reservoir # 1 Surface Area	acre	18.74	18.84	20.46	22.21	23.94	25.17	26.27	26.67	26.33	25.04	22.81	20.36	
Reservoir #2 Vol	AF	12.35	3.02	20.06	25.92	29.46	26.02	24.65	12.76	-4.81	-24.26	-38.72	-39.43	
Reservoir # 2 Surface Area	acre	3.32	3.80	4.60	5.40	6.20	6.70	7.20	7.40	7.30	6.70	5.40	4.10	
Total Water Surface Area	acre	22.05	22.64	25.06	27.61	30.14	31.87	33.47	34.07	33.63	31.74	28.21	24.46	
Contributing Water Shed Area	acre	17.95	17.36	14.94	12.39	9.86	8.13	6.53	5.93	6.37	8.26	11.79	15.54	
Reservoir Run-off	AF	2.83	7.29	5.49	6.83	4.14	3.20	1.20	0.31	0.17	0.00	0.00	0.82	32.28
Reservoir Precip (direct)	AF	3.86	10.57	10.23	16.91	14.06	13.94	6.83	1.99	0.98	0.00	0.00	1.43	80.80
Reservoir Evaporation	AF	-5.64	-2.33	-2.20	-2.13	-3.54	-4.94	-8.09	-12.55	-13.17	-16.74	-13.48	-9.62	-94.43
RMCC Irrigation Lakes														
Lake Water Shed Run-off	AF	0.52	1.40	1.22	1.84	1.40	1.31	0.61	0.17	0.09	0.00	0.00	0.17	8.75
Lake Precipitation (direct)	AF	1.96	5.23	4.57	6.86	5.23	4.90	2.29	0.65	0.33	0.00	0.00	0.65	32.67
Irrig. Lake Evaporation	AF	-2.87	-1.15	-0.98	-0.86	-1.32	-1.74	-2.71	-4.12	-4.39	-5.91	-5.35	-4.40	-35.80
Disposal														
Percent of Annual Total	%	8%	1%	0%	0%	0%	1%	4%	10%	17%	22%	21%	15%	
Residential Irrigation	AF	-28.58	-4.64	-0.05	-0.70	-0.79	-3.50	-15.23	-36.32	-61.46	-77.75	-75.72	-54.64	-359
Golf Course	AF	-43.74	-7.11	-0.08	-1.07	-1.21	-5.36	-23.30	-55.58	-94.05	-119.00	-115.88	-83.62	-550
Van Vleck Ranch Demand	AF	-17.10	-2.78	-0.03	-0.42	-0.47	-2.09	-9.11	-21.73	-36.77	-46.52	-45.30	-32.69	-215
Effluent Storage														
Beginning Water Volume in Res.	AF	65	68.6	171.1	287.5	416.6	524.1	627.8	670.4	632.3	509.4	329.9	161.0	
Change in Water Volume	AF	3.6	102.6	116.4	129.1	107.5	103.7	42.5	-38.1	-122.9	-179.5	-168.8	-96.0	0.0
Final Water Volume in Reservoirs	AF	68.6	171.1	287.5	416.6	524.1	627.8	670.4	632.3	509.4	329.9	161.0	65.0	

Scenario 2: Average Year Precipitation (21 inches)

Physical System Data												
RMCC Lakes Water Surface Area	11.2	acres	ADWF (Buildout)	0.840	MGD	Pan Evaporation Coefficient	0.75	unitless	Reservoir Watershed Area	40	acres	Maximum Storage of Reservoirs	859.9	AF
RMCC Lakes Contributing Watershed	15	acres	Beginning Water Volume in Res.	65	AF	WWRP Site Area	7.5	acres	Reservoir Run-off Coeff	0.9	unitless	Volume of Reservoirs w/ 2ft FB	728.2	AF
RMCC Lakes Run-off Coefficient	0.2	unitless	WWRP Pond Area Total	10.7	acres	Run-off Coefficient for WWRP	0.9	unitless	Proportion in Reservoir #1	81%				

Precip and I/I Inputs			Irrigation Inputs			Results		
Average I/I in Percent of Inflow	9.06%		Residential/Commercial	99	AF	Total RW Available	987	AF
Scenario I/I in Percent of Inflow	9.06%		Golf Courses	673	AF	Max Volume in Reservoirs	580	AF
Scenario I/I Volume, Annual	27.81	MG	Van Vleck	215	AF	Res/Comm Available w/Van Vleck	99	AF
Scenario Precip Modifier	100%		Res/Comm Demand	440	AF	Res/Comm Available w/o Van Vleck	314	AF

Inflows
Outflows

Climate Inputs	Units	October	November	December	January	February	March	April	May	June	July	August	September	Annual Totals
Precipitation (Average)	in	1.26	3.36	2.94	4.41	3.36	3.15	1.47	0.42	0.21	0.00	0.00	0.42	21.00
Scenario Precipitation	in	1.26	3.36	2.94	4.41	3.36	3.15	1.47	0.42	0.21	0.00	0.00	0.42	21.00
Pan Evaporation	in	4.09	1.65	1.41	1.23	1.88	2.48	3.87	5.89	6.27	8.44	7.65	6.29	51.14
Effective Lake Evaporation	in	3.07	1.24	1.05	0.93	1.41	1.86	2.90	4.42	4.70	6.33	5.74	4.72	38.36
RMCSD WWRP														
# Days in Month	days	31	30	31	31	28	31	30	31	30	31	31	30	365
Wastewater Influent	MG	26.05	25.21	26.05	26.05	23.53	26.05	25.21	26.05	25.21	26.05	26.05	25.21	306.69
Wastewater Influent	AF	79.94	77.36	79.94	79.94	72.21	79.94	77.36	79.94	77.36	79.94	79.94	77.36	941.27
I/I Estimate (Average)	AF	7.24	7.01	7.24	7.24	6.54	7.24	7.01	7.24	7.01	7.24	7.24	7.01	85.28
Scenario I/I Estimate	AF	7.24	7.01	7.24	7.24	6.54	7.24	7.01	7.24	7.01	7.24	7.24	7.01	85.28
Site Run-off	AF	0.71	1.89	1.65	2.48	1.89	1.77	0.83	0.24	0.12	0.00	0.00	0.24	11.81
Pond Precipitation (direct)	AF	1.12	3.00	2.62	3.93	3.00	2.81	1.31	0.37	0.19	0.00	0.00	0.37	18.73
Pond Evaporation	AF	-2.74	-1.10	-0.94	-0.82	-1.26	-1.66	-2.59	-3.94	-4.19	-5.64	-5.11	-4.21	-34.20
RMCSD Secondary Storage Reservoirs														
Reservoir # 1 Vol	AF	52.65	56.51	126.66	207.76	294.70	367.86	439.08	469.91	445.32	360.58	235.59	118.55	
Reservoir # 1 Surface Area	acre	18.74	18.84	20.26	21.77	23.22	24.39	25.38	25.77	25.51	24.32	22.30	20.07	
Reservoir #2 Vol	AF	12.35	3.25	17.07	22.27	24.62	21.84	20.86	11.20	-3.64	-20.57	-33.23	-33.77	
Reservoir # 2 Surface Area	acre	3.32	3.80	4.60	5.40	6.20	6.70	7.20	7.40	7.30	6.70	5.40	4.10	
Total Water Surface Area	acre	22.05	22.64	24.86	27.17	29.42	31.09	32.58	33.17	32.81	31.02	27.70	24.17	
Contributing Water Shed Area	acre	17.95	17.36	15.14	12.83	10.58	8.91	7.42	6.83	7.19	8.98	12.30	15.83	
Reservoir Run-off	AF	1.70	4.37	3.34	4.24	2.67	2.10	0.82	0.22	0.11	0.00	0.00	0.50	20.07
Reservoir Precip (direct)	AF	2.32	6.34	6.09	9.98	8.24	8.16	3.99	1.16	0.57	0.00	0.00	0.85	47.70
Reservoir Evaporation	AF	-5.64	-2.33	-2.18	-2.09	-3.46	-4.82	-7.87	-12.21	-12.85	-16.36	-13.24	-9.50	-92.56
RMCC Irrigation Lakes														
Lake Water Shed Run-off	AF	0.32	0.84	0.74	1.10	0.84	0.79	0.37	0.11	0.05	0.00	0.00	0.11	5.25
Lake Precipitation (direct)	AF	1.18	3.14	2.74	4.12	3.14	2.94	1.37	0.39	0.20	0.00	0.00	0.39	19.60
Irrig. Lake Evaporation	AF	-2.87	-1.15	-0.98	-0.86	-1.32	-1.74	-2.71	-4.12	-4.39	-5.91	-5.35	-4.40	-35.80
Disposal														
Percent of Annual Total	%	8%	1%	0%	0%	0%	1%	4%	10%	17%	22%	21%	15%	
Residential Irrigation	AF	-7.89	-1.28	-0.01	-0.19	-0.22	-0.97	-4.20	-10.02	-16.96	-21.45	-20.89	-15.07	-99
Golf Course	AF	-53.53	-8.70	-0.10	-1.31	-1.48	-6.55	-28.51	-68.01	-115.09	-145.61	-141.79	-102.32	-673
Van Vleck Ranch Demand	AF	-17.10	-2.78	-0.03	-0.42	-0.47	-2.09	-9.11	-21.73	-36.77	-46.52	-45.30	-32.69	-215
Effluent Storage														
Beginning Water Volume in Res.	AF	65	69.8	156.4	256.5	363.8	454.1	542.1	580.1	549.8	445.2	290.9	146.4	
Change in Water Volume	AF	4.8	86.6	100.1	107.3	90.3	87.9	38.1	-30.4	-104.6	-154.3	-144.5	-81.4	0.0
Final Water Volume in Reservoirs	AF	69.8	156.4	256.5	363.8	454.1	542.1	580.1	549.8	445.2	290.9	146.4	65.0	

Scenario 3: 2013-14 Drought Precipitation (13 inches)

Physical System Data												
RMCC Lakes Water Surface Area	11.2	acres	ADWF (Buildout)	0.840	MGD	Pan Evaporation Coefficient	0.75	unitless	Reservoir Watershed Area	40	acres	Maximum Storage of Reservoirs	859.9	AF
RMCC Lakes Contributing Watershed	15	acres	Beginning Water Volume in Res.	65	AF	WWRP Site Area	7.5	acres	Reservoir Run-off Coeff	0.9	unitless	Volume of Reservoirs w/ 2ft FB	728.2	AF
RMCC Lakes Run-off Coefficient	0.2	unitless	WWRP Pond Area Total	10.7	acres	Run-off Coefficient for WWRP	0.9	unitless	Proportion in Reservoir #1	81%				

Precip and I/I Inputs			Irrigation Inputs			Results		
Average I/I in Percent of Inflow	9.06%		Residential/Commercial	22	AF	Total RW Available	910	AF
Scenario I/I in Percent of Inflow	5.68%		Golf Courses	673	AF	Max Volume in Reservoirs	530	AF
Scenario I/I Volume, Annual	17.43	MG	Van Vleck	215	AF	Res/Comm Available w/Van Vleck	22	AF
Scenario Precip Modifier	63%		Res/Comm Demand	440	AF	Res/Comm Available w/o Van Vleck	237	AF

Inflows
Outflows

Climate Inputs	Units	October	November	December	January	February	March	April	May	June	July	August	September	Annual Totals
Precipitation (Average)	in	1.26	3.36	2.94	4.41	3.36	3.15	1.47	0.42	0.21	0.00	0.00	0.42	21.00
Scenario Precipitation	in	0.79	2.11	1.84	2.77	2.11	1.98	0.92	0.26	0.13	0.00	0.00	0.26	13.17
Pan Evaporation	in	4.09	1.65	1.41	1.23	1.88	2.48	3.87	5.89	6.27	8.44	7.65	6.29	51.14
Effective Lake Evaporation	in	3.07	1.24	1.05	0.93	1.41	1.86	2.90	4.42	4.70	6.33	5.74	4.72	38.36
RMCSD WWRP														
# Days in Month	days	31	30	31	31	28	31	30	31	30	31	31	30	365
Wastewater Influent	MG	26.05	25.21	26.05	26.05	23.53	26.05	25.21	26.05	25.21	26.05	26.05	25.21	306.69
Wastewater Influent	AF	79.94	77.36	79.94	79.94	72.21	79.94	77.36	79.94	77.36	79.94	79.94	77.36	941.27
I/I Estimate (Average)	AF	7.24	7.01	7.24	7.24	6.54	7.24	7.01	7.24	7.01	7.24	7.24	7.01	85.28
Scenario I/I Estimate	AF	4.54	4.39	4.54	4.54	4.10	4.54	4.39	4.54	4.39	4.54	4.54	4.39	53.47
Site Run-off	AF	0.44	1.19	1.04	1.56	1.19	1.11	0.52	0.15	0.07	0.00	0.00	0.15	7.41
Pond Precipitation (direct)	AF	0.70	1.88	1.64	2.47	1.88	1.76	0.82	0.23	0.12	0.00	0.00	0.23	11.74
Pond Evaporation	AF	-2.74	-1.10	-0.94	-0.82	-1.26	-1.66	-2.59	-3.94	-4.19	-5.64	-5.11	-4.21	-34.20
RMCSD Secondary Storage Reservoirs														
Reservoir # 1 Vol	AF	52.65	57.04	119.97	193.70	270.78	336.15	400.22	429.04	407.94	331.50	217.95	111.94	
Reservoir # 1 Surface Area	acre	18.74	18.84	20.07	21.49	22.89	23.94	24.90	25.24	24.97	23.86	21.95	19.97	
Reservoir #2 Vol	AF	12.35	3.38	15.40	20.22	21.92	19.50	18.74	10.32	-2.99	-18.50	-30.15	-30.60	
Reservoir # 2 Surface Area	acre	3.32	3.80	4.60	5.40	6.20	6.70	7.20	7.40	7.30	6.70	5.40	4.10	
Total Water Surface Area	acre	22.05	22.64	24.67	26.89	29.09	30.64	32.10	32.64	32.27	30.56	27.35	24.07	
Contributing Water Shed Area	acre	17.95	17.36	15.33	13.11	10.91	9.36	7.90	7.36	7.73	9.44	12.65	15.93	
Reservoir Run-off	AF	1.06	2.74	2.12	2.72	1.72	1.39	0.55	0.15	0.08	0.00	0.00	0.31	12.84
Reservoir Precip (direct)	AF	1.45	3.97	3.79	6.20	5.11	5.04	2.47	0.72	0.35	0.00	0.00	0.53	29.63
Reservoir Evaporation	AF	-5.64	-2.33	-2.17	-2.07	-3.42	-4.75	-7.76	-12.02	-12.63	-16.12	-13.07	-9.46	-91.44
RMCC Irrigation Lakes														
Lake Water Shed Run-off	AF	0.20	0.53	0.46	0.69	0.53	0.49	0.23	0.07	0.03	0.00	0.00	0.07	3.29
Lake Precipitation (direct)	AF	0.74	1.97	1.72	2.58	1.97	1.84	0.86	0.25	0.12	0.00	0.00	0.25	12.29
Irrig. Lake Evaporation	AF	-2.87	-1.15	-0.98	-0.86	-1.32	-1.74	-2.71	-4.12	-4.39	-5.91	-5.35	-4.40	-35.80
Disposal														
Percent of Annual Total	%	8%	1%	0%	0%	0%	1%	4%	10%	17%	22%	21%	15%	
Residential Irrigation	AF	-1.79	-0.29	0.00	-0.04	-0.05	-0.22	-0.95	-2.27	-3.85	-4.87	-4.74	-3.42	-22
Golf Course	AF	-53.53	-8.70	-0.10	-1.31	-1.48	-6.55	-28.51	-68.01	-115.09	-145.61	-141.79	-102.32	-673
Van Vleck Ranch Demand	AF	-17.10	-2.78	-0.03	-0.42	-0.47	-2.09	-9.11	-21.73	-36.77	-46.52	-45.30	-32.69	-215
Effluent Storage														
Beginning Water Volume in Res.	AF	65	70.4	148.1	239.1	334.3	415.0	494.1	529.7	503.6	409.3	269.1	138.2	
Change in Water Volume	AF	5.4	77.7	91.0	95.2	80.7	79.1	35.6	-26.1	-94.4	-140.2	-130.9	-73.2	0.0
Final Water Volume in Reservoirs	AF	70.4	148.1	239.1	334.3	415.0	494.1	529.7	503.6	409.3	269.1	138.2	65.0	

Scenario 4: 1976-77 Drought Precipitation (8 inches)

Physical System Data												
RMCC Lakes Water Surface Area	11.2	acres	ADWF (Buildout)	0.840	MGD	Pan Evaporation Coefficient	0.75	unitless	Reservoir Watershed Area	40	acres	Maximum Storage of Reservoirs	859.9	AF
RMCC Lakes Contributing Watershed	15	acres	Beginning Water Volume in Res.	65	AF	WWRP Site Area	7.5	acres	Reservoir Run-off Coeff	0.9	unitless	Volume of Reservoirs w/ 2ft FB	728.2	AF
RMCC Lakes Run-off Coefficient	0.2	unitless	WWRP Pond Area Total	10.7	acres	Run-off Coefficient for WWRP	0.9	unitless	Proportion in Reservoir #1	81%				

Precip and I/I Inputs			Irrigation Inputs			Results		
Average I/I in Percent of Inflow	9.06%		Residential/Commercial	-30	AF	Total RW Available	858	AF
Scenario I/I in Percent of Inflow	3.38%		Golf Courses	673	AF	Max Volume in Reservoirs	495	AF
Scenario I/I Volume, Annual	10.37	MG	Van Vleck	215	AF	Res/Comm Available w/Van Vleck	-30	AF
Scenario Precip Modifier	37%		Res/Comm Demand	440	AF	Res/Comm Available w/o Van Vleck	185	AF

Inflows
Outflows

Climate Inputs	Units	October	November	December	January	February	March	April	May	June	July	August	September	Annual Totals
Precipitation (Average)	in	1.26	3.36	2.94	4.41	3.36	3.15	1.47	0.42	0.21	0.00	0.00	0.42	21.00
Scenario Precipitation	in	0.47	1.25	1.10	1.64	1.25	1.17	0.55	0.16	0.08	0.00	0.00	0.16	7.83
Pan Evaporation	in	4.09	1.65	1.41	1.23	1.88	2.48	3.87	5.89	6.27	8.44	7.65	6.29	51.14
Effective Lake Evaporation	in	3.07	1.24	1.05	0.93	1.41	1.86	2.90	4.42	4.70	6.33	5.74	4.72	38.36
RMCSD WWRP														
# Days in Month	days	31	30	31	31	28	31	30	31	30	31	31	30	365
Wastewater Influent	MG	26.05	25.21	26.05	26.05	23.53	26.05	25.21	26.05	25.21	26.05	26.05	25.21	306.69
Wastewater Influent	AF	79.94	77.36	79.94	79.94	72.21	79.94	77.36	79.94	77.36	79.94	79.94	77.36	941.27
I/I Estimate (Average)	AF	7.24	7.01	7.24	7.24	6.54	7.24	7.01	7.24	7.01	7.24	7.24	7.01	85.28
Scenario I/I Estimate	AF	2.70	2.61	2.70	2.70	2.44	2.70	2.61	2.70	2.61	2.70	2.70	2.61	31.81
Site Run-off	AF	0.26	0.70	0.62	0.93	0.70	0.66	0.31	0.09	0.04	0.00	0.00	0.09	4.41
Pond Precipitation (direct)	AF	0.42	1.12	0.98	1.47	1.12	1.05	0.49	0.14	0.07	0.00	0.00	0.14	6.98
Pond Evaporation	AF	-2.74	-1.10	-0.94	-0.82	-1.26	-1.66	-2.59	-3.94	-4.19	-5.64	-5.11	-4.21	-34.20
RMCSD Secondary Storage Reservoirs														
Reservoir # 1 Vol	AF	52.65	57.40	115.40	184.12	254.48	314.56	373.79	401.25	382.52	311.72	205.96	107.43	
Reservoir # 1 Surface Area	acre	18.74	18.84	20.07	21.31	22.56	23.55	24.46	24.90	24.61	23.55	21.77	19.87	
Reservoir #2 Vol	AF	12.35	3.46	14.26	18.83	20.08	17.91	17.30	9.73	-2.55	-17.09	-28.05	-28.44	
Reservoir # 2 Surface Area	acre	3.32	3.80	4.60	5.40	6.20	6.70	7.20	7.40	7.30	6.70	5.40	4.10	
Total Water Surface Area	acre	22.05	22.64	24.67	26.71	28.76	30.25	31.66	32.30	31.91	30.25	27.17	23.97	
Contributing Water Shed Area	acre	17.95	17.36	15.33	13.29	11.24	9.75	8.34	7.70	8.09	9.75	12.83	16.03	
Reservoir Run-off	AF	0.63	1.63	1.26	1.64	1.06	0.86	0.34	0.09	0.05	0.00	0.00	0.19	7.75
Reservoir Precip (direct)	AF	0.86	2.36	2.25	3.66	3.00	2.96	1.45	0.42	0.21	0.00	0.00	0.31	17.50
Reservoir Evaporation	AF	-5.64	-2.33	-2.17	-2.06	-3.38	-4.69	-7.65	-11.89	-12.49	-15.95	-12.98	-9.42	-90.67
RMCC Irrigation Lakes														
Lake Water Shed Run-off	AF	0.12	0.31	0.27	0.41	0.31	0.29	0.14	0.04	0.02	0.00	0.00	0.04	1.96
Lake Precipitation (direct)	AF	0.44	1.17	1.02	1.54	1.17	1.10	0.51	0.15	0.07	0.00	0.00	0.15	7.31
Irrig. Lake Evaporation	AF	-2.87	-1.15	-0.98	-0.86	-1.32	-1.74	-2.71	-4.12	-4.39	-5.91	-5.35	-4.40	-35.80
Disposal														
Percent of Annual Total	%	8%	1%	0%	0%	0%	1%	4%	10%	17%	22%	21%	15%	
Residential Irrigation	AF	2.36	0.38	0.00	0.06	0.07	0.29	1.26	3.00	5.07	6.42	6.25	4.51	30
Golf Course	AF	-53.53	-8.70	-0.10	-1.31	-1.48	-6.55	-28.51	-68.01	-115.09	-145.61	-141.79	-102.32	-673
Van Vleck Ranch Demand	AF	-17.10	-2.78	-0.03	-0.42	-0.47	-2.09	-9.11	-21.73	-36.77	-46.52	-45.30	-32.69	-215
Effluent Storage														
Beginning Water Volume in Res.	AF	65	70.9	142.5	227.3	314.2	388.3	461.5	495.4	472.2	384.8	254.3	132.6	
Change in Water Volume	AF	5.9	71.6	84.8	86.9	74.2	73.1	33.9	-23.1	-87.4	-130.6	-121.6	-67.6	0.0
Final Water Volume in Reservoirs	AF	70.9	142.5	227.3	314.2	388.3	461.5	495.4	472.2	384.8	254.3	132.6	65.0	

Appendix D Log Pearson Analysis

ECHO OF INPUT:

Stream:

n = 28

Q(1) = 16.9; Q(2) = 28.8; Q(3) = 12.6; Q(4) = 32.01; Q(5) = 34.09; Q(6) = 23.78; Q(7) = 16.09; Q(8) = 28.48; Q(9) = 21.86; Q(10) = 21.1; Q(11) = 20.99; Q(12) = 29.48; Q(13) = 22.6; Q(14) = 14.17; Q(15) = 14.77; Q(16) = 17.52; Q(17) = 29.32; Q(18) = 20.78; Q(19) = 23.08; Q(20) = 6.16; Q(21) = 22.86; Q(22) = 12.86; Q(23) = 24.3; Q(24) = 31.26; Q(25) = 22.92; Q(26) = 27.24; Q(27) = 12.04; Q(28) = 24.54.

skew coefficient [of the logarithms] C_s = -1.292

OUTPUT:

i	Return period T (yr)	Probability P (percent)	Frequency factor K	y = log (Q)	Flood discharge Q (m^3/s)
1	1.05	95.2	-1.923	0.997	10
2	1.11	90.1	-1.339	1.093	12
3	1.25	80	-0.72	1.195	16
4	2	50	0.209	1.348	22
5	5	20	0.838	1.452	28
6	10	10	1.065	1.489	31
7	25	4	1.243	1.519	33
8	50	2	1.329	1.533	34
9	100	1	1.388	1.543	35
10	200	0.5	1.432	1.55	35

Calculate Reset

Your request was processed at 09:59:19 am on August 7th, 2024 [240807 09:59:19].

Thank you for running online_pearson. Please call again. [080402]

ECHO OF INPUT:

Stream:

n = 111

Q(1) = 11.1; Q(2) = 13.8; Q(3) = 16.2; Q(4) = 18; Q(5) = 17.7; Q(6) = 9; Q(7) = 16.5; Q(8) = 13.2; Q(9) = 14.7; Q(10) = 13.2; Q(11) = 18; Q(12) = 8.4; Q(13) = 11.4; Q(14) = 13.2; Q(15) = 20.7; Q(16) = 14.1; Q(17) = 12.6; Q(18) = 8.1; Q(19) = 12; Q(20) = 14.1; Q(21) = 6.9; Q(22) = 11.7; Q(23) = 10.8; Q(24) = 19.5; Q(25) = 19.2; Q(26) = 24.6; Q(27) = 20.4; Q(28) = 8.4; Q(29) = 25.2; Q(30) = 28.2; Q(31) = 21.9; Q(32) = 17.1; Q(33) = 22.2; Q(34) = 18.6; Q(35) = 8.4; Q(36) = 11.1; Q(37) = 14.7; Q(38) = 10.8; Q(39) = 23.7; Q(40) = 16.2; Q(41) = 25.8; Q(42) = 12.3; Q(43) = 21; Q(44) = 22.5; Q(45) = 14.7; Q(46) = 18.6; Q(47) = 27.3; Q(48) = 11.7; Q(49) = 14.1; Q(50) = 11.7; Q(51) = 19.8; Q(52) = 18.3; Q(53) = 15; Q(54) = 15.3; Q(55) = 13.8; Q(56) = 18.9; Q(57) = 15; Q(58) = 26.1; Q(59) = 22.5; Q(60) = 11.4; Q(61) = 13.8; Q(62) = 28.5; Q(63) = 17.1; Q(64) = 15.3; Q(65) = 6.6; Q(66) = 11.1; Q(67) = 23.7; Q(68) = 22.8; Q(69) = 19.8; Q(70) = 24.3; Q(71) = 31.5; Q(72) = 37.5; Q(73) = 12.6; Q(74) = 14.4; Q(75) = 23.7; Q(76) = 18.3; Q(77) = 12.9; Q(78) = 15.6; Q(79) = 15.6; Q(80) = 15.6; Q(81) = 20.7; Q(82) = 24.9; Q(83) = 15.3; Q(84) = 28.2; Q(85) = 23.4; Q(86) = 18.6; Q(87) = 29.4; Q(88) = 11.7; Q(89) = 25.8; Q(90) = 21.9; Q(91) = 15.9; Q(92) = 14.4; Q(93) = 19.2; Q(94) = 22.8; Q(95) = 18.6; Q(96) = 12.9; Q(97) = 13.5; Q(98) = 18.9; Q(99) = 22.2; Q(100) = 17.7; Q(101) = 21.9; Q(102) = 6; Q(103) = 18.6; Q(104) = 8.4; Q(105) = 22.2; Q(106) = 27; Q(107) = 18.3; Q(108) = 26.1; Q(109) = 7.5; Q(110) = 19.5; Q(111) = 13.2.

skew coefficient [of the logarithms] C_s = -0.446

OUTPUT:

i	Return period T (yr)	Probability P (percent)	Frequency factor K	y = log (Q)	Flood discharge Q (cfs)
1	1.05	95.2	-1.761	0.935	9
2	1.11	90.1	-1.32	1.005	10
3	1.25	80	-0.812	1.085	12
4	2	50	0.074	1.226	17
5	5	20	0.855	1.35	22
6	10	10	1.224	1.409	26
7	25	4	1.588	1.467	29
8	50	2	1.808	1.502	32
9	100	1	1.995	1.532	34
10	200	0.5	2.159	1.558	36

Calculate Reset

Your request was processed at 09:45:06 am on August 7th, 2024 [240807 09:45:06].

Appendix E Cost Estimates

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 1A - 3 New Wells, No Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$205,400	All Req'd	$	205,400
2	Construction Surveying (1% of Total Bid Price)	LS	$40,700	All Req'd	$	40,700
New Well Installation						
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	3	$	1,425,800
4	Install 75 HP well pump, motor, and column	EA	$133,380	3	$	400,200
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	3	$	645,800
6	Panel, VFD, SCADA controls	EA	$242,400	3	$	727,200
7	Power distribution	EA	$86,100	3	$	258,300
8	Access road	LS	$8,000	All Req'd	$	8,000
Distribution System Connection to New Wells						
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	410	$	87,000
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	2,677	$	484,100
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$	15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$	15,000

Sum of Estimated Construction Cost	**$**	**4,313,000**
Contingency (20%)	$	863,000
Design, Engineering, and Construction Administration (25%)	$	1,079,000
Environmental, Permitting, Legal, Land Acquisition	$	94,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**6,349,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 1B - 5 New Wells , No Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$340,200	All Req'd	$ 340,200
2	Construction Surveying (1% of Total Bid Price)	LS	$67,400	All Req'd	$ 67,400
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	5	$ 2,376,300
4	Install 75 HP well pump, motor, and column	EA	$133,380	5	$ 666,900
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	5	$ 1,076,300
6	Panel, VFD, SCADA controls	EA	$242,400	5	$ 1,212,000
7	Power distribution	EA	$86,100	5	$ 430,500
8	Access road	LS	$10,000	All Req'd	$ 10,000
Distribution System Connection to New Wells					
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	638	$ 135,400
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	4,382	$ 792,300
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$ 15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$ 20,000

Sum of Estimated Construction Cost	**$**	**7,143,000**
Contingency (20%)	$	1,429,000
Design, Engineering, and Construction Administration (25%)	$	1,786,000
Environmental, Permitting, Legal, Land Acquisition	$	97,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**10,455,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 2A - 3 New Wells, Partial Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$401,800	All Req'd	$	401,800
2	Construction Surveying (1% of Total Bid Price)	LS	$79,600	All Req'd	$	79,600
New Well Installation & Treatment						
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	3	$	1,425,800
4	Install 75 HP well pump, motor, and column	EA	$133,380	3	$	400,200
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	3	$	645,800
6	Panel, VFD, SCADA controls	EA	$242,400	3	$	727,200
7	Power distribution	EA	$86,100	3	$	258,300
8	Access road	LS	$8,000	All Req'd	$	8,000
9	Construct a permanent water treatment facility to treat 655 gpm*	LS	$3,888,000	All Req'd	$	3,888,000
	* see following sheet for WTF cost estimate					
Distribution System Connection to New Wells						
14	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	410	$	87,000
15	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	2,677	$	484,100
16	Install 10" gate valves with thrust blocks	EA	$5,148	3	$	15,500
17	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$	15,000

Sum of Estimated Construction Cost	**$**	**8,436,000**
Contingency (20%)	$	1,688,000
Design, Engineering, and Construction Administration (25%)	$	2,109,000
Environmental, Permitting, Legal, Land Acquisition	$	300,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**12,533,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 2B - 5 New Wells, Partial Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$689,100	All Req'd	$	689,100
2	Construction Surveying (1% of Total Bid Price)	LS	$136,500	All Req'd	$	136,500
New Well Installation & Treatment						
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	5	$	2,376,300
4	Install 75 HP well pump, motor, and column	EA	$133,380	5	$	666,900
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	5	$	1,076,300
6	Panel, VFD, SCADA controls	EA	$242,400	5	$	1,212,000
7	Power distribution	LS	$86,100	5	$	430,500
8	Access road	LS	$10,000	All Req'd	$	10,000
9	Construct a permanent water treatment facility to treat 1174 gpm of well water*	LS	$6,910,000	All Req'd	$	6,910,000
	* see following sheet for WTF cost estimate					
Distribution System Connection to New Wells						
14	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	638	$	135,400
15	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	4,382	$	792,300
16	Install 10" gate valves with thrust blocks	EA	$5,148	3	$	15,500
17	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$	20,000

Sum of Estimated Construction Cost	**$**	**14,471,000**
Contingency (20%)	$	2,895,000
Design, Engineering, and Construction Administration (25%)	$	3,618,000
Environmental, Permitting, Legal, Land Acquisition	$	300,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**21,284,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 3A - 3 New Wells, Portable Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$205,400	All Req'd	$	205,400
2	Construction Surveying (1% of Total Bid Price)	LS	$40,700	All Req'd	$	40,700
New Well Installation						
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	3	$	1,425,800
4	Install 75 HP well pump, motor, and column	EA	$133,380	3	$	400,200
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	3	$	645,800
6	Panel, VFD, SCADA controls	EA	$242,400	3	$	727,200
7	Power distribution	EA	$86,100	3	$	258,300
8	Access road	LS	$8,000	All Req'd	$	8,000
Distribution System Connection to New Wells						
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	410	$	87,000
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	2,677	$	484,100
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$	15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$	15,000

Sum of Estimated Construction Cost	**$**	**4,313,000**
Contingency (20%)	$	863,000
Design, Engineering, and Construction Administration (25%)	$	1,079,000
Environmental, Permitting, Legal, Land Acquisition	$	94,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**6,349,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 3B - 5 New Wells, Portable Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$340,200	All Req'd	$ 340,200
2	Construction Surveying (1% of Total Bid Price)	LS	$67,400	All Req'd	$ 67,400
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	5	$ 2,376,300
4	Install 75 HP well pump, motor, and column	EA	$133,380	5	$ 666,900
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	5	$ 1,076,300
6	Panel, VFD, SCADA controls	EA	$242,400	5	$ 1,212,000
7	Power distribution	EA	$86,100	5	$ 430,500
8	Access road	LS	$10,000	All Req'd	$ 10,000
Distribution System Connection to New Wells					
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	638	$ 135,400
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	4,382	$ 792,300
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$ 15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$ 20,000

Sum of Estimated Construction Cost	**$**	**7,143,000**
Contingency (20%)	$	1,429,000
Design, Engineering, and Construction Administration (25%)	$	1,786,000
Environmental, Permitting, Legal, Land Acquisition	$	97,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**10,455,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 4A - 3 New Wells, Full Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$552,900	All Req'd	$ 552,900
2	Construction Surveying (1% of Total Bid Price)	LS	$109,500	All Req'd	$ 109,500
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	3	$ 1,425,800
4	Install 75 HP well pump, motor, and column	EA	$133,380	3	$ 400,200
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	3	$ 645,800
6	Panel, VFD, SCADA controls	EA	$242,400	3	$ 727,200
7	Power distribution	EA	$86,100	3	$ 258,300
8	Access road	LS	$8,000	All Req'd	$ 8,000
Distribution System Connection to New Wells					
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	410	$ 87,000
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	2,677	$ 484,100
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$ 15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$ 15,000
Water Treatment Facility					
13	Construct a permanent water treatment facility to treat well water, media filtration*	LS	$6,880,000	All Req'd	$ 6,880,000

* see following sheet for WTF cost estimate

Sum of Estimated Construction Cost	**$**	**11,609,000**
Contingency (20%)	$	2,322,000
Design, Engineering, and Construction Administration (25%)	$	2,903,000
Environmental, Permitting, Legal, Land Acquisition	$	350,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**17,184,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 4B - 5 New Wells, Full Treatment
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$959,900	All Req'd	$ 959,900
2	Construction Surveying (1% of Total Bid Price)	LS	$190,100	All Req'd	$ 190,100
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	5	$ 2,376,300
4	Install 75 HP well pump, motor, and column	EA	$133,380	5	$ 666,900
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	5	$ 1,076,300
6	Panel, VFD, SCADA controls	EA	$242,400	5	$ 1,212,000
7	Power distribution	EA	$86,100	5	$ 430,500
8	Access road	LS	$10,000	All Req'd	$ 10,000
Distribution System Connection to New Wells					
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	638	$ 135,400
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	4,382	$ 792,300
11	Install 10" gate valves with thrust blocks	EA	$5,148	3	$ 15,500
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$ 15,000
Water Treatment Facility					
13	Construct a permanent water treatment facility to treat well water, media filtration*	LS	$12,277,000	All Req'd	$ 12,277,000

* see following sheet for WTF cost estimate

Sum of Estimated Construction Cost	**$**	**20,157,000**
Contingency (20%)	$	4,032,000
Design, Engineering, and Construction Administration (25%)	$	5,040,000
Environmental, Permitting, Legal, Land Acquisition	$	350,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**29,579,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 5A - 3 New Wells, Treat at 3 New Wells WTP
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$388,900	All Req'd	$ 388,900
2	Construction Surveying (1% of Total Bid Price)	LS	$77,100	All Req'd	$ 77,100
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	3	$ 1,425,800
4	Install 75 HP well pump, motor, and column	EA	$133,380	3	$ 400,200
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	3	$ 645,800
6	Panel, VFD, SCADA controls	EA	$242,400	3	$ 727,200
7	Power distribution	EA	$86,100	3	$ 258,300
8	Access road	LS	$8,000	All Req'd	$ 8,000
Piping to Connect Wells to WTP					
9	Excavate, furnish, and install 10" PVC C-900 pipe to existing WTP, includes backfill	LF	$212	17,200	$ 3,649,200
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$ 15,000
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	410	$ 87,000
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	2,677	$ 484,100

Sum of Estimated Construction Cost	**$**	**8,167,000**
Contingency (20%)	$	1,634,000
Design, Engineering, and Construction Administration (25%)	$	2,042,000
Environmental, Permitting, Legal, Land Acquisition	$	144,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**11,987,000**

PLANNING LEVEL COST

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 5B - 5 New Wells, Treat at Existing WTP
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$548,700	All Req'd	$ 548,700
2	Construction Surveying (1% of Total Bid Price)	LS	$108,700	All Req'd	$ 108,700
New Well Installation					
3	Drill new well to 500-feet; includes well casing (complete in-place including well development and test pumping)	EA	$475,254	5	$ 2,376,300
4	Install 75 HP well pump, motor, and column	EA	$133,380	5	$ 666,900
5	Pump house installation, including piping, valves, flowmeter, and chlorination equipment	EA	$215,250	5	$ 1,076,300
6	Panel, VFD, SCADA controls	EA	$242,400	5	$ 1,212,000
7	Power distribution	LS	$86,100	5	$ 430,500
8	Access road	LS	$10,000	All Req'd	$ 10,000
Piping to Connect Wells to WTP					
9	Excavate, furnish, and install 14" PVC C-900 pipe, includes backfill	LF	$241	17,200	$ 4,150,100
12	Connection to existing, including flushing, testing, and disinfection	LS	$15,000	All Req'd	$ 15,000
9	Excavate, furnish, and install 10" PVC C-900 pipe, includes backfill	LF	$212	638	$ 135,400
10	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	4,382	$ 792,300

Sum of Estimated Construction Cost	**$**	**11,522,000**
Contingency (20%)	$	2,305,000
Design, Engineering, and Construction Administration (25%)	$	2,881,000
Environmental, Permitting, Legal, Land Acquisition	$	147,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**16,855,000**

PLANNING LEVEL COST

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Alternative 6 - Use Clementia for Domestic Storage
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$9,300	All Req'd	$ 9,300
2	Construction Surveying (1% of Total Bid Price)	LS	$1,900	All Req'd	$ 1,900
3	Rental	Month	$6,181	4	$ 27,800
4	Diesel for 100 days	Gal	$5	8880	$ 44,400
5	Connection to access hatch	ls	$10,000	All Req'd	$ 10,000
	Legal costs to get statutory exemption	ls	$100,000	All Req'd	$ 100,000

Sum of Estimated Construction Cost	**$**	**193,000**
Contingency (20%)	$	39,000
Design, Engineering, and Construction Administration (25%)	$	49,000
Environmental, Permitting, Legal	$	60,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**341,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 7 - New Tank in Village C
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$106,600	All Req'd	$	106,600
2	Construction Surveying (1% of Total Bid Price)	LS	$21,200	All Req'd	$	21,200
New Tank						
3	Site work and excavation	LS	$499,200	All Req'd	$	499,200
4	Tank foundation, reinforced concrete slab 6" thick with min. 24" aggregate fill	CY	$640	185	$	118,600
5	Overflow piping	LS	$25,600	All Req'd	$	25,600
6	Construct 1.0 MG bolted steel tank, includes valving, piping	EA	$1,152,000	1	$	1,152,000
7	SCADA, telemetry, and controls	LS	$100,000	All Req'd	$	100,000
Transmission System Connection to New Tank						
8	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$	20,000
9	Excavate, furnish, and install 12" PVC C-900 pipe, includes backfill	LF	$230	850	$	195,400

Sum of Estimated Construction Cost	**$**	**2,239,000**
Contingency (20%)	$	448,000
Design, Engineering, and Construction Administration (25%)	$	560,000
Environmental, Permitting, Legal	$	25,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**3,272,000**

RMCSD

IWMP Alt 7

PLANNING LEVEL COST

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 8 - New Tank in Village H
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$112,100	All Req'd	$ 112,100
2	Construction Surveying (1% of Total Bid Price)	LS	$22,200	All Req'd	$ 22,200
New Tank					
3	Site work and excavation	LS	$499,200	All Req'd	$ 499,200
4	Tank foundation, reinforced concrete slab 6" thick with min. 24" aggregate fill	CY	$640	185	$ 118,600
5	Overflow piping	LS	$25,600	All Req'd	$ 25,600
6	Construct 1.0 MG bolted steel tank, includes valving, piping	EA	$1,152,000	1	$ 1,152,000
7	SCADA, telemetry, and controls	LS	$100,000	All Req'd	$ 100,000
Transmission System Connection to New Tank					
8	Excavate, furnish, and install 12" PVC C-900 pipe, includes backfill	LF	$230	1,320	$ 303,400
9	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$ 20,000

Sum of Estimated Construction Cost	**$**	**2,353,000**
Contingency (20%)	$	471,000
Design, Engineering, and Construction Administration (25%)	$	589,000
Environmental, Permitting, Legal	$	25,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**3,438,000**

RMCSD

IWMP Alt 8

PLANNING LEVEL COST

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 9 - New Tank at Van Vleck
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$138,900	All Req'd	$ 138,900
2	Construction Surveying (1% of Total Bid Price)	LS	$27,500	All Req'd	$ 27,500
New Tank					
3	Site work and excavation	LS	$698,880	All Req'd	$ 698,900
4	Tank foundation, reinforced concrete slab 6" thick with min. 24" aggregate fill	CY	$640	289	$ 185,200
5	Overflow piping	LS	$35,840	All Req'd	$ 35,900
6	Construct 1.4 million-gallon bolted steel tank, includes valving, piping	EA	$1,612,800	1	$ 1,612,800
7	SCADA, telemetry, and controls	LS	$100,000	All Req'd	$ 100,000
Transmission System Connection to New Tank					
8	Excavate, furnish, and install 12" PVC C-900 pipe, includes backfill	LF	$230	420	$ 96,600
9	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$ 20,000

Sum of Estimated Construction Cost	**$**	**2,916,000**
Contingency (20%)	$	584,000
Design, Engineering, and Construction Administration (25%)	$	729,000
Environmental, Permitting, Legal	$	25,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**4,254,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 10 - Village C Booster Station
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT		TOTAL PRICE
General						
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$54,500	All Req'd	$	54,500
2	Construction Surveying (1% of Total Bid Price)	LS	$10,800	All Req'd	$	10,800
Booster Station Installation						
3	Install booster station, includes pump house, piping, valves, and flowmeter	LS	$213,500	All Req'd	$	213,500
	Install 25 HP regular duty pump and motor	EA	$95,300	2	$	190,600
	25 HP VFDs	EA	$10,020	2	$	20,100
4	Install 40 HP fire pump and motor	EA	$152,400	2	$	304,800
5	40 HP VFDs	EA	$16,700	2	$	33,400
6	Power distribution, electrical, instrumentation and controls	LS	$134,400	All Req'd	$	134,400
7	Install emergency generator & automatic transfer switch	EA	$37,000	4	$	148,000
Distribution System Connection to New Booster Station						
8	Excavate, furnish, and install 12" PVC C-900 pipe, includes backfill	LF	$230	54	$	12,500
9	Connection to existing, including flushing, testing, and disinfection	LS	$20,000	All Req'd	$	20,000

Sum of Estimated Construction Cost	**$**	**1,143,000**
Contingency (20%)	$	229,000
Design, Engineering, and Construction Administration (25%)	$	286,000
Environmental, Permitting, Legal	$	20,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**1,678,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 11 - New Hydrants and Pipeline Upsizing
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$274,000	All Req'd	$ 274,000
2	Construction Surveying (1% of Total Bid Price)	LS	$54,300	All Req'd	$ 54,300
3	Temporary controls of traffic	LS	$200,000	All Req'd	$ 200,000
4" Pipe Upsizing					
4	Excavate, furnish, and install 8" PVC C-900 pipe, includes backfill	LF	$181	18,409	$ 3,328,400
5	Connection to existing, including flushing, testing, and disinfection	EA	$5,000	50	$ 250,000
Fire Hydrants					
6	Install fire hydrant assemblies	EA	$8,800	13	$ 114,400
Upsizing for Existing Conditions					
7	Excavate, furnish, and install 12" PVC C-900 pipe along Guadalupe Dr, includes backfill	LF	$230	3,282	$ 754,900
8	Excavate, furnish, and install 10" PVC C-900 pipe along Escuela Dr, includes backfill	LF	$212	2,679	$ 568,000
9	Connection to existing, including flushing, testing, and disinfection	EA	$5,000	2	$ 10,000
Upsizing for Buildout Conditions					
10	Excavate, furnish, and install 12" PVC C-900 pipe along De La Cruz Dr, includes backfill	LF	$230	585	$ 134,600
11	Excavate, furnish, and install 12" PVC C-900 pipe along Clementia Cir, includes backfill	LF	$230	280	$ 64,400
12	Connection to existing, including flushing, testing, and disinfection	EA	$5,000	2	$ 10,000

Sum of Estimated Construction Cost	**$**	**5,763,000**
Contingency (20%)	$	1,153,000
Design, Engineering, and Construction Administration (25%)	$	1,441,000
Environmental, Permitting, Legal	$	40,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**8,397,000**

PLANNING LEVEL COST

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 12 - WWRP Improvements
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$11,700	All Req'd	$ 11,700
2	Construction Surveying (1% of Total Bid Price)	LS	$2,400	All Req'd	$ 2,400
3	EQ Basin Air Gap	LS	$ 57,440	All Req'd	$ 57,500
4	New Chlorine Contact Basin	EA			
5	Dechlorination System	EA	$ 45,233	All Req'd	$ 45,300
6	DAF Pump Improvements	LS	$128,000	All Req'd	$ 128,000

Sum of Estimated Construction Cost	**$**	**245,000**
Contingency (20%)	$	49,000
Design, Engineering, and Construction Administration (25%)	$	62,000
Environmental, Permitting, Legal	$	20,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**376,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER SYSTEM MASTER PLAN
Alternative 13 - Reclaimed Transmission Improvements
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$181,400	All Req'd	$ 181,400
2	Construction Surveying (1% of Total Bid Price)	LS	$35,400	All Req'd	$ 35,400
3	Temporary controls of traffic	LS	$60,000	All Req'd	$ 60,000
4	North Course Transmission Replacement	LF	$230	11,600	$ 2,668,000
5	North Course Pump Station Rehab	LS	$862,700	All Req'd	$ 862,700

Sum of Estimated Construction Cost	**$**	**3,808,000**
Contingency (20%)	$	762,000
Design, Engineering, and Construction Administration (25%)	$	952,000
Environmental, Permitting, Legal	$	25,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**5,547,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
INTEGRATED WATER MASTER PLAN
Permanent Water Treatment Plant for Full Treatment of Five Wells
PLANNING LEVEL COST ESTIMATE
(YEAR 2024 COST)

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
General					
1	Mobilization/Demobilization (not to exceed 5% of Total Bid Price)	LS	$556,100	All Req'd	$ 556,100
2	Project safety, temporary traffic control, quality control	LS	$75,000	All Req'd	$ 75,000
Central Water Treatment Facility					
3	Site work, including clearing and grubbing	LS	$373,793	All Req'd	$ 373,800
5	Operating/Mechanical building	SF	$273	6,469	$ 1,766,200
6	Evaporation pond excavation/embankment	CY	$78	4,433	$ 345,800
7	Evaporation pond liner	SF	$1.56	185,698	$ 289,700
8	Backwash settling tanks	LS	$2,180,456	All Req'd	$ 2,180,500
9	Treatment equipment	LS	$3,815,799	All Req'd	$ 3,815,800
10	Mechanical, electrical, HVAC, plumbing	LS	$1,915,687	All Req'd	$ 1,915,700
11	Sodium hypochlorite system, including chemical feed pumps and equipment	LS	$358,218	All Req'd	$ 358,300
12	Controls and instrumentation work	LS	$467,241	All Req'd	$ 467,300
13	Generator set and automatic transfer switch	LS	$132,385	All Req'd	$ 132,400

Sum of Estimated Construction Cost	**$**	**12,277,000**
Contingency (20%)	$	2,456,000
Design, Engineering, and Construction Administration (25%)	$	3,070,000
TOTAL ESTIMATED PROJECT COST (2024 DOLLARS)	**$**	**17,803,000**

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
NET PRESENT VALUE ANALYSIS
INTEGRATED WATER MASTER PLAN
Existing Conditions - Groundwater Alternatives
(YEAR 2024 COST)

	No Treatment Req'd	Permanent WTP for Partial Flow	Portable Treatment Unit (10% of years)	Permanent WTP for Full Flow	Pipeline to Existing WTP
Capital Costs	$ 6,349,000	$ 12,533,000	$ 6,349,000	$ 17,184,000	$ 11,987,000
Annual O&M	$ 105,093	$ 321,320	$ 243,793	$ 573,785	$ 105,093
Present Worth O&M	$ 1,718,400	$ 5,254,000	$ 3,986,400	$ 9,382,200	$ 1,718,400
Salvage Value	$ 1,270,827	$ 2,524,893	$ 1,270,827	$ 3,510,097	$ 3,460,347
Present Worth Salvage Value	$ 855,200	$ 1,699,200	$ 855,200	$ 2,362,200	$ 2,328,700
Net Present Value	**$ 7,212,200**	**$ 16,087,800**	**$ 9,480,200**	**$ 24,204,000**	**$ 11,376,700**
Alt 3 % of time used for equal NPV	**n/a**	**54%**	**n/a**	**n/a**	**23%**

*NPV=Capital cost + present day worth of annual O&M-salvage value

*Present Worth O&M = Annual O&M $\times \frac{(1+i)^N-1}{i(1+i)^N}$

where i = interest rate, N = years

Rancho Murieta CSD
IWMP
NPV ANALYSIS (20 Year)

RANCHO MURIETA COMMUNITY SERVICES DISTRICT
NET PRESENT VALUE ANALYSIS
INTEGRATED WATER MASTER PLAN
Buildout Conditions - Groundwater Alternatives
(YEAR 2024 COST)

	No Treatment Req'd	Permanent WTP for Partial Flow	Portable Treatment Unit (10% of years)	Permanent WTP for Full Flow	Pipeline to Existing WTP
Capital Costs	$ 10,455,000	$ 21,284,000	$ 10,455,000	$ 29,579,000	$ 16,855,000
Annual O&M	$ 167,486	$ 356,072	$ 352,486	$ 635,843	$ 167,486
Present Worth O&M	$ 2,738,600	$ 5,822,300	$ 5,763,600	$ 10,397,000	$ 2,738,600
Salvage Value	$ 2,103,537	$ 4,352,730	$ 2,103,537	$ 6,119,873	$ 4,593,597
Present Worth Salvage Value	$ 1,415,600	$ 2,929,300	$ 1,415,600	$ 4,118,500	$ 3,091,400
Net Present Value	**$ 11,778,000**	**$ 24,177,000**	**$ 14,803,000**	**$ 35,857,500**	**$ 16,502,200**
Alt 3 % of time used for equal NPV	**n/a**	**52%**	**n/a**	**n/a**	**18%**

*NPV=Capital cost + present day worth of annual O&M-salvage value

*Present Worth O&M = Annual O&M $\times \frac{(1+i)^N-1}{i(1+i)^N}$

where i = interest rate, N = years

Rancho Murieta CSD
IWMP
NPV ANALYSIS (20 Year)

Discount Rate: 2% Per December 2022 OMB Circular

Salvage Values	20	Planning Period (yrs)

Alternative:	No treatment needed			blending treatment						portable treatment unit			permanent treatment						Pipeline to Existing WTP			
Item	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	WTF Mechanical Building	Backwash tanks	mech, elec, hvac, plumbing	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	WTF Mechanical Building	Backwash tanks + treatment equip	mech, elec, hvac, plumbing	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	
Capital Costs	$571,100	$1,856,333	$400,200	$571,100	$1,856,333	$400,200	$551,500	$1,872,200	$598,200	$571,100	$1,856,333	$400,200	$571,100	$1,856,333	$400,200	$984,700	$3,343,200	$1,068,100	$4,220,300	$1,856,333	$400,200	
Lifespan	50	40	20	50	40	20	50	30	40	50	40	20	50	40	20	50	30	40	50	40	20	
Annual Depreciation (straight line)	$11,422	$46,408	$20,010	$11,422	$46,408	$20,010	$11,030	$62,407	$14,955	$11,422	$46,408	$20,010	$11,422	$46,408	$20,010	$19,694	$111,440	$26,703	$84,406	$46,408	$20,010	
Salvage Value at Planning Period	$342,660	$928,167	$0	$342,660	$928,167	$0	$330,900	$624,067	$299,100	$342,660	$928,167	$0	$342,660	$928,167	$0	$590,820	$1,114,400	$534,050	$2,532,180	$928,167	$0	
		Total	$1,270,827				Total	$2,524,893			Total	$1,270,827					Total	$3,510,097				Total $3,460,347

Buildout Alternatives

Alternative:	No treatment needed			blending treatment						portable treatment unit			permanent treatment						Pipeline to Existing WTP			
Item	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	WTF Mechanical Building	Backwash tanks	mech, elec, hvac, plumbing	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	WTF Mechanical Building	Backwash tanks + treatment equip	mech, elec, hvac, plumbing	PVC Pipelines	Well (casing, column) & Wellhouse	well pumps and motors	
Capital Costs	$927,700	$3,093,833	$666,900	$927,700	$3,093,833	$666,900	$989,100	$3,358,000	$1,072,800	$927,700	$3,093,833	$666,900	$927,700	$3,093,833	$666,900	$1,766,200	$5,996,300	$1,915,700	$5,077,800	$3,093,833	$666,900	
Lifespan	50	40	20	50	40	20	50	30	40	50	40	20	50	40	20	50	30	40	50	40	20	
Annual Depreciation (straight line)	$18,554	$77,346	$33,345	$18,554	$77,346	$33,345	$19,782	$111,933	$26,820	$18,554	$77,346	$33,345	$18,554	$77,346	$33,345	$35,324	$199,877	$47,893	$101,556	$77,346	$33,345	
Salvage Value at Planning Period	$556,620	$1,546,917	$0	$556,620	$1,546,917	$0	$593,460	$1,119,333	$536,400	$556,620	$1,546,917	$0	$556,620	$1,546,917	$0	$1,059,720	$1,998,767	$957,850	$3,046,680	$1,546,917	$0	
		Total	$2,103,537				Total	$4,352,730			Total	$2,103,537					Total	$6,119,873				Total $4,593,597

Existing Conditions

Short Lived Asset Reserve	no treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	3	$ 71,750	$ 43,050		
SCADA, VFD, controls and panels	3	$ 242,400		$ 48,480	
gate valves	3	$ 5,148		$ 1,030	
		Total	$ 43,050	$ 49,510	

Short Lived Asset Reserve	blending treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	3	$ 40,180	$ 24,108		
SCADA, VFD, controls and panels	3	$ 135,744		$ 27,149	
gate valves	3	$ 2,883		$ 577	
evap pond liner	1	$ 162,232		$ 10,815	
chem feed pumps	1	$ 40,120		$ 2,675	
WTP controls and instrumentation	1	$ 43,609		$ 2,907	
filter media	1	$ 50,150	$ 10,030		
		Total	$ 34,138	$ 44,123	

Short Lived Asset Reserve	portable treatment unit				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	3	$ 71,750	$ 43,050		
SCADA, VFD, controls and panels	3	$ 242,400		$ 48,480	
gate valves	3	$ 5,148		$ 1,030	
		Total	$ 43,050	$ 49,510	

Short Lived Asset Reserve	permanent treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	3	$ 71,750	$ 43,050		
SCADA, VFD, controls and panels	3	$ 242,400		$ 48,480	
gate valves	3	$ 5,148		$ 1,030	
evap pond liner	1	$ 289,700		$ 19,313	
chem feed pumps	1	$ 71,644		$ 4,776	
WTP controls and instrumentation	1	$ 77,873		$ 5,192	
filter media	1	$ 89,554	$ 17,911		
		Total	$ 60,961	$ 78,791	

Existing Alts Annual Operation and Maintenance (O&M)				
Item	no treatment	blending	temp treatment	WTP
Labor	$ 10,000	$ 86,800	$ 20,000	$ 155,000
Utilities*	$ 1,034	$ 45,379	$ 2,534	$ 81,034
Supplies, Parts, Maintenance, Misc Repairs	$ 1,000	$ 16,800	$ 1,000	$ 30,000
Chemicals	$ -	$ 19,600	$ 500	$ 35,000
Equipment Replacement	$ 500	$ 74,480	$ 1,000	$ 133,000
Short Lived Asset Reserve	$ 92,560	$ 78,261	$ 92,560	$ 139,752
Portable Treatment Equipment			$ 126,200.00	
Totals	$ 105,093	$ 321,320	$ 243,793	$ 573,785

Buildout Conditions

Short Lived Asset Reserve	no treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	5	$ 71,750	$ 71,750		
SCADA, VFD, controls and panels	5	$ 242,400		$ 80,800	
gate valves	3	$ 5,148		$ 1,030	
		Total	$ 71,750	$ 81,830	

Short Lived Asset Reserve	blending treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	5	$ 40,180	$ 40,180		
SCADA, VFD, controls and panels	5	$ 135,744		$ 45,248	
gate valves	3	$ 2,883		$ 577	
evap pond liner	1	$ 162,232		$ 10,815	
chem feed pumps	1	$ 40,120		$ 2,675	
WTP controls and instrumentation	1	$ 52,331		$ 3,489	
filter media	1	$ 50,150	$ 10,030		
		Total	$ -	$ 50,210	$ 62,803

Short Lived Asset Reserve	portable treatment unit				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	5	$ 71,750	$ 71,750		
SCADA, VFD, controls and panels	5	$ 242,400		$ 80,800	
gate valves	3	$ 5,148		$ 1,030	
		Total	$ 71,750	$ 81,830	

Short Lived Asset Reserve	permanent treatment				
Item	QTY	Cost Per Unit	5 Year	15 Year	
well house piping and valves	5	$ 71,750	$ 71,750		
SCADA, VFD, controls and panels	5	$ 242,400		$ 80,800	
gate valves	3	$ 5,148		$ 1,030	
evap pond liner	1	$ 289,700		$ 19,313	
chem feed pumps	1	$ 71,644		$ 4,776	
WTP controls and instrumentation	1	$ 93,448		$ 6,230	
filter media	1	$ 89,554	$ 17,911		
		Total	$ 89,661	$ 112,149	

Buildout Alts Annual Operation and Maintenance (O&M)				
Item	no treatment	blending	temp treatment	WTP
Labor	$ 10,000	$ 86,800	$ 20,000	$ 155,000
Utilities	$ 1,906	$ 45,379	$ 3,406	$ 81,034
Supplies, Parts, Maintenance, Misc Repairs	$ 1,300	$ 16,800	$ 1,500	$ 30,000
Chemicals	$ -	$ 19,600	$ 700	$ 35,000
Equipment Replacement	$ 700	$ 74,480	$ 1,500	$ 133,000
Short Lived Asset Reserve	$ 153,580	$ 113,014	$ 153,580	$ 201,810
			$ 171,800.00	
Totals	$ 167,486	$ 356,072	$ 352,486	$ 635,843

Appendix F Groundwater Findings Technical Memorandum

ADKINS ENGINEERING & SURVEYING

Technical Memorandum

Literature Review for Groundwater Availability and in Support of Supplemental Well for Rancho Murieta Community Services District

TO: **Melinda Morris, General Manager**

Rancho Murieta Community Services District
15160 Jackson Road
Rancho Murieta, CA 95683

FROM: **Michael Moser, PE and Principal**

Adkins Engineering & Surveying, Inc
1435 Esplanade Avenue
Klamath Falls, OR 97601

DATE: **May 8, 2024**

CC: **Lisa Maddaus, PE and CEO**

Maddaus Water Management, Inc
105 Zephyr Road
Alamo, CA 94507

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Table of Figures and Tables

Introduction

This technical memorandum is prepared for Rancho Murieta Community Services District (RMCSD or District) by Adkins Engineering & Surveying, Inc (Adkins), for the purpose of researching groundwater availability near the District via literature review. This task is part of the Integrated Water System Master Plan (IWMP) production carried out in partnership with Maddaus Water Management, Inc (MWM). Within this memo, the following key pieces of research were reviewed:

- South American Subbasin Groundwater Sustainability Plan, 2022, and appendices, notably:
    - Appendix 2-B: CoSANA Modeling Report (Woodard & Curran, 2021).
    - Appendix 3-A: Interconnected Surface Waters in the South American Subbasin (Larry Walker Associates, 2021).
    - Appendix 3-C: Vulnerable well impact analysis in the South American Subbasin (Larry Walker Associates, 2021).
- Central Sacramento Groundwater Management Plan, 2005, and appendices, notably:
    - Appendix E: Impact Analysis for Well Protection Program (Namvar & Taghavi, Water Resource & Information Management Engineering, Inc (WRIME), 2005).
- Production Water Well Assessment Technical Memorandum (Dunn Environmental, Inc (DE), 2013).

Relevant information within these key pieces of research is coalesced to assess and outline the potential groundwater availability near the District for both a backup supply well and long-term use. The District must comply with California SB 552 which outlines the requirement for small water suppliers (defined as less than 3,000 connections) to increase drought resilience by having a back-up water supply, either a well that meets average day demands, or an intertie with another water supplier. The existing and buildout conditions average day demands (determined by Adkins and MWM as part of the IWMP) were used to linearly interpolate to the 3,000 connection SB 552 target to calculate an average daily flow rate of 1,234 gallons per minute (GPM). Thus, this memo summarizes the availability of groundwater in terms of the South American and Cosumnes Subbasins as well as local availability.

First, this memorandum will summarize key findings from the literature reviewed. Then, regional and localized results are compared in terms of groundwater availability, groundwater level trends, and water budget for near-term and planning horizon. Finally, this memo will present recommendations for potential well placement, yield, and use.

Summary of Documents Reviewed

Appendix 2-B: CoSANA: An Integrated Water Resources Model of the Cosumnes, South American, and North American Groundwater Subbasins

This appendix to the South American Subbasin Groundwater Sustainability Plan (GSP) is an extensive modeling study, representing the North American Subbasin (NASb), South American Subbasin (SASb), and Cosumnes Subbasin (CoSb) in Sacramento County, California. This study outlines goals and objectives, model development and calibration, water supply and demands, development of baseline conditions and assumptions, and recommendations.

The South American Subbasin GSP was developed using the Cosumnes, South American, and North American Subbasins Integrated Water Resources Model (the CoSANA model, or CoSANA). The CoSANA model is a regional integrated water resources model, representing the complex relationships between land surface processes, hydrologic cycles, geology, and movement of water (surface water, groundwater, and interconnected surface and groundwaters) throughout the system.

Rancho Murieta is on the boundary of the SASb and the CoSb. Approximately 22% of the District falls within the CoSb based on urban area, compared to 32% within the SASb. The remaining demand of 46% falls outside of NASb, SASb, and CoSb boundaries, but within the model boundary. For the purposes of this literature review, modeling outputs and assumptions described here will focus on the SASb and CoSb as relevant to Rancho Murieta.

Geology is represented in CoSANA by five layers: the Riverbank Formation, the Laguna Formation, the Mehrten Formation, the Valley Springs Formation, and the Ion Formation. Generally, the Riverbank Formation is the recent alluvium, up to 188 feet thick. The Laguna Formation is up to 502 feet thick. The Mehrten Formation, a water bearing formation, is up to 1,487 feet thick. The Valley Springs Formation is also a water bearing formation and is up to 824

feet thick. The Ione Formation terminates just above the basement of fresh groundwater and is up to 795 feet thick. Minimal borings penetrate deeper than this layer.

These layers vary spatially across the project site, designated by 9 cross sections to show model stratigraphy. Cross Section E-E', indicated in Figure 1, spans from west to east across the SASb and CoSb, terminating just south of the Cosumnes River. For the purposes of our review, the left-most side of this cross section will be used to represent the stratigraphy of soil types within Rancho Murieta.

The CoSANA model indicates that the Mehrten Layer near Rancho Murieta is at and just below the ground surface and extending approximately 60-70 feet below ground surface, followed by the Valley Springs Layer which extends approximately 130 feet below the Mehrten Layer. The Ione Layer extends to a depth of approximately 500 feet below the Valley Springs Layer, or 750 feet below the ground surface. The approximate saltwater interface is nearly 1,000 feet below the ground surface. These modeled values are relatively consistent with observed test well drilling in this location. In the "Production Water Well Assessment" by Dunn Environmental, Inc (DE), discussed in later sections, they determine the local water bearing formations as the Mehrten, Valley Springs, and Ione Formations.

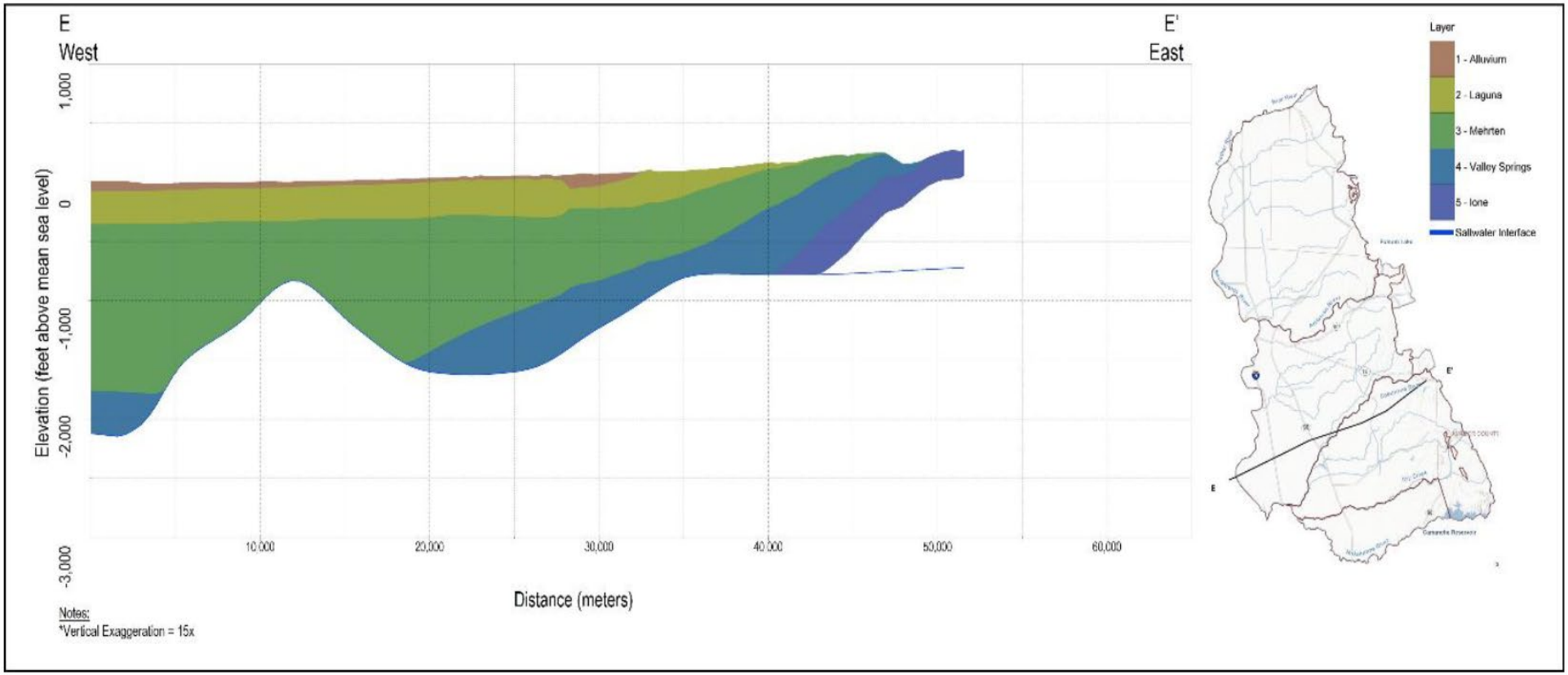

Figure 2-31: CoSANA Cross Section E-E'

Figure 1: Cross section location and vertical stratigraphy near Rancho Murieta, from CoSANA Model Report, page 2-42.

The CoSANA model provides detailed water budgets at each model element that are aggregated into water budgets for selected geographic areas. These water budgets were determined using extensive inflow and outflow data, from hydrologic inflows to subsurface groundwater interactions to evapotranspiration on land cover type and water demands.

The existing conditions water budget was used as a starting point for the various baseline conditions. Table 1 shows the cumulative water budget for each subbasin for existing conditions. The annual cumulative change in storage for SASb is 5,551 AFY while the annual cumulative change in storage for CoSb is -5,510 AFY. This corresponds to the gaining and losing reaches analysis described in the "Interconnected Surface Waters" report, discussed further in the next section. In short, the upper Cosumnes River, as it runs through Rancho Murieta and travels east, is considered a "losing reach" which means that surface water flows are being lost to groundwater via seepage. This would indicate that, at least in this location along the Cosumnes River, seepage is recharging groundwater volumes despite the overall loss in groundwater in the subbasin perspective (Larry Walker Associates, 2021).

Table 1: Cumulative annual groundwater budget for existing conditions, from CoSANA Model Report, page 4-14.

Table 4-2: Summary of CoSANA Groundwater Budget
(Average Annual for the Period WY 1995-2018)

Subbasin	Pumping (AFY)	Deep Percolation (AFY)	Gain from Stream (AFY)	Recharge from Canals (AFY)	Subsurface Inflow (AFY)	Boundary Flows (AFY)	Change in Storage (AFY)
NASb	315,794	189,988	85,907	18,320	18,220	30,019	26,661
SASb	221,618	130,317	101,953	15	-8,884	3,769	5,551
CoSb	130,048	108,054	18,977	0	-2,333	-162	-5,510
Total	**667,460**	**428,359**	**206,837**	**18,335**	**7,003***	**11,302**	**26,702**

Note: CoSANA total is a summation of NASb, SASb, and CoSb values and excludes areas outside of these subbasins.
* The model-wide subsurface inflow value includes subsurface flows to and from areas outside of the combined NASb, SASb, and CoSb area.

Using these water budgets, CoSANA produced groundwater contours across timesteps. The boundaries of these are Spring of 1998, marked by the end of a relatively wet period (Figure 2), and Fall of 2015, marked by the end of a recent drought periods (Figure 3).

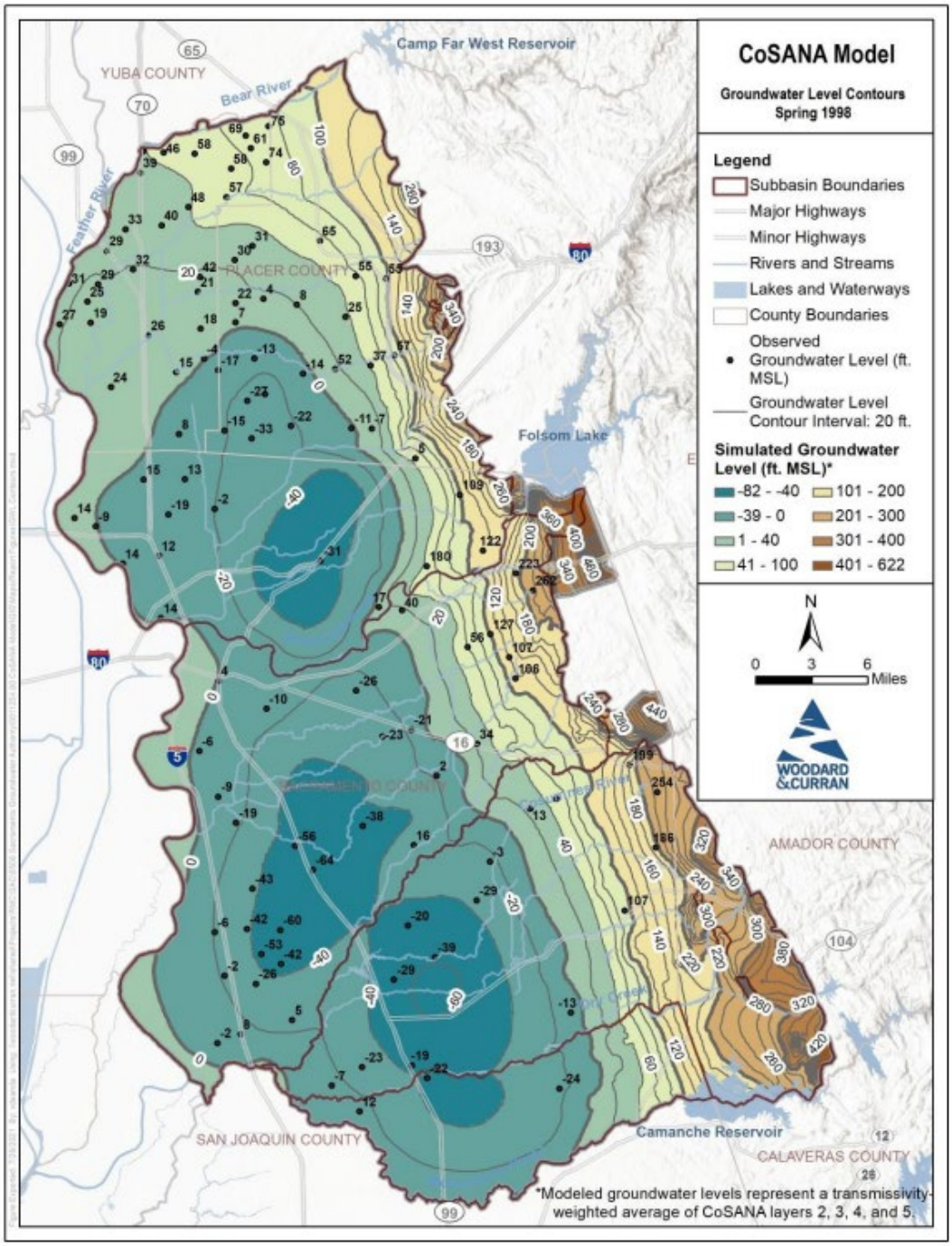

Figure 4-21: CoSANA Groundwater Level Contours – Spring 1998 (End of Wet Period)

Figure 2: Groundwater contours as modeled for Spring of 1998, from CoSANA Model Report, page 4-20.

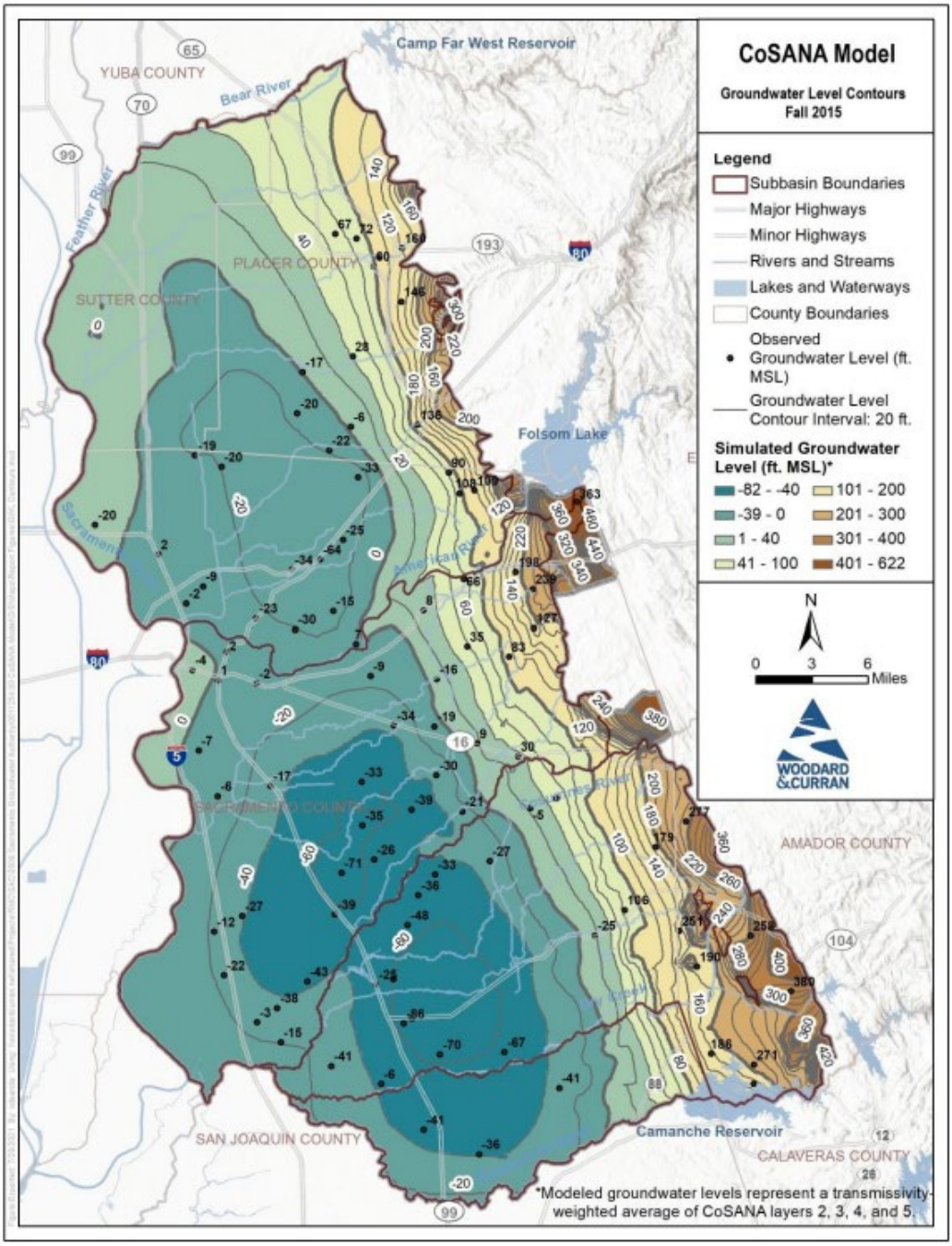

Figure 4-22: CoSANA Groundwater Level Contours – Fall 2015 (End of Drought Period)

Figure 3: Groundwater contours as modeled for Fall of 2015, from CoSANA Model Report, page 4-21.

For the Rancho Murieta location, these contours correspond with a high (Spring of 1998) groundwater at approximately 160 to 140 feet above MSL, or 20 to 40 feet below the ground surface. The model contours correspond to a low groundwater (Fall of 2015) at approximately

140 to 120 feet MSL, or 40 to 60 feet below the ground surface. As discussed in the "Production Water Well Assessment," test holes drilled in a cross section along the Cosumnes River showed groundwater at just above or just below 50 feet below the ground surface for a 2002 and a 1995 test hole, respectively (Figure 16). Thus, regional groundwater predictions made by CoSANA are substantiated by local groundwater investigations via field testing in the Rancho Murieta location.

CoSANA Hydrograph #25 (location ID 6802 – Cosumnes River, south of Rancho Murieta) modeled groundwater about 34 feet below the ground surface (213.68ft), with observed records showing just 22 feet below the ground surface. The trends appear to oscillate seasonally with a slight downward trend from 1994 to 2003 as shown in Figure 4.

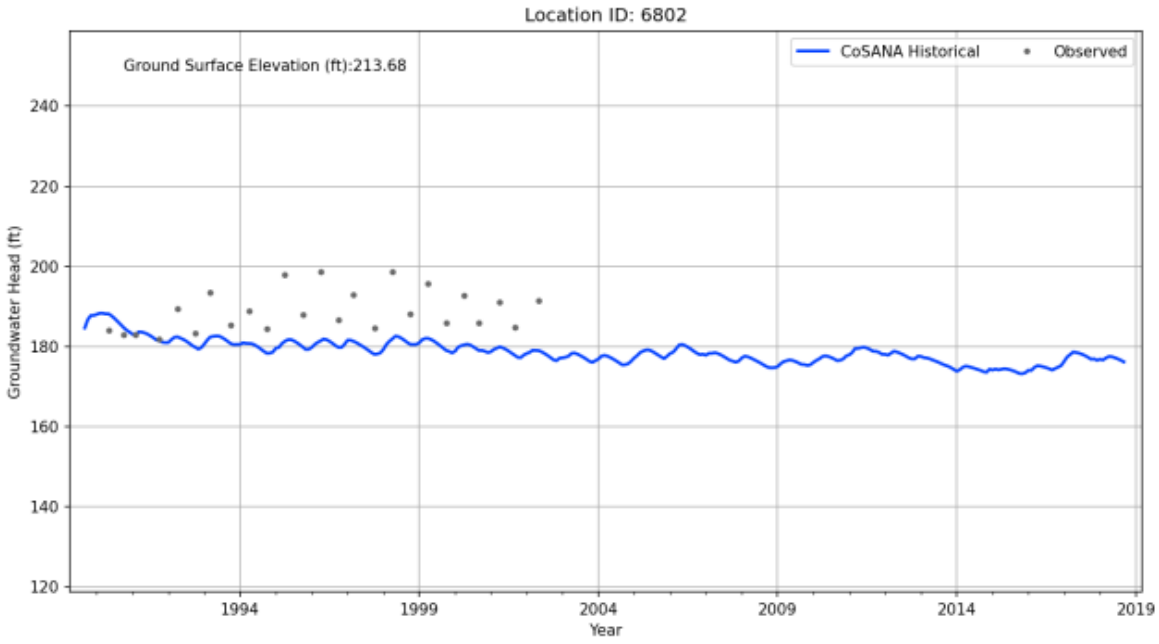

Figure 4-49: CoSANA Groundwater Level Hydrograph – Hydrograph #25

Figure 4: Modeled and observed groundwater levels for test well near Rancho Murieta, from CoSANA Model Report, page 4-36

As part of the development of the GSPs for each subbasin, three sets of baseline conditions have been defined for the CoSANA model. These represent the current conditions baseline (CCBL), projected conditions baseline (PCBL), and projected conditions baseline under climate change (PCBL with Climate Change) conditions. All baseline conditions utilize a planning horizon through 2070. The CCBL is a representation of long-term average conditions

assuming that a recent level of development and water demand persists over a long-term period of hydrologic conditions. The PCBL is a representation of the projected land and water use conditions of 2040 projected through the end of the planning horizon. The PCBL with Climate Change shares the same projected land use as the PCBL, but with additional factors such as changes in streamflow, precipitation, and evapotranspiration. Urban water use is assumed to remain unchanged.

The CCBL for SASb shows an annual positive change in storage of 2,158 AFY. For CoSb, this annual change is slightly negative, -233 AFY. These values are summarized in Table 2 below.

Table 2: Projected CCBL cumulative annual groundwater budget, from CoSANA Model Report, page 5-17.

Table 5-3: CCBL Average Annual Groundwater Budget

Subbasin	Pumping (AFY)	Deep Percolation (AFY)	Gain from Stream (AFY)	Recharge from Canals (AFY)	Boundary Flows (AFY)	Subsurface Inflow (AFY)	Change in Storage (AFY)
NASb	303,094	183,468	81,494	16,732	28,125	8,161	14,843
SASb	212,626	120,915	91,328	26	4,089	-1,573	2,158
CoSb	127,875	109,064	15,575	0	1,442	1,559	-233
Total	**643,595**	**413,447**	**188,397**	**16,758**	**33,656**	**8,147**	**16,768**

Note: Boundary Flows term includes flow between areas outside of the CoSANA model domain and baseflow from small watersheds. Subsurface Inflows includes flow between the simulated subbasins in CoSANA and areas outside of Bulletin 118 subbasins.

The PCBL for SASb shows an annual negative change in storage at the end of the planning horizon of -1,128 AFY. For CoSb, this annual change is -1,293 AFY. These values are summarized in Table 3 below.

Table 3: Projected PCBL cumulative annual groundwater budget, from CoSANA Model Report, page 5-38.

Table 5-6: PCBL Average Annual Groundwater Budget

Subbasin	Pumping (AFY)	Deep Percolation (AFY)	Gain from Stream (AFY)	Recharge from Canals (AFY)	Boundary Flows (AFY)	Subsurface Inflow (AFY)	Change in Storage (AFY)
NASb	323,167	167,424	107,950	16,376	30,140	6,710	5,390
SASb	234,003	121,313	105,665	26	4,886	986	-1,128
CoSb	128,332	107,977	16,494	0	1,536	1,030	-1,293
Total	**685,501**	**396,714**	**230,109**	**16,402**	**36,561**	**8,726**	**2,969**

Note: Boundary Flows term includes flow between areas outside of the CoSANA model domain and baseflow from small watersheds. Subsurface Inflows includes flow between the simulated subbasins in CoSANA and areas outside of Bulletin 118 subbasins.

The PCBL with Climate Change for SASb shows an annual negative change in storage at the end of the planning horizon of -6,222 AFY. For CoSb, this annual change is -9,762 AFY. These values are summarized in Table 4 below.

Table 4: Projected PCBL with Climate Change cumulative annual groundwater budget, from CoSANA Model Report, page 5-38.

Table 5-9: PCBL with Climate Change Average Annual Groundwater Budget

Subbasin	Pumping (AFY)	Deep Percolation (AFY)	Gain from Stream (AFY)	Recharge from Canals (AFY)	Boundary Flows (AFY)	Subsurface Inflow (AFY)	Change in Storage (AFY)
NASb	343,000	160,987	122,181	16,401	32,744	7,228	-3,502
SASb	245,752	114,730	118,164	26	6,198	411	-6,222
CoSb	137,276	101,490	20,744	0	1,540	3,739	-9,762
Total	**726,028**	**377,207**	**261,089**	**16,427**	**40,481**	**11,378**	**-19,486**

This indicates that from a long-term, subbasin-wide perspective, groundwater is projected to become increasingly overdrawn in the subbasins that surround Rancho Murieta. As this is a subbasin-wide analysis, however, this does not mean that the aquifers near Rancho Murieta would dry up, just that the water balance shows a negative change in storage for the entire subbasin. This is supported in the "Vulnerable well impact analysis" (Larry Walker Associates, 2021), discussed in later sections, which determined that even after the historic drought event of 2015, no wells in the SASb were reported dry. This means that a return to Fall 2015 groundwater level lows is unlikely to result in catastrophic and widespread well impacts.

Appendix 3-A: Interconnected Surface Waters (ISW) in South American Subbasin

This appendix is a modeling study that informs on the full South American Subbasin GSP. This study reports on long-term and recent groundwater level conditions (2005-2018) in the SASb and characterizes interconnected surface waters (ISW) using the outputs of the CoSANA model. This appendix outlines the location and quantity of streamflow depletions, the identification of ISW locations, timing and quantity of ground- and surface-water interactions, and provides projections and recommendations for dynamic groundwater levels across the SASb.

Because the eastern reach of the Cosumnes is nearest Rancho Murieta, only modeling outputs relevant to this reach will be summarized in our literature review. The two gages analyzed on the Cosumnes River are the Michigan Bar gage (MHB) just upstream of Rancho Murieta and the USGS McConnell gage (MCC) which is approximately 20 miles downstream of MHB. Groundwater elevation mapping in the SASb is represented by contour maps showing depth to groundwater. Figure 5 shows depth to groundwater using overall averages from 2005-2018 for Spring and Fall. These represent the existing conditions baseline.

Future groundwater elevations are simulated by four scenarios. These are Projected, representing increased groundwater demands from planned developments; Projected CC representing the Projected demands, with a median climate warming scenario; Projected PMA representing groundwater use with feasible, in-progress projects and management actions (harvest water, recharge efforts, regional conjunctive use); and Projected PMA CC representing the Projected PMA demands and management actions with a median climate warming scenario. The Projected Scenario represents “business as usual” developments and increases for groundwater. The Projected CC represents “business as usual” with warmer temperatures and less precipitation. For the sake of comparison, the Projected CC Scenario would be the “worst case” of the four scenarios compared to baseline.

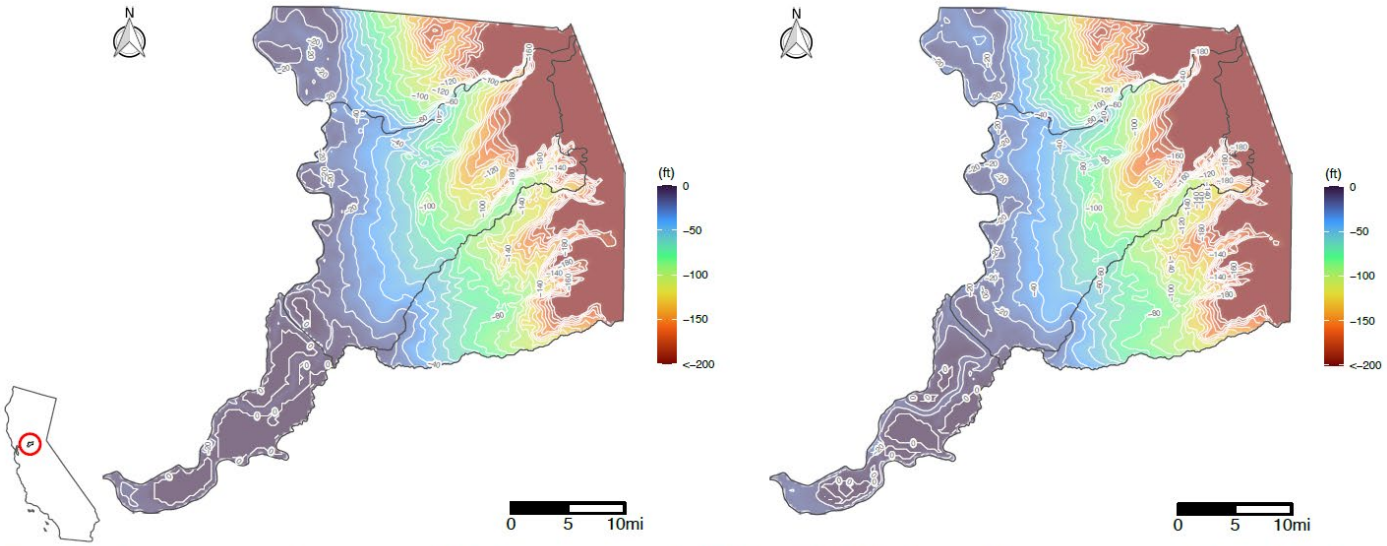

Figure 20: Depth to groundwater in the SASb for average spring (left) and fall (right) conditions across the entire period of record evaluated (2005-2018).

Figure 5: SASb depth to groundwater contours for average spring and fall from 2005-2018, from ISW Report, page 40.

For the Rancho Murieta location, the model indicates that groundwater levels are generally 160 to 140 (Spring) to 104 to 120 (Fall) feet MSL, or 20 to 40 (Spring) to 40 to 60 (Fall) feet below the ground surface. Projected CC groundwater levels, the "worst case" modeled, are expected to be -5 feet from the existing depth to groundwater modeled. If PMA are implemented under projected conditions, then groundwater is modeled to increase by 0 to 5 feet in the Rancho Murieta location. See Figure 6.

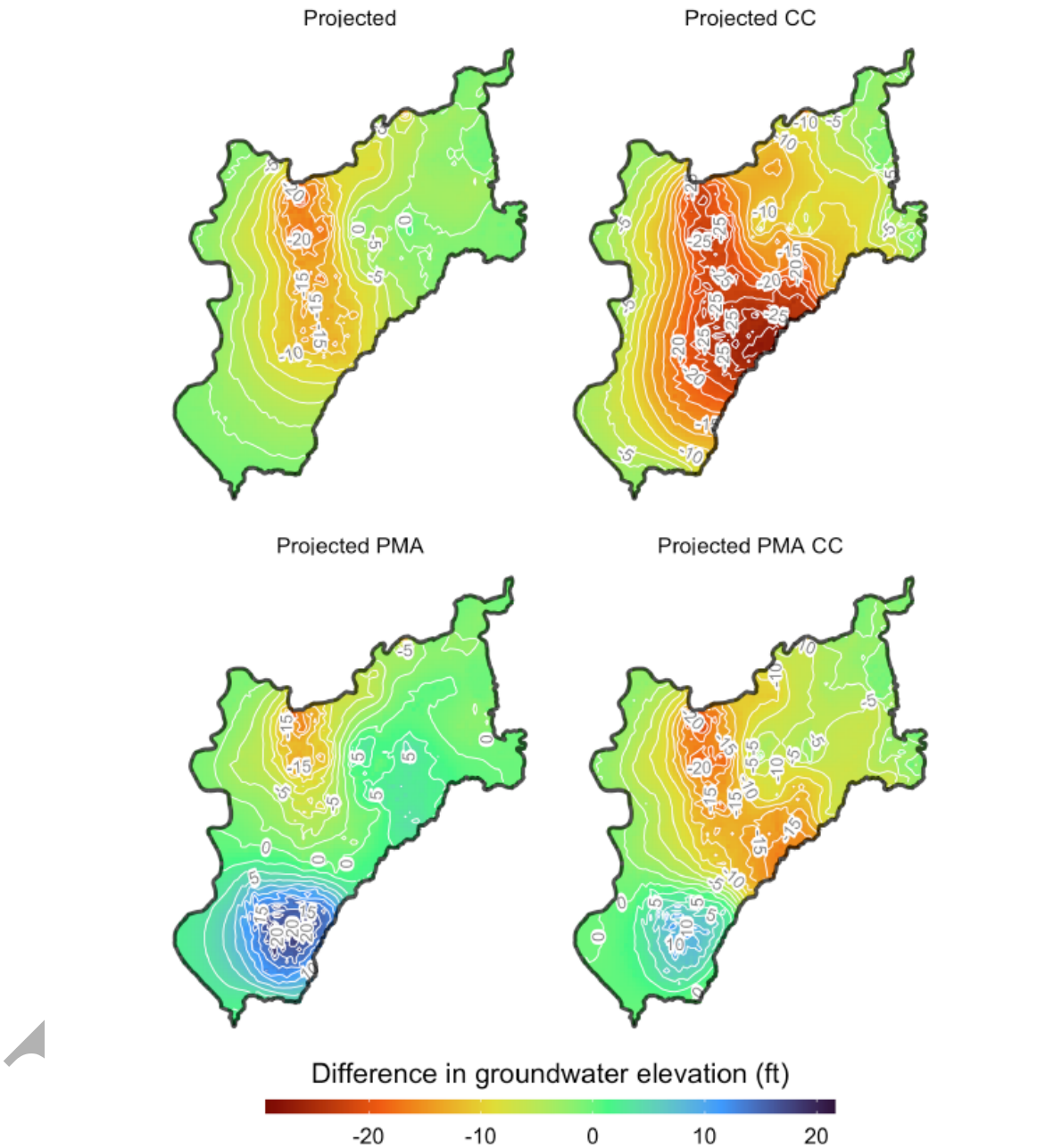

Figure 21: Modeled difference in groundwater level between each of the scenarios and the current conditions baseline at a Fall 2015 benchmark. PMA lead to substantial increases in groundwater level that reduce seepage (e.g., improve baseflow) and increase streamflow at ISW reaches. Climate change projections lead to groundwater level declines, but assume no corrective action or land use change. In reality, climate change would require specialized adaptive management to avoid significant and unreasonable impacts to beneficial users of groundwater and ISW.

Figure 6: Modeled difference in groundwater for each scenario compared to baseline, ISW Report, page 41.

Over time, the Cosumnes is characterized as a stream experiencing active depletion, or losses, to seepage. Understanding the location and timing of gaining and losing streams is essential for anticipating how ISW depletions might change over time and water management

scenarios. See Figure 7 for the seasonal variation in stream losses for the Cosumnes River, the lower right-most reach illustrated.

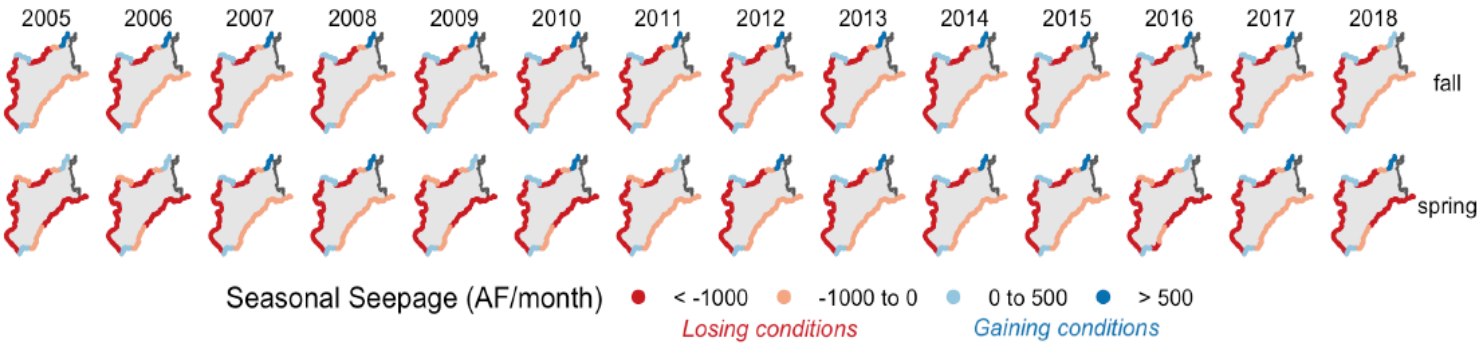

Figure 29: Major gaining and losing stream reaches from 2005-2018 in fall and spring according to the current conditions baseline. Average seasonal seepages show mostly losing (red) reaches.

Figure 7: Major streams in the SASb classified as gaining or losing for spring and fall seasons, 2005-2018, from ISW Report, page 51.

The figure shows that the Cosumnes River is consistently losing surface flows to groundwater via seepage. This is generally on the scale of 0 to 1,000 AF per month in the Fall, to greater than 1,000 AF per month in the Spring. As these losses to seepage on the Cosumnes River are relatively consistent despite season across the study period, it is reasonable to assume that groundwater recharge along losing reaches is stable.

Appendix 3-C: Vulnerable well impact analysis in the South American Subbasin

This appendix is an assessment report of wells in the SASb in terms of the recent drought (2012-2016) conditions. This assessment includes review of well construction data, well depth, and historic groundwater trends to determine the extent of which wells in the SASb are negatively impacted. This appendix also recommends sustainable management criteria to mitigate impacts to vulnerable wells.

During fall of 2015, groundwater levels reach a modern historical low in the SASb, brought on by four years of drought (2012-2016). These conditions were exacerbated by excess pumping to augment lost surface water supply. Despite this, no wells in the SASb were reported dry, in contrast to more than two thousand wells reported dry across California. This suggests that a return to Fall 2015 groundwater level lows is unlikely to result in catastrophic and widespread well impacts.

Key data used in this analysis include groundwater measurements taken by various state-level and local sources and well completion reports. Summary of measurements were compared to CoSANA existing conditions baseline for groundwater over the study period (2005-2018). Projections for groundwater utilized the scenarios outlined in the ISW Report (see Figure 6). Wells were classified as vulnerable if groundwater levels were projected to fall below the 30-foot operating margin above the total completed well depth.

Well impact analysis under projected baseline conditions was evaluated to assess impacts assuming a return to historic Fall 2015 lows, and projected groundwater management and climate change scenarios. Results suggest that, even assuming a worst-case climate change scenario with no projects and management actions, existing wells are unlikely to be negatively impacted. For Rancho Murieta, the "worst case scenario" indicates that groundwater levels drop to 5 feet lower than existing conditions, with wells in this area being mostly in the Valley Springs or Ione Formations, leaving these wells with a considerable buffer against climate-change conditions (see Figure 8). This is supported by the "Impact Analysis for Well Protection Program" discussed in the next section (see Figure 14).

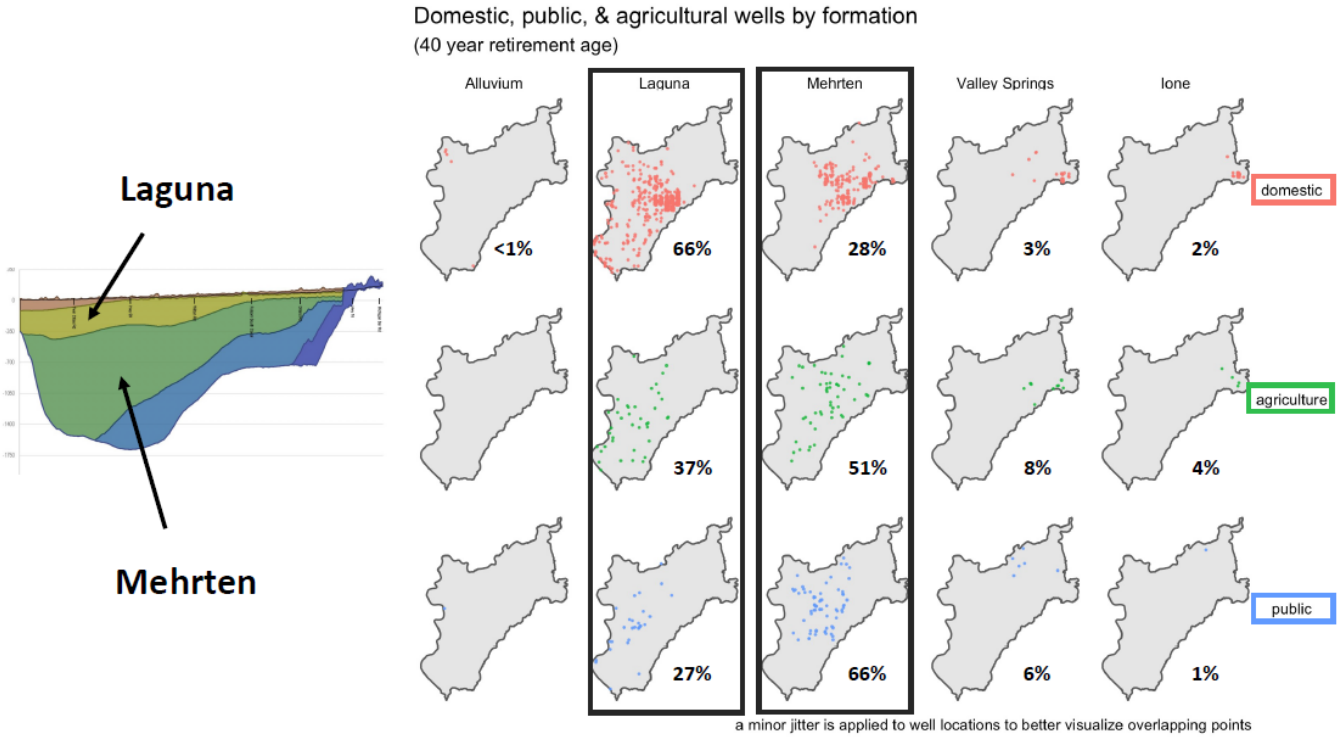

Figure 12: Most wells that provide beneficial uses bottom out in the Laguna or Mehrten, thus transmissivity-weighted heads from these layers (the principal aquifer) are used to evaluate differences in groundwater elevation implied by the projected scenarios.

Figure 8: Well types by formation in SASb, from Vulnerable well assessment report, page 23.

Appendix 1-A, E: Central Sacramento County Groundwater Management Plan – Impact Analysis for Well Protection Program Technical Memorandum

This appendix to the GSP is part of the Central Sacramento Groundwater Management Plan (GMP). It is a technical memorandum that summarizes the results of a hydrologic model used to analyze three simulations in the Central Basin of Central Sacramento County. These future scenarios are the "No Project" Baseline, the Proposed Project, and the Reduced Surface Water Availability.

The "No Project" represents land and water use conditions based on Sacramento County's General Plan build-out level of development through 2030, and corresponding water supply conditions. The "Proposed Project" represents development build-out conditions with the water supplies proposed under the Zone 40 WSMP, representing increased development from "No Project" with corresponding increased water demands. The "Reduced Surface Water Availability" is considered the "worst case scenario" where buildout conditions occur, but with a 26,700 AFY reduction in surface water diversion for Zone 40 and increased groundwater pumping by 26,700 AFY. See Figure 9 for a map of Zone 40.

The modeled groundwater levels were compared with the well bottom depth elevation data across test wells in Zone 40. Water supplies and demands were determined for each subregion using agriculture and urban demands with projected groundwater and surface water uses, plus any remediation reuses. These demands and supplies were developed for each subregion in the study area, which included Rancho Murieta. Using the 2030 Baseline as basis, Rancho Murieta was determined to have a total water demand of 6,096 AFY. Supplies were determined to be 6,096 AFY, 6,096 AFY, and 6,120 AFY for the No Project, Proposed Project, and Reduced Surface Water Availability scenarios, respectively.

Wells in the western part of the Central Basin pump from the upper aquifer, Layer 1 (which corresponds with the Laguna Formation), while wells in the eastern part pump from the lower aquifer, Layer 2 (corresponding with the Mehrten, Valley Springs, and Ione Formations). The wells analyzed along the east-west cross section are shown in Figure 10 with a vertical distribution of the same cross section shown in Figure 11.

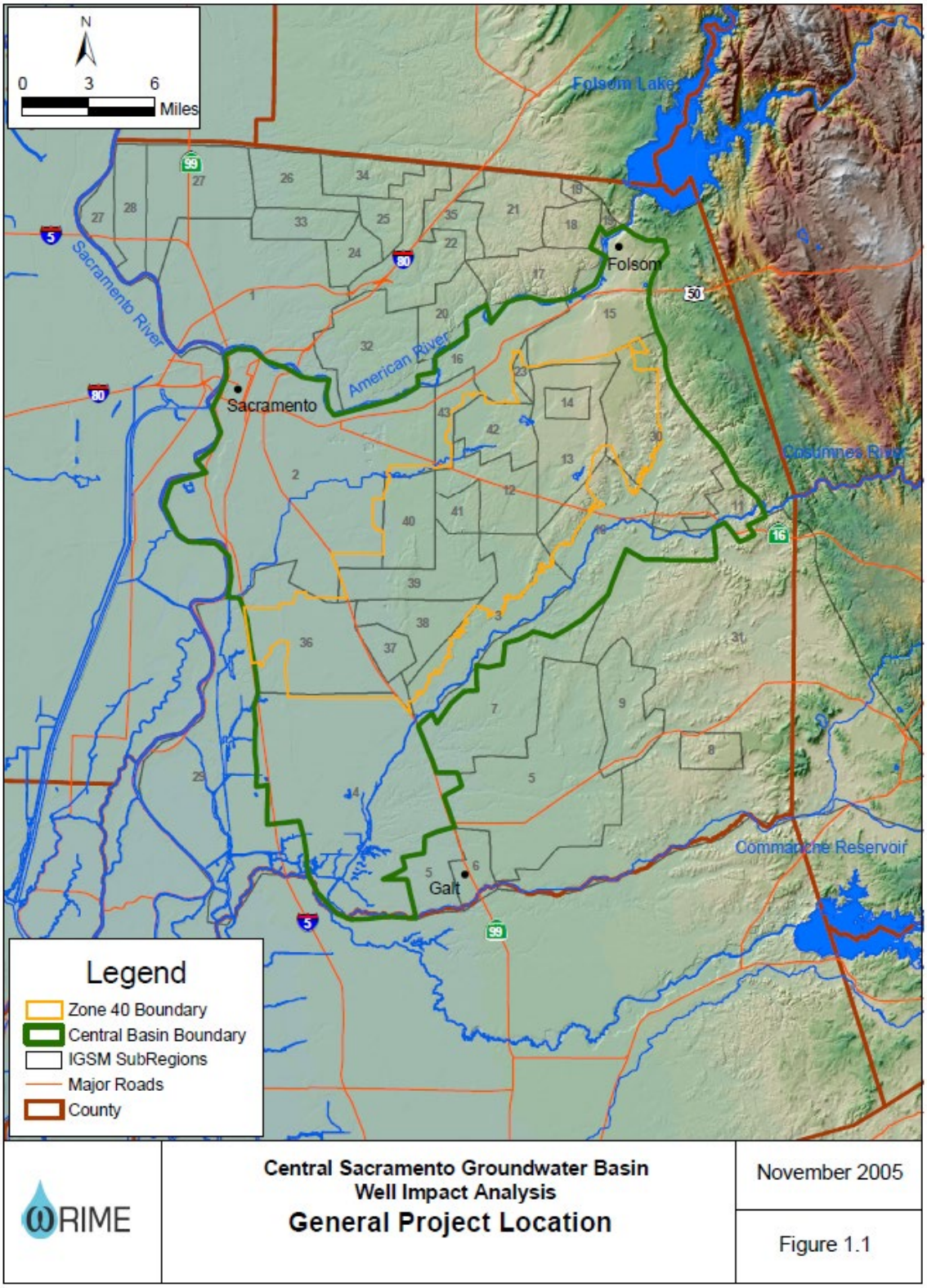

Figure 9: Map of Zone 40 in Central Sacramento County, from Impact Analysis TM, page 4.

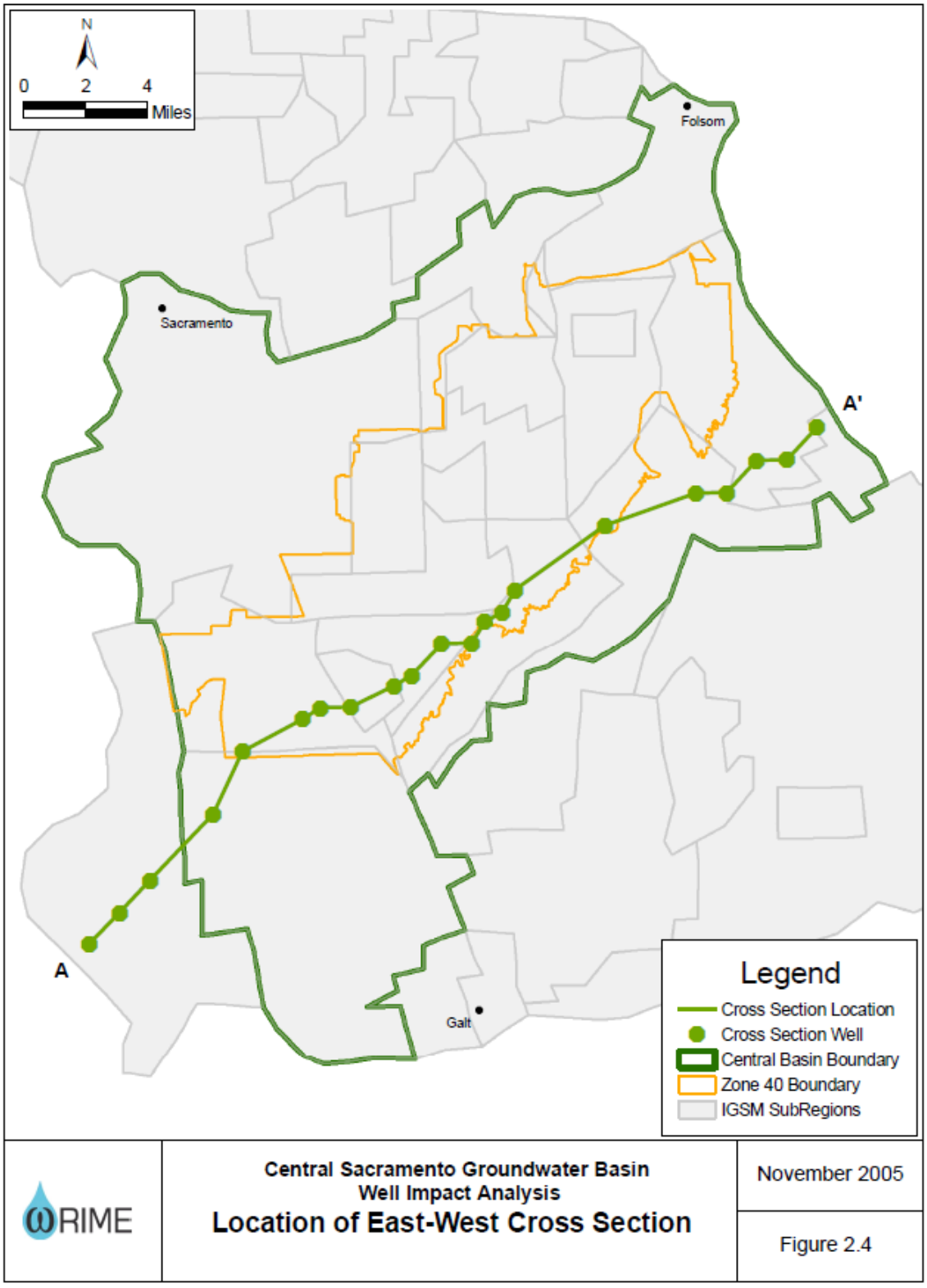

Figure 10: Cross section well locations, from Impact Analysis TM, page 13.

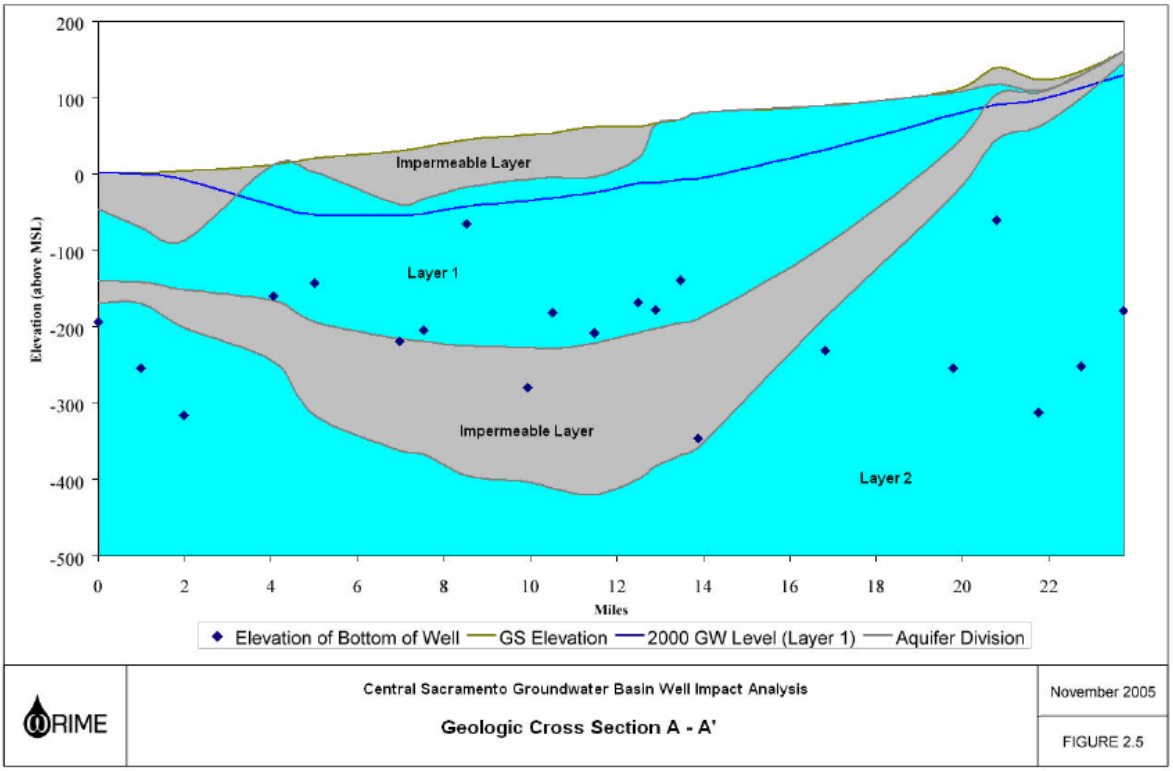

Figure 11: Cross section well depths within Layers 1 and 2, from Impact Analysis TM, page 15.

Along the A-A' cross section in the figure above, the two right-most points represent wells nearest to Rancho Murieta. These two wells are approximately 320-feet and 370-feet below the ground surface.

Modeled groundwater levels for Layer 2 in the Reduced Surface Water scenario are compared to the No Project scenario in Figure 12 and are compared to the Proposed Project scenario in Figure 13. This shows that, even with increased demands due to build-out conditions and reduced stream flows, the decline in groundwater levels near Rancho Murieta are 0 to 5 feet or near 5 feet, respectively. As the sample wells in this location are pumping from Layer 2, the wells were not indicated as impacted negatively by the scenarios modeled, shown in Figure 14. This is supported by the "Vulnerable well impact analysis" discussed in previous sections.

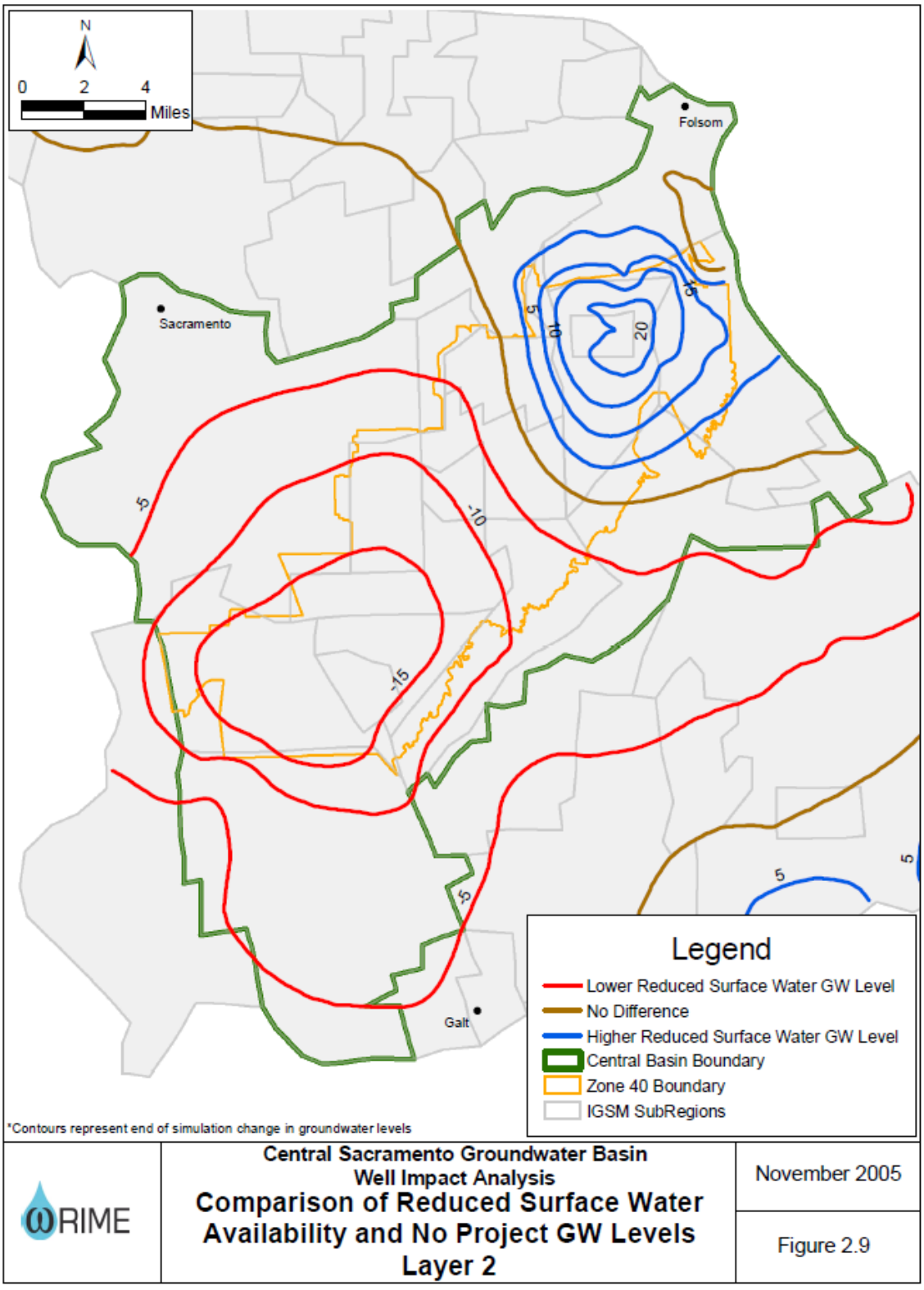

Figure 12: Groundwater contours in Layer 2 comparing Reduced Surface Water Scenario with No Project Scenario, from Impact Analysis TM, page 19.

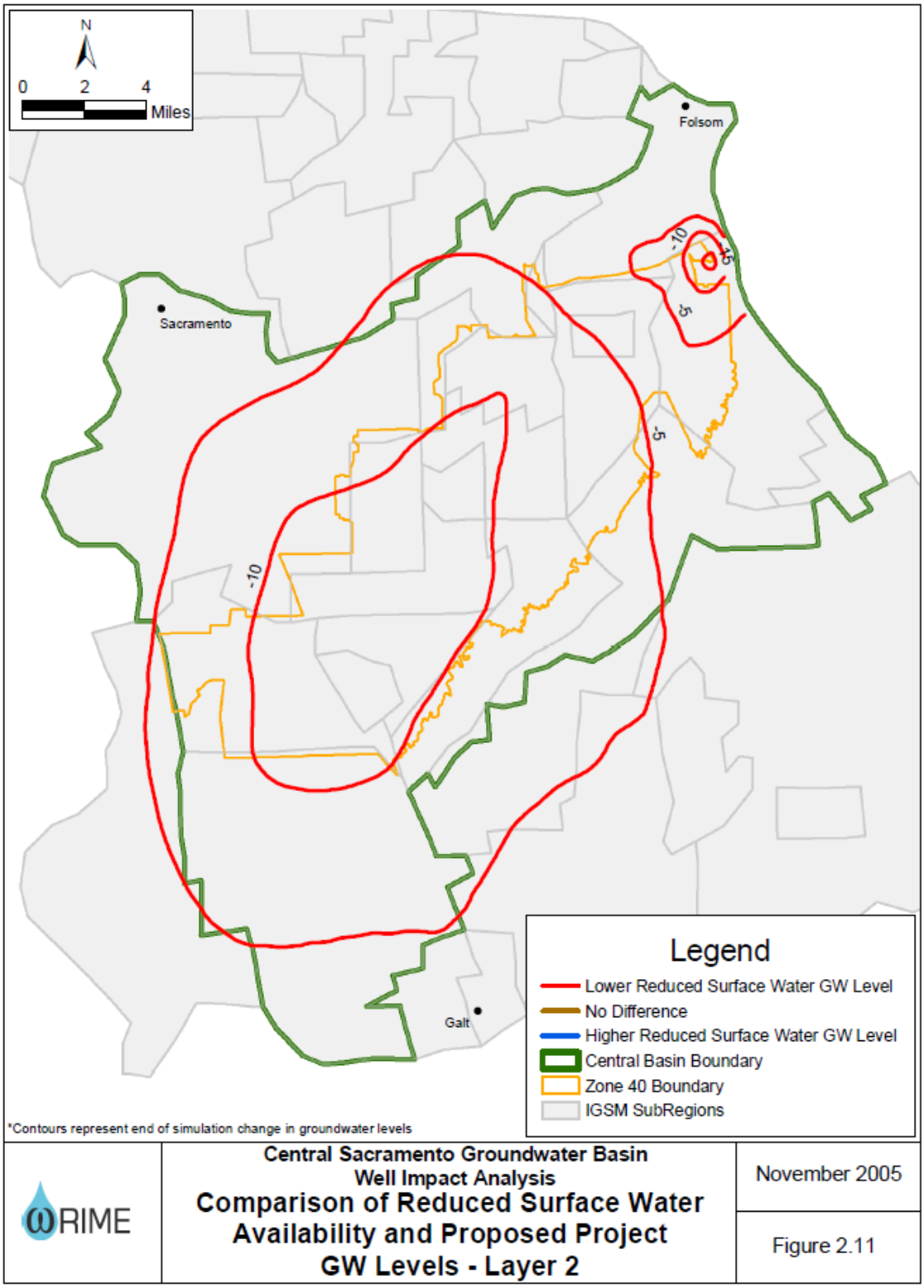

Figure 13: Groundwater contours in Layer 2 comparing Reduced Surface Water Scenario with Proposed Project Scenario, from Impact Analysis TM, page 21.

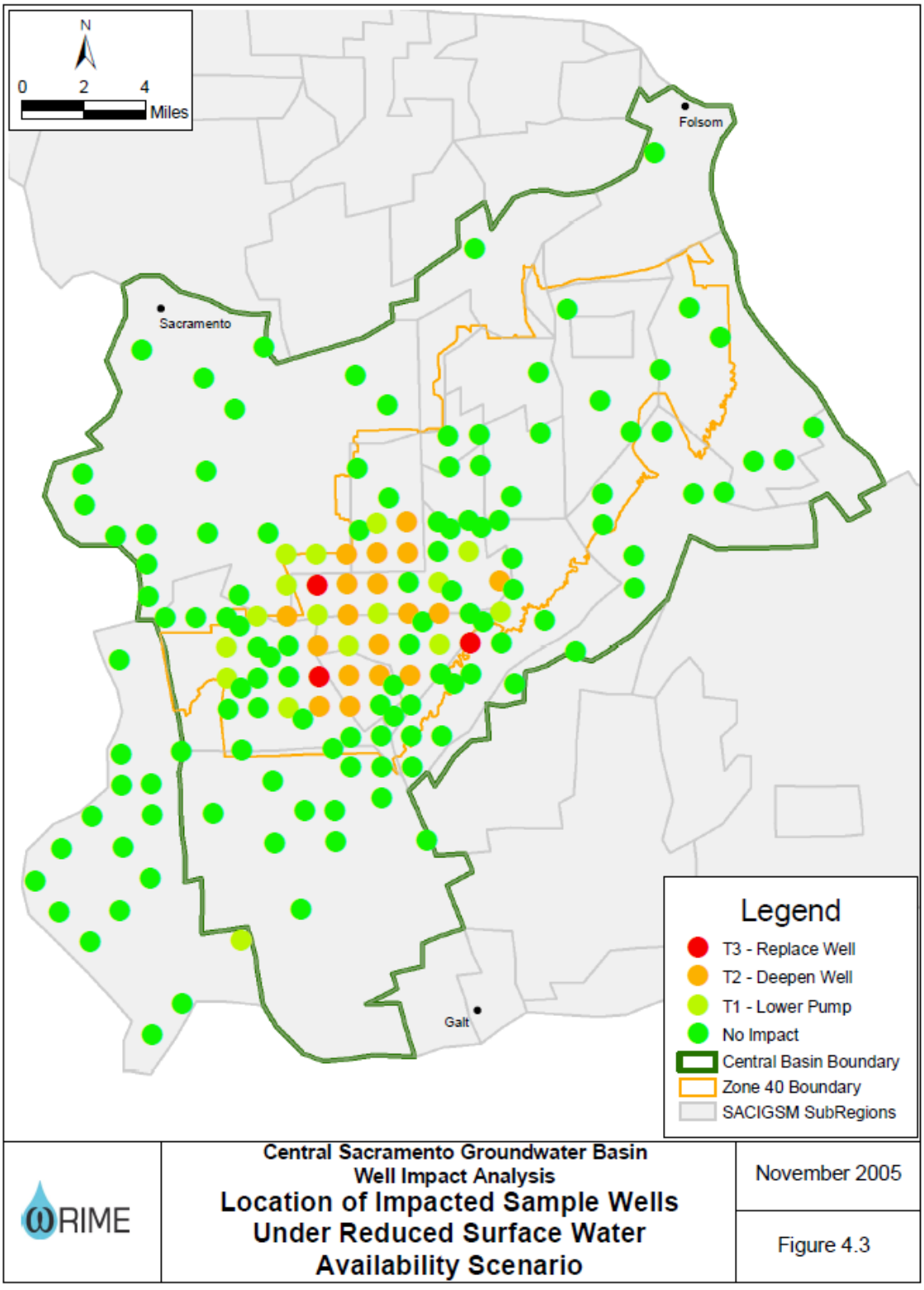

Figure 14: Impacted sample wells under Reduced Surface Water Scenario, from Impact Analysis TM, page, page 35.

Production Water Well Assessment

This technical memorandum by Dunn Environmental, Inc (DE), (2013) outlines previous test well assessments conducted for Rancho Murieta Community Services District (RMCSD or District). This well assessment also included a geophysical analysis, preliminary hydrogeologic model, and the completion of two test holes in 2013. The goal of this assessment was to locate a sustainable groundwater source for the District that could provide 370 GPM as calculated by District staff at the time. It is important to note that this value is not sufficient for current District needs, nor SB 552, but was determined in 2011 based on District needs at the time that memo was written.

Previous investigations assessed in this report included: two test holes completed by Ludhorff & Scalmanini Consulting Engineers (LSCE) in 1988; one test hole completed by Eaton Drilling in 1994; five test holes completed by Eaton Drilling in 1995; one test hole completed by GeoConsultants in 2002, in addition to electrotulleric soundings completed for 17 locations; and review of previous work an available regional hydrogeologic information by HDR in 2003.

Test holes from each of the previous investigations ranged from 250 to 700 feet of depth, some encountering basement and others calculating potential yield. The 2002 investigation conducted by GeoConsultants calculated a specific capacity of 4.3 GPM/foot at one test hole. Based on the pump and recovery test, average transmissivity for this test hole was estimated to be 14,317 gallons per day (gpd) per foot of well depth.

Based on review of the previous investigations and resistivity profiles, DE chose two test hole locations to identify alluvial aquifers and specific capacities of a production well. The test holes determined by DE were drilled in August and September 2013 and are named TH-A and TH-B. These were combined with previous investigations and the cross-section A-A' was developed. See Figure 15 for the plan view of this cross section with a vertical distribution of the same cross section in Figure 16.

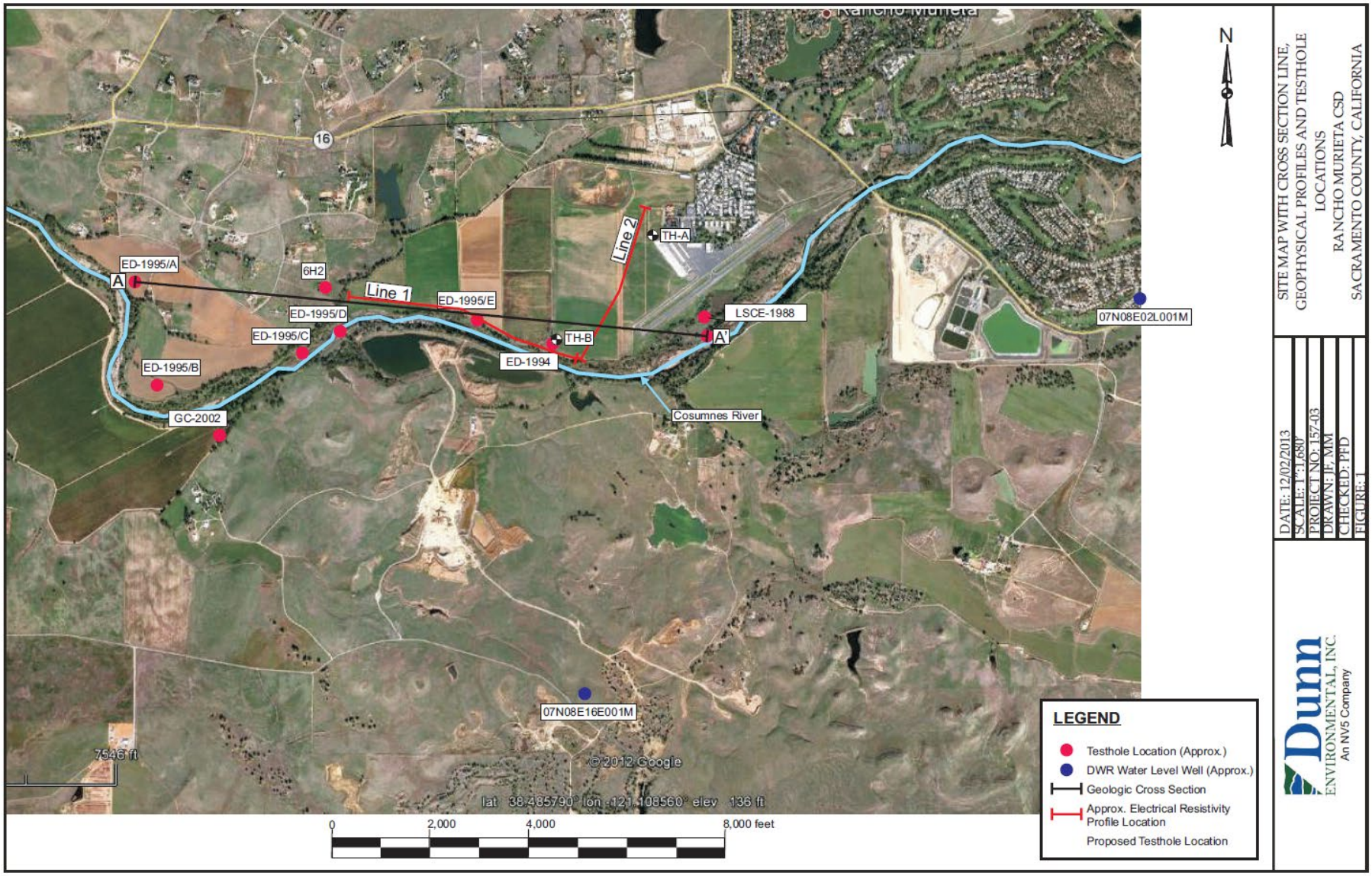

Figure 15: Cross section A-A' developed by Dunn Environmental, Inc, from Production Well TM, page 5.

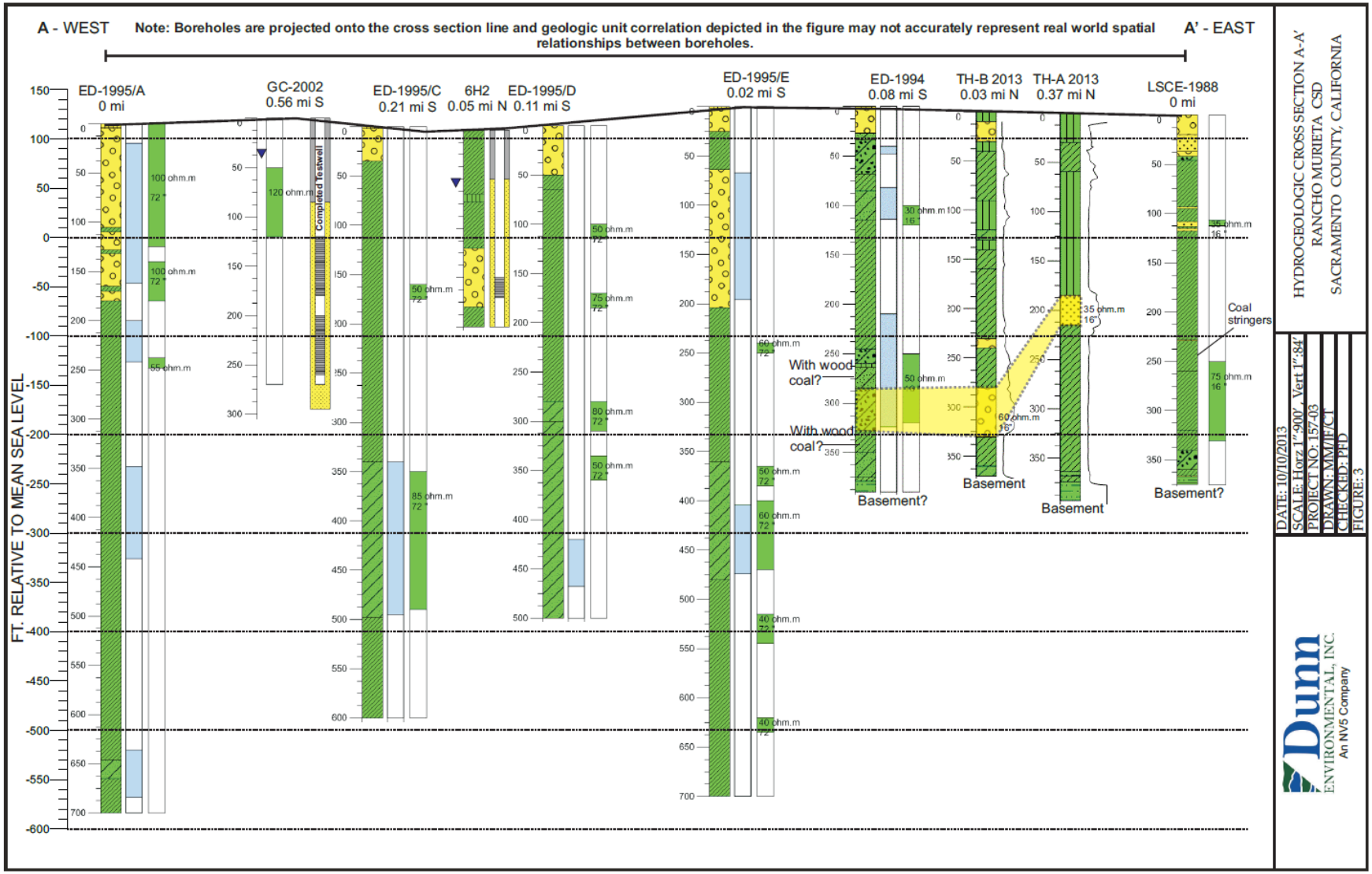

Figure 16: Vertical strata of the cross-section A-A' developed by Dunn Environmental, Inc, from Production Well TM, page 10.

Bedrock was encountered between 360 and 380 feet below ground surface in both test holes with water production zones identified between 180 and 300 feet below ground surface. Airlifting flow was measured and ranged from 100 to 150 GPM; DE notes that flow estimates from airlifting are typically conservative. Borehole and surface geophysical responses indicated that each test hole had layers with significant water production potential well yields ranging from 150 to 500 GPM.

Water quality samples were also collected from each test hole during drilling. Two primary maximum contaminant level (MCL) exceedances were observed for arsenic in TH-A. One secondary MCL exceedance for iron was observed from 280 to 300 feet in TH-B. Five secondary MCL exceedances for manganese were observed in five sampled zones in TH-B. It is important to note that observed metal parameter exceedances may be related to sample turbidity and could remedy through further well development.

This memorandum recommends that up to two production wells should be considered, located within 50 feet of TH-A and TH-B. DE recommends this could be achieved via two options: install a production well near TH-B that is more likely to meet the production goal of 370 GPM, as calculated by the District in 2011; or install a production well near TH-A and conduct aquifer testing and water quality analysis, then evaluate the appropriateness of installing a second production well near TH-A based on the results of that analysis. It is important to note that 370 GPM is not sufficient for current District needs, nor SB 552, but was determined in 2011 based on District needs at the time that memo was written.

Review Findings and Comparison

Local Availability

From the "Vulnerable well impact analysis," most wells in the Rancho Murieta location are in the Valley Springs and Ione Formations (called "Layer 2" in the "Impact Well Analysis" memo), with some rural domestic wells in the Mehrten Formation ("Layer 1"). Thus, these wells are significantly deeper than climate predictions bringing groundwater levels down to the recent historic drought levels of Fall 2015. Further, the "Impact Analysis for Well Protection Program" notes that groundwater pumping from the confined aquifer in Layer 2 would result in decreased

pressure within the aquifer rather than a drop in groundwater levels. Based on the review of data collected in this technical memo, only 2 agricultural wells and 0 rural residential wells are in use in Rancho Murieta, indicating that the second aquifer has local availability.

Water balance for Rancho Murieta conducted in the "Impact Analysis for Well Protection Program" determined that Rancho Murieta had a total water demand of 6,096 AFY using the baseline 2030 as basis. Supplies were determined to be 6,096 AFY, 6,096 AFY, and 6,120 AFY for the No Project, Proposed Project, and Reduced Surface Water Availability scenarios, respectively. This suggests that under the "worst case" modeled, Rancho Murieta has some availability of groundwater to augment reduced surface water availability.

The reach of the Cosumnes River that runs through Rancho Murieta is defined as a consistently losing reach by the "Interconnected Surface Waters" report meaning that the Cosumnes River loses flows to seepage in the range of 0 to over 1,000 AFY. These values are relatively consistent despite season (Spring vs Fall) across the study period. This means that as surface flows are lost to seepage in this location, groundwater is likely being recharged in the upper layers (Alluvium and Laguna Formations).

Regional Availability

The CoSANA Model Report shows that under the current conditions baseline, there is an annual positive change in storage of 2,158 AFY in the SASb. For CoSb, this annual change is slightly negative, -233 AFY. This means that the model indicates that the groundwater is being recharged in the SASb and is being slightly overdrawn in the CoSb. (Table 2). For the projected conditions baseline condition, for the SASb there is an annual negative change in storage at the end of the planning horizon of -1,128 AFY. For CoSb, this annual change is -1,293 AFY. This means that both subbasins are expected to experience an overdraw in groundwater. (Table 3). Under the projected buildout with climate change scenario, the SASb shows an annual negative change in storage at the end of the planning horizon of -6,222 AFY. For CoSb, this annual change is -9,762 AFY. This means that both subbasins are expected to experience a large deficit in groundwater. (Table 4).

The model indicates that from a long-term, subbasin-wide perspective, groundwater is projected to become increasingly overdrawn in the subbasins that surround Rancho Murieta. As

this is a subbasin-wide analysis, however, this does not mean that the aquifers are running dry under these scenarios, just that the water balance is indicating that pumping is greater in volume than recharging. In fact, the "Vulnerable well impact analysis" determined that even after the historic drought event of 2015, no wells in the SASb were reported dry. This indicates that a return to Fall 2015 groundwater level lows is unlikely to result in catastrophic and widespread changes in existing wells and therefore availability of groundwater.

Groundwater Trends

CoSANA modeling outputs show groundwater contours in the Rancho Murieta area that closely match the results of test wells in the area, which show groundwater 20 to 60 feet below the ground surface (range of Spring to Fall levels). These levels vary seasonally over the study period of 2005 to 2018; see Figure 5 for the average Spring and Fall groundwater levels. One test well hydrograph for CoSANA was near Rancho Murieta, which showed modeled groundwater about 34 feet below the ground surface and observed records showing just 22 feet below the ground surface. The trends oscillate seasonally with a slight downward trend from 1994 to 2003 as shown in Figure 4.

Figure 7 from the "Interconnected Surface Waters" report shows that the Cosumnes River is consistently losing surface flows to groundwater via seepage. As these losses to seepage on the Cosumnes River are consistent across the study period regardless of Spring or Fall season, it is reasonable to assume that groundwater recharge along this reach is stable in the upper layers.

Future modeling conducted in the "Interconnected Surface Waters" report indicate that even under the "worst case scenario" modeled – "business as usual" developments and increased demands for groundwater with warmer temperatures and less precipitation – groundwater is expected to drop by only 5 feet below its current levels near Rancho Murieta. This is visualized in Figure 6. Further, the "Impact Analysis for Well Protection Program" indicates that wells near Rancho Murieta would not be negatively impacted by increased build-out demands with climate-change driven reduction of available surface water. It could be inferred, then, that both reports suggest that wells near Rancho Murieta would be resilient to climate change scenarios.

Depth of Aquifer and Potential Yield

The E-E' cross section in CoSANA Modeling Report and the A-A' cross section in the "Impact Analysis for Well Protection Program" both suggest that wells drilled near Rancho Murieta will pump from the lower water-bearing layers. Both reports indicate that groundwater levels near Rancho Murieta are relatively stable even under increased demands and reduced supply in climate change scenarios. Wells in this area are generally in the Valley Springs and Ione Formations, with some domestic wells in the Mehrten Formations (see Figure 8).

Further, the "Production Water Well Assessment" noted that GeoConsultants investigated groundwater near the Cosumnes River, finding the static water level at 39 feet below the ground surface, with a 24.92-foot drawdown. The calculated specific capacity in this location was 4.3 GPM/foot. The test holes drilled by DE in 2013 indicated a specific capacity of 5 to 10 GPM per foot of depth. Using the 4.3 GPM/foot calculated by GeoConsultants in 2002, a well drilled near these locations would need to be approximately 289 feet into the water bearing zone to meet a 1,243 GPM average daily demand. Using a 10 to 5 GPM/foot as estimated by the 2013 test hole investigations would require a well to be 124 to 249 feet into the water bearing zone, respectively. As this flow is relatively large, it is likely that two or more wells will be required to deliver a combined total flow of 1,243 GPM. Two wells were recommended as Option 2 in the "Production Water Well Assessment."

While these depths are well within Layer 2 from the "Impact Analysis for Well Protection Program," in-field test holes indicate that basement likely occurs near 380 feet for some test wells and near 700 feet below the ground surface for other test wells. This is reflected in Figure 11 showing two aquifers separated by an impermeable layer. The "Production Water Well Assessment" indicates that potential water production zones are between 180 and 300 feet below the ground surface for the shallower aquifer and between 350 to nearly 500 feet below the ground surface for the lower aquifer.

The estimated well depths based on calculated specific capacity in the "Production Water Well Assessment" memo are greater than the water bearing zone thicknesses encountered during test drilling. To achieve 1,234 GPM in the lower water bearing zone, using 5 GPM/foot as estimated during test drilling in 2013, two wells would be required. To achieve 2,038 GPM in the lower water bearing zone using 5GPM/foot, four wells would be required. Each of these

wells would need to be drilled to a total well depth of 500 feet each, based on the recommendations in the "Production Water Well Assessment."

Groundwater Management Plan Requirements

In 2014, the California State Legislature adopted the historic Sustainable Groundwater Management Act (SGMA), which established a statewide framework to help protect groundwater resources. The SGMA requires that operators of new wells and groundwater pumping are required to pay a base filing fee and a variable dollar-per-acre-foot pumped annually, based on local GSAs, GSPs, and whether or not the well is located in unmanaged or probationary areas. In unmanaged areas or probationary basins, those who install new wells are required to file groundwater extraction reports with the State Water Resources Control Board and to pay a report filing fee annually.

Rancho Murieta is part of the Sloughhouse Resource Conservation District (SRCD). SRCD is bisected by the Cosumnes Subbasin and the South American Subbasin and therefore must adhere to and report to each subbasin authority. In June of 2022, SRCD established that fees per acre-foot of groundwater pumped would be imposed only on agricultural irrigators. There is no fee for municipal or domestic groundwater pumping. See Attachment A for the hearing and resolution that SRCD established this fee structure.

Personal correspondence with the Interim District Manager of SRCD, Brittany Friedman, (3/5/2024, email), indicated that SRCD is in the process of restructuring their fees so at some point in the future there may be a fee for public uses. See Attachment B for a copy of this correspondence.

Summary and Recommendations

Water budgets were constructed on subbasin and subregion scales across the literature reviewed. These budgets considered hydrologic conditions to estimated water supplies and changes in developments and land use to estimate water demands. Scenarios to evaluate changes in water demands and supplies were developed to project these water budgets out through planning horizons, 2070 and 2030 for the "CoSANA Modeling Report" and the "Impact Analysis for Well Protection Program," respectively. Regionally, modeling indicates that the

SASb and the CoSb experience a negative change in annual cumulative water budget. The "Impact Analysis for Well Protection Program" notes that groundwater pumping from the confined aquifer in Layer 2 would result in increased pressure within the aquifer rather than a drop in groundwater levels. Further, based on the analysis in that report, only 2 agricultural wells and 0 rural residential wells are in use in Rancho Murieta, indicating that the second aquifer has local availability despite a regional deficit in water budget.

Water is currently available locally, and it is likely that groundwater will continue to be available into the future under a variety of climate change scenarios. However, as regional groundwater availability declines, it is important to consider the potential uses of new wells(s): long-term daily flow augmentation is likely unsustainable for the District. Thus, a well should be considered an emergency source or drought resilience and not be used to augment normal daily demands.

The results of multiple modeling and analysis studies show that groundwater levels are 20 to 60 feet below the ground surface near Rancho Murieta. This is confirmed by in-field test hole investigations that encountered groundwater between 30 to 50 feet below the ground surface. Under a multitude of modeling scenarios that analyzed developments, changes to water supplies and demands, and climate change scenarios, groundwater levels are expected to decrease by just 5 feet lower than existing groundwater levels. "Vulnerable well impact analysis" reviewed well vulnerability compared to the recent historic low of 2015 and indicated that wells near Rancho Murieta have a considerable buffer against climate change as they are drilled deep into the second aquifer layer, which is confined below an impermeable layer.

Thus, Rancho Murieta CSD should consider a production well drilled to at least this lower confined aquifer. For a production well to meet the 1,234 GPM average day demands for 3,000 connections, based on calculated specific capacity, it must be between 125 and 300 feet into the water bearing zones according to the "Production Water Well Assessment." If the District were to decide to utilize this well for future build-out as an emergency or drought resilient source, the well(s) would need to supply 2,038 GPM which would need to be 204 to 474 feet into the water bearing zone.

These estimated depths are greater than the thickness of the water bearing zones described in the "Production Water Well Assessment." To achieve 1,234 GPM in the lower

water bearing zone, using 5 GPM/foot as estimated during test drilling in 2013, two wells would be required. To achieve 2,038 GPM in the lower water bearing zone using 5GPM/foot, four wells would be required. Each of these wells would need to be drilled to a total well depth of 500 feet each, based on the recommendations in the "Production Water Well Assessment." The range of specific capacity calculated in this memo is based on a 6 inch diameter well. A larger diameter well could produce more flow. These depths are well within and are likely to be supported by the confined lower aquifer as described in the "Impact Analysis Technical Memorandum."

The location of a production well should follow the recommendations outlined by Dunn Environmental, Inc: located within a 50-foot radius of TH-A and TH-B. Dunn Environmental, Inc also recommend that water quality testing and well production assessment should be conducted during and just following construction of a production well. Actual well flows and water quality cannot be determined until well development for a production well is conducted. As the flows required of this well are relatively high, two or more production wells may be required to meet the 1,234 GPM production for 3,000 connections or the 2,038 GPM for the 2043 build-out conditions. Location will be dependent on the capacity the District selects and the results of well development flow testing and water quality analysis.

Rancho Murieta is part of the Sloughhouse Resource Conservation District (SRCD). There is no fee for municipal or domestic groundwater pumping with SRCD. Personal correspondence with the Interim District Manager of SRCD, Brittany Friedman, (3/5/2024, email), indicated that SRCD is in the process of restructuring their fees so at some point in the future there may be a fee for public uses. See Attachment B for a copy of this correspondence.

If there are any concerns, questions, or comments about the contents of this memorandum, please reach out to me.

Sincerely,

Michael Moser, P.E.

Project Manager & Principal

Attachments:

A. Sloughhouse Resource Conservation District Notice of Meeting & Resolution
B. Correspondence with SRCD Interim District Manager

References

Dunn Environmental, Inc. (2013). "Technical Memorandum: Production Water Well Assessment."

Larry Walker Associates, (2021). "Interconnected Surface Waters (ISW) in the South American Subbasin: Characterization of Historical and Present-day Conditions, and Approached for Monitoring and Management." *Appendix 3-A, South American Subbasin Groundwater Sustainability Plan, 2021*.

Larry Walker Associates, (2021). "Vulnerable well impact analysis in the South American Subbasin: well inventory, historical groundwater trends, and analysis to inform Sustainable Management Criteria." *Appendix 3-C, South American Subbasin Groundwater Sustainability Plan, 2021*.

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Sacramento County Water Agency. (2006). *Central Sacramento County Groundwater Management Plan*.

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Attachment A

SRCD Notice of Meeting & Resolution

BEFORE THE BOARD OF DIRECTORS OF THE SLOUGHHOUSE RESOURCE CONSERVATION DISTRICT

DRAFT RESOLUTION No. 2022.06.08.01

Resolution Adopting a Groundwater Management Sustainability Fee in the Sloughhouse RCD Cosumnes Subbasin GSA Area

WHEREAS, the State of California enacted the Sustainable Groundwater Management Act ("SGMA") in 2014, inter alia, to provide for the sustainable management of groundwater basins, to enhance local management of groundwater consistent with rights to use or store groundwater, to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater, and to manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible. (Water Code, § 10720.1 et seq.); and

WHEREAS, The Sloughhouse Resource Conservation District is a Groundwater Sustainability Agency over part of its jurisdiction in the Cosumnes River Subbasin under the provisions of SGMA and the Board of Directors ("Board") of the Sloughhouse Resource Conservation District also concurrently functions as the Sloughhouse Resource Conservation District Groundwater Sustainability Agency ("Agency"); and

WHEREAS, SGMA authorizes a GSA to impose a fee on the extraction of groundwater or other regulated activity to fund the costs of a groundwater sustainability program. (Water Code, § 10730.) The levy of a fee on groundwater extraction for the purpose of managing the sustainability of a groundwater subbasin constitutes (1) a charge imposed for a specific benefit conferred directly to the payor that is not provided to those not charged, and (2) a charge imposed for a specific government service provided directly to the payor that is not provided to those not charged; and

WHEREAS, The collective GSAs of the Cosumnes Subbasin have arranged for the preparation by HDR, a professional engineering consulting firm, the Cosumnes Subbasin Fee Study ("Fee Study"), which is incorporated by reference into this Resolution, to justify the adoption of the fees herein. The Fee Study shows that the fee adopted herein is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity; and

WHEREAS, the Agency seeks to establish a groundwater sustainability fee ("Fee") within its jurisdictional boundaries in the Cosumnes Subbasin as authorized by Water Code section 10730 based on the Fee Study; and

WHEREAS, pursuant to Water Code section 10730(d), prior to imposing the Fee, the Agency has held a public meeting, at which written or oral presentations have been made; and

WHEREAS, pursuant to Water Code section 10730(d), the Agency posted notice of the time and place of the public meeting at which the Fee will be considered, the notice was

published in the newspaper in compliance with Government Code section 6066, the notice was posted on the Agency's website and was mailed to interested parties, and the data to support the Fee was available to the public at least 20 days before the Agency's public meeting to impose the Fee; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Sloughhouse Resource Conservation District as follows:

1. The Agency finds that all prerequisites required before adopting the Fee have been met, including the proper public noticing of the hearing and the conduct of the public hearing.

2. The Agency approves the Fee Study and finds that it is the proper basis on which to establish the Fee, and that the Fee adopted herein is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity.

3. The Agency hereby adopts the Fee as set forth in Attachment A hereto.

4. The Agency Administrator is hereby authorized and directed to work with the County of Sacramento Department of Finance Auditor-Controller Division to add the Fee as more fully set forth in Attachment A to the County's annual secured tax roll; and

5. the Agency Administrator and Agency Counsel are hereby authorized and directed to take such other and further steps as may be necessary or appropriate to implement the intent and purpose of this resolution.

PASSED AND ADOPTED on this 8th day of June 2022, by the following vote, to- wit:

AYES: Garms, Silva, Washburn, Liebig
NOES: Schneider
ABSENT:
ABSTAIN:

I, the undersigned, hereby certify that I am the duly appointed and acting Secretary of the Sloughhouse Resources Conservation District, and that at a meeting of the Board of Directors of the District held on June 8, 2022 that Resolution 2022.06.08.01 was adopted and has not been rescinded or amended since the date of its adaptation and that it is now in full force and effect.

Austin Miller, SRCD Secretary

6-8-22
Date

SLOUGHHOUSE RESOURCE CONSERVATION DISTRICT
GROUNDWATER SUSTAINABILITY AGENCY

GROUNDWATER SUSTAINABILITY FEE
ATTACHMENT A

SECTION 1. DEFINITIONS

1.1 "Acre Foot" or "AF" is a unit of measurement defined by the volume of water necessary to cover one acre of surface area to a depth of one foot. It is equal to 325,851 gallons.

1.2 "Administrator" means the Administrator of the Agency.

1.3 "Agency" means the Sloughhouse Resource Conservation District or the Sloughhouse Resource Conservation District Groundwater Sustainability Agency.

1.3 "Board" means the Board of Directors of the Sloughhouse Resource Conservation District.

1.4 "Fee" means the Groundwater Sustainability Fee charged as set forth herein.

1.5 "Jurisdictional Area" means those parcels of real property within the Subbasin and those parcels of real property adjacent to the Subbasin that use groundwater derived, extracted, or otherwise obtained from within the Subbasin excluding therefrom any area for which the Agency has entered into an agreement that provides that the Fee shall not be charged within such area, or any portion thereof.

1.6 "Person" means the owner of property charged the Fee, or the owner of real property with a means of extracting groundwater.

1.8 "Subbasin" means the Cosumnes Groundwater Subbasin as set forth in Bulletin 118 of the California Department of Water Resources, as may be amended from time-to-time.

SECTION 2. ESTABLISHMENT OF FEE

2.1 There is hereby charged within the Jurisdictional Area a Fee pursuant to Section 10730 of the California Water Code, and as more fully set forth herein.

2.2 Persons using groundwater to irrigate shall pay up to $10.00, per irrigated acre per year (with each year beginning October 1 and continuing until September 30).

2.3 The actual annual charges for Persons irrigating with groundwater will be determined based on irrigated acreage as determined from the 2018 published Statewide Crop Mapping data provided by the California Department of Water Resources.

2.4 The Fee shall be payable to the Agency as follows:

2.4.1 The Agency shall determine those real properties that are subject to the Fee and shall submit the Fee data to the County of Sacramento Department of Finance Auditor-Controller Division to be included in the annual secured tax roll.

2.4.2 If any Person fails to pay the Fee as charged, the Person shall pay interest and/or penalties to the Agency as allowed by law.

2.4.3 In addition to the interest and penalty set forth in Section 2.4.2, above, the Board may elect to utilize any of the remedies available to it for failure to pay the Fee as set forth in Water Code section 10730.6.

2.4.4 Fee revenues may be used for support of the Agency's groundwater sustainability program, including but not limited to, administration costs, implementation of the Groundwater Sustainability Plan, planning projects, and management actions.

SECTION 3. APPEAL

3.1 Should a Person wish to contest the projected amount of groundwater extraction on which the Fee is assessed, the Person shall first be required to pay the Fee as charged. Within thirty (30) days following payment of the Fee, the Person may file an appeal with the Agency, on a form approved by the Administrator, setting forth the basis upon which the appeal is made. The appeal will be considered timely filed if, within the time allowed, 1) the form is postmarked, United States first class mail, 2) delivered to the Administrator or Clerk of the Board by electronic mail, or 3) personally delivered to the Administrator.

3.2 Within thirty (30) days of filing the appeal, the Administrator shall meet with the Person to discuss the basis of the appeal. The Administrator is authorized to grant the appeal, in whole or in part, or deny the appeal. The determination shall be made no later than fifteen (15) days following the meeting and shall be in writing and delivered to the Person in the same manner as the filing of the appeal.

3.3 If the Person who filed the appeal is dissatisfied with the determination of the Administrator, the Person may file an appeal to the Board within thirty (30) days of delivery of the determination, following the procedures for filing an appeal as set forth in Section 3.1, above.

3.4 The appeal will be placed on the agenda for the next available Board meeting occurring within sixty (60) days of the filing of the appeal. The Board shall receive evidence, and hear from the appellant and staff regarding the merits of the appeal. The Board is authorized to grant the appeal, in whole or in part, or deny the appeal. The determination of the Board shall be memorialized in a minute order and shall be the final decision of the Agency.

SLOUGHHOUSE RESOURCE CONSERVATION DISTRICT
GROUNDWATER SUSTAINABILITY AGENCY

NOTICE OF MEETING AND HEARING ON

PROPOSED GROUNDWATER SUSTAINABILITY FEE

NOTICE IS HEREBY GIVEN that on Wednesday, June 8, 2022, at the hour of 1 p.m., or as soon thereafter as the matter may be heard, the Board of Directors of the Sloughhouse Resource Conservation District, acting as a groundwater sustainability agency in the Cosumnes Subbasin, will hold a public meeting and hearing at the Rancho Murieta Community Service District office, 15160 Jackson Hwy, Rancho Murieta, California. In compliance with the Americans with Disabilities Act and in response to the COVID-19 pandemic, if you need special assistance to participate in this meeting or have concerns about attending the meeting in person, please contact the Clerk of the Board at 916-526-5447 or info@SloughhouseRCD.org to make reasonable arrangements or for call-in information. The Board will consider the following matter:

Proposed levy of a groundwater sustainability fee (the "Groundwater Sustainability Fee") to fund the costs of a groundwater sustainability program in the Cosumnes Subbasin, including, but not limited to, the implementation of the Cosumnes Subbasin Groundwater Sustainability Plan, fund associated groundwater management activities, and meet the requirements of the Sustainable Groundwater Management Act.

The Sloughhouse Resource Conservation District GSA proposes to levy the Groundwater Sustainability Fee under its authority granted by California Water Code section 10730 on all irrigated land within the Sloughhouse Resource Conservation District GSA area within the Cosumnes Subbasin.

The Groundwater Sustainability Fee would be charged in the amount of $10 per acre irrigated with groundwater per year.

Data upon which the proposed Groundwater Sustainability Fee is based may be obtained from the Sloughhouse Resource Conservation District online at www.SloughhouseRCD.org. All interested persons are invited to present their views and comments on this matter. Written/emailed statements may be filed with the District Manager of the District at any time prior to the close of the meeting and oral statements may be made at the meeting.

Dated/Published: May 25, and June 1, 2022

Austin Miller
District Manager
info@SloughhouseRCD.org
916-526-5447

Attachment B

Correspondence with SRCD

Re: Rancho Murieta

Brittany Friedman <brittany@sloughhousercd.org>

Tue 3/5/2024 9:02 PM

To:Brie Galareaux <bgalareaux@adkinsengineering.com>

Hi Brie,

Thanks for the email. We are currently restructuring our fees and will have an updated number and structure breakdown in May 2024. At the moment the fee extends to irrigated lands in the district, only. This is for private groundwater usage and not public/municipal, at this time.

Best,

Brittany Friedman

Interim District Manager, Sloughhouse Resource Conservation District

(916) 526-5447 | sloughhousercd.org

brittany@sloughhousercd.org

On Fri, Mar 1, 2024 at 9:52 AM Brie Galareaux <bgalareaux@adkinsengineering.com> wrote:

> Hi Brittany,
>
> I'm working with Michael Fritsche on the Rancho Murieta Integrated Water Master Plan and have some questions about your District's fee structure so I can include that in some of our reports.
>
> From what I can find online, I see that SRCD imposes a $10 per acre of irrigated land when pumping groundwater. Does your District have a fee for municipal/public uses?
>
> Feel free to call or reply via emial.
>
> Thanks,
>
> **o / 541.884.4666**
>
> **a / 1435 Esplanade Ave, Klamath Falls, OR 97601**
>
> **w / AdkinsEngineering.com**

Appendix G Clementia Reservoir - Water Rights Analysis Memo

Wagner&Bonsignore
Consulting Civil Engineers, A Corporation

Nicholas F. Bonsignore, P.E.
Robert C. Wagner, P.E.
Paula J. Whealen

Martin Berber, P.E.
Patrick W. Ervin, P.E.
David P. Lounsbury, P.E.
Vincent Maples, P.E.
Leah Orloff, Ph.D, P.E.
David H. Peterson, C.E.G., C.H.G.
Ryan E. Stolfus

MEMORANDUM

To: Michael Fritschi, Director of Operations
Rancho Murieta Community Services District

From: Ryan Stolfus

Date: June 30, 2023

Re: Clementia Reservoir - Water Rights Analysis

This Memorandum summarizes our analysis of the water rights associated with Clementia Reservoir (Reservoir) located within the Rancho Murieta Community Services District (RMCSD) and how to continue to maintain a water diversion and use record to optimize Clementia Reservoir as part of the municipal water system. We understand that RMCSD has used Calero and Chesbro Reservoirs as the primary municipal water supply reservoirs, however, Clementia Reservoir is authorized by Permit 16762, as described below, as part of the municipal water supply system and is intended to be a part of the municipal water supply system. The use of Clementia Reservoir as part of the municipal water supply system is required to optimize use of water under the permit and increase the total amount of water available to RMCSD to reliably serve the community.

The State Water Resources Control Board's (State Water Board) online database shows that there are two appropriative water rights associated with the Reservoir, License 13285 (Application A023419) and Permit 16762 (Application A023416) filed concurrently with each other on December 19, 1969.

The following information was reviewed in preparation of this Memorandum:

- Information obtained from the State Water Board water right files for License 13285 (Application A023419) and Permit 16762 (Application A023416).
- State Water Resources Control Board eWRIMS electronic database.
- U.S. Geological Survey (USGS) 7.5 Minute Topographic Quadrangle for Folsom SE.
- Google Earth and U.S. Department of Agriculture aerial imagery of the Reservoir and vicinity.
- Monitoring records provided by RMCSD staff.

For reference, we are enclosing a copy of water right License 13285 (**Exhibit 1**) and Permit 16762 (**Exhibit 2**).

Appropriative Water Rights

We have reviewed the State Water Board files for water right 13285 (Application A023419) Permit 16762 (Application A023416) and found the rights to be in good standing. Recent State Water Board annual water use reports have been filed with the assistance of Wagner & Bonsignore. Following is a summary of the appropriative water rights associated with the Reservoir:

License 13285 (Application A023419)

Owner of Record:	Rancho Murieta Community Services District
Priority Date:	December 19, 1969
Storage Collection Season:	November 1 to May 31
Water Source:	Unnamed stream (natural watershed area of Clementia Reservoir)
Purpose of Use:	Recreational Use
Place of Use:	Clementia Reservoir
Storage Amount:	1,047 acre-feet

Status:

License 13285 authorizes the collection of up to 1,047 acre-feet of water from the upstream watershed that naturally flows into the Reservoir. The only authorized use for this water is recreational purposes at the Reservoir. Water collected pursuant to this right cannot be used as part of the municipal water supply.

Permit 16762 (Application A023416)

This summary only details Permit 16762 in relation to Clementia Reservoir. Permit 16762 also authorizes direct diversion of water and storage of water in Calero, Chesbro and Lower Lakes that is not the focus of this memorandum.

Owner of Record:	Rancho Murieta Community Services District
Priority Date:	December 19, 1969
Storage Collection Season:	November 1 to May 31
Water Source:	Cosumnes River
Purpose of Use:	Municipal, Recreation, Industrial, and Irrigation
Place of Use:	Service Area of Rancho Murieta Community Services District
Storage Amount:	Total of 4,050 acre-feet (combined for all storage reservoirs), including 850 acre-feet in Clementia Reservoir

Status:

Permit 16762 authorizes the diversion to storage in all three reservoirs referenced above including up to 850 acre-feet of water annually from the Cosumnes River (River) into the Reservoir. The only water that can be used from the Reservoir for municipal purposes is water that originated from the River that was pumped into the Reservoir.

Analysis of Historical Pumping from The Cosumnes River to Clementia Reservoir

The table below shows the record of diversion of water from the River into the Reservoir since 2013, pursuant to Permit 16762, that is authorized to be used for municipal purposes.

Clementia Reservoir	
Year	River Water Diverted to Reservoir (acre-feet)
2013	10
2014	84
2015	150
2016	137
2017	109
2018	153
2019	132
2020	150
2021	169
2022	15
2023	130
Total	**1,237**

Approximately 1,237 acre-feet of River water has been diverted into the Reservoir since 2013 and is held in storage for future use in the municipal water system, however, no water has been pumped from the Reservoir to be used in the municipal water system. Please note that Reservoir capacity, including water lost to annual evaporation, is the limiting factor as to how much River water can be stored in the Reservoir. You cannot physically store more River water in the Reservoir than its capacity as any excess River water would be lost to spilling over the dam or evaporation. As stated above, Permit 16762 allows for a maximum of 850 acre-feet of water to be diverted from the River into Reservoir annually.

Water Diversions to the Reservoir Authorized by Permit 16762

Based on the RMCSD monitoring data, in most years the Reservoir does not fill from its own watershed pursuant to License 13285. River water is required to be pumped, pursuant to Permit 16762, to fill the Reservoir to full capacity.

Water has been pumped from the River into Clementia Reservoir and is held in storage. As such, a record of diversion has been made, however, a record that demonstrates the use of that River water from the Reservoir for municipal purposes is required to optimize Permit 16762. River water that is stored in the Reservoir must be put to beneficial use in the municipal water system to maintain the authorized use.

We trust the foregoing and enclosed provides you with the information you requested. Please contact me if you have any questions.

Encl. √

Exhibit 1

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS

License for Diversion and Use of Water

APPLICATION 23419 PERMIT 16765 LICENSE **13285**

THIS IS TO CERTIFY, That

Rancho Murieta Community Services District
P.O. Box 1050
Rancho Murieta, CA 95683

has made proof as of **June 21, 1994** (the date of inspection) to the satisfaction of the State Water Resources Control Board of a right to the use of the water of an **Unnamed Stream** in **Sacramento County**

tributary to **Cosumnes River thence Mokelumne River**

for the purpose of **Recreational use**

under Permit **16765** of the Board and that the right to the use of this water has been perfected in accordance with the laws of California, the Regulations of the Board and the permit terms; that the priority of this right dates from **December 19, 1969** and that the amount of water to which this right is entitled and hereby confirmed is limited to the amount actually beneficially used for the stated purposes and shall not exceed **one thousand forty-seven (1,047) acre-feet per annum to be collected from November 1 of each year to May 31 of the succeeding year.**

This license does not authorize collection of water to storage outside of the specified season to offset evaporation and seepage losses or for any other purpose. (0000005)

After the initial filling of the reservoir, licensee's right under this license extends only to water necessary to keep the storage reservoir full by replacing water lost by evaporation and seepage, and to refill if emptied for necessary maintenance or repair. (0000040)

THE POINT OF DIVERSION OF SUCH WATER IS LOCATED:

By California Coordinates, Zone 2, North 305,440 and East 2,267,230, being within NE¼ of SW¼ of Section 35, T8N, R8E, MDB&M.

A DESCRIPTION OF THE LANDS OR THE PLACE WHERE SUCH WATER IS PUT TO BENEFICIAL USE IS AS FOLLOWS:

At Clementia Reservoir within Section 35, T8N, R8E, MDB&M, as shown on map filed with State Water Resources Control Board.

Licensee shall install and maintain an outlet pipe of adequate capacity in his dam as near as practicable to the bottom of the natural stream channel, or provide other means satisfactory to the State Water Resources Control Board, in order that water entering the reservoir which is not authorized for appropriation under this license may be released. (0050043)

Licensee shall allow representatives of the State Water Resources Control Board, employees of the Omochumne-Hartnell Water District, and other parties as may be authorized from time to time by said Board, reasonable access to project works to determine compliance with the terms of this license. (9990800)

Licensee shall allow representatives of the State Water Resources Control Board and other parties, as may be authorized from time to time by said Board, reasonable access to project works to determine compliance with the terms of this license.

The quantity of water diverted under this license is subject to modification by the Board if, after notice to the licensee and an opportunity for hearing, the Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

Pursuant to California Water Code Sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this license, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

This continuing authority of the Board may be exercised by imposing specific requirements over and above those contained in this license with a view to eliminating waste of water and to meeting the reasonable water requirements of licensee without unreasonable draft on the source. Licensee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this license and to determine accurately water use as against reasonable water requirement for the authorized project. No action will be taken pursuant to this reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the Board also may be exercised by imposing further limitations on the diversion and use of water by the licensee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Sec. 2; is consistent with the public interest and is necessary to preserve or restore the uses protected by the public trust.

Reports shall be filed promptly by licensee on appropriate forms which will be provided for the purpose from time to time by the Board.

The right hereby confirmed to the diversion and use of water is restricted to the point or points of diversion herein specified and to the lands or place of use herein described.

This license is granted and licensee accepts all rights herein confirmed subject to the following provisions of the Water Code:

Section 1625. Each license shall be in such form and contain such terms as may be prescribed by the Board.

Section 1626. All licenses shall be under the terms and conditions of this division (of the Water Code).

Section 1627. A license shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code) but no longer.

Section 1628. Every license shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a license is issued takes the license subject to the conditions therein expressed.

Section 1629. Every licensee, if he accepts a license does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any license granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any licensee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any licensee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

Section 1630. At any time after the expiration of twenty years after the granting of a license, the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State shall have the right to purchase the works and property occupied and used under the license and the works built or constructed for the enjoyment of the rights granted under the license.

Section 1631. In the event that the State, or any city, city and county, municipal water district, irrigation district, lighting district, or political subdivision of the State so desiring to purchase and the owner of the works and property cannot agree upon the purchase price, the price shall be determined in such manner as is now or may hereafter be provided by law for determining the value of property taken in eminent domain proceedings.

Dated: MAY 20 1997

STATE WATER RESOURCES CONTROL BOARD

Roger K. Ramirez

for *Chief, Division of Water Rights*

Exhibit 2

STATE OF CALIFORNIA
THE RESOURCES AGENCY
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

AMENDED **PERMIT** 16762

Application 23416 of Bank of America, N.T.&S.A. as Corporate Custodian of the Pension Trust Fund for Operating Engineers

c/o Daniel F. Gallery, Attorney, 926 J Building, Sacramento, California 95814

filed on December 19, 1969, has been approved by the State Water Resources Control Board SUBJECT TO VESTED RIGHTS and to the limitations and conditions of this Permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source:

Source:	Tributary to:
(1) Cosumnes River	Mokelumne River
(2-8) Unnamed Streams	Cosumnes River
(9) Unnamed Stream	Crevis Creek thence
	Deer Creek thence
	Cosumnes River

2. Location of point of diversion:	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	Base and Meridan
See Supplement Page 2					

County of Sacramento

3. Purpose of use:	4. Place of use:	Section	Township	Range	Base and Meridan	Acres
Municipal						
Recreational						
Industrial	3,600 acres in Sections 2, 3					
	and 4, T7N, R8E, MDB&M; and					
	Sections 26, 27, 28, 33, 34					
	and 35, T8N, R8E, MDB&M					
Irrigation	500 acres net within gross					
	area of the 3,600 acres					

The place of use is shown on map filed with the State Water Resources Control Board.

APPLICATION 23416 PERMIT 16762

(SUPPLEMENT)

2. Location and Point of diversion:	40-acre subdivision of public land survey or projection thereof	Section	Township	Range	Base and Meridian
(1) Cosumnes River - by California Coordinates, zone 2, X = 2,267,670 and Y=303,970	SW¼ of SE¼	35	8N	8E	MD
Diversion and Rediversion					
(2) Chesbro Reservoir - by California Coordinates zone 2, X=2,265,570 and Y=308,460	NW¼ of NW¼	35	8N	8E	MD
Rediversion:					
(3) Laguna Joaquin Reservoir - By California Coordinates, zone 2, X=2,258,230 and Y=304,130	SE¼ of SE¼	33	8N	8E	MD
(4) Peralta Reservoir - by California coordinates, zone 2, X=2,258,400 and Y=307,200	SE¼ of NE¼	33	8N	8E	MD
(5) Clementia Reservoir - by California Coordinates, Zone 2, X=2,267,230 and Y=305,440	NE¼ of SW¼	35	8N	8E	MD
(6) Bass Reservoir - North 1,750 feet and East 1,260 feet from SW corner of Section 35	NW¼ of SW¼	35	8N	8E	MD
(7) Black Bass Reservoir - North 3,900 feet and East 3,170 feet from SW corner of Section 35	SW¼ of NE¼	35	8N	8E	MD
(8) Calero Reservoir - South 1,200 feet and West 2,500 feet from NE Corner of Section 27	NW¼ of NE¼	27	8N	8E	MD

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed (a) 6 cubic feet per second by direct diversion from the Cosumnes River to be diverted from November 1 of each year to May 31 of the succeeding year, and (b) 4,050 acre-feet per annum by storage to be collected from November 1 of each year to May 31 of the succeeding year as follows:

A. 3,900 acre-feet per annum from the Cosumnes River to be stored as follows:

(1) 1,250 acre-feet per annum in Chesbro Reservoir,
(2) 2,610 acre-feet per annum in Calero Reservoir,
(3) 850 acre-feet per annum in Clementia Reservoir, and
(4) 40 acre-feet per annum in Fairway No. 10 Lower Lake.

The combined amount under (2), (3) and (4) shall not exceed a total of 2,650 acre-feet.

B. 50 acre-feet per annum from an unnamed stream to be stored in Chesbro Reservoir.

C. 100 acre-feet per annum from an unnamed stream to be stored in Calero Reservoir.

The maximum rate of diversion from the Cosumnes River to offstream storage shall not exceed 46 cubic feet per second. The equivalent of the continuous flow allowance by direct diversion for any 7-day period may be diverted in a shorter time if there is no interference with vested rights. The total amount of water to be taken from the source shall not exceed 6,368 acre-feet per water year of October 1 to September 30.

This permit does not authorize collection of water to storage outside of the specified season to offset evaporation and seepage losses or for any other purpose. (0000005)

6. The amount authorized for appropriation may be reduced in the license if investigation warrants. (0000006)

7. Said construction work shall be completed on or before December 1, 1980. (0000008)

8. Complete application of the water to the proposed use shall be made on or before December 1, 1990. (0000009)

9. Progress reports shall be submitted promptly by permittee when requested by the State Water Resources Control Board until license is issued. (0000010)

10. Pursuant to California Water Code Sections 100 and 275, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Resources Control Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to minimizing waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement such programs as (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation. (0000012)

11. Permittee shall allow representatives of the State Water Resources Control Board, employees of Omochumne-Hartnell Water District, and other parties as may be authorized from time to time by said board, reasonable access to project works to detrmine compliance with the terms of this permit. (0000011)

12. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Resources Control Board if, after notice to the permittee and an opportunity for hearing, the Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges. (0000013)

13. No water shall be appropriated under this permit until a public district or some other organization capable, to the satisfaction of the Board, of supplying the place of use on a continuous permanent basis, has been established. (0000028)

14. Permittee shall install and maintain outlet pipes of adequate capacity in his dams as near as practicable to the bottom of the natural stream channels, or provide other means satisfactory to the State Water Resources Control Board, in order that water entering the reservoirs which is not authorized for appropriation under this permit may be released. (0050043)

15. In accordance with the requirements of Water Code Section 1393, permittee shall clear the site of the proposed reservoirs of all structures, trees and other vegetation which would interfere with the use of the reservoirs for water storage and recreational purposes. (0120050)

16. If the storage dams will be of such size as to be within the jurisdiction of the Department of Water Resources as to safety, construction shall not be commenced until the Department has approved plans and specifications. (0360048)

17. After the initial filling of Laguna Joaquin, Peralta, Bass, and Black Bass Reservoirs, permittee's right under this permit, as it pertains to these reservoirs, extends only to water necessary to keep these reservoirs full by replacing water beneficially used and water lost by evaporation and seepage, and to refill if emptied for necessary maintenance or repair. Such right shall be exercised only during the authorized diversion season. (0000041)

18. For the protection and preservation of fish life, diversions under this permit from the Cosumnes River shall be subject to the following terms and conditions:

A. No water shall be diverted when the flow is less than 70 cubic feet per second.
B. Only up to 6 cubic feet per second shall be diverted when the flow is between 70 and 175 cubic feet per second (but such diversion shall not reduce the flow below 70 cubic feet per second.
C. Only those flows in excess of 175 cubic feet per second shall be diverted at all other times, except in dry years, as follows:

(1) If on February 1, the total amount that could have been diverted under this permit under the foregoing schedule is less than 400 acre-feet, then permittee may, during February, divert the flows in excess of 70 cubic feet per second, up to a maximum of 46 cubic feet per second.
(2) If on March 1, the total amount that could have been diverted under the foregoing schedule is less than 2,000 acre-feet, then permittee may, during March, divert the flows in excess of 70 cubic feet per second up to a maximum of 46 cubic feet per second.

(0140060)

(3) If on April 1, the total amount that could have been diverted under the foregoing schedule is less than 4,400 acre-feet, then permittee may, during the remainder of the diversion season (April 1 to May 31), divert the flows in excess of 70 cubic feet per second up to a maximum of 46 cubic feet per second.

D. For the purpose of providing maximum continuous downstream fish migration flows as early as possible in the spring months during years when one of the schedules as set forth in paragraphs C(1), C(2), or C(3) above is commenced, the permittee shall continue such diversion schedule (set forth under C(1), C(2), or C(3) respectively) in order to complete the diversion to storage under the permit as soon as possible, and shall not revert to the diversion schedule under B and C above, except for direct diversion to supply its direct diversion requirements during the remainder of the diversion season not to exceed 6 cubic feet per second. The total seasonal diversion shall not exceed 6,368 acre-feet.

E. All measurements of flows shall be determined at the U.S. Geological survey gaging station "Cosumnes River at Michigan Bar." (0140060)

19. The Board retains jurisdiction over this permit for the purpose of modifying the minimum fisheries flow requirements to conform to future Board determinations and fisheries flow requirements of permits issued pursuant to Applications 5645B, 5646, 5647A, 19266, and 21835. (0000600)

20. Permittee shall, upon authorization by the U.S. Congress of the Nashville Unit of the Cosumnes River Division of the Federal Central Valley Project, report annually to the Board on the status of negotiations for a firm water supply for the place of use under this permit, to the extent such supply is not available under prior vested rights of permittee. (0270999)

21. Permittee shall divert no water during the period November 1 to June 1 of each season except during such time as there is a continuous visible surface flow in the bed of Cosumnes River from permittee's point of diversion to the gaging station at Highway 99 known as "Cosumnes River at McConnell." (0160999)

22. Permittee shall install and maintain measuring devices acceptable to the State Water Resources Control Board to measure accurately the quantity of water diverted from Cosumnes River. (0060062)

23. No water shall be used under this permit until the permittee has, through grant of easement or dedication or other means satisfactory to the County of Sacramento, provided for access by the general public to Cosumnes River through the proposed place of use. Such access shall be minimum of 50 feet wide on each bank of the River, or such width as may be in conformity with the parkway plan of the County of Sacramento; provided, however, that reasonable public access along the river is maintained. (0000999)

24. No water shall be used under this permit until the permittee has filed a report of waste discharge with the California Regional Water Quality Control Board, Central Valley Region, pursuant to Water Code Section 13260, and the Regional Board or State Water Resources Control Board has prescribed waste discharge requirements or has indicated that waste discharge requirements are not required. Thereafter, water may be diverted only during such times as all requirements prescribed by the Regional Board or State Board are being met. No discharges of waste to surface water shall be made unless waste discharge requirements are issued by a Regional Board or the State Board. A discharge to groundwater without issuance of a waste discharge requirement may be allowed if after filing the report pursuant to Section 13260:

(1) The Regional Board issues a waiver pursuant to Section 13269, or
(2) The Regional Board fails to act within 120 days of the filing of the report.

No report of waste discharge pursuant to Section 13260 of the Water Code shall be required for percolation to the groundwater of water resulting from the irrigation of crops. (0290101)

25. In order to prevent degradation of the quality of water during and after construction of the project, prior to commencement of construction permittee shall file a report pursuant to Water Code Section 13260 and shall comply with any waste discharge requirements imposed by the California Regional Water Quality Control Board, Central Valley Region, or by the State Water Resources Control Board. (0000100)

26. When the flow of treated wastewater reaches 424 acre-feet per annum, permittee shall implement the use of such wastewater for irrigation purposes in lieu of water from other sources as provided in Sections 15550 and 15551 of the Water Code. Such use shall be reported on the annual progress reports filed with the Board. (0000999)

27. This permit is subject to the agreement dated March 26, 1979 bewteen permittee and Omochumne-Hartnell Water District, to the extent such agreement covers matters within the Board's jurisdiction. (0000300)

28. Suitable metering and recording devices shall be installed, operated and maintained in good working order by Rancho Murieta at the following locations:

A. On the discharge line of each pumping station located within the forebay of the CIA diversion Canal headworks and which divert water to offstream storage pursuant to Permit 16762. A suitable recording device shall also be installed which will provide a continuous record on a strip or circular chart of rates and time of diversion for each pump.

B. At the headworks of the CIA canal a continuous stage recorder to record diversions into the canal. Direct measurements to be made at least bimonthly to provide an accurate stage-discharge relationship. The recorder may be removed during periods of high water.

C. On any other pumping facilities which divert water from the Cosumnes River including but not limited to those facilities commonly referred to as the:

(1) Bass Lake Pump
(2) Old Bridge Pump
(3) Rock Plant Pump

Totalizing meters will be deemed adequate for the foregoing and for (D) and (E).

D. A meter shall be installed in the Cosumnes Irrigation Association Canal downstream from the Laguna Joaquin Reservoir.

E. At all points where water is withdrawn from storage for beneficial use, except from Fairway No. 10 Upper Lake. Water withdrawn for transfer to another reservoir will also be measured except for transfers among Calero, Clementia and Chesbro or from those reservoirs to the Treatment Plant.

F. For purposes of the measurements described above, hour meters of KWH consumption shall not be considered adequate unless otherwise agreed to.

G. At Calero, Chesbro and Clementia Reservoirs changes in storage will be measured at least monthly, and this information, plus any additional measurements actually made regarding changes of storage, furnished to the Board upon request. (0060062)

29. Permittee shall devise a method or plan satisfactory to the State Water Resources Control Board to obtain current stream flow data at the U. S. Geological Survey gaging station at Michigan Bar. Such plan shall be submitted to the Chief of the Division of Water Rights within 60 days. (0000999)

Application 23416 **Permit** 16762

30. Permittee shall make all reasonable effort to collect local runoff to storage to the extent local runoff is available in lieu of diverting water from the Cosumnes River. (0000999)

31. (0000029) added Water Conc.

This permit is issued and permittee takes it **subject to the following provisions of the Water Code:**

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

Dated: AUGUST 5 1980

STATE WATER RESOURCES CONTROL BOARD

Walter G. Pettit

Chief, Division of Water Rights

P16762
9-12-86 Assgd to Rancho Murieta Properties, Inc.
1-14-88 Assgd to Rancho Murieta Community Services District

STATE OF CALIFORNIA
THE RESOURCES AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

ORDER

APPLICATION 23416 PERMIT 16762 LICENSE

ORDER APPROVING A NEW DEVELOPMENT SCHEDULE
AND AMENDING THE PERMIT

WHEREAS:

1. A petition for extension of time within which to develop the project and apply the water to the proposed use has been filed with the State Water Resources Control Board.

2. The permittee has proceeded with diligence and good cause has been shown for extension of time.

NOW, THEREFORE, IT IS ORDERED THAT:

1. Paragraph 7 of the permit is amended to read as follows:

   CONSTRUCTION WORK SHALL BE
   COMPLETED ON OR BEFORE December 1, 1990

2. Paragraph 8 of the permit is amended to read as follows:

   COMPLETE APPLICATION OF THE
   WATER TO THE PROPOSED USE
   SHALL BE MADE ON OR BEFORE December 1, 2000

3. Paragraph 31 is added to this permit as follows:

   The State Water Resources Control Board, under its authority to conserve the public interest, retains continuing authority over this permit to require permittee to develop and implement a water conservation program, after notice and opportunity for hearing. The requirements for this term may be satisfied by permittee's compliance with any comprehensive water conservation program, approved by the State Water Resources Control Board, which may be imposed by a public agency.

Dated: SEPTEMBER 14 1982

Raymond Walsh

Raymond Walsh, Chief
Division of Water Rights

MEMORANDUM

Date: October 16, 2024

To: Board of Directors

From: Mimi Morris – General Manager

Subject: Murieta Village Distribution System and Sewer Mainline Replacement

BACKGROUND

The sewer system and water distribution system for the Murieta Village residential units is one of the oldest systems in the District, dating back to the era when water was provided to the community by the El Dorado Irrigation District, more than 50 years ago.

That system is laid out under the Murieta Village residential units, making it both difficult and dangerous to repair leaks should they occur. A Capital Improvement Plan (CIP) Project(#21-01-01) was authorized in 2021 to fully replace the aging Schedule 40 PVC water infrastructure running under Murieta Village residential units as well as the sewer mainlines. The project was to have been done in coordination with a resurfacing project to be undertaken by the Murieta Village management. It is unclear why the project did not move forward three years ago, but the need remains strong and even more important today. The project budget three years ago was $877,000 and the risk assessment was high. In the last six months, there have been at least three source leaks that have created problems for owners in the community.

Responsibility for providing beneficial use water to the Murieta Village was transferred to the District at the time the District was created.

PROPOSAL

Staff proposes that the District should move forward with a project to route new water distribution lines and sewer mainlines under the streets and right of ways of Murieta Village to avoid the impacts of leaks under the dwelling units. The new piping system will provide both long term viability of the water supply for the Murieta Village and increased safety for the residents. The old PVC distribution system would be disconnected and abandonment grouted after being replaced by the new system.

Additionally, staff proposes that the Board adopt an Interim Policy effective retroactively to April of 2024 to reimburse residents for their costs to repair leaks which occur in any area of the main that is Before the Meter (BM). Residents will be responsible for the section of pipe After the Meter (AM) until the replacement distribution system is in place. Additionally and alternatively, CSD staff is authorized to make the necessary repairs to water distribution system leaks and sewer main issues until the replacement project is completed, contingent upon the ability of staff to make the needed repairs.

Finally, staff proposes that all Murieta Village residents be required to install their own sewer cleanouts in order to ensure that each of their sewer systems is independent enough to be able to prevent disruption to the entire community. Per the attached 1971 Sewer Plan, Cleanouts and Service were intended for each lot, which is consistent with the rest of the community.

RANCHO MURIETA COMMUNITY SERVICES DISTRICT

Category:	Water Distribution System	**Policy** # 2024-02
Title:	Reimbursement for Damages Caused by Murieta Village water main breaks	

PURPOSE

This policy statement is to define the process for review and approval of requests for reimbursement for damage caused by system or personal line break(s) associated with Ranch Murieta CSD- owned water infrastructure within the Murieta Village neighborhood and to authorize RMCSD to make repairs to such breaks when it is safe to do so.

BASIC POLICY AND GUIDELINES

The policy applies to, but is not limited to, property damage claims resulting from the following: Rancho Murieta CSD-owned water, and ancillary system asset break/leak within the Murieta Village portion of Community Services District service area. District responsibility begins after the meter (AM), and the property owner's responsibility is anything before the meter (BM). Each instance will be handled separately and on its own merits. An immediate and prompt investigation will be conducted to determine the facts of the claim. This policy does not cover alleged damages for personal injury.

To request reimbursement for damaged property or other loss related to a water main break, a claimant must complete a Claim form and file it with the CSD office. Once the claim is filed, CSD staff and/or agents will review and investigate the claim and determine compensation, if any. The investigation will include consideration of the following:

A: Whether the loss arose out of, or resulted from, any unforeseen, non-negligent actions or conditions of the CSD-owned water mainline by which it can be concluded that the homeowner/ tenant was an innocent party?

B. Whether the loss arose out of, or resulted from, any actions or conditions of the CSD-owned water mainline by which it can be concluded that the CSD was negligent and where the claimant was an innocent party?

C. Whether the loss arose out of, or resulted from, actions or conditions caused by an identifiable third party? For example, a contractor is performing work in an area damaged the mainline or property service line directly. In such case, the claim would be denied regardless of the damage locations, and the claimant would be encouraged to pursue their damages against the responsible third party, in this case the contractor.

D. Whether the loss arose out of, or resulted from, the actions of the claimant or the claimant's third-party contractor? If it is determined that the claimant caused or contributed to the loss, the claim will be denied. The claimant would be advised of the CSD's intent to pursue any damages to CSD property resulting from the claimant's negligent acts. Claimants will be responsible for pursuing the third party, if applicable.

District staff as part of the investigation will determine if the repair may be safely conducted by district personnel or if the services of an outside contractor may be necessary.

Approval of Claims would be at the Board's approval and discretion.

Adopted by Rancho Murieta Community Services District's Board of Directors	

MURIETA DRIVE

PLUG END OF PIPE

LONE PINE DRIVE

Cordoza Ct

Natchez Ct

Vallero Way

Jurata Ct

EXISTING LIFT STATION

EXIST. 8" SEWER LINE

Poncho Conde Cir

Goldan Circle

RECREATION AREA (SEE SHEET)

Bella Union Ct

Sonora Drive

Sonora Drive

EXIST. 10" WATER LINE

EXISTING BURIED CABLE

FUTURE FREEWAY SOUTH R/W LINE

Garcia Way

Hernandez Square

Carlos Circle

Carmelita Circle

CANTOVA WAY

SCALE : 1" = 50'

NOTE:
CALL S.M.U.D. (452-3211, EXT. 431) PRIOR TO EXCAVATION IN AREA OF BURIED CABLE.

4" Pipe

4" Pipe private sewer lateral

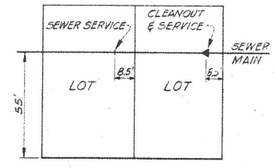
6" Pipe MAIN lines RMCSD

NOTES:

1. SEE SPECIFICATIONS FOR MINIMUM PIPE COVER, TYPE, CONNECTIONS, ETC.
2. ALL MANHOLES NOT IN STREETS SHALL BE SET TO PROPOSED FINISHED GRADES.
3. ALL SEWER LINES TO BE SLOPED AT .008 UNLESS OTHERWISE SHOWN ON PLAN.
4. CAST IRON PIPE SHALL BE CLASS 150 OR APPROVED EQUAL.

LEGEND:

- 6" — PIPE SIZE & DIRECTION OF FLOW
- MANHOLE (MAX. 300' BETWEEN MANHOLES)
- CLEANOUT & SERVICE



SEWER SERVICE LOCATION
NO SCALE
(TYPICAL ALL LOTS UNLESS OTHERWISE SHOWN ON PLAN)

APPROVALS

THE SPINK CORPORATION
ENVIRONMENTAL · PLANNING · ENGINEERING
ARCHITECTURE · SURVEYING · MAPPING
720 F STREET SACRAMENTO, CALIFORNIA 95814 (916) 446-0960

RANCHO MURIETA
SACRAMENTO COUNTY, CALIFORNIA

MOBILE HOME PARK

PARK

SEWER PLAN

REV	DATE	DESCRIPTION	BY	APP

DRAWN BY: HW | CHECKED: ERD
JOB NO: 6621-005 | DATE: 7/12/71
SHEET:

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

Mimi Morris
General Manager
Rancho Murieta Community Services District (RMCSD)
PO Box 1050
Rancho Murieta, CA 95683

October 7, 2024

Subject: RM-045 Tank Sizing Standards Amendment #1

Dear Mimi,

Per our Master Services Agreement dated 3-19-21, between Rancho Murieta Community Services District and Domenichelli & Associates Inc, we are requesting authorization to proceed on the following Task Order.

This letter represents our estimated scope and budget for analyzing additional District water system data and formulating capacity requirements for water storage tanks for existing and future development for the District. This task order will also identify potential deficiencies and or modifications to the current system that may enhance use of existing tank capacity.

The following is the intended scope of this task order:

- Gather and review additional District flow and use data.
- Review new flow meter data at Rio Oso tank relative to District SCADA data.
- Establish tank storage criteria for emergency, fire and operational storage and check these criteria against current available storage in both Rio Oso and Van Vleck tanks.
- Produce a brief TM outlining our findings.

Scope of Services:

Task 1. Gather and Review additional District flow and use data:
Obtain current flow SCADA data for both storage tanks. D&A will review the pertinent data to compile criteria for analyses.

Task 2. Data Analysis for Tank Storage:
After review of all data, D&A will compile and graph storage tank information for peak summer demand days (July & September 2024). Tank capacity needs and potential system control modifications will be established to potentially enhance use of existing tank capacities.

Task 3. Technical Memorandum (TM):
D&A will summarize our findings and recommendations in a Draft TM to be submitted to the District for review. A review workshop will be conducted with the District to gather comments and thoughts regarding the TM. After the review workshop, D&A will provide responses to all comments and questions prior to completion of the final TM.

Task Order Deliverables:

PDF version of the Draft TM, Review Workshop Agenda and Responses to Comments, PDF version and two hard copies of the Final Technical Memorandum.

Project Fees:

Rancho Murieta Community Services District
RM-045 Tank Sizing Standards Amendment #1

Fee Estimate
10/7/2024

Tasks	Labor				Total
	QA/QC	Project Manager	Project Engineer	Total Hours	Total Fee
	Joe Domenichelli	Daryl Heigher	Alex M/ Matt D		
	$210	$180	$138		
Task 1. Gather and Review additional SCADA & new Flow Meter data					
1.1 Gather and Review Additional Information	2	8	4	14	$ 2,412
Subtotal Task 1:	2	8	4	14	$ 2,412
Task 2. Data Analysis:					
3.1 Analyze & Graph Data for Tanks (Inflow & Outflow)	2	4	36	42	$ 6,108
3.2 Establish Tank Capacity needs & potential modifications	8	4	24	36	$ 5,712
Subtotal Task 3:	10	8	60	78	$ 11,820
Task 4. Technical Memorandum (TM):					
4.1 Draft TM	4	4	8	16	$ 2,664
4.2 Workshop with the District	4	4		8	$ 1,560
4.3 Final TM	2	8	4	14	$ 2,412
Subtotal Task 4:	10	16	12	38	$ 6,636
TOTAL	22	32	76	130	$ 20,868

Please give me a call if you have any questions.

Sincerely,

Joe Domenichelli
Domenichelli & Associates, Inc.

Authorization to Proceed by,

_____ _____

Rancho Murieta CSD Date

MEMORANDUM

Date:	October 16, 2024
To:	Board of Directors
From:	Eric Houston - Director of Operations
Subject:	RFP Response Committee Recommendations for WWTF Disinfection Construction Services (CIP# 23-14-02)

Recommended Action

It is recommended that the Board authorize the General Manager to execute a contract with Industrial Contractors INC in the amount of $2,402,558 for construction services for the District Wastewater Facility Disinfection Improvements (CIP# 23-14-02).

Background

Earlier this summer the District released a request for proposal (RFP) for construction services related to the Wastewater Treatment Facility Disinfection Project (Project). The project consists of replacing chlorine gas disinfection with disinfection using sodium hypochlorite (NaOCl) and constructing permanent chlorine contact facilities.

The District received three proposals at that time out of the several consultants contacted. The proposals were provided to the RFP review committee consisting of the Operations Director, and the Chief Plant Operator. The committee members were tasked with scoring the proposals based on:

- Project Understanding
- Project Approach
- Work Plan
- Proposed Schedule
- Company and Individual Experience
- References
- Pricing

Each criterion was ranked between 0-10 and multiplied by the individual criteria weighting for each criterion.

District separately requested and received cost estimates to perform the construction services from each proposer. The cost estimates were ranked from the lowest to the highest (0-10) and the two estimates in the middle were linearly fit between the highest and lowest scores. The price score rankings were then multiplied by price criteria weighting and then added to the other criteria ranking and totaled on the master score sheet.

The totalized ranking of the (3) proposals resulted in the following scores:

1. 1125- TNT Industrial Contractors
2. 1060- Gateway Pacific Construction
3. 1000- Pacific Infrastructure

Master RFP Scoring Matrix for Wastewater Treatment Plant Sodium Hypochlorite Conversion							
		Respondents (Score Respondants 0-10)					
		Gateway Pacific Construction		**TNT Industrial Contractors**		**Pacific Infrastructure**	
Criteria	Criteria Weight	Score	Total	Score	Total	Score	Total
1. Understanding of Scope of Work & Project Objectives	10	9	90	10	100	9	90
2. Project Approach	20	19	380	20	400	18	360
3. Quality of Overall Work Plan	5	5	25	5	25	5	25
4. Proposed Project Schedule for Timely Completion of Work	5	5	25	5	25	5	25
5. Company Experience Completing Similar Projects	10	10	100	10	100	10	100
6. Individual Team Member Experience Completing Similar Projects	10	10	100	10	100	10	100
7. Reference Quality - *to be scored by one reviewer*	5	5	25	5	25	4	20
8. Pricing - *to be ranked after items #1-7 are complete and fitted between 0-10 based on highest to lowest pricing.*	35	9	315	10	350	8	280
		Totals:	**1060**	Totals:	**1125**		**1000**
Rank			**2**		**1**		**3**

TNT received the highest score and was the lowest cost by $392,331 at $2,402,558 estimated to complete the construction services.

The District has received $750,000 in state funding for the project. The remainder of the funds needed to complete the project will be allocated from the sewer reserve. This project was approved in the FY 22-23 budget as CIP#23-14-02 and has sufficient appropriation to cover the cost of this portion of the project.

Recommendation

Staff recommends that the Board approve the District to move forward with awarding a contract with TNT Industrial Contractors INC in the amount of $2,402,558 to complete the construction services for the Wastewater Treatment Facility Disinfection Improvements.

MEMORANDUM

Date: October 11, 2024

To: Board of Directors

From: Travis Bohannon, Chief Plant Operator

Subject: Water Treatment Plant 2 Filter Bed Rehabilitation.

HISTORY

In July of 2024, the board approved a CIP Project to rehab Water Treatment Plant #2 (WTP #2) filter bed. The media needs replaced, the porous plate under the media in some places have minor breakthroughs, the rail that the traveling bridge moves on is bent and the wheels/bearings for the traveling bridge need replacing.

PROJECT UPDATE

On August 23, 2024, an RFP was issued to solicit bids for the rehab of water treatment plant #2 filter bed. The proposal due date was October 7, 2024, and as of that date the district has only received 1 bid and that was from TNT. The original contractor that gave us the budgetary bid, backed out on the day the bids were to be received and stated they were now too busy to do the work.

PROJECT RECOMMENDATIONS

Due to the urgency of this project and the time that the project would need to be completed, the district is recommending that the board except the bid from TNT for the amount of $299,039.00. The CIP Project was approved for the amount of $275,000.00. The difference in price is $24,039.00.

The claimant must provide substantial evidence of their diligence and the reasons for the delay, and the delay must not prejudice the public entity. In his late claim application, Plaintiff provides no evidence of due diligence or any justifiable reasons for the delay. Rather, he incorrectly asserts that he could not conduct discovery and therefore could not determine whether the District was involved in the incident.

Conclusion

Before a complaint for money or damages against a public entity can be filed with the court, a claim must be presented to the entity in accordance with the Government Claims Act. The Claimant should have filed his claim in a timely manner. His late claim application does not contain sufficient facts to show that his failure to timely file his government claim was due to mistake or excusable neglect. In sum, Plaintiff did not comply with the mandatory requirements of the Government Claims Act.

If you have any questions, please do not hesitate to call.

RECOMMENDATION

Reject the Application for Leave to Present to the late claim on behalf of Ricardo Mendoza and direct staff to notify the Claimant.

Enclosures

Letter of September 11, 2024, for Application for Leave to Present Claim
Claim Against Rancho Murieta Community Services District filed by Ricardo Mendoza
Plaintiff's Ex Parte Application for Leave to File a Claim Against District
Order of the Court

13148-0001\3025880v1.doc

PRODIGY
ELECTRIC AND CONTROLS, INC
PRODIGYELECTRIC.COM

Quote

Please Remit To This Address:

Prodigy Electric And Controls, Inc.
PO Box 141
Lincoln, CA 95648

Bill To:

Rancho Murieta CSD
15160 Jackson Road
Rancho Murieta, CA

Quote #	40601
Date	9/20/2024
Total Due:	$12,593.01
Terms	Net 15
P.O. No.	

Phone # 916.997.0798

CA License # 998361

Job Description

WWRP operations lts

Description	Qty	Rate	Total
Install New Led replacement lights in Operations building and use mc cable as needed. Includes: 2@ Outdoor Wall pack Led lts 1@ 8' led strip light 16@ 4' vapor tight Lights (6 are for the outdoor awning areas) 11@ 4'x1' wrap around led lts 5@ 4'x1.5' wrap around led lts	1	12,593.01	12,593.01

Total $12,593.01

PRODIGY
ELECTRIC AND CONTROLS, INC
PRODIGYELECTRIC.COM

Quote

Please Remit To This Address:

Prodigy Electric And Controls, Inc.
PO Box 141
Lincoln, CA 95648

Bill To:

Rancho Murieta CSD
15160 Jackson Road
Rancho Murieta, CA

Quote #	40603
Date	9/20/2024
Total Due:	$29,081.77
Terms	Net 15
P.O. No.	

Phone # 916.997.0798

CA License # 998361

Job Description

WTP Lts

Description	Qty	Rate	Total
Install New Led replacement lights in warehouse and use mc cable as needed. Includes: 8@ Outdoor Wall pack Led lts 2@ PIR High Bay led lts to replace 8' strip lts shop 1@ 4' strip lt 13@ 8 ft strip lt 3@ led screw in bulb in bathroom 3@ outdoor 6" can led lts 54@ 4' vapor tight lts 9@ 4'x2' troffer led lts	1	29,081.77	29,081.77

Total $29,081.77

PRODIGY
ELECTRIC AND CONTROLS, INC
PRODIGYELECTRIC.COM

Quote

Please Remit To This Address:

Prodigy Electric And Controls, Inc.
PO Box 141
Lincoln, CA 95648

Bill To:

Rancho Murieta CSD
15160 Jackson Road
Rancho Murieta, CA

Quote #	40602
Date	9/20/2024
Total Due:	$18,488.60
Terms	Net 15
P.O. No.	

Phone # 916.997.0798

CA License # 998361

Job Description

Main Office Lts

Description	Qty	Rate	Total
Install New Led replacement lights in Main offices and use mc cable as needed. Includes: 12@ Outdoor can down Led lts 8@ 4'x1' wrap around led lts 46@ 4'x2' troffer led lts 8@ 2'x2' troffer led lts	1	18,488.60	18,488.60

Total $18,488.60

PRODIGY
ELECTRIC AND CONTROLS, INC
PRODIGYELECTRIC.COM

Quote

Please Remit To This Address:

Prodigy Electric And Controls, Inc.
PO Box 141
Lincoln, CA 95648

Bill To:

Rancho Murieta CSD
15160 Jackson Road
Rancho Murieta, CA

Quote #	40600
Date	9/20/2024
Total Due:	$17,275.38
Terms	Net 15
P.O. No.	

Phone # 916.997.0798

CA License # 998361

Job Description

WWRP Warehouse Lights

Description	Qty	Rate	Total
Install New Led replacement lights in warehouse and use mc cable as needed. Includes: 5@ Outdoor Wall pack Led lts 9@ PIR High Bay led lts to replace 8' strip lts 1@ 4' led strip lt for an always on lt above battery table 9@ 4'x1' wrap around led lts 9@ 4'x1.5' wrap around led lts 1@ led screw in bulb in bathroom	1	17,275.38	17,275.38

Total $17,275.38

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Sacramento, California 95816
rwglaw.com

MEMORANDUM

TO: Honorable Members of the Board of Directors

CC: Mimi Morris, General Manager

FROM: Patrick L. Enright

DATE: October 16, 2024

SUBJECT: Late Claim of Ricardo Mendoza - Agenda Item 17

Executive Summary

The October 16, 2024, Board of Directors Meeting agenda contains two related items:

1. Closed Session (at 4:00): to consider a claim from Ricardo Mendoza ("Claimant") for an injury that occurred at the Equestrian Center on October 5, 2023, for damages in excess of $2,000,000.

2. New Business Item: Consideration of Claimant's Petition to File Late Claim pursuant to Government Code section 911.4-912.2 and 930.4 et seq.

By letter dated September 11, 2024, the Claimant petitioned the District to permit the filing of a late claim. This memorandum describes the statutes governing late claims against public entities and briefly analyzes the petitions. It concludes that the claim is untimely.

Background

On September 11, 2024, Ricardo Mendoza presented a request to file a late claim against Rancho Murieta Community Services District ("District"). The alleged incident occurred at the Equestrian Center, 7200 Lone Pine Drive, Rancho Murieta, on October 5, 2023. The Plaintiff (Mr. Mendoza) was shot at the Equestrian Center, and the allegation is that the District

provides security to private events. The Claimant's petition states that "[t]he reason why the claim was not timely filed is due to mistake, inadvertence, surprise or excusable neglect."

Government Claims Act

Depending on the nature of the claim, the claimant must file it within six months or a year of its accrual.

Before a complaint for money or damages against a public entity can be filed with the court, a claim must first be presented to the entity in accordance with the Government Claims Act, Govt. Code §§ 810-996.6 (the "Act"). Govt. Code § 945.4. To shorten the statute of limitations to six months, the District must consider whether to accept or reject the claim within 45 days. Claims relating to a cause of action for injury to a person, property, or crops must be presented within six months of the accrual of the cause of action. Govt. Code § 911.2(a). Claims relating to "any other cause of action" must be presented within one year of accrual. Govt. Code § 911.2(a).

The Claimant presented the claim on September 11, 2024, more than six months after the accrual of the injuries that occurred on or about October 5, 2023. On October 2, 2024, the court held an *ex parte* hearing on the Plaintiff's request for leave to file a claim against the District. The motion was denied as premature, pending the District's review of the request for the late claim filing.

The Statute of Limitations bars the Application to Present a Late Claim Because it was not Presented within a Reasonable Time not to Exceed Six Months after the Cause of Action Accrued.

The Claimant's "only recourse at this time is to apply, without delay, to this office for leave to present a late claim." If a claim that must be presented within six months of the accrual of the cause of action – that is, any claim for injury to person, property, or crops – is not filed within that period, the claimant may apply to the public entity for permission to present a late claim. Govt. Code § 911.4(a).

The Application for Leave to Present a Late Claim must be presented within one year after the cause of action accrues. Govt. Code § 911.4(b). The one-year deadline is tolled for any period during which the Claimant is (1) mentally or physically incapacitated and does not have a guardian or conservator or (2) detained or adjudged to be a dependent child of the juvenile court, provided certain conditions are met. Govt. Code § 911.6(b)-(c).

The Claimant's Application for Leave to File a Late Claim was filed with the District on September 11, 2024, over eleven (11) months after the cause of action accrued.

The Application to Present a Late Claim States that the Failure to Timely Present the Claim Resulted from a Mistake, Inadvertence, Surprise, or Excusable Neglect but Fails to allege any Facts.

The Government Code requires that the Application state the reason for the delay. Govt. Code § 911.4(b). The Application must be granted when one or more of the following is applicable:

1. The failure to present the claim resulted from mistake, inadvertence, surprise, or excusable neglect (coupled with a lack of prejudice to the public entity).

2. The Claimant was a minor during the entire claim presentation period.

3. The Claimant was mentally or physically incapacitated during the entire claim presentation period.

4. The Claimant died during the claim presentation period. (Govt. Code § 911.6(b)).

The Claimant alleges that Defendant West Coast Equine Foundation ("WCEF") did not file an answer until July 29, 2024, and as a result, Plaintiff could not conduct any discovery. As soon as Defendant alluded to a governmental entity being involved for security for the private property, Plaintiff served a government claim on the District.

First, the law allows a plaintiff to serve written discovery on a defendant ten (10) days after service of the summons and complaint. (Code. Civ. Proc. §§ 2030.020(b), 2031.020(b).) WCEF's delay in filing an answer to Plaintiff's Complaint had no impact on Plaintiff's ability to conduct discovery. Second, it took the Plaintiff over six weeks to file the claim after WCEF alluded to the District providing private security. Of course, the basic allegation is incorrect as the District does not provide private security to the Equestrian Center. Accordingly, the late claim application does not comply with Government Code requirements.

The Government Claims Act provides excusable neglect, a recognized ground for relief from the requirement to file a timely claim against a public entity. The standard for excusable neglect is stringent and requires more than just a failure to discover a fact or a simple mistake. The Plaintiff has failed to allege any facts for relief, including what steps were taken to investigate the District's potential liability within the first six months after the incident occurred.

In *Harrison v. County of Del Norte* (1985) 168 Cal.App.3d 1, the court found that ignorance of the claims' statute and the existence of potential causes of action against governmental entities does not excuse compliance with the requirement to file claims timely, especially if the information could have been ascertained through reasonable diligence.

MEMORANDUM

Date: October 16, 2024

To: Board of Directors

From: Mimi Morris, General Manager

Subject: Streamlined Pay for Performance Program Manual and the 2025 NR Salary Schedule

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RECOMMENDED ACTION

District Staff recommends the Board approve the streamlined Pay for Performance Program Manual and the 2025 Non-Represented Salary Schedule.

BACKGROUND

Since 1994, the District has had a Pay for Performance Program in place with the goal of motivating improved performance among the Non-Represented employees through a variety of compensation and benefit incentives.

Policy 2012-08 formalized the Pay for Performance program and a program manual was originally prepared in 2016 and updated in 2021. The Program Manual outlined in detail the methodology for calculating increases and evaluating performance. The overly complicated 50-page document was difficult to follow and implement because it went deeply into the specific calculations before clearly outlining the essential components. Staff **has not altered the program in any significant way** but has reworked the document to more clearly define its various components. Detailed descriptions and examples regarding the calculation and performance evaluation methodologies are retained in the document, but as attachments so that the essence of the program components are more visible.

Staff added language clarifying that one-time payments authorized for staff who have exceled and earned a percentage increase that would push them beyond the maximum point in the salary range are bonuses. These one-time payments are not pensionable but are one-time bonus opportunities wherein the District can reward staff for exemplary performance. This is not a change to the program or policy, just the addition of the word bonus to clarify the nature of the payment. Additionally, the document references retains the requirement for audits of the program by the Personnel Committee, and annual

distribution of Benefit Valuations to Non-Represented employees. Staff will work to have these in place by October of 2025.

In addition to the streamlined Pay for Performance Program Manual, staff recommends an increase of 8% to the 2025 Non-Represented Salary Schedule to address the delay in the tri-annual salary survey referenced in the 2021 manual. Due to the focus of Executive Management on financial audits and other operational goals, the survey did not get done. Staff recommends that the next survey be conducted by October of 2025 and that this increase be put in place in lieu of the survey. It is important to note that increases to the Non-Represented Salary Schedules do not automatically result in increases in pay to staff. Increases are dependent on performance evaluations and accomplishment of goals.

Increase of 8% to Maximum Range
Proposed to Board October 16, 2024
To be Effective January 1, 2025

		Monthly Salary Range		
Code	**District Position**	**Minimum**	**Control Point**	**Maximum**
NR27	Chief Plant Operator	$ 7,888	$8,813	$ 10,517
NR39	Director of Operations	$10,171	$12,149	$ 15,256
NR17	District Secretary	$5,326	$6,361	$ 7,989
NR33	Information Technology Manager	$7,933	$8,996	$ 10,800
~~NR31~~	~~Security Supervisor~~	~~$7,004~~	~~$ 8,125~~	~~$ 9,246~~
NR12	Security Sergeant	$5,100	$5,915	$ 7,269
NR23	Utility Supervisor	$6,584	$7,864	$ 9,877

# # #

Rancho Murieta Community Services District

Pay for Performance Manual

Revised:

TABLE OF CONTENTS

SECTION 1 - INTRODUCTION

BACKGROUND

In November of 1994, the Board of Directors adopted a policy to develop and implement a compensation plan that would recognize the quality of an employee's performance on the job. Over time, the Pay for Performance Plan has changed to reflect changes in and out of the District, but stayed consistent with the intent of the original agreement. Prior to this time, District employees received pay increases based on the cost of living and length of service. Employees were generally hired at the minimum of the salary range and received a 2.5% increase each year and usually received a cost of living increase ranging from 2 to 3%. Upon reaching the maximum of the salary range, employees received the cost of living increase only. The District did not financially reward employees for their *level* of contribution. This program is based on the assumption that pay can act as a motivator for higher levels of performance. This program applies to non-represented employees. Although the represented employees are covered under the current memorandum of understanding (MOU) between the District and the Operating Engineers Local #3 for minimum standards to move between steps, the basic underpinnings of this manual (i.e. core competencies, measurements, ratings and goal identification and attainment, and performance evaluation) are consistent with those of non-represented employees, supervisors and managers.

SECTION 1-1

GENERAL DESCRIPTION OF THE PAY FOR PERFORMANCE PROGRAM

The Pay for Performance program differs from the old compensation and evaluation programs in a number of ways:

- The pay for each job class is determined by a salary survey of comparable public agencies. This survey is performed no less than every three years. (See Section 2, page 1 for more information)

- No cost of living increases are given, but since a salary survey is conducted regularly, employees are assured of competitive salaries within the financial resources of the District.

Pay increases vary and are based on the employee's level of performance. Pay increases vary from 0 to 8%, based on the employee's performance evaluation and position in the salary range. (See Section 2, page 3, for additional information.)

- The evaluation of an employee's performance is based on factors related to the job classification, specifically predetermined competencies and SMART goals and objectives.
- In addition to base pay, there are additional incentives for specific behaviors such as special service. (See Section 4 for additional information and Policy #2011-08.)

- Benefits are reviewed periodically for their comparability with other agencies, and desirability by employees. (See Section 5 for more information.)

The main components of the program are competitive base pay and benefits, salary increases based on level of performance, and special incentives for unusual achievements. The District, like most public agencies, has limited funds and wants to use those funds in the best possible manner. This program is not intended to punish employees in any way, but rather reward those employees that contribute most to the District's mission of "… to take a leadership role in responding to the needs of the residents. The District will deliver superior community services efficiently and professionally at a reasonable cost while responding to and sustaining the enhanced quality of life the community desires".

The Pay for Performance program is a dynamic program and will be revised when it is apparent that elements of the program are not supporting the objective of rewarding employees for creativity, innovation, teamwork, productivity, and quality. The hope of installing such a program is that the customers of the District will benefit by receiving the highest quality, most cost effective service possible and that employees will be rewarded appropriately for their additional effort.

SECTION 1-2

PURPOSE OF MANUAL

The purpose of this manual is to identify the components of and explain how the pay for performance management program is administered for non-represented employees and the performance management system is administered for all employees, represented and non-represented.

SECTION 2 - COMPENSATION PLAN AND SALARY ADMINISTRATION

SECTION 2-1

STRUCTURE OF SALARY RANGES

External Pay Comparisons

The salary structure for classifications insures external competitiveness through salary comparisons with similar agencies. The District's management team conducts a salary survey no less than every three (3) years. In non survey years, adjustments to the salary ranges based on changes in the CPI will aid in keeping the salary structure competitive with the market. The survey is conducted and completed during the first three (3) months of the calendar year. The Personnel Committee of the Board of Directors reviews the collected data and makes recommendations to the Board for salary range adjustments, if any.

The comparison agencies are selected by the Board of Directors and can be changed at any time. The current survey group is listed below.

Cities and Counties

City of Davis	City of Folsom	City of Galt	City of Modesto
City of Roseville	City of Woodland	City of Yuba City	

Special Districts

Amador Water Agency	Calaveras County Water District
Groveland Community Services District	Mammoth Community Water District
South Tahoe Public Utility District	Tuolumne Utilities District

Security

County of Sacramento	Elk Grove Unified School District
Lake of the Pines Association	Lake Wildwood Association
Sacramento City Unified School District	Sacramento Municipal Utility District

In general, the comparison agencies are cities, counties, and special districts of a similar size, that provide similar services in water and/or wastewater treatment, and security. Other factors, such as geographic region and cost of living, were taken into consideration when choosing the comparator group. The following positions are provided salary ranges as a result of the survey:

Accounting Manager	Chief Plant Operator
Director of Administration	Director of Operations
	District Secretary
General Manager	Security Supervisor
Security Sergeant	Utilities Supervisor

Internal Salary Relationships

Not all District classifications are surveyed since some classifications are not common in other agencies or may be part of a series in which certain internal relationships can be inferred. Those classifications not surveyed are linked to the surveyed jobs by percentage differentials. The more similar the linked class is to the benchmark class, the smaller the percentage differential.

At times, pay for a particular class may be altered by internal comparisons even though survey data may indicate a higher or lower salary. The relationship between classes may also change as a result of reorganization of work units or change in employee responsibilities.

Position in the Market

Position in the market refers to "targeted" level of pay among comparison agencies. The Board of Directors determines the District's position relative to the comparison agencies. The Board may change the District's position based on such issues as ability to pay, change in District goals, etc. Currently, the District's position among comparison agencies is the base salary market median of the agencies surveyed.

Salary Ranges

A salary schedule was created for the non-represented classifications, which consists of forty-six (46) salary ranges with approximately 30% between the minimum and maximum. (See Exhibit A.) There shall be no specific or predetermined steps within the range, thus allowing for the flexibility of adjustment to recognize varying levels of performance. Each classification will be assigned to a range. Range placements are made by placing the market base salary median findings for each classification into the salary range whose control point is closest to the market median number. The control point represents the value of each position assigned to the salary range at the fully competent level.

Title	Market Top Step Median	Range Minimum	Control Point (Range NR23)	Range Maximum
Example Position	$6,300	$5,293	$6,351	$6,986

The maximum pay for each salary range class is 10% above the control point of the range. The minimum of the salary range for each class is 20% below the control point. The range below the control point represents pay for an employee who is not yet fully competent in all aspects of the classification. The following illustrates how the salary range for a class is created.

Position
Control point = $6,351; Maximum of range = $6,351 * 1.10; Minimum of range = $6,351 / 1.20 Resulting Range is $5,293 - $6,986

SECTION 2-2

INITIAL PAY AND SALARY RANGE ADJUSTMENTS

Pay for New Employees

There are two (2) situations in which new employees may be placed above the entry rate of the salary range: the employee has job related experience and/or training that is greater/more extensive than the minimum requirements for the job and when extensive recruiting indicates that qualified candidates will not accept offers at the entry rate. The District's salary offer to new employees will also take into consideration the extent and level of experience of current employees in the same class to ensure internal equity among employees. This applies to both represented and non-represented employees.

Salary Adjustments

Employees receive salary increases based on their performance during the prior year. The amount of the increase for non-represented employees is based on three factors: the level of performance, current position in the salary range, and money available for salary increases. Salary increases for represented employees are implemented according to the terms and conditions of the current MOU. The following charts depict the possible increases for non-represented employees based on position in the range and overall evaluation of performance.

Performance Standards	% Increases
Exemplary	6.5% - 8% (not to exceed maximum of the range)
Exceeds Standards	3.5% - 6% (not to exceed maximum of the range)
Fully Effective	1 – 3% (not to exceed the control point of the range)
Improvement Needed	0
Minimum Standards Not Met	0

The District has selected the month of April as the focal review date; meaning that all employees will receive annual performance appraisals within the month of April each year. Individuals hired within the first nine (9) months of the rating period (May – January) will be eligible for a pro-rated merit increase, from their hire date forward.

Individuals hired within the last three (3) months of the rating period (February – April) will not receive an annual performance review nor be eligible for a merit increase. Their first performance review will occur on their six (6) month anniversary and they will be eligible for a merit increase on the following Agency-wide annual performance review date.

Once an employee reaches the maximum of the salary range, and is rated as outstanding or exceeds standards, the employee is eligible for the cash equivalent of the recommended increase, but the increase does not become a part of base pay for purposes of retirement calculations.

Employees can only receive a salary adjustment once a year unless they are receiving a promotion to another position.

Adjustments to individual salaries based on range movement are not automatic. The reviewer may recommend an upward adjustment in an individual's salary or may recommend that an individual's salary be maintained at its current level, despite any adjustment in the salary range.

Salary Placement Upon Promotion, Demotion, Reclassification and Market Equity Adjustments

Promotion - When a regular non-represented employee is promoted, the employee will receive a salary increase of at least the minimum of the new salary range.

Demotion - When an employee is demoted, the employee's salary will be reduced to an amount in the range of the lower classification which has the same percentage relationship to the control point as the employee's salary in the higher classification.

Reclassification - Any employee in a job which is reclassified with a different salary range shall be compensated at the same rate of pay in the new salary range or the minimum of the new salary range should the employee's pay rate be less than the minimum of the new salary range. The salary of an employee whose position is reclassified to a classification with a lower salary range and whose salary is above the maximum of the new salary range shall be frozen at the salary of the old classification until the salary range of the new classification is equal to or exceeds the employee's salary. This is referred to as "Y-rating".

Market Equity Adjustments - An employee who is classified in a position with a salary range which has been increased as a result of a salary study (equity adjustment to salary range) remains at their current salary unless adjustment to the salary range results in employees being paid below the minimum of the salary range. If employees are rated as "fully effective" on their previous performance evaluation, they will be given a salary increase that will pay them at the minimum of the salary range.

SECTION 3 - PERFORMANCE MANAGEMENT SYSTEM

SECTION 3-1

PURPOSE OF PERFORMANCE MANAGEMENT SYSTEM

The performance management system applies to all employees, represented and non-represented. The objectives of the performance management system are to: encourage effective communication between supervisors and employees regarding expectations for job performance and work habits; provide feedback to employees regarding how well they are meeting those job expectations; assist employees in identifying ways they can achieve the best level of performance; provide a method for tying performance to pay; provide additional opportunities for employees to assist supervisors and managers in identifying ways in which the work environment and productivity can be improved; determine the training needs of employees; and assist employees in planning career goals.

SALARY INCREASE BUDGET

The salary increase budget will be determined annually within the context of overall District's performance and budget dollars available, and shall be fiscally prudent taking into account the District's financial condition, reserves, revenue growth, and competing budget priorities. The range of potential increases for the upcoming rating period will be announced to all employees by April each year. (Refer to the current MOU for Represented employees)

REVIEW PERIODS

The supervisor in the following instances conducts formal reviews of performance**:**

1. When an employee has worked an initial six (6) month period in his or her new job position (this applies not only to newly hired employees, but also to employees who have been promoted or otherwise transferred to new job classifications);
2. Annually, on the focal review date in April; salary adjustments, if applicable, to be effective May 1st;
3. When an employee is being considered for promotion, transfer, demotion, termination, or other disciplinary action is being considered;
4. Whenever the employee's supervisor believes there has been a significant change in the employee's performance; and
5. Whenever requested by the General Manager or the Board of Directors.

DOCUMENTATION OF THE REVIEW PROCESS

The Performance Evaluation form for the specific individual serves as the record of the review process.

CORE COMPETENCIES

The Core Competencies refer to the interpersonal and job skills common to all classifications and are considered especially important to working successfully at the District. These Core

Competencies describe the expectation of characteristics an employee should possess as they are performing their work at the District. All employees will be evaluated on the first eight (8) competencies listed below. Supervisors and managers will also be evaluated on the last two (2) competencies listed below.

1. **Customer Service** - Represents the District to individuals both inside and outside the organization in a service oriented, responsive, consistent, timely, respectful, and effective manner within the context and authority of their position.

2. **Job Knowledge** - Possesses technical knowledge and learned skills, methods, techniques, policy, and procedures necessary to perform the job. Keeps up-to-date on developments and changes relevant to the job and the District. Understands their job in the context of the District's operations.

3. **Initiative/Innovation** - Self-motivated; resourceful; continually seeks to improve work methods as a means to greater efficiency and effectiveness. Willingness to seek out and accept challenging new responsibilities.

4. **Safety/Security** - Ensures safety of District customers, community, and employees; protects and secures District data, facilities, infrastructure, and systems. (Please note that the rating definition for this Core Competency differs based on functional area, for example, administration, operations, or safety/security.)

5. **Teamwork** - Works collaboratively and cooperatively with others inside and outside of the organization. Creates positive working relationships and fully shares in responsibilities; respects and understands roles within the team. Supports positive working environment to ensure high performance of the whole team and the District.

6. **Reliability** - Monitors status of assignments to meet District fiscal needs, timetables, and deadlines for submission of work; follows instructions and meets job expectations including attendance and punctuality. Accountable and consistent.

7. **Effectiveness/Productivity** - Ability to approach issues effectively, resourcefully, and creatively. Adeptness at analyzing facts, forecasting issues, problem solving, decision-making, and demonstrating good judgment. Ability to use knowledge and skill to deliver a quality product or level of service. Skill at planning, organizing, and prioritizing workload and proficiency in measuring and monitoring workload.

8. **Communication** - Clear and concise in speech, writing, and presentations. Provides required information to individuals both inside and outside the organization in a service oriented, consistent, timely, and effective manner.

9. **Management** - Ensures a smooth operation by maximum utilization of personnel, technology, and equipment; staff motivation, growth, development; and adherence to safety and security guidelines. Provides clear work direction, expectations, and constructive feedback and guidance, including timely performance reviews. Matches program expectations with resources. Identifies and addresses obstacles to their employees' performance.

10. **Leadership** - Uses appropriate interpersonal styles and methods in guiding individuals and groups towards task and strategic accomplishments. Exhibits skills that create a vision of purpose. Influences and manages change. Obtains political support. Encourages communication within and between departments. Establishes, directs, and/or chairs committees, teams, and programs.

RATING OF CORE COMPETENCIES ON THE PERFORMANCE EVALUATION FORM

The rating scale for each core competency consists of five (5) levels – Exemplary, Exceeds Standards, Fully Effective (equivalent to the previous "meets standards" rating), Improvement Needed, and Minimum Standards Not Met. Examples of job behavior are used to describe each level of performance for each competency. It is anticipated that as managers gain more experience with these rating scales, the descriptions of behavior will become more specific. An example scale is shown below for the evaluation competency **Initiative/Innovation**.

EXEMPLARY	**EXCEEDS STANDARDS**	**FULLY EFFECTIVE**	**IMPROVEMENT NEEDED**	**MINIMUM STANDARDS NOT MET**
A self-starter who always completes work with little or no supervision. Anticipates the needs of others and the District and addresses those needs by taking on increased responsibilities. Thinks out of the box to actively identify and implement creative ways to increase productivity and streamline and improve processes on a District-wide level.	A self-starter who completes work with minimal supervision. Actively seeks increased responsibilities. Thinks out of the box. Recommends ways to increase productivity and streamline and improve processes within department/ program area.	Completes work under general supervision and takes direction well. Takes on additional responsibilities as assigned. Makes some recommendations to increase productivity and streamline and improve processes in assigned program area/area of responsibility.	Requires some direct supervision, difficulty accepting new ideas and responsibilities, and resists change. Attempts may be made to improve work processes in assigned area of responsibility.	Requires constant supervision and is generally not receptive to new ideas and change. Little attempt to improve work processes in assigned area of responsibility.

Each rating has a numerical equivalent: Exemplary = four (4) points, Exceeds Standards = three (3) points, Fully Effective = two (2) points, Improvement Needed = one (1) point, and a rating of

Minimum Standards Not Met receives zero (0) points. Each point equivalent is then multiplied by the weighting for each competency and the resulting weighted scores are added together for the employee's overall rating.

The total weighting for each job must equal, at a minimum, 10 for Supervisors/Managers. The total weighted rating for represented jobs, at the fully functional rating, must equal a minimum 2.0 (which equates to 100 points from the old evaluation forms). On the next page is an example of rated competencies and the resulting total number of points if an employee had received the given ratings.

The weighting of each competency may vary with each job class. These competencies and the weight of each competency may change over time due to a change in duties and responsibilities or a change in those qualities that the District values or wants to emphasize.

Using the table on the next page, the total points for this sample would equal an overall rating of Fully Effective.

Sample Rating			
Core Competency	**Weight**	**Rating**	**Weighted Rating**
Customer Service	1	3	3
Job Knowledge	1	2	2
Initiative/Innovation	1	2	2
Safety/Security	1	2	2
Teamwork	1	3	3
Reliability	1	3	3
Effectiveness/Productivity	1	2	2
Communication	1	1	1
Management (Supervisors only)	1	3	3
Leadership (Supervisors only)	1	2	2
Total	**10**		**23**
Overall Rating			**2.3**

The total points are calculated based on the total weighted rating divided by the total weight. The District may decide to change the weight on any of the competencies, perhaps to emphasize competencies that will help drive operational goals. For example, if during one year, the District decided to place a greater weight on Teamwork and changed the weight to 5 and kept all other competencies with a weight of 1, then the total weight would equal 14. The overall rating would be calculated based on the total weighted rating divided by 14.

Total points are converted to the Overall Rating using the following scale:

3.51 – 4 = Exemplary
3 – 3.50 = Exceeds Standards

2 – 2.99 = Fully Effective

1 – 1.99 = Improvement Needed

0 – 0.99 = Minimum Requirements Not Met

EMPLOYEE MERIT INCREASES

A designated supervisor shall be responsible for 1) the annual review of each employee's performance; and 2) recommendations for employee merit increases. Merit increase recommendations shall be within the District's annual salary budget guidelines and based on the individual employee's performance.

Guidelines for recommending merit increases. :

- Range Minimum to the Control Point is the portion of the range where a new or less experienced employee would be placed. Progress through the range would occur as an employee moves towards the fully competent level (control point). There may be circumstances, such as hiring a highly experienced individual, which would warrant salary placement near or at the control point.
- The Control Point is the position of the salary range where an employee may normally expect to progress. Most employees will achieve and maintain a salary at this point of the range (fully competent). The achievement of full competency is determined by the ability to meet standards in the District's core competencies and achievement of individually determined goals for the review period.
- The Control Point to the Range Maximum is utilized for those employees whose performance over time consistently exceeds expectations or is outstanding as defined by the District's core competencies and individual goal achievement.

Adjustments to an employee's salary will be made based on the results of the performance evaluation. Salary adjustments shall be based on achievements in key areas weighted as follows:

- Core Competencies 50%
  Goals and Objectives 50%

The maximum total points an employee may receive based on the evaluation of the core competencies and goals and objectives is 4.

Overall rating of achievement of goals and objectives are converted to points using the following scale:

4 = Exemplary

3 = Exceeds Standards

2 = Fully Effective

1 = Improvement Needed

0 = Minimum Requirements Not Met

During the annual performance review process, both performance ratings (core competencies and goals and objectives) and the relative position of the individual within the salary range will be considered in recommending the salary increase.

The following merit guidelines shall apply for performance reviews:

Overall Rating	<Control Point	Control Point	>Control Point and <Max	> Max (lump sum)
Exemplary – 3.51 to 4	6.5% - 8%	6.5% - 8%	6.5% - 8%	6.5%
Exceeds Standards – 3.34 to 3.50	5.5% - 6%	5.5% - 6%	5.5% - 6%	3.5%
Exceeds Standards – 3.17 to 3.33	4.5% - 5%	4.5% - 5%	4.5% - 5%	3.5%
Exceeds Standards – 3 to 3.16	3.5% - 4%	3.5% - 4%	3.5% - 4%	3.5%
Fully Effective – 2 to 2.99	1% - 3%	1% - 3%	0%	0%
Improvement Needed – 1 to 1.99	0%	0%	0%	0%
Min Requirements Not Met– 0 to 0.99	0%	0%	0%	0%

- If base pay is below the control point: Employees with at least "Fully Effective" performance will have the opportunity to receive a pay increase up to the control point of their range, based on their performance. No increase will be given to those rated below "fully effective".
- If base pay is between the control point and maximum: Employees with performance that either "Exceeds Standards" or is "Exemplary" will have the opportunity to receive an increase up to the maximum of their range. If an "Exemplary" increase exceeds the maximum, the portion above the maximum will be paid in a lump sum payment.
- If base pay is above the maximum: Employees who are frozen at or above the maximum of their range and perform at an "Exemplary" or "Exceeds Standards" level on their performance review, will receive a lump sum payment equal to the applicable percentage on the matrix above.

Timing of Increases. Merit increases will be considered on an annual basis in May, in conjunction with the Agency performance review cycle in April.

EXAMPLES OF PROGRESSION THROUGH SALARY RANGE

This following table demonstrates one example of how a non-represented employee would move through the salary range based on the employment scenario described below. Assume in this example that a salary survey is performed every other year with salary range adjustments effective the first of July. This means a survey is performed in Years 3, 5, and 7 during the employee's service. A survey was also performed in Year 1, but prior to the employee's starting date.

	Hire	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6

Employee Increase		3%	6%	5%	4%	1.6%	4.5%
Employee Salary	$5,293	$5,452	$5,779	$6,068	$6,311	$6,415	$6,905
Minimum Salary	$5,293	$5,293	$5,293	$5,346	$5,346	$5,346	$5,346
Control Point	$6,351	$6,351	$6,351	$6,415	$6,415	$6,415	$6,415
Maximum Salary	$6,986	$6,986	$6,986	$7,056	$7,056	$7,056	$7,056

In *YEAR 1,* the monthly salary range for this position is $5,293-$6,986. The control point of the range is $6,351. The employee is hired at the range minimum of $5,293. At the end of YEAR 1, the employee receives a "Fully Effective" rating (2.9 Points), qualifying for a maximum increase of 3% to $5,452.

The employee's salary *at the beginning of YEAR 2* is $5,452. At the *end of YEAR 2,* the employee receives an "Exceeds Standards" rating (3.5 Points) and qualifies for a maximum increase of 6%, bringing the employee's salary to $5,779.

During YEAR 3, the District performs a salary survey and the Board approves a 1% increase to the salary range for this job based on the results of the survey. The new control point is $6,415, the range minimum is $5,346 and the range maximum is $7,056. *At the end of YEAR 3,* the employee receives another "Exceeds Standards" rating (3.3 Points) and qualifies for maximum increase of 5% at the *end of YEAR 3* increasing salary to $6,068.

At the end of YEAR 4, the employee receives an "Exceeds Standards" rating (3.1 Points) qualifying for a maximum increase of 4%, which would bring salary to $6,311.

During YEAR 5, the District performs another salary survey and the Board approves no increase to the salary range for this job based on the results of the survey. The control point, range minimum, and range maximum remain the same. *At the end of YEAR 5,* the employee receives a "Fully Effective" rating (2.9 Points) qualifying for a maximum increase of 3% which would bring salary to $6,500. However the control point of the range is $6,415 and when an employee receives a "Fully Effective" rating, they would not be able to move above the control point, therefore the employee's salary is limited to an increase to the control point or $6,415.

At the end of YEAR 6, the employee receives a "Fully Effective" rating (2.5 Points) and would remain at the control point, which represents the market median top step. The employee's salary would remain $6,415.

This following table demonstrates a second example of how a non-represented employee would move through the salary range based on the employment scenario described below. Assume in this example that a salary survey is performed in Year 1 and every other year (in Years 3, 5, and 7) with salary range adjustments effective the first of July.

	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6

Employee Increase		0%	3.5%	5%	3.7%	6.5% lump sum payment
Employee Salary	$6,450	$6,450	$6,676	$7,010	$7,269	$7,269
Minimum Salary	$5,293	$5,293	$5,399	$5,399	$5,507	$5,507
Control Point	$6,351	$6,351	$6,478	$6,478	$6,608	$6,608
Maximum Salary	$6,986	$6,986	$7,126	$7,126	$7,269	$7,269

In ***YEAR 1,*** the District performs a salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The monthly salary range for this position is $5,293-$6,986. The control point of the range is $6,351. The employee's salary is $6,450.

The employee's salary *at the beginning of* ***YEAR 2*** is $6,450. At the *end of YEAR 2* the employee receives an "Fully Effective" rating (2.5 Points) and qualifies for no increase because the employee's salary is above the control point. The employee's salary would remain $6,450.

During ***YEAR 3,*** the District performs a salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The new control point is $6,478, the range minimum is $5,399, and the range maximum is $7,126. *At the end of YEAR 3,* the employee receives an "Exceeds Standards" rating (3.1 Points) and qualifies for 3.5% increase at the *end of YEAR 3* increasing salary to $6,676.

At the end of ***YEAR 4,*** the employee receives an "Exceeds Standards" rating (3.3 Points) and qualifies for 5% increase at the *end of YEAR 4* increasing salary to $7,010.

During ***YEAR 5,*** the District performs another salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The new control point is $6,608, the range minimum is $5,507, and the range maximum is $7,269. *At the end of YEAR 5* an "Exceeds Standards" rating (3.5 Points) and qualifies for a maximum 6% increase. The largest increase the employee can receive is 3.7% increase to the maximum of the range of $7,269.

At the end of ***YEAR 6,*** the employee receives an "Exemplary" rating (3.9 Points) and qualifies for a maximum 6.5% lump sum payment. The employee's salary remains the same at $7,269.

SECTION 3-2

GOALS AND OBJECTIVES

Departmental goals, for both represented and non-represented employees, are based upon District-wide goals identified by the General Manager and the Board of Directors in the Strategic Plan. Department goals become the foundation used by the Supervisor/Manager and his or her staff to establish specific goals for the department/division and employees. Department/Division

Heads will review the department/division goals with employees and the overall impact and expectation of that department/division in achieving the goals.

In addition to directing the employee's efforts toward important organizational goals, objectives are a necessary tool for the supervisor as well. Supervisors are responsible for the evaluation process for the purpose of rewarding and developing their employees. The evaluation can be difficult to write and inaccurate in content when a supervisor does not have a clear understanding of what is expected from the employee.

Successful development and negotiation of goals and objectives between the supervisor and employee often result in a more productive workplace. It also allows the employee to understand what is expected of him or her and how he or she will be evaluated at the time of his or her performance appraisal.

Developing Goals

The terms "goal" and "objective" have often been confused with one another and how they are best used. Goals and objectives are defined as follows:

- Goal: A broad statement of desired results for the District, department, or division.
- Objective: Objectives are determined for each goal. Effective objectives include measurements developed in terms of numbers, percentages, time, or some other tangible indicator of results. They are achievable, challenging, and motivate individuals to attain excellent performance.

Guidelines for Preparing Employee Goals:

- Goals are broad in scope.
- Goals are normally long-term or ongoing in nature.
- Goals are based on the goals of the District, but are designed to support areas for which the employee is assigned.
- Goals are brief and clear statements.
- Goals require one or more specific objective to be achieved.
- Goals are within the supervisor's area of responsibility and/or authority.

There are four (4) types of goals:

1. Professional Development Goals focus on career growth. Examples of objectives include attending classes, seminars, or workshops or participating in on-the-job training, cross-training, or self-study programs.
2. Performance Goals focus on the improvement of performance or behavioral problems that impact group or job performance. Examples of objectives include improving computer proficiency, time management, or writing skills; building

collaborative co-worker relationships; or reducing absenteeism. (Note: These objectives may reflect Performance Category ratings of "Improvement Needed" or "Minimum Standards Not Met".)

3. Project Goals are specific assignments. Examples of objectives include participating in or managing an ongoing or future project.
4. Strategy Goals are directly related to the District's strategy plan.

Developing Objectives

Effective objectives are defined for each major activity, project, or area of responsibility in a position. It is possible, for most positions, to develop measurements in terms of percentages, time, or numbers, or some other objective and quantifiable indicator of results.

Guidelines for Preparing Objectives:

- Objectives are SMART: Specific, Measurable, Attainable, Relevant, and have a Timeframe.
- Objectives are written at an "acceptable level of performance."
- Objectives are aligned to the supervisor's goals.
- The number of objectives is typically 2-5, but may vary depending on each employee's situation.

A good objective is Specific enough so that there is no doubt in either the employee's or supervisor's mind as to what is expected.

Measurement methods are objective, not subjective, and they are clear, reasonable, and fair.

A task should be reasonably Attained but challenging, given normal resource availability and management support, rather than just what needs to be done.

An employee cannot reasonably be expected to reach twelve-month objectives in a six-month period. A new employee should not be expected to perform at the same level as an employee with extensive experience.

A Relevant objective is one that has the desired outcome and is in line with department/division objectives and the Strategic Plan of the District.
A good objective encompasses a Time in which each task can be accomplished. A relevant time is selected that also meets the District's timeframe for meeting its goals.

In preparing objectives, each employee, with guidance from his or her supervisor, prepares objectives based on his or her classification description and/or goals of the department/division.

SECTION 3-3

THE PERFORMANCE MANAGEMENT CYCLE

One Month Prior to the Review Period
The supervisor will work with employees to establish goals for the coming year. If employees are new to the job, the supervisor will also review the employee job description with them and ensure that employees understand the duties and responsibilities of the job. The supervisor will explain the expectations in terms of quality of work product, characteristics of work behavior, and level of productivity.

Sixth Month of the Review Period
The supervisor, on an informal basis, will review employees' progress towards goals and other significant work behavior.

Eleventh Month of the Review Period
Employees will be given a copy of the evaluation form and will be required to evaluate their level of performance and provide input into developing goals and objectives for the upcoming review period. This document will be used in discussion with the supervisor during the formal review period.

Twelfth Month of the Review Period
The supervisor will conduct the formal evaluation completing the evaluation form and discuss with the employee the employee's self rating and the supervisor's rating. Goals for the new review period will be set. A follow up meeting is conducted with the employee within the next week to finish discussions after considering information from the initial discussion.

The performance evaluation of any employee receiving an overall rating of "Exemplary" or "Minimum Standards Not Met" will be reviewed by the Management Action Committee (MAC) to ensure consistency in the application of the District's performance standards.

SECTION 3-4

EMPLOYEE APPEAL
Employees not satisfied with the rating of their performance may appeal in writing to the General Manager. The employee may appeal the evaluation process or ratings of particular competency, but not the amount of a salary increase. The review and resulting action by the General Manager is final.

SECTION 3-5

STEPS IN THE PERFORMANCE REVIEW PROCESS
One (1) month prior to the first supervisor/employee meeting in each series of meetings the supervisor will:

1. Provide a copy of the Performance Evaluation form to the employee for completion.

2. Review the Performance Evaluation form and performance goals established at the most recent previous performance review session.
3. Review notes taken on employee performance since the last formal review.
4. Complete a Performance Evaluation form based on the employee's performance since the last formal review.
5. Develop a preliminary list of goals for the next evaluation period.
6. Schedule a meeting with the employee.
7. Schedule a meeting with the Management Action Committee to review initial rating if the employee's overall rating is "Exemplary" or "Minimum Standards Not Met".

At the performance review meeting the supervisor will:

1. Review the purpose of the performance review.
2. Discuss the employee's past performance, including problems and successes. (Reference goals established at the last performance review, as well as those communicated since the last performance review.)
3. Review reasons for successes and problems, as well as ideas for improvements in employee performance and career growth.
4. Discuss and modify, as needed, goals for the next review period.
5. Schedule a follow-up meeting within a week to finish discussions after considering information from the initial discussion.

At the conclusion of the final meeting:

1. Finalize the Performance Evaluation form.
2. Provide the employee with two copies of the form - one to keep and one to sign and return with comments.
3. Send the original signed Performance Evaluation form, including any employee written comments, to the reviewing manager.

SECTION 3-6

AUDIT OF THE PERFORMANCE MANAGEMENT SYSTEM

The District's Personnel Committee will periodically review the performance management system to ensure that all procedures, evaluation competencies, and evaluation methods are still appropriate in terms of District goals and objectives.

SECTION 4 - ADDITIONAL COMPENSATION

SECTION 4-1

There are a number of additional rewards and incentives the District may give to employees for special achievements, in addition to merit increases, as part of the annual performance review of goal attainment. These additional compensation incentives are for work "above and beyond" normal work activities and or goal attainmentand are a public recognition of a job well done. Not all incentives are necessarily awarded every year. The cash awards are generally "one-time" awards and are not added to base pay. This section outlines the new types of rewards and general information regarding them. Policy 2011-08 more particularly describes the type of incentives outlined below.

The Board of Directors authorizes the General Manager to budget monies, not to exceed $150.00 per employee per annum, for the following purposes:

1. Employee job-related achievement or superior performance recognition.

2. Employee recognition event, including awards for employment anniversary dates, recognized at five (5) year increments. Other awards include: certificates of appreciation, special certificates of merit and attendance awards for continuous attendance during any twelve (12) month period ending in the recognition year.

3. Employee retirement.

4. Birth of an employee's child or other significant milestone in an employee's life.

5. Bereavement acknowledgements for the death of an employee, an employee's close family relative or District retiree.

6. Seasonal District celebrations, e.g. December holiday lunch and annual employee appreciation lunch.

Types of expenses authorized under this policy include, but are not limited to, plaques, flowers, cards, refreshments and other minor items.

SAFETY AWARDS

The District recognizes both teams and individuals for promoting safety, maintaining a safe work environment, and working in a safe manner. Both team members and individuals may receive additional time off, lunch, and public recognition in the PIPELINE Newsletter, the RIVER VALLEY TIMES and public signage.

SPECIAL SERVICE AWARD

This award recognizes outstanding service to the community as indicated by customer acknowledgments. Special service is characterized by:

- Actions or performance beyond the normal skill level for the job
- Outstanding one-time actions
- Extraordinary effort, diligence, courage, patience or a commitment of the employee's own time to the benefit of the District.

Rewards may consist of additional time off and public recognition in the form of a letter to the employee's family, plaque in offices, and coverage in the PIPELINE Newsletter, RIVER VALLEY TIMES, and on Channel 5 cable television.

COST SAVINGS BONUS

This award is given to employees who conceive of methods, procedures, or services that result in substantial cost savings or efficiencies for the District. Rewards up to a maximum of $500 (or an amount approved by the Board) can be made to either individuals or groups.

This award is in addition to the Employee Suggestion Program or noteworthy cost savings.

SECTION 4-2

At times, exempt employees are required to work beyond the normal 40 hour workweek. In order to remain competitive within the existing job market, the District allows the following additional compensation pays:

Technology and Equipment stipend: Exempt employees tend to work from home outside of regular work hours. The District allows a $75 a month stipend to help offset the cost of working outside of the office and incidental expenses incurred while working remotely.

Commuter Stipend: The District acknowledges that exempt employees are required to be in office more than the regular workweek. The District will pay a $150 a month stipend for all exempt employees to assist with the cost of extended workweeks.

Annual Deferred Compensation Match: Effective July 1 of every fiscal year, each exempt employee will receive a non-PERSable match equal to 2.5% of their annual base salary. The stipend will be placed into a deferred compensation account. Any employee hired after the July 1st date will receive a prorated amount in the fiscal year in which they were hired.

SECTION 5 - BENEFITS

In addition to base salary, rewards, and incentives, the District provides indirect compensation usually referred to as benefits. Benefits provided by the District are described in detail in the District Personnel Manual.

In an effort to remain competitive in the marketplace, benefit surveys are conducted periodically to compare the District's benefit package to the benefits provided by similar agencies. Adjustments to account for changes in market conditions are made to the District's benefit package, pending Board approval.

The District recognizes that benefits are an extremely important part of total compensation and that employees value them as much as direct compensation. Annually, the District provides each employee with the estimated value of his or her benefits package to ensure each employee recognizes the value of his or her total compensation package.

Rancho Murieta Community Services District

Pay for Performance Manual

Revised: ~~***11/17/2011***~~

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Section 5 - Benefits

SECTION 1 - INTRODUCTION

BACKGROUND

In November of 1994, the Board of Directors adopted a policy to develop and implement a compensation plan that would recognize the quality of an employee's performance on the job. Over time, the Pay for Performance Plan has changed to reflect changes in and out of the District, but stayed consistent with the intent of the original agreement. Prior to this time, District employees received pay increases based on the cost of living and length of service. Employees were generally hired at the minimum of the salary range and received a 2.5% increase each year and usually received a cost of living increase ranging from 2 to 3%. Upon reaching the maximum of the salary range, employees received the cost of living increase only. The District did not financially reward employees for their *level* of contribution. This program is based on the assumption that pay can act as a motivator for higher levels of performance. This program applies to non represented employees. Although the represented employees are covered under the current memorandum of understanding (MOU) between the District and the Operating Engineers Local #3 for minimum standards to move between steps, the basic underpinnings of this manual (i.e. core competencies, measurements, ratings and goal identification and attainment, and performance evaluation) are consistent with those of non represented employees, supervisors and managers.

SECTION 1-1

GENERAL DESCRIPTION OF THE PAY FOR PERFORMANCE PROGRAM

The Pay for Performance program differs from the old compensation and evaluation programs in a number of ways:

- The pay for each job class is determined by a salary survey of comparable public agencies. This survey is performed no less than every three years. (See Section 2, page 1 for more information)

- No cost of living increases are given, but since a salary survey is conducted regularly, employees are assured of competitive salaries within the financial resources of the District. ~~(Represented employees' increases are subject to the terms and conditions of the MOU.)~~

- Pay increases vary and are based on the employee's level of performance. Pay increases vary from 0 to 8%, based on the employee's performance evaluation and position in the salary range. (See Section 2, page 3, for additional information.) ~~(Represented employees' increases are subject to the terms and conditions of the MOU.)~~

- The evaluation of an employee's performance is based on factors related to the job classification, specifically predetermined competencies and SMART goals and objectives.

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- In addition to base pay, there are additional incentives for specific behaviors such as special service. (See Section 4 for additional information and Policy #2011 08.)

- Benefits are reviewed periodically for their comparability with other agencies, and desirability by employees. (See Section 5 for more information.)

The main components of the program are competitive base pay and benefits, salary increases based on level of performance, and special incentives for unusual achievements. The District, like most public agencies, has limited funds and wants to use those funds in the best possible manner. This program is not intended to punish employees in any way, but rather reward those employees that contribute most to the District's mission of "… to take a leadership role in responding to the needs of the residents. The District will deliver superior community services efficiently and professionally at a reasonable cost while responding to and sustaining the enhanced quality of life the community desires".

The Pay for Performance program is a dynamic program and will be revised when it is apparent that elements of the program are not supporting the objective of rewarding employees for creativity, innovation, teamwork, productivity, and quality. The hope of installing such a program is that the customers of the District will benefit by receiving the highest quality, most cost effective service possible and that employees will be rewarded appropriately for their additional effort.

SECTION 1-2

PURPOSE OF MANUAL

The purpose of this manual is to identify the components of and explain how the pay for performance management program is administered for non represented employees and the performance management system is administered for all employees, represented and non represented.

SECTION 2 - COMPENSATION PLAN AND SALARY ADMINISTRATION

SECTION 2-1

STRUCTURE OF SALARY RANGES

External Pay Comparisons

The salary structure for classifications insures external competitiveness through salary comparisons with similar agencies. The District's management team conducts a salary survey no less than every three (3) years. In non survey years, adjustments to the salary ranges based on changes in the CPI will aid in keeping the salary structure competitive with the market. The survey is conducted and completed during the first three (3) months of the calendar year. The Personnel Committee of the Board of Directors reviews the collected data and makes recommendations to the Board for salary range adjustments, if any.

The comparison agencies are selected by the Board of Directors and can be changed at any time. The current survey group is listed below.

Cities and Counties

City of Davis	City of Folsom	City of Galt	City of Modesto
City of Roseville	City of Woodland	City of Yuba City	

Special Districts

Amador Water Agency	Calaveras County Water District
Groveland Community Services District	Mammoth Community Water District
South Tahoe Public Utility District	Tuolumne Utilities District

Security

County of Sacramento	Elk Grove Unified School District
Lake of the Pines Association	Lake Wildwood Association
Sacramento City Unified School District	Sacramento Municipal Utility District

In general, the comparison agencies are cities, counties, and special districts of a similar size, that provide similar services in water and/or wastewater treatment, and security. Other factors, such as geographic region and cost of living, were taken into consideration when choosing the comparator group. The following positions are provided salary ranges as a result of the survey:

Accounting ~~Supervisor~~Manager	Chief Plant Operator
Director of Administration	Director of ~~Field~~ Operations
~~District Engineer~~	District Secretary
General Manager	Security ~~Chief~~Supervisor
Security Sergeant	Utilities Supervisor

Internal Salary Relationships
Not all District classifications are surveyed since some classifications are not common in other agencies or may be part of a series in which certain internal relationships can be inferred. Those classifications not surveyed are linked to the surveyed jobs by percentage differentials. The more similar the linked class is to the benchmark class, the smaller the percentage differential.

At times, pay for a particular class may be altered by internal comparisons even though survey data may indicate a higher or lower salary. The relationship between classes may also change as a result of reorganization of work units or change in employee responsibilities.

Position in the Market
Position in the market refers to "targeted" level of pay among comparison agencies. The Board of Directors determines the District's position relative to the comparison agencies. The Board may change the District's position based on such issues as ability to pay, change in District goals, etc. Currently, the District's position among comparison agencies is the base salary market median of the agencies surveyed.

Salary Ranges
A salary schedule was created for the non represented classifications, which consists of forty six (46) salary ranges with approximately 30% between the minimum and maximum. (See Exhibit A.) There shall be no specific or predetermined steps within the range, thus allowing for the flexibility of adjustment to recognize varying levels of performance. Each classification will be assigned to a range. Range placements are made by placing the market base salary median findings for each classification into the salary range whose control point is closest to the market median number. The control point represents the value of each position assigned to the salary range at the fully competent level.

Title	Market Top Step Median	Range Minimum	Control Point (Range NR23)	Range Maximum
Example Position	$6,300	$5,293	$6,351	$6,986

The maximum pay for each salary range class is 10% above the control point of the range. The minimum of the salary range for each class is 20% below the control point. The range below the control point represents pay for an employee who is not yet fully competent in all aspects of the classification. The following illustrates how the salary range for a class is created.

Position
Control point = $6,351; Maximum of range = $6,351 * 1.10; Minimum of range = $6,351 / 1.20 Resulting Range is $5,293 - $6,986

~~Represented employees salary ranges and intermediate steps are identified in the current MOU.~~

SECTION 2-2

INITIAL PAY AND SALARY RANGE ADJUSTMENTS

Pay for New Employees

There are two (2) situations in which new employees may be placed above the entry rate of the salary range: the employee has job related experience and/or training that is greater/more extensive than the minimum requirements for the job and when extensive recruiting indicates that qualified candidates will not accept offers at the entry rate. The District's salary offer to new employees will also take into consideration the extent and level of experience of current employees in the same class to ensure internal equity among employees. This applies to both represented and non represented employees.

Salary Adjustments

Employees receive salary increases based on their performance during the prior year. The amount of the increase for non represented employees is based on three factors: the level of performance, current position in the salary range, and money available for salary increases. Salary increases for represented employees are implemented according to the terms and conditions of the current MOU. The following charts depict the possible increases for non represented employees based on position in the range and overall evaluation of performance.

Performance Standards	% Increases
Exemplary	6.5% - 8% (not to exceed maximum of the range)
Exceeds Standards	3.5% - 6% (not to exceed maximum of the range)
Fully Effective	1 – 3% (not to exceed the control point of the range)
Improvement Needed	0
Minimum Standards Not Met	0

The District has selected the month of April as the focal review date; meaning that all employees will receive annual performance appraisals within the month of April each year. Individuals hired within the first nine (9) months of the rating period (May – January) will be eligible for a pro rated merit increase, from their hire date forward.

Individuals hired within the last three (3) months of the rating period (February – April) will not receive an annual performance review nor be eligible for a merit increase. Their first performance review will occur on their six (6) month anniversary and they will be eligible for a merit increase on the following Agency wide annual performance review date.

Once an employee reaches the maximum of the salary range, and is rated as outstanding or exceeds standards, the employee is eligible for the cash equivalent of the recommended increase,

but the increase does not become a part of base pay for purposes of retirement calculations. Employees can only receive a salary adjustment once a year unless they are receiving a promotion to another position.

Adjustments to individual salaries based on range movement are not automatic. ~~(Refer to the current MOU for Represented employees.)~~ The reviewer may recommend an upward adjustment in an individual's salary or may recommend that an individual's salary be maintained at its current level, despite any adjustment in the salary range.

Salary Placement Upon Promotion, Demotion, Reclassification and Market Equity Adjustments

Promotion - When a regular non represented employee is promoted, the employee will receive a salary increase of at least the minimum of the new salary range. ~~(Refer to the current MOU for Represented employees.)~~

Demotion When an employee is demoted, the employee's salary will be reduced to an amount in the range of the lower classification which has the same percentage relationship to the control point as the employee's salary in the higher classification. ~~(Refer to the current MOU for Represented employees.)~~

Reclassification Any employee in a job which is reclassified with a different salary range shall be compensated at the same rate of pay in the new salary range or the minimum of the new salary range should the employee's pay rate be less than the minimum of the new salary range. The salary of an employee whose position is reclassified to a classification with a lower salary range and whose salary is above the maximum of the new salary range shall be frozen at the salary of the old classification until the salary range of the new classification is equal to or exceeds the employee's salary. This is referred to as "Y rating". ~~(Refer to the current MOU for Represented employees.)~~

Market Equity Adjustments An employee who is classified in a position with a salary range which has been increased as a result of a salary study (equity adjustment to salary range) remains at their current salary unless adjustment to the salary range results in employees being paid below the minimum of the salary range. If employees are rated as "fully effective" on their previous performance evaluation, they will be given a salary increase that will pay them at the minimum of the salary range. ~~(Refer to the current MOU for Represented employees.)~~

SECTION 3 - PERFORMANCE MANAGEMENT SYSTEM

SECTION 3-1

PURPOSE OF PERFORMANCE MANAGEMENT SYSTEM

The performance management system applies to all employees, represented and non represented. The objectives of the performance management system are to: encourage effective communication between supervisors and employees regarding expectations for job performance and work habits; provide feedback to employees regarding how well they are meeting those job expectations; assist employees in identifying ways they can achieve the best level of performance; provide a method for tying performance to pay; provide additional opportunities for employees to assist supervisors and managers in identifying ways in which the work environment and productivity can be improved; determine the training needs of employees; and assist employees in planning career goals.

SALARY INCREASE BUDGET

The salary increase budget will be determined annually within the context of overall District's performance and budget dollars available, and shall be fiscally prudent taking into account the District's financial condition, reserves, revenue growth, and competing budget priorities. The range of potential increases for the upcoming rating period will be announced to all employees by April each year. (Refer to the current MOU for Represented employees)

REVIEW PERIODS

The supervisor in the following instances conducts formal reviews of performance**:**

1. When an employee has worked an initial six (6) month period in his or her new job position (this applies not only to newly hired employees, but also to employees who have been promoted or otherwise transferred to new job classifications);
2. Annually, on the focal review date in April; salary adjustments, if applicable, to be effective May 1st;
3. When an employee is being considered for promotion, transfer, demotion, termination, or other disciplinary action is being considered;
4. Whenever the employee's supervisor believes there has been a significant change in the employee's performance; and
5. Whenever requested by the General Manager or the Board of Directors.

DOCUMENTATION OF THE REVIEW PROCESS

The Performance Evaluation form for the specific individual serves as the record of the review process.

CORE COMPETENCIES

The Core Competencies refer to the interpersonal and job skills common to all classifications and are considered especially important to working successfully at the District. These Core

Competencies describe the expectation of characteristics an employee should possess as they are performing their work at the District. All employees will be evaluated on the first eight (8) competencies listed below. Supervisors and managers will also be evaluated on the last two (2) competencies listed below.

1. **Customer Service** Represents the District to individuals both inside and outside the organization in a service oriented, responsive, consistent, timely, respectful, and effective manner within the context and authority of their position.

2. **Job Knowledge** Possesses technical knowledge and learned skills, methods, techniques, policy, and procedures necessary to perform the job. Keeps up to date on developments and changes relevant to the job and the District. Understands their job in the context of the District's operations.

3. **Initiative/Innovation** Self motivated; resourceful; continually seeks to improve work methods as a means to greater efficiency and effectiveness. Willingness to seek out and accept challenging new responsibilities.

4. **Safety/Security** Ensures safety of District customers, community, and employees; protects and secures District data, facilities, infrastructure, and systems. (Please note that the rating definition for this Core Competency differs based on functional area, for example, administration, operations, or safety/security.)

5. **Teamwork** Works collaboratively and cooperatively with others inside and outside of the organization. Creates positive working relationships and fully shares in responsibilities; respects and understands roles within the team. Supports positive working environment to ensure high performance of the whole team and the District.

6. **Reliability** Monitors status of assignments to meet District fiscal needs, timetables, and deadlines for submission of work; follows instructions and meets job expectations including attendance and punctuality. Accountable and consistent.

7. **Effectiveness/Productivity** Ability to approach issues effectively, resourcefully, and creatively. Adeptness at analyzing facts, forecasting issues, problem solving, decision making, and demonstrating good judgment. Ability to use knowledge and skill to deliver a quality product or level of service. Skill at planning, organizing, and prioritizing workload and proficiency in measuring and monitoring workload.

8. **Communication** Clear and concise in speech, writing, and presentations. Provides required information to individuals both inside and outside the organization in a service oriented, consistent, timely, and effective manner.

9. **Management** Ensures a smooth operation by maximum utilization of personnel, technology, and equipment; staff motivation, growth, development; and adherence to safety and security guidelines. Provides clear work direction, expectations, and constructive feedback and guidance, including timely performance reviews. Matches program expectations with resources. Identifies and addresses obstacles to their employees' performance.

10. **Leadership** Uses appropriate interpersonal styles and methods in guiding individuals and groups towards task and strategic accomplishments. Exhibits skills that create a vision of purpose. Influences and manages change. Obtains political support. Encourages communication within and between departments. Establishes, directs, and/or chairs committees, teams, and programs.

RATING OF CORE COMPETENCIES ON THE PERFORMANCE EVALUATION FORM

The rating scale for each core competency consists of five (5) levels – Exemplary, Exceeds Standards, Fully Effective (equivalent to the previous "meets standards" rating), Improvement Needed, and Minimum Standards Not Met. Examples of job behavior are used to describe each level of performance for each competency. It is anticipated that as managers gain more experience with these rating scales, the descriptions of behavior will become more specific. An example scale is shown below for the evaluation competency **Initiative/Innovation**.

EXEMPLARY	**EXCEEDS STANDARDS**	**FULLY EFFECTIVE**	**IMPROVEMENT NEEDED**	**MINIMUM STANDARDS NOT MET**
A self-starter who always completes work with little or no supervision. Anticipates the needs of others and the District and addresses those needs by taking on increased responsibilities. Thinks out of the box to actively identify and implement creative ways to increase productivity and streamline and improve processes on a District-wide level.	A self-starter who completes work with minimal supervision. Actively seeks increased responsibilities. Thinks out of the box. Recommends ways to increase productivity and streamline and improve processes within department/ program area.	Completes work under general supervision and takes direction well. Takes on additional responsibilities as assigned. Makes some recommendations to increase productivity and streamline and improve processes in assigned program area/area of responsibility.	Requires some direct supervision, difficulty accepting new ideas and responsibilities, and resists change. Attempts may be made to improve work processes in assigned area of responsibility.	Requires constant supervision and is generally not receptive to new ideas and change. Little attempt to improve work processes in assigned area of responsibility.

Each rating has a numerical equivalent: Exemplary = four (4) points, Exceeds Standards = three (3) points, Fully Effective = two (2) points, Improvement Needed = one (1) point, and a rating of

Minimum Standards Not Met receives zero (0) points. Each point equivalent is then multiplied by the weighting for each competency and the resulting weighted scores are added together for the employee's overall rating.

The total weighting for each job must equal, at a minimum, 10 for Supervisors/Managers. The total weighted rating for represented jobs, at the fully functional rating, must equal a minimum 2.0 (which equates to 100 points from the old evaluation forms). On the next page is an example of rated competencies and the resulting total number of points if an employee had received the given ratings.

The weighting of each competency may vary with each job class. These competencies and the weight of each competency may change over time due to a change in duties and responsibilities or a change in those qualities that the District values or wants to emphasize.

Using the table on the next page, the total points for this sample would equal an overall rating of Fully Effective.

Sample Rating			
Core Competency	**Weight**	**Rating**	**Weighted Rating**
Customer Service	1	3	3
Job Knowledge	1	2	2
Initiative/Innovation	1	2	2
Safety/Security	1	2	2
Teamwork	1	3	3
Reliability	1	3	3
Effectiveness/Productivity	1	2	2
Communication	1	1	1
Management (Supervisors only)	1	3	3
Leadership (Supervisors only)	1	2	2
Total	**10**		**23**
Overall Rating			**2.3**

The total points are calculated based on the total weighted rating divided by the total weight. The District may decide to change the weight on any of the competencies, perhaps to emphasize competencies that will help drive operational goals. For example, if during one year, the District decided to place a greater weight on Teamwork and changed the weight to 5 and kept all other competencies with a weight of 1, then the total weight would equal 14. The overall rating would be calculated based on the total weighted rating divided by 14.

Total points are converted to the Overall Rating using the following scale:

3.51 – 4 = Exemplary
3 – 3.50 = Exceeds Standards

2 – 2.99 = Fully Effective

1 – 1.99 = Improvement Needed

0 – 0.99 = Minimum Requirements Not Met

EMPLOYEE MERIT INCREASES

A designated supervisor shall be responsible for 1) the annual review of each employee's performance; and 2) recommendations for employee merit increases. Merit increase recommendations shall be within the District's annual salary budget guidelines and based on the individual employee's performance. ~~(Refer to the current MOU for Represented employees.)~~

Guidelines for recommending merit increases. ~~(Refer to the current MOU for Represented employees.)~~:

- Range Minimum to the Control Point is the portion of the range where a new or less experienced employee would be placed. Progress through the range would occur as an employee moves towards the fully competent level (control point). There may be circumstances, such as hiring a highly experienced individual, which would warrant salary placement near or at the control point.
- The Control Point is the position of the salary range where an employee may normally expect to progress. Most employees will achieve and maintain a salary at this point of the range (fully competent). The achievement of full competency is determined by the ability to meet standards in the District's core competencies and achievement of individually determined goals for the review period.
- The Control Point to the Range Maximum is utilized for those employees whose performance over time consistently exceeds expectations or is outstanding as defined by the District's core competencies and individual goal achievement.

Adjustments to an employee's salary will be made based on the results of the performance evaluation. Salary adjustments shall be based on achievements in key areas weighted as follows:

~~➢ For 2012 reviews~~	~~Core Competencies~~	~~80%~~
	~~Goals and Objectives~~	~~20%~~
➢ ~~For 2013 reviews~~	Core Competencies	50%
	Goals and Objectives	50%

The maximum total points an employee may receive based on the evaluation of the core competencies and goals and objectives is 4.

Overall rating of achievement of goals and objectives are converted to points using the following scale:

4 = Exemplary

3 = Exceeds Standards

2 = Fully Effective

1 = Improvement Needed

0 = Minimum Requirements Not Met

During the annual performance review process, both performance ratings (core competencies and goals and objectives) and the relative position of the individual within the salary range will be considered in recommending the salary increase.

The following merit guidelines shall apply for performance reviews~~: (Refer to the current MOU for Represented employees.):~~

Overall Rating	<Control Point	Control Point	>Control Point and <Max	> Max (lump sum)
Exemplary – 3.51 to 4	6.5% - 8%	6.5% - 8%	6.5% - 8%	6.5%
Exceeds Standards – 3.34 to 3.50	5.5% - 6%	5.5% - 6%	5.5% - 6%	3.5%
Exceeds Standards – 3.17 to 3.33	4.5% - 5%	4.5% - 5%	4.5% - 5%	3.5%
Exceeds Standards – 3 to 3.16	3.5% - 4%	3.5% - 4%	3.5% - 4%	3.5%
Fully Effective – 2 to 2.99	1% - 3%	1% - 3%	0%	0%
Improvement Needed – 1 to 1.99	0%	0%	0%	0%
Min Requirements Not Met– 0 to 0.99	0%	0%	0%	0%

- If base pay is below the control point: Employees with at least "Fully Effective" performance will have the opportunity to receive a pay increase up to the control point of their range, based on their performance. No increase will be given to those rated below "fully effective".
- If base pay is between the control point and maximum: Employees with performance that either "Exceeds Standards" or is "Exemplary" will have the opportunity to receive an increase up to the maximum of their range. If an "Exemplary" increase exceeds the maximum, the portion above the maximum will be paid in a lump sum payment.
- If base pay is above the maximum: Employees who are frozen at or above the maximum of their range and perform at an "Exemplary" or "Exceeds Standards" level on their performance review, will receive a lump sum payment equal to the applicable percentage on the matrix above.

Timing of Increases. Merit increases will be considered on an annual basis in May, in conjunction with the Agency performance review cycle in April.

EXAMPLES OF PROGRESSION THROUGH SALARY RANGE

This following table demonstrates one example of how a non represented employee would move through the salary range based on the employment scenario described below. Assume in this example that a salary survey is performed every other year with salary range adjustments effective

the first of July. This means a survey is performed in Years 3, 5, and 7 during the employee's service. A survey was also performed in Year 1, but prior to the employee's starting date.

	Hire	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Employee Increase		3%	6%	5%	4%	1.6%	4.5%
Employee Salary	$5,293	$5,452	$5,779	$6,068	$6,311	$6,415	$6,905
Minimum Salary	$5,293	$5,293	$5,293	$5,346	$5,346	$5,346	$5,346
Control Point	$6,351	$6,351	$6,351	$6,415	$6,415	$6,415	$6,415
Maximum Salary	$6,986	$6,986	$6,986	$7,056	$7,056	$7,056	$7,056

In *YEAR 1,* the monthly salary range for this position is $5,293 $6,986. The control point of the range is $6,351. The employee is hired at the range minimum of $5,293. At the end of YEAR 1, the employee receives a "Fully Effective" rating (2.9 Points), qualifying for a maximum increase of 3% to $5,452.

The employee's salary *at the beginning of YEAR 2* is $5,452. At the *end of YEAR 2,* the employee receives an "Exceeds Standards" rating (3.5 Points) and qualifies for a maximum increase of 6%, bringing the employee's salary to $5,779.

During YEAR 3, the District performs a salary survey and the Board approves a 1% increase to the salary range for this job based on the results of the survey. The new control point is $6,415, the range minimum is $5,346 and the range maximum is $7,056. *At the end of YEAR 3,* the employee receives another "Exceeds Standards" rating (3.3 Points) and qualifies for maximum increase of 5% at the *end of YEAR 3* increasing salary to $6,068.

At the end of YEAR 4, the employee receives an "Exceeds Standards" rating (3.1 Points) qualifying for a maximum increase of 4%, which would bring salary to $6,311.

During YEAR 5, the District performs another salary survey and the Board approves no increase to the salary range for this job based on the results of the survey. The control point, range minimum, and range maximum remain the same. *At the end of YEAR 5,* the employee receives a "Fully Effective" rating (2.9 Points) qualifying for a maximum increase of 3% which would bring salary to $6,500. However the control point of the range is $6,415 and when an employee receives a "Fully Effective" rating, they would not be able to move above the control point, therefore the employee's salary is limited to an increase to the control point or $6,415.

At the end of YEAR 6, the employee receives a "Fully Effective" rating (2.5 Points) and would remain at the control point, which represents the market median top step. The employee's salary would remain $6,415.

This following table demonstrates a second example of how a non represented employee would move through the salary range based on the employment scenario described below. Assume in this example that a salary survey is performed in Year 1 and every other year (in Years 3, 5, and 7) with salary range adjustments effective the first of July.

	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Employee Increase		0%	3.5%	5%	3.7%	6.5% lump sum payment
Employee Salary	$6,450	$6,450	$6,676	$7,010	$7,269	$7,269
Minimum Salary	$5,293	$5,293	$5,399	$5,399	$5,507	$5,507
Control Point	$6,351	$6,351	$6,478	$6,478	$6,608	$6,608
Maximum Salary	$6,986	$6,986	$7,126	$7,126	$7,269	$7,269

In ***YEAR 1,*** the District performs a salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The monthly salary range for this position is $5,293 $6,986. The control point of the range is $6,351. The employee's salary is $6,450.

The employee's salary *at the beginning of* ***YEAR 2*** is $6,450. At the *end of YEAR 2* the employee receives an "Fully Effective" rating (2.5 Points) and qualifies for no increase because the employee's salary is above the control point. The employee's salary would remain $6,450.

During ***YEAR 3,*** the District performs a salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The new control point is $6,478, the range minimum is $5,399, and the range maximum is $7,126. *At the end of YEAR 3,* the employee receives an "Exceeds Standards" rating (3.1 Points) and qualifies for 3.5% increase at the *end of YEAR 3* increasing salary to $6,676.

At the end of ***YEAR 4,*** the employee receives an "Exceeds Standards" rating (3.3 Points) and qualifies for 5% increase at the *end of YEAR 4* increasing salary to $7,010.

During ***YEAR 5,*** the District performs another salary survey and the Board approves a 2% increase to the salary range for this job based on the results of the survey. The new control point is $6,608, the range minimum is $5,507, and the range maximum is $7,269. *At the end of YEAR 5* an "Exceeds Standards" rating (3.5 Points) and qualifies for a maximum 6% increase. The largest increase the employee can receive is 3.7% increase to the maximum of the range of $7,269.

At the end of ***YEAR 6,*** the employee receives an "Exemplary" rating (3.9 Points) and qualifies for a maximum 6.5% lump sum payment. The employee's salary remains the same at $7,269.

SECTION 3-2

GOALS AND OBJECTIVES

Departmental goals, for both represented and non represented employees, are based upon District wide goals identified by the General Manager and the Board of Directors in the Strategic Plan. Department goals become the foundation used by the Supervisor/Manager and his or her staff to establish specific goals for the department/division and employees. Department/Division Heads will review the department/division goals with employees and the overall impact and expectation of that department/division in achieving the goals.

In addition to directing the employee's efforts toward important organizational goals, objectives are a necessary tool for the supervisor as well. Supervisors are responsible for the evaluation process for the purpose of rewarding and developing their employees. The evaluation can be difficult to write and inaccurate in content when a supervisor does not have a clear understanding of what is expected from the employee.

Successful development and negotiation of goals and objectives between the supervisor and employee often result in a more productive workplace. It also allows the employee to understand what is expected of him or her and how he or she will be evaluated at the time of his or her performance appraisal.

Developing Goals

The terms "goal" and "objective" have often been confused with one another and how they are best used. Goals and objectives are defined as follows:

- Goal: A broad statement of desired results for the District, department, or division.
- Objective: Objectives are determined for each goal. Effective objectives include measurements developed in terms of numbers, percentages, time, or some other tangible indicator of results. They are achievable, challenging, and motivate individuals to attain excellent performance.

Guidelines for Preparing Employee Goals:

- Goals are broad in scope.
- Goals are normally long term or on-going in nature.
- Goals are based on the goals of the District, but are designed to support areas for which the employee is assigned.
- Goals are brief and clear statements.
- Goals require one or more specific objective to be achieved.
- Goals are within the supervisor's area of responsibility and/or authority.

There are four (4) types of goals:

1. Professional Development Goals focus on career growth. Examples of objectives include attending classes, seminars, or workshops or participating in on the job training, cross training, or self study programs.
2. Performance Goals focus on the improvement of performance or behavioral problems that impact group or job performance. Examples of objectives include improving computer proficiency, time management, or writing skills; building collaborative co worker relationships; or reducing absenteeism. (Note: These objectives may reflect Performance Category ratings of "Improvement Needed" or "Minimum Standards Not Met".)
3. Project Goals are specific assignments. Examples of objectives include participating in or managing an ongoing or future project.
4. Strategy Goals are directly related to the District's strategy plan.

Developing Objectives

Effective objectives are defined for each major activity, project, or area of responsibility in a position. It is possible, for most positions, to develop measurements in terms of percentages, time, or numbers, or some other objective and quantifiable indicator of results.

Guidelines for Preparing Objectives:

- Objectives are SMART: Specific, Measurable, Attainable, Relevant, and have a Timeframe.
- Objectives are written at an "acceptable level of performance."
- Objectives are aligned to the supervisor's goals.
- The number of objectives is typically 2 5, but may vary depending on each employee's situation.

A good objective is Specific enough so that there is no doubt in either the employee's or supervisor's mind as to what is expected.

Measurement methods are objective, not subjective, and they are clear, reasonable, and fair.

A task should be reasonably Attained but challenging, given normal resource availability and management support, rather than just what needs to be done.

An employee cannot reasonably be expected to reach twelve month objectives in a six month period. A new employee should not be expected to perform at the same level as an employee with extensive experience.

A Relevant objective is one that has the desired outcome and is in line with department/division objectives and the Strategic Plan of the District.

A good objective encompasses a Time in which each task can be accomplished. A relevant time is selected that also meets the District's timeframe for meeting its goals.

In preparing objectives, each employee, with guidance from his or her supervisor, prepares objectives based on his or her classification description and/or goals of the department/division.

SECTION 3-3

THE PERFORMANCE MANAGEMENT CYCLE

One Month Prior to the Review Period
The supervisor will work with employees to establish goals for the coming year. If employees are new to the job, the supervisor will also review the employee job description with them and ensure that employees understand the duties and responsibilities of the job. The supervisor will explain the expectations in terms of quality of work product, characteristics of work behavior, and level of productivity.

Sixth Month of the Review Period
The supervisor, on an informal basis, will review employees' progress towards goals and other significant work behavior.

Eleventh Month of the Review Period
Employees will be given a copy of the evaluation form and will be required to evaluate their level of performance and provide input into developing goals and objectives for the upcoming review period. This document will be used in discussion with the supervisor during the formal review period.

Twelfth Month of the Review Period
The supervisor will conduct the formal evaluation completing the evaluation form and discuss with the employee the employee's self rating and the supervisor's rating. Goals for the new review period will be set. A follow up meeting is conducted with the employee within the next week to finish discussions after considering information from the initial discussion.

The performance evaluation of any employee receiving an overall rating of "Exemplary" or "Minimum Standards Not Met" will be reviewed by the Management Action Committee (MAC) to ensure consistency in the application of the District's performance standards.

SECTION 3-4

EMPLOYEE APPEAL
Employees not satisfied with the rating of their performance may appeal in writing to the General Manager. The employee may appeal the evaluation process or ratings of particular competency, but not the amount of a salary increase. The review and resulting action by the General Manager is final. ~~(Refer to the current MOU for Represented employees)~~

SECTION 3-5

STEPS IN THE PERFORMANCE REVIEW PROCESS

One (1) month prior to the first supervisor/employee meeting in each series of meetings the supervisor will:

1. Provide a copy of the Performance Evaluation form to the employee for completion.
2. Review the Performance Evaluation form and performance goals established at the most recent previous performance review session.
3. Review notes taken on employee performance since the last formal review.
4. Complete a Performance Evaluation form based on the employee's performance since the last formal review.
5. Develop a preliminary list of goals for the next evaluation period.
6. Schedule a meeting with the employee.
7. Schedule a meeting with the Management Action Committee to review initial rating if the employee's overall rating is "Exemplary" or "Minimum Standards Not Met".

At the performance review meeting the supervisor will:

1. Review the purpose of the performance review.
2. Discuss the employee's past performance, including problems and successes. (Reference goals established at the last performance review, as well as those communicated since the last performance review.)
3. Review reasons for successes and problems, as well as ideas for improvements in employee performance and career growth.
4. Discuss and modify, as needed, goals for the next review period.
5. Schedule a follow up meeting within a week to finish discussions after considering information from the initial discussion.

At the conclusion of the final meeting:

1. Finalize the Performance Evaluation form.
2. Provide the employee with two copies of the form one to keep and one to sign and return with comments.
3. Send the original signed Performance Evaluation form, including any employee written comments, to the reviewing manager.

SECTION 3-6

AUDIT OF THE PERFORMANCE MANAGEMENT SYSTEM

The District's ~~Management Action~~Personnel Committee ~~(MAC)~~ will periodically review the performance management system to ensure that all procedures, evaluation competencies, and evaluation methods are still appropriate in terms of District goals and objectives.

SECTION 4 - ADDITIONAL COMPENSATION ~~INCENTIVES~~

SECTION 4-1

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There are a number of additional rewards and incentives the District may give to employees for special achievements, in addition to merit increases, as part of the annual~~a~~ performance review of goal attainment. These additional compensation incentives are for work "~~-~~above and beyond" normal work activities and or goal attainment~~. They are "AttaBoys' isn~~and are a public recognition of a job well done. Not all incentives are necessarily awarded every year. The cash awards are generally "one time" awards and are not added to base pay. This section outlines the new types of rewards and general information regarding them. Policy 2011 08 more particularly describes the type of incentives outlined below.

The Board of Directors authorizes the General Manager to budget monies, not to exceed $150.00 per employee per annum, for the following purposes:

1. Employee job related achievement or superior performance recognition.

2. Employee recognition event, including awards for employment anniversary dates, recognized at five (5) year increments. Other awards include: certificates of appreciation, special certificates of merit and attendance awards for continuous attendance during any twelve (12) month period ending in the recognition year.

3. Employee retirement.

4. Birth of an employee's child or other significant milestone in an employee's life.

5. Bereavement acknowledgements for the death of an employee, an employee's close family relative or District retiree.

6. Seasonal District celebrations, e.g. December holiday lunch and annual employee appreciation lunch.

Types of expenses authorized under this policy include, but are not limited to, plaques, flowers, cards, refreshments and other minor items.

SAFETY AWARDS

The District recognizes both teams and individuals for promoting safety, maintaining a safe work environment, and working in a safe manner. Both team members and individuals may receive additional time off, lunch, and public recognition in the PIPELINE Newsletter, the RIVER VALLEY TIMES~~,~~ and public signage.

SPECIAL SERVICE AWARD

This award recognizes outstanding service to the community as indicated by customer acknowledgments. Special service is characterized by:

- Actions or performance beyond the normal skill level for the job
- Outstanding one time actions
- Extraordinary effort, diligence, courage, patience or a commitment of the employee's own time to the benefit of the District.

Rewards may consist of additional time off and public recognition in the form of a letter to the employee's family, plaque in offices, and coverage in the PIPELINE Newsletter, RIVER VALLEY TIMES, and on Channel 5 cable television.

COST SAVINGS BONUS
This award is given to employees who conceive of methods, procedures, or services that result in substantial cost savings or efficiencies for the District. Rewards up to a maximum of $500 (or an amount approved by the Board) can be made to either individuals or groups.

This award is in addition to the Employee Suggestion Program or noteworthy cost savings.

SECTION 4 2

At times, exempt employees are required to work beyond the normal 40 hour workweek. In order to remain competitive within the existing job market, the District allows the following additional compensation pays:

Technology and Equipment stipend: Exempt employees tend to work from home outside of regular work hours. The District allows a $75 a month stipend to help offset the cost of working outside of the office and incidental expenses incurred while working remotely.

Commuter Stipend: The District acknowledges that exempt employees are required to be in office more than the regular workweek. The District will pay a $150 a month stipend for all exempt employees to assist with the cost of extended workweeks.

Annual Deferred Compensation Match: Effective July 1 of every fiscal year, each exempt employee will receive a non PERSable match equal to 2.5% of their annual base salary. The stipend will be placed into a deferred compensation account. Any employee hired after the July 1st date will receive a prorated amount in the fiscal year in which they were hired.

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SECTION 5 - BENEFITS

In addition to base salary, rewards, and incentives, the District provides indirect compensation usually referred to as benefits. Benefits provided by the District are described in detail in the District Personnel Manual.

In an effort to remain competitive in the marketplace, benefit surveys are conducted periodically to compare the District's benefit package to the benefits provided by similar agencies. Adjustments to account for changes in market conditions are made to the District's benefit package, pending Board approval.

The District recognizes that benefits are an extremely important part of total compensation and that employees value them as much as direct compensation. Annually, the District provides each employee with the estimated value of his or her benefits package to ensure each employee recognizes the value of his or her total compensation package.

MEMORANDUM

Date: October 16, 2024

To: Board of Directors

From: Mimi Morris, General Manager

Subject: Non-Represented Executive Management Group

RECOMMENDED ACTION

District Staff recommends that the Board approve the Resolution creating the Executive Management Group consisting of the General Manager, Director of Finance and Administration, and Director of Operations.

BACKGROUND

Since its inception, the District has not had any group for the Non-Represented Staff, including confidential and managerial staff. The District's Pay for Performance Manual states that "Non-Represented employees play a larger role in ensuring that the organization achieves its mission." This is a true statement, but the level of involvement in ensuring that the mission is achieved falls more heavily on certain Non-Represented employees than on others.

Both the General Manager and the Director of Finance and Administration have worked well in excess of a 40-hour week over the last 12-17 months to address the broken systems left behind by prior management and to establish a more positive direction for the organization. Accordingly, a new group is recommended for these two positions and the Director of Operations to reflect the difference between their roles and the rest of the NonRepresented staff.

The attached resolution outlines the proposed creation of Executive Management Group. The Board may also want to consider the adoption of a group for the Non-Represented Confidential and Managerial group at a later meeting. Since the Director of Operations started working for the District on October 3, 2024, the recommendation is not to give him a pay increase at this time.

Salary Schedules for the NR Executive Management group are attached with an increase of 10% retroactive to 1/1/24 and a discretionary increase of 10% effective on 1/1/25.

NR Executive Management Group with 10% increase

to be Retroactive to January 1, 2024

Code	District Position	Monthly Salary Range Minimum	Control Point	Maximum
NR41	Director, Finance and Administration	$ 11,188	$13,364	$ 15,539
NR53	General Manager	$ 14,225	$16,501	$ 18,777
NR39	Director of Operations	$11,188	$13,364	$15,539

NR Executive Management Group with 10% increase

to be Effective January 1, 2025

Code	District Position	Monthly Salary Range Minimum	Control Point	Maximum
NR41	Director, Finance and Administration	$ 12,307	$14,700	$ 17,093
NR53	General Manager	$ 15,648	$18,151	$ 20,655
NR39	Director of Operations	12,307	14,700	$17,903

RESOLUTION NO. R2024-11

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE RANCHO MURIETA COMMUNITY SERVICES DISTRICT FOR SALARY AND BENEFITS FOR THE EXECUTIVE MANAGEMENT GROUP

WHEREAS, Rancho Murieta Community Services District ("District") desires to memorialize the benefits and compensation currently provided to Executive Management;

WHEREAS, the District's Executive Management group consists of the following positions:

- General Manager
- Director of Administration
- Director of Operations

WHEREAS, the above positions are considered a group because they share similarities in job duties or are otherwise a logical work-related grouping;

THEREFORE, BE IT RESOLVED by the Board of Directors of the District:

Section 1 – Purpose and Application

The purpose of this Resolution is to set forth the salary and benefits for Executive Management employees of the District. This Resolution is not intended to amend or alter the current benefits provided to the Executive Management group in their employment contracts. The Board of Directors retains all rights and authority to amend, reduce, or eliminate benefits and additional compensation in its sole and absolute discretion consistent with any contractual obligations.

This Resolution shall be applicable to the following Executive Management employees:

- General Manager
- Director of Administration
- Director of Operations

Section 2 – Compensation Increases

Members of the Executive Management group listed above shall receive a base salary within the range set forth in publicly available salary schedule and may receive annual compensation adjustments. The amount of the salary adjustment is determined by the Board of Directors. The Board of Directors shall consider the employee's performance, knowledge, skills, and experience for his or her assigned work and their availability in the open labor market; the compensation provided to comparable positions in the private and public sectors; and any other factors the Board of Directors deems appropriate.

Compensation adjustments, if any, are awarded in the sole discretion of the Board of Directors. The amount of the compensation adjustment, if any, is subject to the discretion of the Board of Directors. None of the above shall require an employee to receive a compensation adjustment.

Effective January 1, 2024, employees employed with the District as of January 1, 2024 will receive a 10% salary increase.

Effective January 1, 2025, employees employed with the District as of January 1, 2025 will receive a 10% increase.

Section 3 – Pay for Performance Plan

[If this is available for these employees, we can add a reference to it. Otherwise, we will delete and renumber].

Section 4 – Retirement

The District provides retirement benefits through the California Public Employees' Retirement System ("CalPERS").

Employees who are not defined as new members under the Public Employees' Pension Reform Act ("PEPRA") are subject to the 2% at age 55 benefit formula. Each employee will pay the entire member contribution towards their retirement benefit.

Employees who are defined as "new members" under PEPRA will be subject to all applicable PEPRA provisions, which includes the 2% at age 62 formula. New members must also pay 50% of the total normal cost of the retirement benefit.

Section 5 – Medical Benefits

The District provides medical benefits through the Public Employees' Medical and Hospital Care Act ("PEMHCA").

[I can fill this in, but we would need to discuss the District's structure. The website says you have a vesting schedule, but I did not see that in the resolutions you sent.]

Section 6 – Other Insurance and Benefits

The District provides employees and eligible dependents with dental, life, and long-term disability insurance through Guardian. The District's contribution for unrepresented employees and eligible family members is the amount necessary to pay the full cost of enrollment.

The District provides employees and eligible dependents with vision coverage through Vision Service. The District's contribution for unrepresented employees and eligible family members shall be the amount necessary to pay his/her enrollment.

The District provides employees and eligible dependents with employee assistance program benefits through Sutter EAP.

# # #

RESOLUTION NO. [2024-XX]

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE RANCHO MURIETA COMMUNITY SERVICES DISTRICT FOR SALARY AND BENEFITS FOR THE EXECUTIVE MANAGEMENT GROUP

WHEREAS, Rancho Murieta Community Services District ("District") desires to memorialize the benefits and compensation currently provided to Executive Management;

WHEREAS, the District's Executive Management group consists of the following positions:

- General Manager
- Director of Finance and Administration
- Director of Operations

WHEREAS, the above positions are considered a group because they share similarities in job duties or are otherwise a logical work-related grouping;

THEREFORE, BE IT RESOLVED by the Board of Directors of the District:

Section 1 – Purpose and Application

The purpose of this Resolution is to set forth the salary and benefits for Executive Management employees of the District. This Resolution is not intended to amend or alter the current benefits provided to the Executive Management group in their employment contracts. The Board of Directors retains all rights and authority to amend, reduce, or eliminate benefits and additional compensation in its sole and absolute discretion consistent with any contractual obligations.

This Resolution shall be applicable to the following Executive Management employees:

- General Manager
- Director of Finance and Administration
- Director of Operations

Section 2 – Compensation Increases

Members of the Executive Management group listed above shall receive a base salary within the range set forth in publicly-available salary schedule and may receive annual compensation adjustments. The amount of the salary adjustment is determined by the Board of Directors. The Board of Directors shall consider the employee's performance, knowledge, skills, and experience for his or her assigned work and their availability in the open labor market; the compensation provided to comparable positions in the private and public sectors; and any other factors the Board of Directors deems appropriate.

Compensation adjustments, if any, are awarded in the sole discretion of the Board of Directors. The amount of the compensation adjustment, if any, is subject to the discretion of the Board of Directors. None of the above shall require an employee to receive a compensation adjustment.

Effective January 1, 2024, Executive Management Group employees employed with the District as of January 1, 2024 will receive a 10% salary increase.

Effective January 1, 2025, employees employed with the District as of January 1, 2025 will receive a 10% increase. Salary increases will be prorated based on time in the Executive Management Group in the 2024 calendar year.

Section 3 – Pay for Performance Plan
Employees in the Executive Management Group are ineligible to participate in the Pay for Performance Plan.

Section 4 – Retirement
The District provides retirement benefits through the California Public Employees' Retirement System ("CalPERS").

Employees who are not defined as "new members" under the Public Employees' Pension Reform Act ("PEPRA"), also known as Classic employees, are subject to the 2% at age 55 Local Government benefit formula. Each employee will pay the entire member contribution towards their retirement benefit.

Employees who are defined as "new members" under PEPRA will be subject to all applicable PEPRA provisions, which includes the 2% at age 62 Local Government Benefit formula. Each employee will pay the entire member contribution towards their retirement benefit.

Section 5 – Deferred Compensation
Unless a different amount is provided under the employee's contract, the District will contribute an amount equal to 2.5% of the employee's compensation to an IRC 457 plan offered by the District.

Section 6 – Medical Benefits
The District provides medical benefits through the Public Employees' Medical and Hospital Care Act ("PEMHCA").

The District contributes the amount necessary to pay the full cost of enrollment, including the enrollment of family members, based on the Kaiser (CA) – Region 1 basic/supplemental rate.

Section 7 – Other Insurance and Benefits
The District provides employees and eligible dependents with dental, life, and long-term disability insurance through Guardian. The District's contribution for unrepresented employees and eligible family members is the amount necessary to pay the full cost of enrollment.

The District provides employees and eligible dependents with vision coverage through Vision Service. The District's contribution for unrepresented employees and eligible family members shall be the amount necessary to pay his/her enrollment.

The District provides employees and eligible dependents with employee assistance program benefits through Sutter EAP.

Rancho Murieta Community Services District
General Manager Employment Agreement

The Agreement dated May 17, 2023, by and between Rancho Murieta Community Services District, a public agency ("District"), and Melinda Morris, an individual ("Employee"), is amended as follows:

1. Employment – No change.

2. Term. No change

3. Duties. No change

4. **Hours.** No change

5. Outside Employment and Activities. No change

6. Compensation. For all services to be rendered by Employee under this Agreement, District will provide the following salary and benefits:

a. Annual salary in the amount of $ 204,839 will be increased to $225,323 retroactive to January 1, 2024, consistent with a 10% increase for the Unrepresented Executive Management Group. With a 10% annual increase on January 1st, 2025. Salary will be paid at the times and in the manner as provided by District's standard payroll practices.

b. Paid administrative leave of 100 hours per fiscal year, retroactive to 7/1/24. Administrative leave shall be provided in accordance with District Personnel Manual section 5.08(j).

c. Combined Annual Leave (sick leave, personal days, and vacation leave) of 400 hours per year (.1923 hour per hour worked/paid) retroactive to 7/1/24 and, notwithstanding the limit in section 5.15(a) of the District Personnel Manual, Employee may accumulate up to three (3) years of vacation accrual of vacation leave. If Employee's vacation balance exceeds this amount, Employee shall cease to earn vacation credits until Employee's balance is less than the maximum accrual amount specified in this section. Employee is eligible to participate in the District's vacation buy-back program as provided in the District Personnel Manual.

d. Travel allowance. No change

e. Cellphone. no change

f. Other employee benefits (~~including sick leave~~; retirement system membership and employer and employee contributions; dependent coverage on health, dental and other group insurance programs) as provided for regular full-time District employees under the District Personnel Manual (as the same may be amended by District from time to time) and other applicable employment and benefit policies, but not including overtime or compensatory time off benefits.

g. With prior Board of Directors approval, reimbursement of actual and reasonable fees and costs for publications, subscriptions, journals, membership in job-appropriate

professional organizations, and attendance at job-appropriate professional and continuing education conference.

h. Deferred Compensation. District will deposit to Employee's deferred compensation account 5% of annual pay starting on 1/1/25 and continuing on January 1st thereafter.

7. **Other Terms and Conditions of Employment.** No Change

8. **Ownership of Documents.** No Change

9. **Termination.** No Change

10. **Suspension.** No change

11. **Performance Evaluation.** No Change

12. **Entire Agreement.** No Change

13. **Notices.** No Change

14. **Successors and Assigns.** No Change

15. **Amendment.** No Change

16. **Waiver.** No Change

17. **Construction and Interpretation.** No Change.

18. **Governing Law and Venue.** No Change

EMPLOYER

_____

Tim Maybee, President

EMPLOYEE

_____

Melinda E. Morris

ATTEST

_____

Amelia Wilder, Board Secretary

Rancho Murieta Community Services District
General Manager Employment Agreement

This Agreement dated May 17, 2023, by and between Rancho Murieta Community Services District, a public agency ("District"), and Melinda Morris, an individual ("Employee"), who agree as follows:

1. **Employment.** District appoints and employs Employee as General Manager of the District, and Employee accepts such employment, on and subject to the terms and conditions of this Agreement, effective on the date that Employee reports for work, but no later than June 1, 2023.

2. **Term.** This Agreement will take effect on the effective date and terminate on May 31, 2026, unless sooner terminated as provided in section 9 or extended by mutual written agreement of the parties. Extension of the Agreement by District requires approval by its Board of Directors at a noticed Board meeting. Employee serves at the pleasure of the District Board of Directors (see Government Code section 61050(d)) and the Board therefore may terminate Employee's employment at any time as provided by section 9.

3. **Duties.** Employee's duties under this Agreement will be those duties and responsibilities that are (a) assigned to the office of the General Manager in the Community Services District Law, (b) listed on the job description for the General Manager position as adopted and amended from time to time by the District Board of Directors, (c) described in the District Code and District ordinances, resolutions and policies, and (d) otherwise assigned or directed by the Board of Directors. The current job description is attached as Exhibit A. Employee will be the chief executive officer of District and work under the direction and control of the Board of Directors. Employee also will serve as District Treasurer (sometimes referred to in District governing documents as Finance Officer). Employee at all times will act in the best interests of the District and perform all duties in a competent and professional manner.

4. **Hours.** Employee acknowledges that the General Manager position is a full-time, exempt management position and agrees to devote Employee's full time, attention and energies to the job duties and be available to work at such times as appropriate to fully and competently perform the duties of the position, regardless of the number of hours or time of day or week involved.

5. **Outside Employment and Activities.** Employee will not engage in any conduct, other employment or business, commercial or professional pursuits, whether for compensation or otherwise, that would interfere with Employee's responsibilities and duties to District or that would reflect unfavorably upon the interests of District. Any outside employment, consulting or business conducted by Employee during the term of this Agreement requires the prior approval of the District Board of Directors.

6. **Compensation.** For all services to be rendered by Employee under this Agreement, District will provide the following salary and benefits:

a. Annual salary in the amount of $ 194,160. Salary will be paid at the times and in the manner as provided by District's standard payroll practices. The District Board of

Directors may, at any time during the term of this Agreement, increase General Manager's salary, and the Board of Directors shall consider a salary increase after six months of employment and completion of a performance evaluation.

b. Paid administrative leave of 80 hours per fiscal year. For the period from the effective date through June 30, 2024), paid administrative leave shall be 120 hours. Thereafter, Employee shall be granted 80 hours of administrative leave on July 1 of each fiscal year. Administrative leave shall be provided in accordance with District Personnel Manual section 5.08(j).

c. Paid vacation of 152 hours per year (i.e., 0.0731 hour accrued per hour worked/paid). On the effective date, Employee shall be granted 70 hours of vacation leave. Notwithstanding the limit in section 5.15(a) of the District Personnel Manual, Employee may accumulate up to three (3) years of vacation accrual of vacation leave. If Employee's vacation balance exceeds this amount, Employee shall cease to earn vacation credits until Employee's balance is less than the maximum accrual amount specified in this section. Employee is eligible to participate in the District's vacation buy-back program as provided in the District Personnel Manual.

d. Travel allowance in the amount of $1,000 per month. The allowance covers all business-related vehicle transportation expenses for Employee (except for authorized out-of-town vehicle rentals) as well as temporary lodging in or around Rancho Murieta when Employee decides that business needs dictate that Employee stay overnight near the District office. After consultation with Employee, and at any time after twelve months of employment, the District Board of Directors may eliminate the temporary lodging component and reduce this allowance to $500 per month. This payment is in lieu of payment of any mileage reimbursement for business-related use of Employee's personal vehicle. This payment will not be reported to the California Public Employees' Retirement System (CalPERS) as compensation for pension calculation purposes.

e. Cellphone allowance in the amount of $100 per month. The allowance covers all business-related cellphone expenses for Employee. This payment will not be reported to the California Public Employees' Retirement System (CalPERS) as compensation for pension calculation purposes. Employee shall forego this allowance if Employee receives a cellphone issued and paid by District.

f. Other employee benefits (including sick leave; retirement system membership and employer and employee contributions; deferred compensation investment opportunities; employee and dependent coverage on health, dental and other group insurance programs) as provided for regular full-time District employees under the District Personnel Manual (as the same may be amended by District from time to time) and other applicable employment and benefit policies, but not including overtime or compensatory time off benefits.

g. With prior Board of Directors approval, reimbursement of actual and reasonable fees and costs for publications, subscriptions, journals, membership in job-appropriate professional organizations, and attendance at job-appropriate professional and continuing education conferences.

7. Other Terms and Conditions of Employment. Employee's employment will be governed by the District Personnel Manual (as the same may be amended by District from time to time) and the parties will comply with all applicable provisions of the Personnel Manual. If any term or condition of this Agreement is inconsistent or in conflict with a term or condition of the Personnel Manual, the Agreement will govern. If any term or condition of this Agreement is inconsistent or in conflict with a federal or state law, the law will govern.

As a condition of employment, Employee shall be required to be reinstated from CalPERS retirement effective no later than the date Employee reports to work.

8. Ownership of Documents. Every document, report, study, spreadsheet, worksheet, plan, blueprint, specification, drawing, map, photograph, computer model, computer disk, magnetic tape, CAD data file, computer software and any other writing or thing prepared by Employee during the term of employment (the "Work") will be the property of District. District will have the right to use, modify, reuse, reproduce, publish, display, broadcast and distribute the Work and prepare derivative and additional documents or works based on the Work without further compensation to or permission from Employee. Notwithstanding this paragraph, District grants to Employee a non-revocable license to copy and use any database developed by Employee during the term of employment, provided (a) Employee's use does not infringe on any other agreements, (b) Employee does not copy or use any District-specific data, including, but not limited to, any District financial or customer data, and (c) Employee provides prior written notice to the District.

9. Termination. This Agreement may be terminated in any one of the following ways:

a. By mutual agreement of the parties, expressed in writing.

b. By Employee, upon giving to District at least 90 days prior written notice of Employee's election to resign from employment and terminate this Agreement.

c. By the death of Employee.

d. By Employee's service or disability retirement.

e. By District, for cause, upon giving to Employee written notice of immediate termination. The written notice of termination will specify (1) the particular cause(s) and the facts and circumstances justifying the termination of the Agreement for cause, and (2) the opportunity of Employee to meet with the District Board of Directors on the reasons for the termination. If Employee requests a meeting, the meeting will be held at the Board's earliest convenience in a closed session, unless Employee requests an open session. After the meeting, the Board may affirm, modify or reverse its decision to terminate for cause. For purposes of this Agreement, the following will justify termination for cause: willful breach of duty; habitual neglect of duty; gross insubordination; conviction of a crime involving moral turpitude; conduct that makes it impossible or impracticable to perform the duties under this Agreement or that seriously impedes District operations; conduct that tends to bring discredit to District; conduct unbecoming an employee in public service; mishandling of District funds; any intentional misrepresentation or fraud in connection

with the performance of Employee's duties; theft of District property; violation of law; any misrepresentation by Employee in connection with Employee's application for employment, including representations made on Employee's resume that was provided to District; any violation of the District Personnel Manual; or, material breach of this Agreement.

f. By District, without cause, upon giving to Employee notice of immediate termination and payment of severance pay in an amount equal to Employee's then monthly salary multiplied by six months; except that, if the Agreement is terminated within six months of its expiration date, the severance pay amount will be determined based on the number of months left on the unexpired term of the Agreement.

10. Suspension. The District Board of Directors may suspend Employee with full pay and benefits at any time and for any reason during the term of this Agreement.

11. Performance Evaluation. The District Board shall perform an annual evaluation of Employee's job performance that will include a Board appraisal of the Employee's performance and may include a 360 evaluation (i.e., an opportunity for a group of coworkers to provide feedback on an employee's performance). Employee's first annual performance evaluation shall be scheduled to occur after six months of employment (approximately December 2023).

12. Entire Agreement. The parties intend this writing to be the sole, final, complete, exclusive and integrated expression and statement of the terms of their contract concerning the subject matter addressed in the Agreement. This Agreement supersedes all prior oral or written negotiations, representations, contracts or other documents that may be related to the subject matter of this Agreement, except those other documents that may be expressly referenced in this Agreement.

13. Notices. Any notice to be given to Employee will be sufficiently served if given to him personally or if deposited in the United States Mail, regular pre-paid mail, addressed to Employee at Employee's most recent residence address as shown on the District payroll records. Any notice to be given to District must be addressed to the District Board of Directors and delivered or mailed to the District Secretary at the District offices.

14. Successors and Assigns. This Agreement is personal to Employee. Employee may not transfer or assign the Agreement or any part of it. Subject to this restriction on transfer and assignment, this Agreement will bind, and inure to the benefit of, the successors, assigns, heirs and legal representatives of the parties.

15. Amendment. This Agreement may be amended only by a subsequent writing approved and signed by both parties. Any amendment by District must be approved by the District Board of Directors at a noticed public meeting. Individual directors do not have the authority, express or implied, to amend, modify, extend, or in way alter this Agreement or the terms and conditions of Employee's employment.

16. Waiver. The waiver at any time by either party of its rights with respect to a default or other matter arising in connection with this Agreement will not be deemed a waiver with respect to any subsequent default or matter.

17. **Construction and Interpretation.** The parties agree and acknowledge that this Agreement has been arrived at through negotiation and that each party has had a full and fair opportunity to revise the terms of this Agreement. Consequently, the normal rule of construction that any ambiguities are to be resolved against the drafting party will not apply in construing or interpreting this Agreement.

18. **Governing Law and Venue.** Except as otherwise required by law, this Agreement will be interpreted, governed by, and construed under the laws of the State of California. The County of Sacramento will be venue for any state court litigation and the Eastern District of California will be venue for any federal court litigation concerning the enforcement or construction of this Agreement.

EMPLOYER

Tim Maybee, President

Attest:

Amelia Wilder, Board Secretary

EMPLOYEE

Melinda Morris

Exhibit A
General Manager Job Description

RANCHO MURIETA COMMUNITY SERVICES DISTRICT

GENERAL MANAGER

DEPARTMENT: ADMINISTRATION

FLSA OVERTIME STATUS: EXEMPT
BARGAINING UNIT: N/A

APPROVED BY BOARD OF DIRECTORS –08/15/2018

SUMMARY: In charge of the administrative, legal, engineering, operations, and financial activities of the District; represent the Board's policies and programs with employees, community organizations, and the general public; review budget requests and make recommendations to the Board on final expenditure levels; responsible for employer-employee relations; responsible for development, maintenance, and improvement of District facilities and services; and perform other related duties as required. Interact with county/state/federal agencies to achieve District objectives.

SUPERVISION: Under administrative direction of the Board of Directors. Direct supervision to department heads.

ESSENTIAL DUTIES AND RESPONSIBILITIES include the following. Other duties may be assigned.

- Serves as chief executive officer for the District; sets vision and implements long range Board established goals for District;
- provides advice and consultation on the development and operation of District services, functions, and policies;
- oversees the preparation of the annual budget, making recommendations to the Board on final expenditure levels; reviews and approves purchase order and budget requests;
- coordinates the preparation of the agenda for Board of Directors' meetings.
- conducts a variety of special studies and surveys to determine effectiveness of District programs and services; maintains continuous awareness of administrative practices and recommends changes which increase the efficiency and economy of District operations and services;
- represents the Board's policies and programs with employees, community representatives, developers, and other government agencies;

- oversees the development and administration of capital improvement budgets and plans;

- directs personnel matters, including employment procedures, grievances, affirmative action, and employer-employee relations; oversees negotiations with bargaining groups;

- negotiates leases, agreements, and contracts; oversees and directs legal counsel;

- coordinates District engineering functions; confers with developers and contractors as necessary; serves as District representative with other public agencies.

- maintains media and public relations;

- Manage day to day operations of the District.

QUALIFICATION REQUIREMENTS:
To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

Ability to plan, organize, direct, communicate, coordinate, and supervise the functions and activities of the organization to achieve efficient operations and meet service goals. Exercise leadership, authority, and management tactfully and effectively. Prepare and administer District budgeting and fiscal control processes. Collect and analyze data on a variety of topics, including compensation and other utility billing rates. Effectively organize and carry out public and media relations. Coordinate the preparation of Board agendas. Administer personnel and employer-employee relations programs. Oversee the development and improvement of District facilities and services. Provide advice and consultation to the Board of Directors on the development of ordinances, regulations, policies, and programs. Prepare comprehensive technical reports and recommendations. Effectively represent and implement District policies, programs, and services with employees, contractors, representatives of other agencies, and the public. Establish and maintain cooperative working relationships.

EDUCATION AND/OR EXPERIENCE:
Minimum Education: Undergraduate degree from an accredited four (4) year college or university with a major in Business Administration, Public Administration, Engineering or a closely related field.

Five (5) years of broad and extensive work experience in a management or administrative position in a private or public utility agency. Background should include responsibility for formulation and implementation of programs, budgets and administrative operations.

LICENSE AND/OR CERTIFICATES:
Possession of the category of California Driver's license required by the State Department of Motor Vehicles to perform the essential duties of the position. Continued maintenance of a valid driver's license, insurability, and compliance with established District vehicle operation standards are a condition of continuing employment.

Possession of or obtain within 12 months of hire, National Incident Management System (NIMS) IS 100,200 and 700 training.

PHYSICAL DEMANDS:
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.

While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is occasionally required to stand, walk, stoop, kneel, or crouch.

Specific vision abilities required by this job include close vision, distance vision, peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

The noise level in the work environment is usually quiet.

COMMENTS:
Appointments to this position are made in accordance with California Government Code section 61240.