

SPECIAL MEETING OF BOARD OF DIRECTORS MONTECITO WATER DISTRICT 583 SAN YSIDRO ROAD MONTECITO, CALIFORNIA

MONDAY, MARCH 18 2019 9:30 A.M.

AGENDA

1. CALL TO ORDER, ROLL CALL, DETERMINATION OF QUORUM

2. PLEDGE OF ALLEGIANCE

3. PUBLIC FORUM

This portion of the agenda may be utilized by any member of the public to address and ask questions of the Board of Directors on any matter not on the agenda within the jurisdiction of the Montecito Water District. Depending upon the subject matter, the Board of Directors may be unable to respond at this time, or until the specific item is placed on the agenda at a future MWD Board meeting in accordance with the Ralph M. Brown Act.

4. CONSENT CALENDAR

Following items are to be approved or accepted by vote on one motion unless a Board member requests separate consideration:

- * A. Minutes of February 26, 2019
- * B. Payment of Bills for February 2019
- * C. Investment of District Funds for February 2019

5. <u>DISTRICT OPERATIONS AND GENERAL MANAGER'S REPORTS</u>

* A. BOARD ACTION: Approval of an updated proposal from Dudek for professional services associated with the Development of a Groundwater Sustainability Plan pursuant to the Sustainable Groundwater Management Act

^{*} indicates attachment included for this item

- * B. BOARD ACTION: Adoption of Resolution No. 2180 authorizing the General Manager to sign and file, for and on behalf of the District, a Financial Assistance Application for a grant agreement from the State Water Resources Control Board for the development of a Groundwater Augmentation Feasibility Study
 - C. BOARD ACTION: Approval of award of professional services contract to conduct a hydrogeological investigation of the Montecito Groundwater Basin
- * D. BOARD ACTION: Approval of award of construction contract for Water Main Repair at Parra Grande Bridge (Disaster Related Repair Project)
- * E. BOARD ACTION: District Support of SB 669 Safe Drinking Water Trust
 - F. INFORMATION ONLY: General Manager's Report (Oral)

6. <u>DISTRICT BUSINESS REPORT</u>

- * A. INFORMATION ONLY: Unaudited District Monthly Financial Reporting for February 2019
 - B. INFORMATION ONLY: Business Manager's Report (Oral)

7. DIRECTOR AND COMMITTEE REPORTS

- A. Presidents Report: Director Wicks
- B. Central Coast Water Authority: Director Wicks
- C. Santa Barbara County Special Districts Association: Director Wicks
- D. Cachuma Operation and Maintenance Board: Director Plough
- E. Cachuma Conservation Release Board: Director Plough
- F. Operations & Customer Relations Committee: Directors Hayman & Wicks
- G. Finance Committee: Directors Coates & Plough
- H. Strategic Planning Committee: Directors Wicks & Goebel

8. LEGAL MATTERS

- A. CLOSED SESSION: Pursuant to Government Code 54956.9(d)(2) Conference with Legal counsel Anticipated Litigation, 59 cases
- B. Recent and Pending Legal Matters Review Oral Report

^{*} indicates attachment included for this item

9. DIRECTOR REQUESTS

Requests from Directors for items other than regular agenda items for the next regular Board meeting scheduled for Tuesday, April 23, 2019 or any future meeting.

10. ADJOURNMENT

<u>Note</u>: This agenda was posted at the Montecito Water District front counter and outside display case at 9:30 a.m. on March 15, 2019. The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied the benefits of, the District's programs, services or activities because of any disability. If you need special assistance to participate in this meeting, please contact the District Office at 805-969-2271. Notification at least twenty-four (24) hours prior to the meeting will enable the District to make appropriate arrangements.

Supporting documents for agenda items are available at the District front counter during normal business hours.

Materials related to an item on this agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the Montecito Water District offices located at 583 San Ysidro Road, Montecito, during normal business hours.

^{*} indicates attachment included for this item



OF BOARD OF DIRECTORS MONTECITO WATER DISTRICT 583 SAN YSIDRO ROAD MONTECITO, CALIFORNIA

TUESDAY, FEBRUARY 26, 2019 9:30 A.M.

1. CALL TO ORDER, ROLL CALL, DETERMINATION OF QUORUM

President Wicks called the meeting to order at 9:30 a.m.

Directors Present:

Directors, Kenneth Coates, Brian Goebel, Cori Hayman, Tobe Plough, and Floyd Wicks

Directors Absent:

None

Staff Present:

Nick Turner, General Manager Daryl Smith, Business Manager Adam Kanold, Engineering Manager Robert M. Cohen, General Counsel Laura Camp, P. I. Officer Chad Hurshman, Treatment Superintendent Lois Werner, Recording Secretary

Guests Present:

Bob Hazard, Montecito Journal Dick Shaikewitz, District customer

Adam Geiss, Auditor Jane Gray, Dudek

2. PLEDGE OF ALLEGIANCE

Those present recited the Pledge of Allegiance.

3. PUBLIC FORUM

A District customer who did not state his name thanked the Board for information recently presented to the public in meetings at the Fire District and the Montecito Association.

4. CONSENT CALENDAR

Following discussion it was moved by Director Goebel, seconded by Director Coates and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to approve the Consent Calendar as presented.

5. BOARD OF DIRECTORS

A. INFORMATION ONLY: Reappointments of the District JPA representative and alternate for the Cachuma Operations and Maintenance Board Director Wicks presented this item concerning the rearrangement of the representative and alternate positions for District representation at COMB. Director Hayman (formerly District alternate) is now MWD representative to COMB, and Director Plough (formerly the District rep) is now the alternate.

6. DISTRICT OPERATIONS AND GENERAL MANAGER'S REPORTS

A. BOARD ACTION: Consideration and approval of an Agreement with Santa Barbara County for the collection, sharing and maintenance of customer data between the agencies for purposes of public alert and warning in accordance with California Senate Bill No. 821

Mr. Turner and Ms Camp presented this item and responded to questions from Directors and members of the public. Following discussion it was moved by Director Coates, seconded by Director Plough and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to authorize District participation in an Agreement with Santa Barbara County to share utility customer contact information for the sole purpose of enrolling County residents in a public emergency warning system in accordance with Senate Bill 821, Government Code Section 8593.4 subject to County approval of the addition to the agreement of unilateral indemnification.

B. BOARD ACTION: Participation in Central Coast Water Authority 2019 Supplemental Water Purchase Program

Mr. Turner presented this item and responded to questions from Directors. Following discussion it was moved by Director Plough, seconded by Director Coates and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to approve participation in the CCWA 2019 SWPP with an initial requested delivery goal of up to 2,800 AF of water and authorize the General Manager to execute the *Statement of Intent* to purchase water from Mojave Water Agency under the CCWA 2019 SWPP Agreement.

C. BOARD ACTION: Consideration and approval of proposal from Wyndham Design Architectural Design & Permitting Services associated with the Jameson Lake Rebuild

Mr. Kanold presented this item and responded to questions from Directors. Following discussion it was moved by Director Hayman, seconded by Director Goebel and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to authorize execution of a professional services agreement with Wyndham Design for architectural design and permitting services and approve a not-to-exceed amount of \$120,000, which includes Wyndham Design costs and other design-related costs as outlined in the staff report to the Board – all costs covered by District insurance.

D. BOARD ACTION: Declaration of surplus equipment and approval to send surplus equipment to auction

Mr. Turner presented this item and responded to questions from Directors. Following discussion it was moved by Director Coates, seconded by Director Plough and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to declare as surplus the three vehicles presented, and offer the equipment at auction.

E. BOARD ACTION: Adoption of Resolution No. 2177 adopting the Santa Barbara County 2019 Integrated Regional Water Management Plan

Mr. Turner introduced Ms Gray, who presented this item and responded to questions from Directors. Following discussion it was moved by Director Coates, seconded by Director Hayman and carried by the following roll-call vote to adopt Resolution No. 2177 as presented:

AYES: Directors Coates, Goebel, Hayman, Plough, and Wicks

NOES: None ABSENT: None ABSTAIN: None

- F. INFORMATION ONLY: Water Works Operations Report for January 2019

 Mr. Kanold and Mr. Turner presented this report and responded to questions from Directors.
- G. INFORMATION ONLY: Progress update on implementation of permanent pipeline repairs and FEMA reimbursement
 - Mr. Kanold presented this progress report and responded to questions from Directors and members of the public.
- H. BOARD ACTION: Adoption of Resolution No. 2178 nominating Scott H. Quady of Calleguas Municipal Water District to the California Water Insurance Fund Board, an ACWA JPIA Captive Insurance Company
 - Mr. Turner and Mr. Cohen presented this item and responded to questions from Directors. Following discussion it was moved by Director Goebel, seconded by Director Hayman and carried by the following roll-call vote to adopt Resolution No. 2178 as presented:

AYES: Directors Coates, Goebel, Hayman, Plough, and Wicks

NOES: None ABSENT: None ABSTAIN: None

I. INFORMATION ONLY: General Manager's Report (Oral)

Mr. Turner reported on District activities and projects not covered elsewhere in the agenda.

7. DISTRICT BUSINESS REPORT

A. INFORMATION ONLY: Unaudited District Monthly Financial Reporting for January 2019

Mr. Smith presented this report and responded to questions from Directors.

B. BOARD ACTION: Consideration and approval of a Debt Management Policy

Mr. Smith presented this item and responded to questions from Directors and members of the public. Following discussion it was moved by Director Coates, seconded by Directors Plough and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to adopt the Debt Management Policy as amended in section 1.3 to include Board review of cash flow, reserve levels, and long-term debts.

C. BOARD ACTION: Adoption of Resolution No. 2179 authorizing the execution and delivery of an installment purchase agreement and related documents with Holman Capital Corporation for the Smart Metering Program

Mr. Smith and Mr. Turner presented this item and responded to questions from Directors. Following discussion it was moved by Director Goebel, seconded by Director Coates and carried by the following roll-call vote to adopt Resolution No. 2179 as presented:

AYES: Directors Coates, Goebel, Hayman, Plough, and Wicks

NOES: None ABSENT: None ABSTAIN: None

D. BOARD ACTION: Receive, Accept and File 2017/18 Annual Audited Financial Statements

Mr. Smith introduced Mr. Guise, who presented this item and responded to questions from Directors. Following discussion it was moved by Director Plough, seconded by Director Coates and carried, with Directors Coates, Goebel, Hayman, Plough, and Wicks voting in favor, to receive, accept, and file the Audited Financial Statements for the Fiscal Years ending in June 30, 2018 and 2017.

8. DIRECTOR AND COMMITTEE REPORTS

A. President's Report

Director Wicks reported on an upcoming ACWA Region 5 meeting which will include a presentation on the January 2018 mudflow.

B. Central Coast Water Authority

Mr. Turner reported on the activities of CCWA.

C. Santa Barbara County Special Districts Association

Director Wicks reported on the activities of the SBC-SDA.

D. Cachuma Operation and Maintenance Board

Director Plough reported on the activities of COMB.

E. Cachuma Conservation Release Board

Director Plough reported on the activities of CCRB.

F. Operations & Customer Relations Committee

Directors Hayman & Wicks reported on the activities of the Operations and Customer Relations Committee.

G. Finance Committee

Directors Coates & Plough reported that the activities of the Finance Committee had been covered elsewhere in the agenda.

H. Strategic Planning Committee

Directors Wicks and Goebel reported on the joint MWD/MSD committee meeting on February 25.

9. LEGAL MATTERS

A. CLOSED SESSION: Conference with Legal Counsel – Anticipated Litigation (Government Code 54956.9(d)(2); Four cases.

The Board adjourned to closed session at 2:30 p.m.

The Board reconvened in opens session at 2:45 p.m.

Report out of closed session:

The Board received a report from General Counsel Robert M. Cohen and reviewed multiple claims received by the District and arising out of the mudslide event of January 9, 2018. The Board voted 5 to 0 on a motion by Director Coates, seconded by Director Plough, concerning those claims as follows:

1. to grant the application for leave to file a late claim pursuant to Government Code §911.6(b)(1) as to claimants (1) Santiago Benitez Calderone; and (2) Sulpicia Calderone, individually and as Successor-in-interest to The Estate of Faviola Benitez Calderone.

To reject the claim received on February 26, 2019 of claimants (1) Santiago Benitez Cardozo, individually and as Successor-in-interest to The Estete of Faviola Benitez Calderone and (2) Sulpicia Calderone, individually and as Successor-in-interest to The Estate of Faviola Benitez Calderone.

2. To return the amended claim received on January 11, 2019 on behalf of claimants (1) Rhonda Wheatley; (2) Alan Racalbuto, individually and as Successor-in-interest to the Estate of Joseph Bleckel; and (3) Louis Bleckel with no action taken because the claim is late as to these claimants per the Government Code, as

memorialized in a February 8, 2019 letter to counsel for the claimants.

- 3. To reject the Second Amended Government Claim Related to Damages Resulting from the January 9, 2018 Montecito Mudslide received on February 8, 2019 from Frantz Law Group on behalf of multiple claimants; which claimants are specifically identified on the claim form and available for review.
- 4. A status update was received by counsel, and no action was taken.
- B. Recent and Pending Legal Matters Review Oral Report
 Mr. Cohen reported on an item on an upcoming agenda of the State Water Resources Control Board.

10. DIRECTOR REQUESTS

Directors requested that impediments to State Water deliveries to Cachuma, and the State Water Contract and Contract Extension be placed as regular agenda items for the next regular Board meeting scheduled for Tuesday, March 19, 2019.

11. ADJOURNMENT

There being no further business to come before the Board, the meeting was adjourned at 2:47 p.m.

| | Approved: | |
|------------------------|------------------------|--|
| Attest: | Floyd Wicks, President | |
| Nick Turner, Secretary | | |

MONTECITO WATER DISTRICT PAYMENT OF BILLS TOTAL DISBURSEMENTS SUMMARY

FOR THE MONTH OF FEBRUARY 2019

SECTION: 4-B

AP CHECK REGISTER \$ 826,451.06

NET PAYROLL DIRECT DEPOSITS 1

2/4/2019 Pay Period #3 65,139.64 2/15/2019 Pay Period #4 69,477.73

Payroll Direct Deposits \$ 134,617.37

EXTERNAL WIRE TRANSFERS OUT FOR PAYMENT OF BILLS 2

Subtotal External Wire Transfers \$0.00

TOTAL DISBURSEMENTS \$961,068.43

INTERNAL WIRE TRANSFERS BETWEEN ACCOUNTS 3

2/12/2019 FROM ARB CKING TO ARB MONEY MARKE 730,569.79

NET INTERNAL WIRE TRANSFERS \$ 730,569.79

¹ The Net Payroll Direct Deposits are the payroll amounts that are deposited into employee bank accounts through an ACH. Payments for employee benefits and payroll taxes, both the employee and employer portions, are recorded on the Check Register, therefore are not included.

² External Wire Transfers Out are wire transfers which are made periodically for items such as debt service payments, the fixed portion of the State Water Project payment, supplemental water purchases and transfers to open new District bank or investment accounts.

³ Internal Wire Transfers Between Accounts held by Montecito Water District are made periodically for items such as transfers between investment accounts and bank accounts or for transfers to open new bank or investment accounts.

Montecito Water District Check Register FEBRUARY 1, 2019 through FEBRUARY 28, 2019

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|------|-----------|-----------------------------------|-------------------------------|-------|--------------------------------|
| 1747 | 2/15/2019 | ACWA-JPIA ACWA-JPIA Total | 38,835.81 38,835.81 | | MED/DEN/VSN INSUR PREM MAR2019 |
| 1852 | 2/27/2019 | ALEXANDER'S Total | 6,170.70 6,170.70 | | FEB METER READING SRV |
| 1748 | 2/15/2019 | ALL ARND LANDSCAPE | 296.58 | | BVTP SUPPS |
| 1795 | | ALL ARND LANDSCAPE | 104.86 | | BVTP SUPPS |
| | | ALL ARND LANDSCAPE Total | 401.44 | | |
| 1798 | 2/26/2019 | ANTHEM BLUE CROSS | 958.53 | | LIEBERKNECHT MED RET MAR-MAY19 |
| 1797 | 2/26/2019 | ANTHEM BLUE CROSS | 982.23 | | MED RET BEN / JOE DIAZ MAR-MAY |
| 1796 | 2/26/2019 | ANTHEM BLUE CROSS | 256.65 | | MED RET BENEFIT - ALFONSO DIAZ |
| | | ANTHEM BLUE CROSS Total | 2,197.41 | | |
| 1746 | 2/15/2019 | A-OK POWER EQUIP | 652.45 | | BVTP SUPPS |
| | | A-OK POWER EQUIP Total | 652.45 | | |
| 1749 | 2/15/2019 | ARCADY DISTRIBUTING | 154.80 | | OFFICE COFFEE/CREAMER |
| | | ARCADY DISTRIBUTING Total | 154.80 | | |
| 1853 | 2/27/2019 | AT&T MOBILITY | 1,423.19 | | MOBILE SRVC 01/12/19-02/11/19 |
| | | AT&T MOBILITY Total | 1,423.19 | | |
| 0 | 2/28/2019 | BENEFLEX INC | 152.50 | | FSA ADMIN FEES JAN 2019 |
| | | BENEFLEX INC Total | 152.50 | | |
| 0 | 2/4/2019 | BENFLEX - CLARITY | 1,152.97 | | PP #3 FSA CONTRIBUTIONS |
| 0 | 2/15/2019 | BENFLEX - CLARITY | 1,109.49 | | PP #4 FSA CONTRIBUTIONS |
| | | BENFLEX - CLARITY Total | 2,262.46 | | |
| 1799 | 2/26/2019 | BILL ALCALA | 80.00 | | FLEET WASHING 02/25 |
| 1799 | 2/26/2019 | BILL ALCALA | 120.00 | | FLEET WASHING 2/11 |
| | | BILL ALCALA Total | 200.00 | | |
| 1750 | 2/15/2019 | BRENNTAG PACIFIC INC | 3,737.65 | | CHEM SUPPS ORTEGA RESVR |
| | | BRENNTAG PACIFIC INC Total | 3,737.65 | | |
| 1800 | 2/26/2019 | BRUCE GOETTING | 500.00 | | DOULTON SHARED ROAD REPAIRS |
| | | BRUCE GOETTING Total | 500.00 | | |
| 0 | 2/4/2019 | CAL PERS | 14,395.80 | | PP #3 PENSION CONTRIBUTION |
| 0 | 2/15/2019 | CAL PERS | 14,212.49 | | PP #4 PENSION CONTRIBUTION |
| | | CAL PERS Total | 28,608.29 | | |
| 1801 | 2/26/2019 | CALIFORNIA ELECTRIC | 48.19 | | PADEN WELL SUPPS/REPAIRS |
| | | CALIFORNIA ELECTRIC Total | 48.19 | | |
| 0 | _, | CALPERS 457 | 2,989.67 | | PP #3 457 CONTRIBUTION |
| 0 | 2/15/2019 | CALPERS 457 | 3,762.67 | | PP #4 457 CONTRIBUTION |
| | | CALPERS 457 Total | 6,752.34 | | |
| 1802 | 2/26/2019 | CANNON CORP | 9,577.50 | F | FEMA HIGHLINE ENGINEERING |
| 1802 | 2/26/2019 | CANNON CORP | 10,684.00 | F | FEMA HIGHLINE ENGINEERING |
| | | CANNON CORP Total | 20,261.50 | | |
| 1803 | 2/26/2019 | CANON FINANCIAL | 321.60 | | OFC CANON LEASE FEB2019 |
| | | CANON FINANCIAL Total | 321.60 | | |
| 1751 | 2/15/2019 | CARP VALLEY LUMBER | 66.25 | | BVTP SUPPS |
| 1751 | 2/15/2019 | CARP VALLEY LUMBER | 58.25 | | BVTP SUPPS |
| 1751 | 2/15/2019 | CARP VALLEY LUMBER | 132.42 | | BVTP SUPPS |
| 1751 | 2/15/2019 | CARP VALLEY LUMBER | 74.82 | | BVTP SUPPS |
| 1804 | 2/26/2019 | CARP VALLEY LUMBER | 25.50 | | BVTP SUPPS |
| 1804 | 2/26/2019 | CARP VALLEY LUMBER | 17.98 | | BVTP SUPPS |
| | | CARP VALLEY LUMBER Total | 375.22 | | |

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|-------|--------------|---|---------------------------------|-------|---|
| 1752 | 2/15/2019 | CARP VALLEY WATER CARP VALLEY WATER Total | 431,069.71 431,069.71 | | CATER QTRLY TRMT COSTS 19Q2 |
| 1753 | 2/15/2019 | CARQUEST AUTO | (56.75) | | CREDIT FOR TRK #177 ITEM RTN |
| 1805 | 2/26/2019 | CARQUEST AUTO | 66.19 | | SHOP SUPPS |
| 1753 | 2/15/2019 | CARQUEST AUTO | 7.10 | | TRK #142 REPAIRS |
| 1753 | 2/15/2019 | CARQUEST AUTO | 34.44 | | TRK #142 REPAIRS |
| 1753 | 2/15/2019 | CARQUEST AUTO | 113.24 | | TRK #156 & 142 REPAIRS |
| 1753 | 2/15/2019 | CARQUEST AUTO | 243.73 | | TRK #177 REPAIRS |
| 1805 | 2/26/2019 | CARQUEST AUTO | 14.78 | | TRK #180 SML TOOLS |
| | | CARQUEST AUTO Total | 422.73 | | |
| 1794 | 2/15/2019 | CLEAN ENERGY CAP | 1,609.47 | | LOCAL WATER SUPPLY NEGOT |
| 1806 | 2/26/2019 | CLEAN ENERGY CAP | 20,430.00 | | LOCAL WTR SUPPLY NEGOT |
| | | CLEAN ENERGY CAP Total | 22,039.47 | | |
| 1809 | 2/26/2019 | CO OF SB | 30.00 | | DISP FLOURESCENT LGHTS / HAZ |
| | | CO OF SB Total | 30.00 | | |
| 1807 | 2/26/2019 | COHEN & BURGE LLP | 31,248.00 | | MUDSLIDE/SCE/CCWA/BOARD/FINANC |
| 1807 | 2/26/2019 | COHEN & BURGE LLP | 192.00 | | SPECIAL LEGAL |
| | | COHEN & BURGE LLP Total | 31,440.00 | | |
| 1755 | 2/15/2019 | COLANTUONO | 360.00 | | LEGAL - SPECIAL C.A. |
| 1755 | 2/15/2019 | COLANTUONO | 1,158.20 | | LEGAL SPECIAL C.A. |
| 1755 | 2/15/2019 | COLANTUONO | 300.00 | | LEGAL SRVCS |
| | | COLANTUONO Total | 1,818.20 | | |
| 1808 | 2/26/2019 | COLONIAL LIFE | 735.88 | | BCN #4901575-0204627; PREM 2/4 |
| | | COLONIAL LIFE Total | 735.88 | | |
| 1756 | 2/15/2019 | COMPUVISION | 1,994.80 | | 2 SCADA COMP/WARR/PROCSR |
| 1756 | 2/15/2019 | COMPUVISION | 831.25 | | IT NETWORK ASSISTANCE |
| | | COMPUVISION Total | 2,826.05 | | |
| 1810 | 2/26/2019 | COX | 648.83 | | BVTP PHONE/INTERNET |
| 1757 | 2/15/2019 | COX | 725.96 | | ADMIN PHONE/INTERNET FEB2019 |
| | | COX Total | 1,374.79 | | |
| 1811 | 2/26/2019 | DANIEL RODRIGUEZ | 90.99 | | 357 ORTEGA RDGE MAIN BRK DNR |
| 1811 | 2/26/2019 | DANIEL RODRIGUEZ | 93.80 | | CREW DINNER-RIVEN ROCK MN BRK |
| 1758 | 2/15/2019 | DANIEL RODRIGUEZ | 70.09 | В | MEAL FOR CREW DURING STORM |
| | | DANIEL RODRIGUEZ Total | 254.88 | | |
| 1759 | 2/15/2019 | DOCUPRODUCTS | 84.14 | | CANON COPIER MAINT 2/12-3/11 |
| | | DOCUPRODUCTS Total | 84.14 | _ | |
| 1812 | 2/26/2019 | DUDEK | 6,010.19 | F | FEMA HIGHLINE ENVIRO SRVCS |
| | | DUDEK Total | 6,010.19 | | |
| 1813 | 2/26/2019 | ECONOMY TREE | 650.00 | | TORO CYN RD / WTR TNK SITE |
| | | ECONOMY TREE Total | 650.00 | | |
| 0 | 2/28/2019 | =: : : | 2,742.69 | | CC/ACH CLEARING HOUSE FEES |
| | | EPX Total | 2,742.69 | _ | |
| 1814 | 2/26/2019 | EUROFINS EATON | 206.00 | В | WTR QLTY SAMPLING-JAMESON 1/25 |
| 1814 | 2/26/2019 | EUROFINS EATON | 170.00 | В | WTR QLTY SAMPLING-JAMESON 2/12 |
| | 0/00/00/10 | EUROFINS EATON Total | 376.00 | | |
| 1815 | 2/26/2019 | EVERBRIDGE, INC | 5,757.91 | | OFFICE EQUIP/COMP SOFTWARE |
| 40.45 | 0/00/05:5 | EVERBRIDGE, INC Total | 5,757.91 | | DANIK LID EVOEDTIONS ATTENDED |
| 1816 | 2/26/2019 | FEDEX | 150.70 | | BANK UP EXCEPTIONS 1/17 - 2/08 |
| 40.47 | 0.100.100.10 | FEDEX Total | 150.70 | | N. (5) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6 |
| 1817 | 2/26/2019 | FERGUSON | 1,820.83 | | INVENTORY/NON-INVENTORY SUPPS |
| | | FERGUSON Total | 1,820.83 | | |

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|------|------------------------|--------------------------|---------------------------|-------|---------------------------------|
| 1818 | 2/26/2019 | FGL ENVIRONMENTAL | 34.00 | | WTR SAMPLE ANALYSIS - 01/28 |
| 1818 | 2/26/2019 | FGL ENVIRONMENTAL | 224.00 | | WTR SAMPLE ANALYSIS - 01/28 |
| 1818 | 2/26/2019 | FGL ENVIRONMENTAL | 68.00 | | WTR SAMPLE ANALYSIS - 02/06 |
| 1760 | 2/15/2019 | FGL ENVIRONMENTAL | 68.00 | | WTR SAMPLE ANALYSIS 1/08 |
| 1760 | 2/15/2019 | FGL ENVIRONMENTAL | 264.00 | | WTR SAMPLE ANALYSIS 1/14 |
| 1760 | 2/15/2019 | FGL ENVIRONMENTAL | 54.00 | | WTR SAMPLE ANALYSIS 1/21 |
| 1760 | 2/15/2019 | FGL ENVIRONMENTAL | 204.00 | | WTR SAMPLE ANALYSIS 1/21 |
| 1760 | 2/15/2019 | FGL ENVIRONMENTAL | 15.00 | | WTR SAMPLE ANALYSIS 11/07/18 |
| | | FGL ENVIRONMENTAL Total | 931.00 | | |
| 1819 | 2/26/2019 | FRONTIER | 45.82 | | TELEMETRY LINE |
| | | FRONTIER Total | 45.82 | | |
| 1820 | 2/26/2019 | FUEL SMART SB | 1,983.83 | | FUEL PURCHASES THRU 2/12 |
| 1854 | 2/27/2019 | FUEL SMART SB | 1,586.32 | | FUEL PURCHASES THRU 2/26 |
| | | FUEL SMART SB Total | 3,570.15 | | |
| 1761 | 2/15/2019 | GRAINGER INC. | 41.26 | | BVTP SUPPS |
| 1761 | 2/15/2019 | GRAINGER INC. | 57.78 | | BVTP SUPPS |
| 1761 | 2/15/2019 | GRAINGER INC. | 62.89 | | BVTP SUPPS |
| 1761 | 2/15/2019 | GRAINGER INC. | 198.87 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 77.33 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 97.36 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 108.64 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 98.98 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 55.95 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 236.19 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 239.93 | | BVTP SUPPS |
| 1821 | 2/26/2019 | GRAINGER INC. | 19.79 | | BVTP SUPPS |
| | | GRAINGER INC. Total | 1,294.97 | | |
| 0 | | HARTFORD LIFE | 25.00 | | PP #3 457 CONTRIBUTION |
| 0 | 2/15/2019 | HARTFORD LIFE | 25.00 | | PP #4 457 CONTRIBUTION |
| | | HARTFORD LIFE Total | 50.00 | | |
| 1762 | 2/15/2019 | HOSE-MAN, INC. | 21.85 | | FORKLIFT REPAIR |
| 4000 | 0/00/00/0 | HOSE-MAN, INC. Total | 21.85 | _ | |
| 1822 | 2/26/2019 | ICF JONES & STOKES | 877.50 | В | JAMESON ALGAECIDE PERMIT |
| 4700 | 0/45/0040 | ICF JONES & STOKES Total | 877.50 | | DILL DDINT DEC 2040 |
| 1763 | 2/15/2019 | INFOSEND | 558.72 | | BILL PRINT DEC 2018 |
| 1763 | 2/15/2019 | INFOSEND | 2,012.14 | | DECEMBER PRINT/POSTAGE |
| 1763 | 2/15/2019 2/15/2019 | INFOSEND INFOSEND | 2,002.26 | | JAN2019 BILL PRINT/MAIL |
| 1763 | 2/15/2019 | INFOSEND Total | 563.71 5 136 93 | | JAN2019 MTHLY SUPP FEE/COMPLY |
| 1764 | 2/15/2019 | IRON MOUNTAIN | 5,136.83 43.30 | | SHRED SRVCS JAN 2019 |
| 1704 | 2/13/2019 | IRON MOUNTAIN Total | 43.30 | | SHRED SRVCS JAN 2019 |
| 0 | 2/27/2019 | JAN E ABEL | 298.72 | | MED RETIREE BEN REIMB MAR2019 |
| U | 2/2//2013 | JAN E ABEL Total | 298.72 298.72 | | WED RETIREE BEN REIWD WARZOTS |
| 1765 | 2/15/2019 | JUAN O.'S REPAIR | 500.00 | | ORTEGA PUMP STATION FLUSHING |
| 1700 | 2/10/2013 | JUAN O.'S REPAIR Total | 500.00 | | OKTEGAT GIVII GTATION LEGGIIING |
| 0 | 2/4/2019 | LINCOLN FINANCIAL | 2,075.00 | | PP #3 457 CONTRIBUTION |
| 0 | | LINCOLN FINANCIAL | 2,075.00 | | PP #4 457 CONTRIBUTION |
| 1823 | 2/26/2019 | LINCOLN FINANCIAL | 1,013.00 | | LTD INSUR PREM - MAR 2019 |
| | | LINCOLN FINANCIAL Total | 5,163.00 | | |

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|--------------|------------------------|-------------------------------------|----------------|-------|---|
| 1766 | 2/15/2019 | MARBORG | 748.86 | | 3YRD TRASH/RECYCLE JAN2019 |
| 1824 | 2/26/2019 | MARBORG | 10.78 | | DTP PORTABLE RESTROOM |
| 1766 | 2/15/2019 | MARBORG | 619.15 | | GARBAGE 11YRD ROLL |
| 1766 | 2/15/2019 | MARBORG | 890.71 | | GLEN OAKS DIRT REMOVAL |
| 1766 | 2/15/2019 | MARBORG | 142.91 | | GARBAGE JAN 2019 |
| | | MARBORG Total | 2,412.41 | | |
| 1825 | 2/26/2019 | MCCORMIX CORP. | 119.77 | | FLEET FUEL PURCH THRU 2/15/19 |
| 1767 | 2/15/2019 | MCCORMIX CORP. | 43.23 | | FUEL PURCHASES THRU 1/31 |
| 1767 | 2/15/2019 | MCCORMIX CORP. | 297.28 | | OIL SUPPLIES |
| 4000 | 0/00/0040 | MCCORMIX CORP. Total | 460.28 | | DVTD OUDDO |
| 1826 | 2/26/2019 | MCMASTER-CARR | 240.84 | | BVTP SUPPS |
| 4007 | 2/26/2010 | MCMASTER-CARR Total | 240.84 | | DVTD CUDDS |
| 1827 1827 | 2/26/2019 2/26/2019 | MISSION LINEN MISSION LINEN | 82.24 22.00 | | BVTP SUPPS BVTP UNIFORM PANTS - SANCHEZ |
| 1827 | 2/26/2019 | MISSION LINEN | 109.25 | | BVTP UNIFORM SRVC - 02/12 |
| 1768 | 2/15/2019 | MISSION LINEN | 82.24 | | BVTP UNIFORM SRVC - 02/12 BVTP UNIFORM SRVC - 2/05 |
| 1827 | 2/26/2019 | MISSION LINEN | 229.36 | | DIST UNIFORM SRVC - 02/19 |
| 1768 | 2/15/2019 | MISSION LINEN | 315.28 | | DIST UNIFORM SRVC - 2/05 |
| 1768 | 2/15/2019 | MISSION LINEN | 237.74 | | DIST UNIFORM SRVC - 2/12 |
| | | MISSION LINEN Total | 1,078.11 | | |
| 1828 | 2/26/2019 | MNS ENGINEERS | 2,870.00 | | JUNCAL EMERG ACTION PLAN DEC18 |
| | | MNS ENGINEERS Total | 2,870.00 | | |
| 1829 | 2/26/2019 | MONTECITO JOURNAL | 328.90 | | 1/4PG AD LOVE RAIN - 2/14/19 |
| 1769 | 2/15/2019 | MONTECITO JOURNAL | 328.90 | | MONTHLY AD - RUN DATE 1/24 |
| | | MONTECITO JOURNAL Total | 657.80 | | |
| 1830 | 2/26/2019 | MONTECITO VILLAGE | 1.41 | | BVTP SUPP |
| 1830 | 2/26/2019 | MONTECITO VILLAGE | 34.01 | | BVTP SUPPS |
| 1830 | 2/26/2019 | MONTECITO VILLAGE | 54.90 | | BVTP SUPPS |
| 1830 | 2/26/2019 | MONTECITO VILLAGE | 29.03 | | BVTP SUPPS |
| 1830 1830 | 2/26/2019 2/26/2019 | MONTECITO VILLAGE MONTECITO VILLAGE | 5.38 36.56 | | BVTP SUPPS SHOP SUPPS |
| 1770 | 2/20/2019 | MONTECITO VILLAGE | 7.53 | | TERMINAL RESVR ROOF REPAIRS |
| 1770 | 2/13/2019 | MONTECITO VILLAGE Total | 168.82 | | TERMINAL RESVICTOOL REPAIRS |
| 1771 | 2/15/2019 | NBS GVRNMT FINANCE | 2,281.25 | | RATE STUDY |
| 1831 | 2/26/2019 | NBS GVRNMT FINANCE | 1,593.75 | | RATE STUDY PROF SRVC THRU 1130 |
| | | NBS GVRNMT FINANCE Total | 3,875.00 | | |
| 1772 | 2/15/2019 | NORTHERN SAFETY | 66.99 | | SAFETY GLASSES |
| | | NORTHERN SAFETY Total | 66.99 | | |
| 0 | 2/4/2019 | PAYLOCITY CORP | 30,765.86 | | PP #3 TAX DEPOSIT |
| 0 | | PAYLOCITY CORP | 32,378.15 | | PP #4 TAX DEPOSIT |
| 0 | 2/04/2019 | PAYLOCITY CORP | 386.07 | | PAYROLL FEES END 2/01; PP #3 |
| 0 | 2/14/2019 | PAYLOCITY CORP | 225.96 | | PAYROLL FEES END 2/15/19; PP#4 |
| | 0/00/00/10 | PAYLOCITY CORP Total | 63,756.04 | | |
| 1832 | 2/26/2019 | PRAXAIR Tatal | 90.00 | | DIST SUPPS |
| 4770 | 0/45/0040 | PRAXAIR Total | 90.00 | | ADMINI COOLINDO MAINT |
| 1773 | 2/15/2019 2/15/2019 | PRO GARDEN SUPPLY PRO GARDEN SUPPLY | 41.30 | | ADMIN GROUNDS MAINT |
| 1773 1773 | 2/15/2019 | PRO GARDEN SUPPLY | 72.85 41.30 | | BARKER PASS GROUNDS MAINT GOPHER TRAPS |
| 1113 | 211312018 | PRO GARDEN SUPPLY Total | 155.45 | | GOFTIER TRAFS |
| 1833 | 2/26/2019 | PURETEC | 72.26 | | BVTP SUPPS |
| 1833 | 2/26/2019 | PURETEC | 146.67 | | CHEM SUPPS - BVTP |
| 1833 | 2/26/2019 | PURETEC | 1.05 | | FINANCE CHG DEC 2018 |
| | | PURETEC Total | 219.98 | | |

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|------|-----------|---------------------------------------|-------------------------------|--------|---------------------------------|
| 1774 | 2/15/2019 | QUILL CORPORATION | 28.94 | | BVTP SUPPS |
| | | QUILL CORPORATION Total | 28.94 | | |
| 1775 | 2/15/2019 | RAUCH COMM | 702.25 | | ENEWS/JOURNAL/WEBSITE |
| | | RAUCH COMM Total | 702.25 | | |
| 1776 | 2/15/2019 | RED WING BUSINESS | 297.37 | | D RODRIGUEZ SAFETY BOOTS |
| 1776 | 2/15/2019 | RED WING BUSINESS | 300.00 | | J BAUTISTA SAFETY BOOTS |
| 1776 | 2/15/2019 | RED WING BUSINESS | 293.82 | | J CARRILLO SAFETY BOOTS |
| 1776 | 2/15/2019 | RED WING BUSINESS | 300.00 | | J DIAZ SAFETY BOOTS |
| 1776 | 2/15/2019 | RED WING BUSINESS | 265.57 | | R ROMERO SAFETY BOOTS |
| | | RED WING BUSINESS Total | 1,456.76 | | |
| 1779 | 2/15/2019 | S.B. CO CLERK | 3,283.92 | | ELECTION SRVCS 2018 GENERAL |
| | | S.B. CO CLERK Total | 3,283.92 | | |
| 1834 | 2/26/2019 | S.B. HOME IMPR | 33.69 | | JAMESON SUPPS |
| 1834 | 2/26/2019 | S.B. HOME IMPR | 127.85 | | JAMESON SUPPS |
| | 0/45/0040 | S.B. HOME IMPR Total | 161.54 | | |
| 1777 | 2/15/2019 | S.B. HOME IMPR CNTR | 89.09 | | JAMESON SUPPS |
| 4==0 | 0/45/0040 | S.B. HOME IMPR CNTR Total | 89.09 | | |
| 1778 | 2/15/2019 | SAF-T-FLO INDUSTRIES | 573.45 | | CHECK VALVE/SOL TUBE BVTP SUPP |
| 4005 | 0/00/0040 | SAF-T-FLO INDUSTRIES Total | 573.45 | | LAMEGON CATELLITE BUONE LANG |
| 1835 | 2/26/2019 | SATCOM DIRECT INC | 48.40 | | JAMESON SATELLITE PHONE JAN19 |
| 4700 | 2/15/2019 | SATCOM DIRECT INC Total SCE | 48.40 | | MTH V FL FO CDVC 40/00 04/05/40 |
| 1782 | 2/15/2019 | | 18,361.63 18,361.63 | | MTHLY ELEC SRVC 12/26-01/25/19 |
| 1836 | 2/26/2019 | SCE Total SCHOCK | • | | STORM OF EANIER |
| 1836 | 2/26/2019 | SCHOCK | 4,705.72 | J J | STORM CLEANUP |
| 1030 | 2/20/2019 | SCHOCK Total | 3,791.83 | J | STORM CLEANUP |
| 1780 | 2/15/2019 | SMARDAN HATCHER | 8,497.55 213.71 | | CARETAKER PROP SUPPS/REPAIRS |
| 1760 | 2/13/2019 | SMARDAN HATCHER SMARDAN HATCHER Total | 213.71 213.71 | | CARETAKER PROP SUPPS/REPAIRS |
| 1783 | 2/15/2019 | SO CAL GAS | 88.24 | | ADMIN GAS SRVC 1/07-2/04 |
| 1783 | 2/15/2019 | SO CAL GAS | 68.69 | | BVTP GAS SRVC 1/04-2/04/19 |
| 1700 | 2/10/2010 | SO CAL GAS Total | 156.93 | | DV11 G/(G G/(VG 1/04-2/04/13 |
| 1781 | 2/15/2019 | SOAP MAN | 185.76 | | DIST SUPPS |
| 1837 | 2/26/2019 | SOAP MAN | 345.65 | | DIST/KITCHEN SUPPS |
| 1001 | 2/20/2010 | SOAP MAN Total | 531.41 | | DIST/MITSTIEM SOLT S |
| 1839 | 2/26/2019 | ST WTR CNTRL BRD | 65.00 | | D2 EXAM FEE - DAVID WONG |
| 1000 | _,,_ | ST WTR CNTRL BRD Total | 65.00 | | BE EN WITTEE BANKIB WORKS |
| 1838 | 2/26/2019 | STAPLES ADVANTAGE | 241.88 | | OFFICE SUPPS/BVTP SUPPS |
| | | STAPLES ADVANTAGE Total | 241.88 | | |
| 1784 | 2/15/2019 | TETRA TECH, INC | 39,829.72 | F | FEMA HIGHLINE CEQA REPAIRS |
| | | TETRA TECH, INC Total | 39,829.72 | | |
| 1840 | 2/26/2019 | TRI-CO REPRO | 78.32 | J | ALDER CREEK FLUME SCANS |
| 1840 | 2/26/2019 | TRI-CO REPRO | 31.06 | | SYCAMORE CANYON MAPS |
| | | TRI-CO REPRO Total | 109.38 | | |
| 1855 | 2/27/2019 | TYLER TECH | 9,844.78 | | REISSUE OF CK #1539 - DEC 2018 |
| | | TYLER TECH Total | 9,844.78 | | |
| 1785 | 2/15/2019 | UNDERGROUND ALERT | 143.65 | | DIG ALERT TICKETS JAN 2019 |
| | | UNDERGROUND ALERT Total | 143.65 | | |
| 1841 | 2/26/2019 | UNITED HEALTHCARE | 198.66 | | ALEX AYALA RET MED INSUR MAR19 |
| | | UNITED HEALTHCARE Total | 198.66 | | |
| 1842 | 2/26/2019 | UPS | 130.73 | | BVTP WTR SAMPLES TO EUROFINS |
| | | UPS Total | 130.73 | | |

| CK# | DATE | VENDOR/PAYEE | AMT | F/J/B | DESCRIPTION |
|--------------|------------------------|-------------------------------|-----------------|-------|---|
| 1843 | 2/26/2019 | USA BLUEBOOK | 196.70 | | BVTP SUPPS |
| 1843 | 2/26/2019 | USA BLUEBOOK | 239.24 | | BVTP SUPPS |
| 1843 | 2/26/2019 | USA BLUEBOOK | 178.78 | | BVTP SUPPS |
| 1843 | 2/26/2019 | USA BLUEBOOK | 186.86 | | BVTP SUPPS |
| 1786 | 2/15/2019 | USA BLUEBOOK | 445.24 | | FIRE HYDRANT METER PARTS |
| | | USA BLUEBOOK Total | 1,246.82 | | |
| 1787 | 2/15/2019 | USC COMPANIES, INC. | 474.60 | | OFFICE JANITORIAL JAN 2019 |
| | | USC COMPANIES, INC. Total | 474.60 | | |
| 1754 | 2/15/2019 | VOID | - | | VOID |
| 1851 | 2/27/2019 | VOID | - | | VOID |
| | | VOID Total | - | | |
| 1788 | 2/15/2019 | WATER QUAL/TREAT | 4,680.00 | В | WATER QUALITY IMPROVEMENT |
| | | WATER QUAL/TREAT Total | 4,680.00 | | |
| 1789 | 2/15/2019 | WCT PRODUCTS | 3,468.30 | | PIPELINE LOCATOR DIST BUDG ITM |
| | | WCT PRODUCTS Total | 3,468.30 | | |
| 1790 | 2/15/2019 | WELLS CC / AWWA | 1,000.00 | | AWWA CONF FEE:PRINCE/SANCHEZ |
| 1790 | 2/15/2019 | WELLS CC / SHERWIN WILL | 99.35 | | JAMESON LAKE PAINT |
| 1790 | 2/15/2019 | WELLS CC / LOG ME IN | 70.15 | | LONG DISTANCE CONF CHARGES |
| 1790 | 2/15/2019 | WELLS CC / AMAZON | 760.32 | | OFFICE SUPPLIES/PHONE/MEALS |
| 1790 | 2/15/2019 | WELLS CC / ICONTACT | 52.00 | | PUB INFO SUBSCRIPTION |
| 1790 | 2/15/2019 | WELLS CC / USPS | 66.80 | | POSTAGE |
| 1790 | 2/15/2019 | WELLS CC / SMART FINAL | 86.62 | | WATER |
| 1790 | 2/15/2019 | WELLS CC / ASSOC BAG | 61.29 | | DOOR TAG BAGS |
| 1790 | 2/15/2019 | WELLS CC / VIASAT | 200.86 | | INTERNET - JAMESON |
| 4704 | 0/45/0040 | WELLS FARGO BANK Total | 2,397.39 | | DVTD DEGT ONTDL JANIAG |
| 1791 | 2/15/2019 | WESTERN EXTERM | 69.50 | | BVTP PEST CNTRL JAN 19 |
| 1791 | 2/15/2019 2/15/2019 | WESTERN EXTERM WESTERN EXTERM | 258.50 | | DAM PEST CONTROL JAN-MAR19 |
| 1791 1791 | 2/15/2019 | WESTERN EXTERM | 118.00 73.50 | | OFFICE PEST CNTRL JAN/FEB19 OFFICE PEST CNTRL JAN19 |
| 1791 | 2/15/2019 | WESTERN EXTERM | 81.00 | | TORO CYN PEST CNTRL |
| 1731 | 2/10/2019 | WESTERN EXTERM Total | 600.50 | | TORO CHI FEST CHIRE |
| 1792 | 2/15/2019 | WESTERN WATER | 6,932.15 | | PARK LANE DMG CLA VAL ELEC CTR |
| 1792 | 2/15/2019 | WESTERN WATER | 1,150.73 | | PARK LANE DMG TRANSMITTER |
| 1752 | 2/10/2013 | WESTERN WATER Total | 8,082.88 | | TARK LANE DING TRANSMITTER |
| 1844 | 2/26/2019 | WOOD RODGERS, INC. | 1,900.00 | | ON CALL ENG SUPP THRU 1/31/19 |
| 1011 | 2/20/2010 | WOOD RODGERS, INC. Total | 1,900.00 | | ON ONEE ENG COLL THING THE TO |
| 1793 | 2/15/2019 | ZACHARIAS HUNT | 1,665.95 | | GIS MONTHLY |
| | | ZACHARIAS HUNT Total | 1,665.95 | | |
| 1845 | 2/27/2019 | ROGERS, ANTHONY | 27.76 | | CUSTOMER REFUND |
| 1849 | 2/27/2019 | ANDERSON, THOMAS J | 171.69 | | CUSTOMER REFUND |
| 1848 | 2/27/2019 | GRIFFITH TTEE, LOMA | 160.34 | | CUSTOMER REFUND |
| 1850 | 2/27/2019 | LEE, LARRY & RACHEL | 79.99 | | CUSTOMER REFUND |
| 1847 | 2/27/2019 | SEKBAN, ALI | 100.89 | | CUSTOMER REFUND |
| 1846 | 2/27/2019 | TURNER, MARSHALL | 79.99 | | CUSTOMER REFUND |
| | | CUSTOMER REFUNDS Total | 620.66 | | |
| | | Grand Total | 826,451.06 | | |

MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 4-C

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: BUSINESS DEPARTMENT

SUBJECT: DISTRICT FUNDS

For your information, the District's current invested reserve portfolio, as of 2/28/19, is as follows:

| Unrestricted Reserve Funds | Date | Principal |
|-------------------------------|-----------|--------------|
| American Riviera Checking | 2/28/2019 | \$1,460,826 |
| American Riviera Money Market | 2/28/2019 | \$5,008,749 |
| Schwab | 2/28/2019 | \$6,602,141 |
| CCWA Credit Balance Fund | 2/28/2019 | \$148,889 |
| | TOTAL | \$13,220,605 |

| Restricted Reserve Funds | Date | Principal |
|---|-----------|-------------|
| Bank of New York-2010 A Bond Reserve Fund | 2/28/2019 | \$1,460,343 |
| California Bank & Trust DWR Ortega Loan Reserve | 2/28/2019 | \$590,580 |
| CCWA Rate Coverage Reserve Fund | 2/28/2019 | \$1,450,183 |
| | TOTAL | \$3,501,106 |

MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 5-A

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: GENERAL MANAGER

SUBJECT: APPROVAL OF PROPOSAL FROM DUDEK FOR PROFESSIONAL

CONSULTING SERVIES TO ASSIST WITH DEVELOPMENT OF A GROUNDWATER SUSTAINABILITY PLAN PURSUANT TO THE

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

This item was reviewed by the Strategic Planning Committee at their meeting on March 15, 2019 and the Committee concurs with the staff recommendation.

RECOMMENDATION:

That the Board of Directors approve the updated proposal received from Dudek to provide services associated with the development of a Groundwater Sustainability Plan pursuant to the Sustainable Groundwater Management Act including the optional funding options analysis (Task 3.2) for the combined not to exceed amount of \$640,148.

DISCUSSION:

With the District's official designation by the Department of Water Resources as the exclusive Groundwater Sustainability Agency (GSA) for the Montecito Groundwater Basin (Basin) in November 2018, the next step in the Sustainable Groundwater Management Act (SGMA) compliance process is the preparation of a Groundwater Sustainability Plan (GSP).

The ultimate goal of SGMA is sustainable groundwater management achieved through the development and implementation of a GSP. GSPs must result in "sustainable conditions" in the basin, which are defined by SGMA as the avoidance of significant negative impacts, such as chronic overdraft, worsening water quality, surface water depletions, sea water intrusion (in coastal basins), and land subsidence. GSPs require detailed technical information to define the basin and aquifer conditions, including historic and current water supply use, water quality conditions, and projected water demands. GSPs must also include measurable objectives and interim milestones to be met on the way to achieving sustainability within 20 years.

The District has consulted with Dudek on SGMA compliance for the Basin since 2016. Dudek's involvement thus far has included work on two basin boundary modifications, a basin prioritization assessment and most recently, the formation of a GSA for the basin. In addition, Dudek has played a significant and key role in the District's communication and public outreach efforts for SGMA. The District has been well served by Dudek's

involvement in its SGMA process. Based on Dudek's technical experience with SGMA, knowledge of and familiarity with the Basin and past involvement in the District's SGMA compliance process, staff recommends continuing to consult with Dudek for the next phase of SGMA: GSP development. Due to the highly technical nature of GSP development and the significant time commitment required for completion, assistance from a consultant is required.

Attached is an updated proposal from Dudek to provide the next phase of services required for SGMA compliance, which includes the development of a GSP for the Basin. The proposal provides a detailed work plan, project schedule and an estimate of the costs for Board consideration. The proposal includes two optional tasks; a funding options analysis and the development of a numerical groundwater model. The funding options analysis will evaluate the various options for funding the development of the GSP. The numerical groundwater model is an effective tool used to simulate the water budget in the Basin and evaluate potential future projects and the effect of climate change on the Basin.

Staff recommends awarding this work, including the optional funding options analysis, to Dudek. The optional task to develop a numerical groundwater model could be considered for approval by the Board at a later date when it becomes evident that this modeling effort is necessary for GSP completion and/or implementation.

BACKGROUND:

The Sustainable Groundwater Management Act (SGMA) took effect on January 1, 2015, and requires all groundwater basins designated as medium or high priority by the Department of Water Resources (DWR) to be sustainably managed by the year 2042. DWR defines "sustainability" as the absence of negative impacts such as groundwater depletion, water quality degradation, and land subsidence. DWR's groundwater basin priority designations are based on several factors, including population, number of groundwater wells, overdraft, land subsidence and water quality conditions. As part of the 2014 California State Groundwater Elevation Monitoring (CASGEM) Program, the Montecito Groundwater Basin was designated a "very low" priority basin, meaning that SGMA compliance is not mandatory.

Groundwater continues to be an integral part of the District's water supply portfolio, currently making up 10-15% of its total supply. Managing that supply responsibly will ensure its long term reliability. In 2016, recognizing the benefits of groundwater to its overall water supply portfolio and the need to ensure long-term sustainability of the Basin, the District's Board of Directors elected to pursue compliance with SGMA, on a voluntarily basis.

In early 2019, DWR completed its preliminary assessment of the 2014 basin priority rankings determined as part of the CASGEM program. As a result, the Montecito Groundwater Basin was redesignated from "very-low" to "medium" priority based on current basin information. This change, when final would mandate the implementation of SGMA for the Basin. This preliminary ranking is not anticipated to change when DWR finalizes their reprioritization process in early summer 2019.

In 2016, the District considered a proposal received from Dudek for providing professional services to assist the District with compliance with SGMA for the Basin. The proposal suggested a phased approach to include assistance with Basin Boundary Modifications (Phase 1), formation of a Groundwater Sustainability Agency (GSA) (Phase 2), monitor grant funding opportunities and prepare/submit applications (Phase 3) and development of a Groundwater Sustainability Plan (GSP) (Phase 4). The District's Board of Directors supported the staff recommendation to proceed with Phases 1 & 2 of the proposal and to revisit future phases of work after formation of a GSA.

Below is summary of the District's progress to date towards implementation of SGMA for the Basin:

Phase 1 - Groundwater Basin Boundary Modification

Pursuant to SGMA, DWR developed a process by which responsible entities may adjust existing boundaries as designated in State Bulletin 118. Such adjustments may be based on scientific or jurisdictional considerations. In 2016, a scientific based modification to the shared boundary between the Montecito and Carpinteria Groundwater Basins as requested by the Carpinteria Valley Water District (CVWD) was denied by DWR. Subsequently in July 2018, with assistance from Dudek, the District collaborated with CVWD and applied for a modification based on a jurisdictional basis. This new Basin Boundary Modification, which aligned the westerly most boundary of the Basin with the District's jurisdictional boundary was approved by DWR in February 2019. The District doesn't currently anticipate pursuing additional basin boundary modifications for the Basin.

Phase 2 – Formation of a Groundwater Sustainability Agency (GSA)

As a medium-priority basin, the Basin is required to implement the SGMA process, which includes the formation of a GSA. GSAs can consist of a local agency or combination of agencies that have water supply, water management, or land use responsibilities in the basin. SGMA empowers GSAs with certain financial, regulatory, and enforcement abilities but does not allow them to determine water rights. In July 2018, the District adopted Resolution No. 2169 declaring its intent to form a GSA for the Basin. GSA formation has specific requirements, including a robust public outreach and education program. The District retained Dudek to assist with the GSA outreach, coordination, and application process (Phase 2 services).

Extensive public outreach was conducted via several methods, including public meetings, workshops, email updates, the MWD SGMA webpage, and MWD newsletters. The public outreach performed as of July 2018 is documented in District Resolution No. 2169.

The GSA application was submitted to DWR and deemed complete by DWR on August 29, 2018. On November 28, 2018, following a 90-day public review period, DWR declared the District the exclusive GSA for the Basin, officially establishing the *Montecito Groundwater Basin Groundwater Sustainability Agency* (Agency). Its anticipated that the Agency will hold its first public board meeting as a GSA in April 2019.

Project Schedule

If the Basin prioritization remains medium priority on the final prioritization ranking, the Basin will not be bound to the original SGMA compliance schedule. Instead, GSA formation must occur within 2 years of the final basin reprioritization, and the GSP must be submitted within 5 years of final basin prioritization. Therefore, the Basin GSP must be submitted to DWR by May 2024. Achieving Basin sustainability is still required within 20 years of GSP submittal for non-critically overdrafted basins.

The District's decision to become the GSA and ultimately manage the Basin ahead of it being required has resulted in it being well ahead of the required SGMA compliance timeline. Staff proposes a 3.5-year schedule for GSP development, projected to begin in March 2019 and conclude in mid-2022.

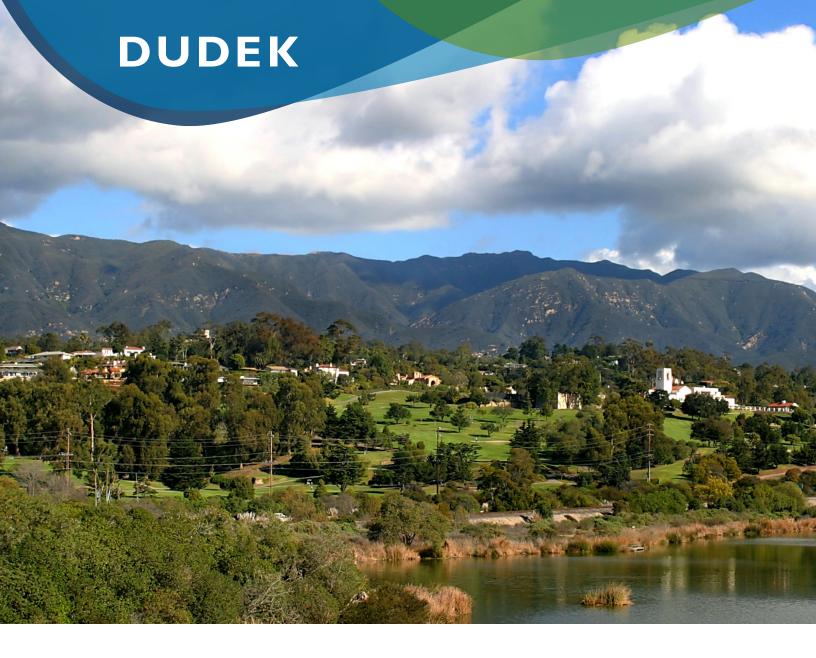
Fiscal Impact:

The proposed cost included in Dudek's proposal to complete this work including the funding options analysis (Task 3.2) is a not-to-exceed amount of \$640,148. The proposed work and corresponding costs will be spread over 3.5 years as depicted in the project schedule.

The District's FY18/19 approved budget includes \$200,000 for SGMA-related work and future FY budgets would include a portion of these costs. Note that *Task 3.2 Funding Options Analysis* included in Dudek's proposal comprises an analysis of the various funding mechanisms to be considered for funding the GSP development process and ultimately its implementation. This work would be performed within the first year of this project.

Attachments:

1. Updated proposal from Dudek dated March 1, 2019



Development of a Groundwater Sustainability Plan for the Montecito Groundwater Basin

PREPARED FOR

Montecito Water District

March 1, 2019

Cover Letter

March 1, 2019

Nicholas Turner

Montecito Water District
583 San Ysidro Road
Santa Barbara, California 93108

Subject: Development of a Groundwater Sustainability Plan for the Montecito Groundwater Basin

Dear Mr. Turner,

The Montecito Groundwater Basin (Basin) Groundwater Sustainability Agency (GSA) requires the preparation of a Sustainable Groundwater Management Act (SGMA)—compliant Groundwater Sustainability Plan (GSP) for the Basin. We are pleased to submit this scope of services to prepare the GSP and conduct the related processes including stakeholder outreach and data management. In addition, we have teamed with Raftelis to offer the GSA an optional evaluation of fee and funding options for preparing and implementing the GSP. In order to provide context for our proposed scope of work, we have included a background section on SGMA and the Montecito Water District's progress toward compliance thus far.

Dudek has been contracted to prepare all or part of eight GSPs throughout California and has prepared the only preliminary draft GSPs for public review in California. We have a diverse staff of technical, policy, and planning experts and our project manager and deputy project manager have decades of experience in Santa Barbara County and Montecito Water District (MWD) water and planning issues. We have enjoyed assisting MWD with the first several phases of the SGMA-related process including basin boundary modification (BBM), Basin Prioritization Evaluation, and GSA formation. We appreciate you considering Dudek's updated proposal for GSP preparation and look forward to further discussing the project with MWD and the GSA.

Please contact Matt Naftaly at mnaftaly@dudek.com or 805.309.8529 if you have any questions or want to discuss any aspect of the project.

Sincerely,

Matt Naftaly, PH

Project Manager

Trey Driscoll, PG, CHG

Trey Dineall

Principal in Charge

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APPENDICES

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Sustainable Groundwater Management Act

As a medium-priority basin, Montecito Groundwater Basin (**Figure 1**) is required to be managed under a GSP that has been prepared in accordance with the SGMA. Several of the SGMA requirements have already been implemented by MWD (see MWD SGMA Implementation to Date). This proposal is for the preparation and initial implementation tasks of the GSP required for the Basin (see MWD GSP Work Plan).

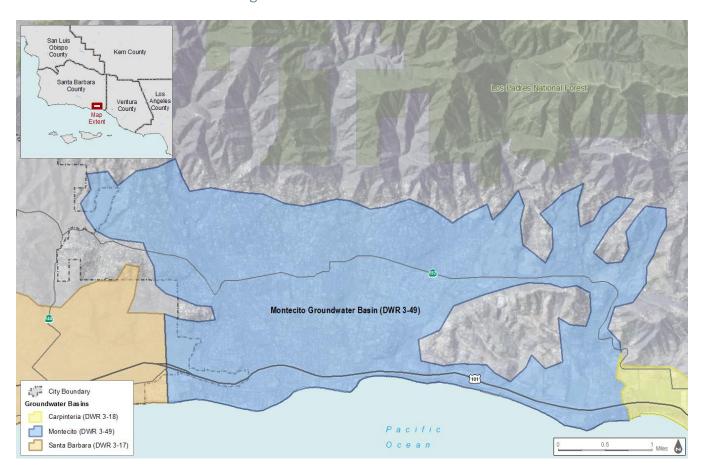


Figure 1. Montecito Groundwater Basin

The Requirements of SGMA

The SGMA is legislation requiring the comprehensive study and management of California's groundwater basins. It is contained in three bills that were signed into law in September 2014.¹ The SGMA requires sustainable management of all groundwater basins designated as medium or high priority by the California Department of Water Resources (DWR). Although the legislation is focused on groundwater management, it addresses groundwater basins holistically, as groundwater management is affected by surface water supplies, water consumption, long-term climate, and land use planning. Central to the SGMA legislation is the emphasis on management of groundwater by local entities with minimal oversite by the State. However, in the event that eligible agencies for a basin are unable, or unwilling, to implement the SGMA, the State Water Resources Control Board may intervene at the expense of the local water users.

The people of the state have a primary interest in the protection, management, and reasonable beneficial use of the water resources of the state, both surface and underground, and the integrated management of the state's water resources is essential to meeting its water management goals.²

Primary to the requirements of the SGMA is the "sustainable management of groundwater," which the SGMA defines as the absence of "undesirable results." The legislation defines undesirable results as the chronic lowering of groundwater, significant and unreasonable reduction in groundwater storage, significant and unreasonable degradation of water quality, land subsidence due to excessive groundwater withdrawal, surface water depletions that have significant and unreasonable impacts on beneficial uses, and seawater intrusion. "Significant and unreasonable" is left to the local GSA to define based on the specific needs and characteristics of each basin.

The primary processes of the SGMA legislation are described briefly below and in greater detail in the sections that follow.

Basin Boundary Modification

In preparation for the implementation of the SGMA, DWR established a process for local entities overlying the groundwater basins to apply for modifications to basin boundaries. Modifications may be based on either scientific or jurisdictional considerations and are intended to enhance the management of the groundwater basins (see the "Basin Boundary Modification" section).

Basin Prioritization

The 2009 California State Groundwater Elevation Monitoring (CASGEM) Program basin prioritization provided the foundation for the initial DWR prioritization of California's 513 groundwater basins. Under the SGMA, the basin prioritization process takes into account several local factors, including current and projected groundwater use, projected land use, and existing undesirable results (see "Basin Prioritization" section).

Groundwater Sustainability Agency

The GSA is the local agency responsible for the implementation of the SGMA. To be eligible, GSA entities must overlie the basin and have land use or water management responsibilities within the Basin. GSAs may consist of a

Senate Bill (SB) 1168 (Pavley), Assembly Bill (AB) 1739 (Dickinson), SB 1319 (Pavley). SGMA is codified in California Water Code (CWC), Part 2.75 (Sustainable Groundwater Management), Section 10720–10737.8, et al.

² SB 1168, Section 1a.



single entity or a combination of entities. There are specific requirements for the application and formation of a GSA. GSAs are afforded certain powers and responsibilities through the SGMA legislation, including the ability to require water users to monitor and report groundwater use and the ability to charge fees to implement management activities. A GSA may limit groundwater extractions, limit or prohibit construction of new wells, impose spacing requirements on new wells, or establish extraction allocations (California Water Code (CWC) Section 10725.8(e)). Broader powers of the GSA include the ability to acquire surface water or groundwater rights, to import surface water, and to conduct water supply and treatment projects.

Note that the SGMA does not authorize a GSA to make "a binding determination of water rights of any person or entity ..." and states that "nothing ... determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights" (CWC Sections 10726.8 and 10720.5(b)).

Groundwater Sustainability Plan

Section 4 of this scope of work includes a work plan for developing a GSP that is specific to the needs and issues of the Basin and Basin stakeholders. Below is an overview of GSP components and requirements.

The GSP is a comprehensive planning document, the implementation of which must result in sustainable management of the Basin within a 20-year implementation period. During the implementation period, annual reporting and periodic GSP reviews/amendments must be submitted to DWR to track progress and make adjustments needed to achieve Basin sustainability. The required content of the GSP is specified in the California Code of Regulations.³ GSP requirements include the development and maintenance of a data management system (DMS) (Section 352.6) and a comprehensive communication plan that addresses outreach to Basin stakeholders and affected agencies (Section 354.10).

GSP preparation is predicated upon several interrelated requirements making GSP preparation and implementation most effective as an iterative process. Some of the primary requirements are described briefly below:

Hydrogeologic Conceptual Model (Section 354.14)

The Hydrogeologic Conceptual Model (HCM) is the starting point for all of the technical analyses required for the GSP (**Figure 2**). It is a written and graphical description of the basin physical and hydrogeologic characteristics including geologic setting, water supplies and uses, aquifer characteristics, groundwater quality, and interaction between groundwater and surface water. An example of information to be included in the HCM is the potential for seawater intrusion when water levels in onshore aquifers are pumped below mean sea level, thus creating a hydraulic gradient with groundwater flowing inland from the coast.

GSP Regulations refers to the emergency regulations adopted by DWR as California Code of Regulations Title 23, Division 2, Chapter 1.5, Section 350 et seq.



2005-2015 Inflow (AFY) 2005-2015 Water Inflows and Outflows 2005-2015 Outflow (AFY) Borrego Groundwate ET/Other Stream Agricultura 1 Subbasin Boundary (Plan Area) Rams Hill Wastewater Treatment Facility Borrego Sinl -1,000 -2,000 Lower Aquifer

Figure 2. Dudek Hydrogeological Conceptual Model Graphic of Borrego Springs Subbasin

Water Budget (Section 354.18)

Much like a financial budget, the water budget is an accounting of all of the sources of water entering and leaving the groundwater basin. In this section, the presence and extent of an overdraft is evaluated. The groundwater budget must be quantified and include current and historical groundwater use. In **Figure 2**, an example water budget for the period 2005 to 2015 is shown for the Borrego Springs Subbasin illustrating the outflows by pumping far exceed inflows from natural recharge. The projected water budget must be evaluated including anticipated climate change impacts and changes to land use in the Basin.

Sustainable Management Criteria (Sections 354.22-354.30)

The sustainable management criteria are the heart of the GSP. These criteria separate the GSP from previous management plan requirements, which were based only on the water budget. Development of the sustainable management criteria relies on identifying undesirable results, and requires extensive input from stakeholders, advisory committees, and the GSA. Collectively, these entities develop the management criteria based on the needs and circumstances of the Basin.



Required components of the sustainable management criteria are as follow:

- Sustainability Goals (Section 354.24) A policy statement or statements that define sustainability for the Basin and how it is to be achieved within the 20-year timeframe for implementation.
- Undesirable Results (Section 354.26) Groundwater conditions that, when occurring to a definable level, prevent the sustainable management of the groundwater basin. Undesirable results defined by the SGMA include:
 - o Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply;
 - Significant and unreasonable reduction of groundwater storage;
 - Significant and unreasonable seawater intrusion;
 - Significant and unreasonable degraded water quality;
 - Significant and unreasonable land subsidence; and
 - Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.
- Minimum Thresholds (Section 354.28) Quantifiable metrics below which undesirable results in the Basin will occur and sustainable basin management will not be achieved.
- Measurable Objectives (Section 354.30) Quantifiable metrics, including interim milestones for achieving the Sustainability Goal within the 20-year implementation period.

Monitoring Networks (Subarticle 4)

Monitoring network requirements include documentation of data gaps that would impact GSP development, and the development of a monitoring network sufficient for characterization of groundwater conditions throughout the GSP implementation period. Monitoring networks must include all relevant parameters such as groundwater quantity, quality, and land subsidence. The spacing of monitoring points in addition to the frequency of measurements must be addressed in this section. Monitoring network development is iterative and may be improved as data is obtained and basin conditions assessed.

Projects and Management Actions (Subarticle 5)

This section of the GSP describes the projects and management actions that the GSA will use to achieve and maintain groundwater basin sustainability. These must be evaluated as they pertain to the sustainable management criteria established for the Basin. Information presented for Projects and Management Actions must include the circumstances under which they are implemented, how interested stakeholders and agencies were included in project selection, and the current status and projected timetable for completion of those projects selected.

See the "Basin GSP Work Plan" section for development of the GSP that is specific to the needs and issues of the Montecito Groundwater Basin.

Montecito Groundwater Basin

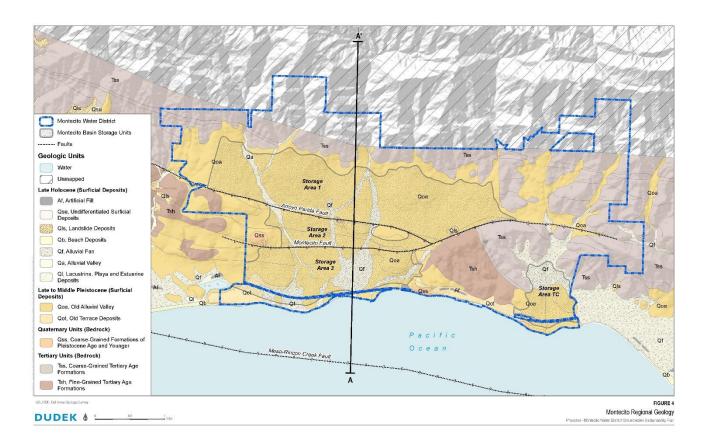
Basin Overview

The Basin (DWR Basin No. 3-49) encompasses 6,270 acres of the south coast of Santa Barbara County (Figure 3). It is a coastal alluvial basin within a structural depression underlain by the highly folded, consolidated rocks of the Santa Ynez Mountains of California's Transverse Range. Consolidated bedrock formations of the mountains include the Matilija Sandstone, Cozy Dell Shale, and Coldwater Sandstone. The Basin is composed of storage areas separated by east—west-trending faults and increases in thickness southward from the Santa Ynez Mountains to the Pacific Ocean. Adjacent south coast basins include the 6,160-acre Santa Barbara Groundwater Basin to the west and the 8,120-acre Carpentaria Groundwater Basin to the east. The Toro Canyon Subunit defines the easternmost part of the Basin (Figure 4).



Figure 3. Santa Barbara South Coast Region Groundwater Basins

Figure 4. Montecito Regional Geology



The Basin boundaries are well defined to the north and south, consisting of the steep, east-west-trending consolidated rocks of the Santa Ynez Mountains and the offshore, east-west-trending Rincon Creek Fault Zone, respectively. The boundary to the west is primarily jurisdictional and has little relationship to subsurface hydrogeologic structure. The eastern boundary of the Basin is largely coincident with the surficial alluvial deposits of the Toro Canyon Subunit. The eastern Basin boundary modification has been preliminarily approved by DWR and the City of Santa Barbara is considering a modification application for a future DWR modification process (see the "Basin Boundary Modification" section for the status of the BBM application).

The principal aquifers are primarily unconfined and include, from deepest to shallowest, the Santa Barbara Formation, Casitas Formation, and alluvium and undifferentiated terrace deposits. The maximum thickness of the Basin is about 1,200 feet in Storage Area 3 (**Figure 4**).

Basin Water Supplies

While SGMA requirements are focused on the sustainability of groundwater resources, implementation of the SGMA directly impacts all water sources because it requires evaluation of, and planning for, water demand and supply sources under current and future conditions with consideration of the reliability and forecasted changes to land use and climate (see SGMA section above). Within the Basin, groundwater has historically been an important part of the total water supply because it is one of the few local water sources unaffected by surface reservoir evaporation and relatively resistant to drought. In addition to the requirements of the SGMA, the MWD 2015 Urban Water Management Plan Update sets as a goal the implementation of 85% "local, drought-proof water supplies" by the year 2025 (Baker 2015).



Current water sources within the Basin include State Water Project water; supplemental imported water purchases; Lake Cachuma and Tecolote Tunnel infiltration; Jameson Lake, Doulton Tunnel infiltration; Santa Ynez River tributary diversion; and groundwater. MWD is in the process of considering or implementing additional water supply options including a long-term water supply agreement with the City of Santa Barbara, banking of water within the Basin, and various recycled water alternatives. Dudek will address all potential water projects and management plans as part of the GSP preparation (see Task 8).

Groundwater Supply and Demand

The safe yield of the Basin has been variously calculated, ranging from about 1,100 to 2,500 AFY by different researchers. "Safe," as defined by DWR for Bulletin 118, is the total amount of water that can be withdrawn on a continuous basis without resulting in adverse impacts. The safe yield is dependent on projects or management actions that provide recharge to the Basin and the avoidance of undesirable results.

The amount of groundwater supplied by MWD varies depending on the availability of other supplies. The approximate percentage of each water source supplied by the MWD during drought and normal years is depicted in Figure 5. Currently, the quantity of water withdrawn from the basin by private well owners is unknown and suspected to have increased significantly as a result of the drought conditions of the past 7 years. Dudek will estimate groundwater use by private well owners to fulfill initial GSP requirements and will recommend that the GSA implement more-definitive techniques as the process progresses (see Task 5.2).

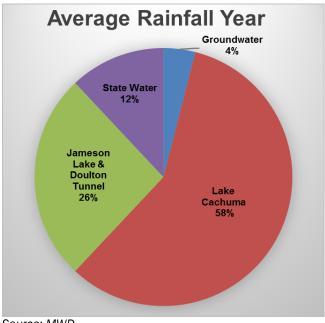
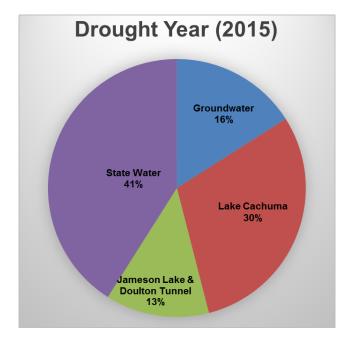


Figure 5. MWD Historic Water Supply Sources



Source: MWD

MWD SGMA Implementation to Date

Following is a description of MWD's progress toward SGMA implementation.

Basin Boundary Modification

The SGMA legislation provides the opportunity for local entities to apply for adjustments to basin boundaries that were originally defined for DWR Bulletin 118 (CWC Section 10722.2). Such adjustments may be based on scientific or jurisdictional considerations. Scientific modifications are in accordance with physical considerations, such as the presence of subsurface barriers to groundwater flow or the physical extent of aquifers. Jurisdictional modifications are those that are made in accordance with entity service areas or jurisdictions. Both types are intended to promote ease of groundwater management through the SGMA process.

The first BBM process was conducted by DWR in 2016. Although MWD did not choose to pursue a modification at that time, the Carpinteria Valley Water District submitted an application to annex the Toro Canyon subunit to the Carpinteria Valley Groundwater Basin. The Montecito Water District retained Dudek to respond to the application, which was denied by DWR on the grounds that "The request did not provide scientific information demonstrating that the Toro Canyon area is connected to the Carpinteria or Montecito basins. The requesting agency changed request type, but local public water system support was not demonstrated" (DWR BBM Website 2016).

Subsequent collaboration resulted in a BBM application prepared by Dudek and submitted to DWR by MWD with the support of the Carpinteria Valley Water District for the second BBM process conducted in 2018. As required by SGMA guidelines, MWD adopted Resolution No. 2163 authorizing the submittal of a BBM application. The application adjusts the eastern boundary of the Basin to correspond to the MWD service area, thereby simplifying oversight of groundwater management issues and potential fees. The deadline for application submittal was September 28, 2018, and DWR's BBM recommendations will be released in early 2019. Preliminary indication from DWR is that the application will be approved.

Basin Prioritization

Groundwater basin prioritization was initially conducted by DWR for the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The Program, in which MWD voluntarily participates, was established under the 2009 Groundwater Monitoring legislation (SBx7-6) to provide groundwater elevation information for all of California's groundwater basins (CWC Section 10933). The CASGEM and SGMA requirements apply only to those basins ranked as medium or high priority. The SGMA requires that DWR reassess the basin prioritization anytime DWR conducts a BBM process. All 513 of California's groundwater basins were assessed based on an algorithm that variously weighted the following components:

- Population overlying the basin;
- Rate of current and projected growth of the population overlying the basin;
- Total number of public supply wells that extract water from the basin;
- Total number of wells that extract from the basin;
- Irrigated acreage overlying the basin;
- Degree to which persons overlying the basin rely on groundwater as their primary source of water;
- Documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation; and
- Any other information determined to be relevant by DWR.



The first prioritization process, conducted by DWR in 2014, ranked the Basin as "Very Low" priority. However, the determination was made without consideration of the groundwater extraction by private well owners and other data that was potentially missing or out of date. In May 2018, DWR recommended reprioritization of the Basin as "Medium Priority," with finalization of the reprioritization due in February 2019.

GSA Formation

As a medium-priority basin, the Basin is required to implement the SGMA process, including the formation of a GSA. The GSA is the local agency responsible for implementing the SGMA. Like other SGMA processes, GSA formation has specific requirements, including a robust public outreach and education program (CWC Section 10723). As required by the SGMA, MWD adopted a resolution in July 2018 declaring its intent to form a GSA composed of the MWD Board (Resolution No. 2169). Dudek was retained by MWD to assist with the GSA outreach, coordination, and application process.

Outreach was conducted via several methods, including public meetings, workshops, email updates, the MWD SGMA webpage, and MWD newsletters. Along with MWD, Dudek has compiled a comprehensive list of stakeholders to which SGMA process updates have been emailed or mailed with ongoing SGMA information and updates. Each public workshop included comprehensive information regarding the SGMA process and MWD progress toward BBM, Basin prioritization, and GSA formation.

The GSA application was submitted using the DWR web portal (https://sgma.water.ca.gov/portal/gsa/all) and deemed complete by DWR on August 29, 2018. DWR requires a 90-day period during which the application is publicly available. If no other eligible entity submits a conflicting application during that time, the original applicant is designated as the exclusive GSA for the Basin. If there are other eligible applicants during that time, the eligible entities are required to resolve the conflict prior to GSA formation. On November 28, 2018, the MWD Board of Directors was declared the exclusive Basin GSA by DWR.

Basin GSP Work Plan

The GSP requirements and components for implementing the SGMA are contained in the legislation and guidelines. In addition to the required components, Dudek will address the following questions and issues that are specific to the Basin:

- Physical Characteristics and Impacts:
 - o Is there seawater intrusion occurring and, if so, to what extent?
 - To what extent are the aquifers of the Basin subunits in contact hydrogeologically? Should they be treated as separate management areas?
 - What is the nature of the Basin's boundaries with the Carpinteria Groundwater and Santa Barbara Groundwater Basins? To what extent is there inflow or outflow of groundwater to those basins?
 - What is the geology of the Toro Canyon Subunit at depth? To what extent is there groundwater exchange between it and the Carpinteria Groundwater Basin?
 - What is the feasibility of groundwater banking in the Basin? What project design would best take advantage of this option?
- Management/Procedural Questions:
 - How much of the groundwater extraction is attributable to *de minimis* extractors?⁴ How can *de minimis* extractors be identified and brought into the SGMA process?
 - o How can existing private well owners be located and incorporated into the SGMA process?
 - What sources of funding are available for implementation of the SGMA and the related projects and management actions?

Effective SGMA implementation is an iterative process in which information is acquired with initial GSP development and refined with each reporting period and periodic update toward achieving sustainable management within the required time period.

Dudek will generally adhere to the format of the *Groundwater Sustainability Plan (GSP) Annotated Outline*, DWR's guidance document, released December 2016. Following is a work plan for GSP development for the Basin that explains required and recommended components of the GSP development process as they relate to the Basin.

Task 1: Project Management

This task includes coordination of staff, schedule, budget, reporting requirements, and quality assurance/quality control. Key Dudek team members will attend a kickoff meeting with MWD staff to discuss these issues. Dudek will prepare an agenda for the meeting one week in advance for MWD to review and revise. Anticipated topics include methods of, and staff to be included in, communication, GSP data requirements, and schedule, as well as other issues of concern for MWD. Within one week of the meeting, Dudek will prepare and distribute the meeting minutes.

SGMA defines a "de minimis extractor" as "a person who extracts, for domestic purposes, two acre-feet or less (of groundwater) per year" (CWC 10721(e)). These users are subject to SGMA, but it is up to the GSA to decide how they are incorporated into a GSA and how their use is addressed in a GSP. De minimis extractors are exempt under SGMA from some requirements such as the requirement to report metered groundwater extraction (CWC 10725.5).



Throughout the project, Dudek will provide MWD with weekly emailed project updates to include a progress summary, critical data collection items to support the ongoing work, and items that may impact the project schedule. Additionally, we will prepare monthly progress reports that summarize project progress by task and list upcoming activities, pending information needed to support these activities, out-of-scope items, percent complete, budget status, and updated schedule. We also recommend periodic meetings with MWD to discuss work completed and plan for upcoming tasks. Dudek will prepare materials for and attend 20 GSA Board, technical advisory, or other advisory meetings, as appropriate.

Task 2: Public and Stakeholder Communications and Engagement

The Dudek team assembled for this project has broad experience designing and conducting effectual public outreach programs and specific experience in the Montecito community with an understanding of its issues, concerns, and opportunities. Our team is well versed in communication and engagement related to GSPs and the planning process. We are also well acquainted with water resource management. We are skilled in and have experience articulating complex scientific issues in relatable layperson terminology. Nuances of groundwater management are particularly challenging for stakeholders to understand because groundwater is not visible in the way that other water resources are. Dudek's graphic's team is skilled at developing visual aids that clearly demonstrate complex concepts through illustrated infographics, animated videos, 3D diagrams, cutaways, charts, and maps. Dudek has designed a team that has a wealth of relevant experience directly related to the scope of this project, including:

- GSP Development: Stakeholder communication and engagement for the Las Posas Valley Basin GSP,
 Oxnard Subbasin GSP, Pleasant Valley Basin GSP, Yucaipa Basin GSP and Borrego Valley Basin GSP;
- Santa Barbara County Stakeholder Engagement in Integrated Regional Water Management (IRWM)
 Programs: Public and stakeholder communication and outreach for the Santa Barbara IRWM Program, as well as for the San Luis Obispo IRWM Program, and CABY IRWM Program;
- Communication and Engagement Plans: Fox Canyon Groundwater Management Agency (FCGMA) GSP development, Yucaipa Basin GSP development, CABY IRWM Region, San Luis Obispo County IRWM, and Santa Barbara County Stormwater Resource Program; and
- **GSA Formation:** Stakeholder engagement and facilitation for the formation of the Cuyama Basin GSA, the San Antonio Basin GSA, and Upper Ventura River GSA.

As MWD is aware, the SGMA requires stakeholder and public communication and engagement throughout the process of generating a GSP. Apart from statutory requirements, however, there is latitude in the way communication and engagement is conducted. Dudek will work with the MWD Board and staff to create the most-effective and strategic approach to public and stakeholder communication and engagement that will be reflected in a Communication and Engagement (C&E) Plan.

Task 2.1: Communication and Engagement Plan Preparation

The Stakeholder C&E Plan is a foundational document and tool for effective and meaningful engagement. The C&E Plan will clarify SGMA requirements for stakeholder engagement at the beginning of the project and describe how requirements will be met throughout the development of the GSP with the types, levels, and timing of communication and engagement. A central element in the state guidance on stakeholder engagement is understanding local stakeholders and applying engagement strategies that are designed to meet local goals and objectives. Dudek understands that there has been discussion at the MWD Board related to the convening of a technical advisory committee and a stakeholder advisory committee. Should these be formed, Dudek will work with the GSA Board and these committees to ensure a collaborative and streamlined process for messaging and timeline purposes.

Prior to preparing a C&E Plan, Dudek will provide the GSA Board with a presentation detailing the SGMA requirements for stakeholder engagement and state guidance documents. Dudek will facilitate a GSA Board discussion to define the goals and desired outcomes of communication and engagement. Dudek will then develop the C&E Plan to include the content and direction outlined by the GSA Board and address specific areas, methods, and associated timeframes for stakeholder engagement, as necessary, to fully comply with SGMA's stakeholder engagement requirements. This C&E Plan will describe necessary steps to meet GSA goals and objectives while working with basin stakeholders to develop a GSP that:

- Demonstrates how the basin will be sustainably managed without undesirable results;
- · Is acceptable to basin stakeholders; and
- Meets DWR requirements.

Of particular importance in developing the GSP is reaching out to and engaging with private well owners as they may account for the majority of groundwater use in the Basin. The number and location of private wells is not currently known and it is likely that some are undiscoverable through examination of well and permit records. Physical methods for locating wells and estimating water use are described in the Basin Plan in the section "Identification of Well Locations and Groundwater Use." However, it is imperative that outreach activities include contact with all potential well owners. In addition, the importance of participation in the SGMA process must be effectively conveyed. For example, it should be explained to groundwater users that their participation is needed in order to assign an appropriate groundwater allocation, if it is determined that such an allocation is needed. Tools of engagement may include mailing a questionnaire to residents with wells asking for construction and usage information. Dudek's experience implementing the SGMA in other Basins has demonstrated that with effective engagement, there is increasing participation of private well owners as neighbors contact and educate each other.

Task 2.2: Stakeholder Workshops

In coordination with the GSA Board and relevant staff, Dudek will prepare materials for public workshops, technical advisory committees, and other stakeholder forums or discussions, as outlined in the final C&E Plan. These workshops and forums will occur at key points in the GSP development process. These will most likely focus on GSP preparation, HCM and water budget, sustainable management criteria, and projects and management actions, but other topics can be added, as necessary and appropriate with direction from the GSA Board.

Deliverables

Dudek will deliver a technical memorandum and a draft and final Stakeholder C&E Plan. Dudek will deliver materials related to workshops, forums, notices, and other requisite materials for SGMA compliance.

Task 3: Funding Options

Task 3.1: Monitoring of Funding Opportunities

Dudek has written many successful grants, including grants for GSA formation and GSP generation, and has obtained tens of millions of dollars for projects for entities throughout the state. Dudek is skilled in writing technical and competitive grant applications and securing funding for our clients for a variety of planning and implementation projects. Dudek stays abreast of funding opportunities for SGMA plans and projects, as well as of other funding opportunities that align with the SGMA, and will provide the GSA Board with regular updates on opportunities. Proposition 68, which passed in 2018, provides \$290 million for regional water sustainability, including \$50 million for groundwater sustainability planning. In our most recent discussion with DWR staff in mid-January 2019, they indicated they would be looking at releasing draft guidelines for groundwater sustainability planning and projects within 2 to 4 months, which would be a window of March to May. Draft Guidelines would be posted for a 30-day public comment period and finalized after comments have been reviewed. Hence, it is likely that opportunities for a funding application would be available in autumn, if DWR adheres to the schedule they have outlined. Dudek will continue to monitor this opportunity as well as others and keep MWD staff and Board aware of schedules and options.

Task 3.2: Funding Options Analysis (Optional)

The GSA is afforded certain authorities as described in The Requirements of SGMA Section of this proposal, including the ability to implement fees for the purpose of groundwater management. In practice, the imposition of fees may be complicated and controversial. Dudek has teamed with Raftelis Financial Services to offer a comprehensive evaluation of funding options available to the GSA, including the impacts of Proposition 26 and Proposition 218. They will address the issues associated with fees for *de minimis* extractors, a group that may account for a significant part of the Basin water use, and for those associated with groundwater extraction over allocation. The Raftelis study will assist the GSA in developing an informed long-term strategy for funding GSP development and implementation (see **Appendix A**). Raftelis has extensive experience in SGMA- and GSP-related funding studies and has teamed with Dudek in other groundwater basins.

A few of the funding methods commonly considered are an extraction-based fee, a parcel fee, and up-front funding by the GSA with later reimbursement by extractors. Extraction-based fees are often favored because they place the burden on those making the most direct use of the resource. In this scenario, fees would be proportional to the amount of groundwater used. However, an inherent problem for many basins is the initial lack of quantitative pumping data on which to base the costs. An initial allocation of costs may be based on an indirect determination of pumping quantity based on parcel size, land use, water meter readings, and electricity use. Dudek has previously collected and analyzed some of this data for the Basin for evaluating the DWR Basin Prioritization. As wells are metered and actual use is reported, allocations and fee basis may be adjusted.

Another potential method of assessing fees is per parcel. Such a fee may be a flat fee or based on the size and land use of each parcel. Justification for this scenario is that each parcel benefits from the sustainable management of the groundwater basin as it contributes to the overall environmental and economic well-being of the basin.

Task 4: Data Management System

The DMS is an important foundation for the preparation of future SGMA-compliant annual reports for the DWR and is essential to support the study and GSP-compliant technical studies for the GSA. The requested hydrogeological study and associated technical studies are only as valid as the data used to compile them, and a peer-reviewed DMS architecture is a critical starting point for the overall project.

The DMS will be constructed using an integrated suite of web-enabled, industry-standard software and tools to limit overall development time and maintenance cost. The DMS will support management, validation, querying, analysis, and export of existing historical datasets, as well as the incorporation of new data over the term of the GSP such as pumping, groundwater elevation measurements, water quality analytical data, geodetic land survey information, seismic and resistivity data, and locational geospatial references. Because the DMS will be hosted on a web-enabled enterprise Geographic Information Systems (GIS) platform, it will facilitate secure collaboration and controlled access by MWD, GSA, advisory committee, and stakeholders, as appropriate.

Dudek uses a three-step approach for building and implementing the DMS. The process for developing the DMS includes: (1) creating a data management plan; (2) developing the DMS database and application; and (3) performing data compilation and review, in order to load the DMS with historical data, conduct a gap analysis, and deploy the DMS in a foundational state.

Task 4.1: Data Management Plan

Dudek has been through this process before; we constructed a comprehensive DMS and technical memorandum presenting the DMS architecture for the Borrego Valley Basin, and we are implementing similar methods in other basins. Drawing from our experience, we will rapidly produce a succinct yet detailed data management plan outlining the architecture, accessibility, validation, quality controls, and reporting capabilities of the DMS.

While we already have a successful implementation model through our past experience (which will be a cost- and time-savings for the Montecito Groundwater Basin GSA), it is important that we review the data management plan with MWD and GSA members under the specific context of this GSP. A one-size-fits-all approach can ignore contextual nuances and leave out important factors; therefore, we bring proven methods from our past experience with the goal of tailoring the ultimate DMS architecture for the specific needs of the region, administering agencies and stakeholders.

Based on our experience, we anticipate the plan will outline the DMS approach for the Basin, including the ability to query and manage sub-areas collectively or separately. The plan will describe the system architecture of the DMS, which will likely be housed in a versioned Esri enterprise geodatabase and will run on the Microsoft SQL ServerTM relational database management system (or selected equivalent) allowing for rapid processing times and scalable data storage potential. Curated portions of the DMS database will be published as secure services to allow for web-viewing capabilities and multiple options for secure data dissemination across organizations and teams. Where appropriate, automated tasks may be incorporated into the planned DMS architecture; the purpose of these automated tasks would be to run analyses and securely integrate results and data between the DMS and other legacy/in-house systems. The plan will also present appropriate user access control levels to support future data reporting, validation, queries, management and technical study analyses. Access controls will be implemented for limiting access of specific data to specific users, groups, and roles (e.g., view-only versus editable access).



Deliverables

Dudek will deliver a data management plan technical memorandum for the Basin, outlining the planned system architecture of the DMS and drawing from experience producing similar documents for other basins in Southern California.⁵

Task 4.2: DMS Development

The Data Management Plan for DMS development will address critical data access and management questions prior to initiation. We anticipate the DMS will incorporate functionality such as assessing compiled data, configuring the historical data sources for relevance and need within the DMS, identifying data gaps, performing data querying/filtering and export, data validation, and adding future data into the DMS. These data will facilitate an efficient data gap analysis to determine the need for additional data acquisition to support subsurface hydrogeologic conceptual site models, as well as water budget assessments and numerical groundwater models. The DMS will allow for incorporating and querying of future data. It will be configured for the collection and management of various data types including global positioning system (GPS), geodetic land survey, groundwater elevations, and groundwater quality data via electronic data deliverables from analytical laboratories. Finally, the DMS will be configured to feed data directly into geospatial tools for the preparation of visual aids and to perform geospatial analyses.

The DMS will be developed such that future field data may be added—after appropriate validation and quality controls—during a field site visit as a GPS data point from a mobile device, input by hand from a personal computer (e.g., transcribed from field notes), or automatically imported from specifically formatted tables via an automated procedure (e.g., from a laboratory electronic data deliverable). The DMS will be accessible via the web browser and may be viewed geographically on a map viewer, displaying web-charts and images of the Basin. The DMS will be able to output data in GIS (shapefile) or Microsoft ExcelTM formats.

Additionally, Dudek would set up a SharePoint Online site for secure file sharing, document co-authoring, and team collaboration. The DMS will be constructed to comply with required DWR monitoring and reporting formats. Dudek effectively implemented a SharePoint Online site for the Borrego Valley Basin use, and notable benefits include the reliability of the Microsoft cloud (AzureTM), built-in security, and powerful features such as document co-authoring.

Deliverables

Dudek will deliver the DMS user interface, updated system architecture documentation, and user documentation to describe functions of the web-based DMS tool.⁶

We assume the following deliverables:

- One electronic copy of the DMS Technical Memorandum;
- One electronic copy of the DMS User Guide;
- One Esri enterprise geodatabase, which will be populated with the current and historical data upon completion of Task 4.3;

⁵ Assumptions: (1) Discussion of the DMS will occur at the project kickoff meeting and (2) will include up to two rounds of review during the creation of the Data Management Plan Technical Memorandum.

Assumption: Dudek will host the DMS database and user interface(s) during development, and we may deploy the solution to the MWD infrastructure upon final delivery of the GSP. Dudek can continue to host the DMS long term for a nominal fee, should MWD prefer this approach. This hosting fee is calculated upon final delivery based on the server resource requirements of the solution, but is generally between \$2,000 and \$3,000 per year for low-traffic applications.

Task 4.3: Data Compilation and Review

The data compilation and review stage will begin in parallel with planning and development Tasks 4.1 and 4.2, because the structure of the DMS will be influenced by the size and shape of expected data inputs. DMS data compilation and review will utilize lessons learned and best practices from other groundwater basins supported by Dudek and recommendations from DWR. We will perform review and normalization of the historical datasets for compliance with DWR and SGMA requirements. The data will then be evaluated for validity and intended/acceptable use in the hydrogeological study and subsequent GSP-related technical studies. Compilation and review will identify data gaps or unacceptable levels of uncertainty within the data. Dudek technical leads will be informed of the data validity and/or potential data gaps upon compilation of the DMS. Additionally, the technical leads will be consulted directly by the DMS team when data normalization questions arise. Data compilation and review will be an ongoing process throughout the project as new data are gathered during technical studies and/or updates to DWR reporting requirements are communicated.

Deliverables

Dudek will deliver a technical memorandum providing an assessment of the existing historical data sources received, and including processes to input and validate data acquired in the future.

Task 5: Basin Setting and Existing Conditions

Requirements for this section include a comprehensive description of the basin, including land use, water-related programs and resources, well permitting procedures, and a summary of planning documents. Existing water resources monitoring and management programs will also be described with regard to their impact on operational flexibility and conjunctive use of water supplies.

Dudek will prepare this section using current and historical documents, data and information, interviews with knowledgeable individuals and organizations, and our experience conducting technical and planning projects within the Basin and Santa Barbara County. Our project manager and staff have decades of experience with the water supplies of Montecito and Santa Barbara County, including Cachuma Reservoir, the State Water Project, cloud seeding, groundwater studies, IRWM, and the SGMA (see the "Qualifications and Experience" section). We will use this experience to fulfil the requirements of this section and effectively integrate existing and potential resources into the GSP.

Task 5.1: Data Collection and Literature Review

The technical underpinning of the GSP, and need for the collection of additional data and information, will be based on data collected and studies completed to date in the Basin. Therefore, within 2 weeks of the kickoff meeting with MWD, Dudek will prepare a comprehensive data and literature request for MWD. Dudek will compile and review the studies and data provided by MWD, as well as relevant studies and data found on public databases maintained by the DWR, the State Water Resources Control Board, and U.S. Geological Survey (USGS).

Up to three Esri Web AppBuilder applications, serving as the primary user interface(s) for the DMS (allowing mapbased search and query of the data within the enterprise geodatabase). The three versions are assumed to be clones of each other (i.e., similar in design and scope), with each allowing different levels of access and functionality based on user permissions (e.g., MWD/GSA internal access, agency/stakeholder access, and public access);

[•] Three geoprocessing tasks for enabling automated import of water quality data, water level data, and weather data, respectively, over the term of the GSP;

One geoprocessing task for quality assurance of data within the enterprise geodatabase over the term of the GSP; and

One geoprocessing task for packaging data in the enterprise geodatabase into an exportable format (e.g., Excel), and enabling self-serve user exports from the DMS over the term of the GSP.

The goal is to collect all relevant data up front, so we can effectively evaluate current and historical conditions, as well as spatial and temporal data gaps, in the early stages of GSP development. The data and studies will be used to prepare the current and historical groundwater conditions section of the Plan Area and Basin Setting chapter of the GSP.

Task 5.2: Plan Area Description

The Plan Area and Basin Setting chapter of the GSP contains all the necessary background information for development of the sustainable management criteria. The Plan Area section of this chapter includes a description of the modified Basin boundary, a summary of jurisdictional areas and other features in the Basin, a description of the existing water resources monitoring and management programs, a discussion of land use elements or topic categories of applicable general plans, and a catch-all section that discusses additional elements relevant to the GSP. This section also includes a description of the beneficial uses and users in the Basin, as well as the decision-making process and public engagement opportunities provided during the GSP development process. Dudek will leverage the previous work that we have done for MWD to develop the land use section of the GSP by preparing the maps and figures required under the SGMA.

Identification of Well Locations and Groundwater Use

Identification and inclusion of all possible wells is essential to the development and implementation of the GSP. Historically, groundwater development in Santa Barbara County required only ministerial permitting and no record of extraction quantities. In the Basin, some percentage of wells were constructed without permitting or prior to permit requirements. Currently, it is uncertain how many wells exist, where they are located, and how much groundwater is extracted from them. It is known that the number of wells has significantly increased during the current drought period, which has so far lasted for about 7 years (**Figure 6**).

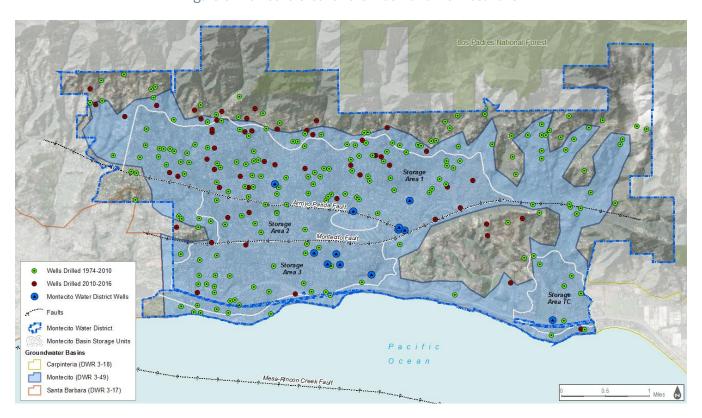


Figure 6. Montecito Groundwater Basin and Well Locations



Dudek will collect available information to document the known locations of public and private wells. We will use other methods to identify undocumented wells, including reconnaissance from public streets and rights-of-way and from analysis of aerial photographs and land use records. For example, a property with land use requiring significant irrigation such as orchards or large turf areas may be served only enough MWD water to support a single dwelling unit. This would indicate the presence of one or more groundwater wells to supplement MWD water. Well owners for such properties may be contacted through the normal or targeted outreach methods to bring them into the SGMA process.

De Minimis Extractors

De minimis extractors are defined by DWR as those extracting less than 2 AFY. The Basin is unusual in that a significant proportion of the total Basin groundwater use may be by de minimis or marginally de minimis groundwater users. Such users may require specific methods of outreach, regulation, and fee considerations. As a rule of thumb, residences less than an acre in size may be considered de minimis extractors. Land use maps, water supply, and electrical consumption records may be used to refine the identification. As well owners are identified and integrated into sustainability planning, and with the implementation of metering requirements, de minimis extractors can be identified with a reasonable level of certainty.

Task 5.3: Hydrogeologic Conceptual Model

The HCM affords a comprehensive understanding of the Basin, its physical geology, aquifers, and sources of discharge and recharge. Preparation of the HCM is the basis for the identification of sustainable management criteria and helps to identify existing data gaps in the available information. For the Basin, there are components of the HCM that may need further investigation by research or field methods. Such components include the degree of hydrologic connectivity between storage areas, boundary conditions with the Carpinteria and Santa Barbara Groundwater Basins, and the hydrogeologic character of the Toro Canyon Subunit at depth.

This information is necessary to determine the water balance of the Basin as a whole. For example, is there groundwater exchange between the Santa Barbara and Carpinteria Groundwater Basins, and in which direction does the water flow? Under what conditions would the flow direction be reversed, i.e. banking of groundwater in locations proximal to the boundary?

Dudek will prepare the HCM and identify data gaps that are critical to the understanding of the Basin and preparation of the GSP. In cases where additional information is needed via field analyses, Dudek will prepare scopes, schedules, and cost estimates for conducting the studies. Field analyses may include the construction of additional groundwater monitoring wells, water quality sampling, and geotechnical investigations.

Deliverables

Dudek will deliver a technical memorandum providing the HCM in written and graphical format. An additional technical memorandum will identify data gaps and related scopes, schedules, and costs for filling those gaps.

Task 5.4: Water Budget and Sustainable Yield

Dudek will leverage our experience with GSP-specific model development and knowledge of DWR best management practices with the HCM developed for the Basin to prepare a comprehensive water budget mathematical model in spreadsheet form. The water budget will be used to estimate the Basin sustainable yield, and assess the potential impacts of proposed projects and management actions, land use changes, sea-level rise, and variable climate scenarios, as required by the SGMA guidelines. The mathematical model is a simplified tool in evaluating hydrogeologic conditions and undesirable results in the Basin compared to more-complex numerical models. DWR stated that "it is each GSA's role to carefully consider if changing basin conditions and proposed projects and management actions have the potential to trigger undesirable results within the basin or in adjacent basins, and whether a model is necessary to demonstrate the proposed projects and management actions will achieve the sustainability goal. The use of a model will ultimately depend on the individual characteristics and complexity of the basin setting, the presence or absence of undesirable results, and the presence or absence of interconnected surface water systems." The use of a mathematical spreadsheet model to estimate the water budget and evaluate undesirable results will provide a preliminary assessment of the system. and provide the basis for determining whether a numerical model is a more appropriate modeling tool to evaluate sustainable management actions because of the complexity and interactions of the hydrogeologic conditions in the Basin. The development of a numerical model may be identified as a next step, or included in the 5-year update of the GSP, as a tool to enhance estimates of undesirable results and evaluating the impacts of projects and management actions in achieving sustainability. Development of the water budget using a mathematical model will ultimately inform development and design of the numerical model (see optional Task 5.5).

As part of producing the SGMA-compliant water budget, the following components will be quantified, either by direct measurements or estimations based on the following data:

- Total surface water entering and leaving the Basin by water source type;
- Inflow to the groundwater system by water source type, including subsurface groundwater inflow and infiltration of precipitation, applied water, and surface water;
- Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water, and subsurface groundwater outflow;
- The change in the annual volume of groundwater in storage between seasonal high- and low-water level conditions;
- If overdraft conditions occur, as defined in Bulletin 118, a quantification of overdraft over a period of years that approximate average conditions;
- The water year type (wet, dry, or normal) associated with the annual supply, demand, and change in groundwater stored; and
- An estimate of sustainable yield for the basin.

Dudek recommends the eventual development of a numerical groundwater/surface water model with the availability of data acquired through the development and initial implementation of the GSP.

Deliverables

Dudek will provide a mathematical Basin water budget spreadsheet. Dudek will provide a technical memorandum with sustainable yield estimates and estimated impacts of potential projects, climate change, land-use changes, and other SGMA required parameters.

Task 5.5: Montecito Basin Numerical Model (Optional)

Dudek will use the HCM developed in Task 5.3 as the foundation for building a comprehensive numerical model to simulate the water budget in the Montecito Basin and evaluate potential future projects and climate change impacts on the groundwater basin, as required by the SGMA guidelines. Dudek proposes to use the USGS numerical code GSFLOW. GSFLOW includes two integrated model components to simulate (1) watershed contributions to recharge using the Precipitation Runoff Modeling System (PRMS) and (2) groundwater flow using MODFLOW-NWT, a Newton-Raphson formulation for MODFLOW-2005 to improve unconfined groundwater flow simulations. PRMS, the watershed and surface-water component of the modeling system, simulates the water balance on the surface and in the root-soil zone. Water balance components include precipitation, plant canopy interception and evaporation, evapotranspiration, stormwater runoff, and soil moisture content in the root zone. Excess water not removed by these processes is available as runoff to streams or deep percolation. Outputs of recharge and streamflow from the PRMS model are then used as inputs to the groundwater flow component of the modeling system, MODFLOW-NWT, which simulates the recharge of infiltrating surface water migrating past the root zone and stream flow discharge to groundwater. MODFLOW-NWT simulates the water balance of the saturated groundwater system by comparing recharge to water removed via pumping, subsurface inflows and outflows in the basin, and evapotranspiration in shallow groundwater habitat environments. The numerical model will iteratively simulate the water balance of the basin based on monthly stress periods with daily time steps.

The numerical model will be calibrated to steady-state and transient hydraulic heads measured at select wells completed in the alluvial formations in the basin, and to streamflow measured at gaging stations in the watershed, if available. The calibrated numerical model will be used to develop a 50-year baseline water budget from which future projects and climate change effects may be evaluated. Dudek will work with the GSA to prepare the input criteria that will be used to model the long-term sustainability of the Basin. These input criteria will be based on the historical/baseline water budget, as well as on the future climate scenarios provided by DWR.

The DWR guidance on incorporating climate change into the assessment of sustainability is currently limited and the datasets to be used for these analyses were not developed specifically to address the 50-year planning horizon analyzed in the GSP. The DWR datasets cover a longer time horizon than will be simulated for the Basin sustainability analysis, leaving the GSA to consider which 50-year period(s) to simulate as part of the GSP. One way to address uncertainty in future climate conditions is to simulate the future conditions using a dry, average, and wet 50-year period from the data provided by DWR. Another way to assess uncertainty is to produce a range of synthetic future climate data, based on the historical distribution of precipitation and the gridded change factors provided by DWR. Dudek will work collaboratively with the GSA to establish technically sound and locally specific future conditions to simulate in the Basin.

Results of the numerical model in simulating the baseline water budget and future budgets influenced by planned projects and climate change will be documented in the "Water Budget and Sustainable Yield" section of the "Basin Setting" chapter. This chapter will be developed with input from the MWD and GSA.

Deliverables:

This scope and fee includes (1) development and calibration of a baseline numerical model using the best available historical data and (2) modification of the baseline model to simulate up to two future climate scenarios. Model update presentations will be given at up to three GSA or technical committee meetings and up to six conference calls, as needed.

Task 6: Development of Sustainable Management Criteria

Sustainable management criteria development is vital to the GSP because the criteria provide the GSA with the operational flexibility to maximize use of groundwater in the Basin, while avoiding undesirable results.

Sustainability Goal

The GSA must adopt a non-quantitative sustainability goal, or goals, that set the framework for determining what is significant and unreasonable for each sustainability indicator. Because these goals are primarily policy statements that communicate the GSA's vision for sustainable management of the Basin to stakeholders and DWR, they will be developed early, but may be revised after the undesirable results and minimum thresholds have been defined. Dudek will work with the GSA to craft a mission statement that summarizes the purpose for sustainably managing groundwater resources and reflects local economic, social, and environmental values in the Basin.

An example of a sustainability goal that may be relevant to the Basin is the maintenance of groundwater in storage that provides a reliable emergency water supply in the event of a reasonably foreseeable drought.

Measurable Objectives

Measurable objectives are the quantitative measure of the sustainability goal. They are set at individual representative monitoring sites. If conditions at the monitoring sites meet or exceed the measurable objectives, the Basin is at the desired groundwater condition. If the objective is not met at the time of GSP development, progress toward meeting it is documented with implementation. If currently met, dropping below the objective may trigger the implementation of projects or management actions specified in the GSP. The background technical studies, documentation of the current and historical Basin conditions, and water budget results will be used to establish the measureable objectives for the Basin in coordination with the District, GSA, and stakeholders.

An example of a measurable objective that may be developed for the Basin is the maintenance of a groundwater elevation at the MWD office well, located in Storage Area 1 (Well ID: 4N/26W-8P3), of greater than 150 feet above mean sea level (**Figure 7**).

Montecito State Well 4N/26W-8P3 Land Surface Elevation 220' Well Depth 404' Water Surface Elevation (Feet, MSL) `190

Figure 7. Groundwater Elevation at Montecito State Well 4N/26W-8P3

Undesirable Results

The GSA must define undesirable results in the Basin by determining what condition(s) in the Basin would be significant and unreasonable for each sustainability indicator. This determination is based on an analysis of how the minimum thresholds may affect the interests of beneficial uses and users of groundwater, or land use and property interests. Because both beneficial uses and users of groundwater are considered when defining undesirable results, the determination of undesirable results must incorporate stakeholder feedback. Dudek, with input from the GSA, will provide the technical information analysis to support the decision-making process, and will work collaboratively with the GSA and stakeholders to facilitate the definition of undesirable results.

Examples of undesirable results that may apply to the Basin include the reduction of groundwater storage to the point at which it does not provide an emergency drought supply or seawater intrusion that impacts groundwater supply wells. Undesirable results that are not likely to be significant concerns in the Basin include land subsidence, water quality degradation, and depletion of interconnected groundwater and surface water. However, all undesirable results will be investigated as required by the SGMA.

Minimum Thresholds

The minimum thresholds are the quantitative measure of undesirable results and are set at individual monitoring sites that are, preferably, the same as those used for the measurable objectives. These thresholds will be established based on an analysis of how they would impact beneficial uses and users of groundwater in the Basin and the determination of undesirable results for each sustainability indicator. As with the definition of the undesirable results, Dudek will conduct the technical analysis to support setting the minimum thresholds. This is anticipated to be an iterative process, with the results of the predictive simulations informing the minimum threshold determination. In addition, Dudek will work collaboratively with MWD and stakeholders to incorporate both agency needs and stakeholder feedback into the final minimum thresholds.

A hypothetical example of a minimum threshold that may apply to the Basin is the maintenance of a groundwater elevation at the MWD well (District Well No. 1-19) of the 2015 elevation of 100 feet above mean sea level (Well ID: 4N/26W-8P3) (Figure 7).

Interim Milestones

For any sustainability indicator that does not currently meet the measurable objective, Dudek will recommend interim milestones. The interim milestones will be at 5-year increments and be used to evaluate whether progress is being made toward sustainability during the 20-year implementation period.

Once MWD and stakeholders have established the Basin's goals and objectives, Dudek will draft the Undesirable Results, Minimum Thresholds, and Measurable Objectives sections of the Sustainable Management Criteria chapter of the GSP.

Deliverables

Dudek will provide a technical memorandum and graphical materials illustrating Sustainable Management Criteria options as they apply to the Basin.

Task 7: Development of a Monitoring Program

The monitoring program will be developed to address each of the applicable six SGMA sustainability indicators. The existing data and groundwater monitoring programs, such as the CASGEM program, will be evaluated. SGMA-compliant monitoring will be developed to fill data gaps identified during existing data compilation and review and conform to DWR's prescribed best management practices. The evaluation will be approached holistically to consider groundwater elevation and groundwater quality for both spatial and temporal coverage. The monitoring program will include evaluation of groundwater/surface water interactions along the Basin creeks.

Any specific data gaps identified during Task 5 will inform the need for additional well installations. Dudek will identify the best locations for new wells to fill data gaps and obtain an understanding of the Basin boundary and seawater intrusion conditions. We recognize that the need for additional wells will likely be dependent on the level of cooperation from individual well owners. The identified monitoring points will be used to define quantitative values for minimum thresholds, measurable objectives, and interim milestones in the GSP.

Deliverables

Dudek will deliver a technical memorandum presenting and describing the adequacy of the existing monitoring network and, if recommended, provide a proposal for developing additional monitoring. Dudek will deliver a monitoring and measurement plan consistent with DWR best management practices.

Task 8: Development and Assessment of Projects and Management Actions

MWD has a diverse portfolio of water supplies and efficiency programs, including surface water (Cachuma Reservoir, Jameson Lake, and Santa Ynez River tributary flow), imported water (State Water Project and Supplemental Water Purchase Program), groundwater (including infiltration from Doulton Tunnel), out-of-basin groundwater banking, water conservation programs, and rainfall enhancement. The regional and interdependent nature of these sources and associated infrastructure afford diverse opportunities for conjunctive and regional use projects. Water supplies under consideration or development include participation in the City of Santa Barbara Charles E. Meyer desalination plant, in-basin groundwater banking, and multiple direct and indirect potable and non-potable water reuse projects as described in the recently completed *Draft Recycled Water Feasibility Study*.

Task 8.1: Identification of Projects and Management Actions

Dudek will assist MWD in developing existing projects and management actions including actions to increase the Basin sustainable yield or to reduce extractions to within sustainable yield. In particular, projects identified in the *Draft Recycled Water Feasibility Study* and ongoing Groundwater Augmentation Feasibility Analysis will be considered.

Task 8.2: Prioritization of Projects and Management Actions

The Dudek team will work with MWD, GSA, and stakeholders to develop prioritization criteria to evaluate each potential project or management action. The water budget developed in Task 5.4 will also guide prioritization of the various proposed actions. Selection criteria will include capital and operations and maintenance costs, permitting, public acceptance, ease of construction, and effectiveness for improving groundwater quantity and quality. Project timing will be considered as it pertains to the achievement of interim milestones and sustainability goals. Projects identified will be ranked and prioritized for further consideration based on the application of these criteria.

Task 8.3: Evaluation of Projects and Management Actions

We will solicit input and assist the GSA in selecting projects and management actions to be implement by analyzing and prioritizing the feasibility of the options using a decision matrix that incorporates the future Basin conditions from the water budget with and without the projects under consideration.

Deliverables

Dudek will develop a list and description of potential projects and management actions for consideration and further evaluation. In developing projects and management actions, we will inform and solicit ideas from Basin stakeholders through the public outreach program and provide a decision matrix evaluation of projects.

Task 9: Groundwater Sustainability Plan Document Preparation

Plans of the magnitude and complexity of GSPs require a clear outline to verify that the document is structured logically and that all the required components will be incorporated. Dudek will prepare an annotated outline of the document for MWD review and approval within 2 months of the kickoff meeting. The outline will be based on the DWR Annotated Outline guidance document, and will be filled in as information is collected. Working closely with the GSA and technical advisory committee, Dudek will prepare one administrative draft of the GSP for review and comment by the GSA and stakeholders. The GSP components will be based on the findings of the tasks previously described. The evaluation criteria specified in the GSP Regulations will be considered throughout the GSP preparation process.

Task 9.1: Develop Administrative Draft GSP

Dudek will provide an administrative draft to the District and GSA in electronic format for their review and comment. We anticipate a 60 day review period for the administrative draft and anticipate that all comments from the District and GSA will be coordinated and provided to Dudek as a single comment document from the entire team. Although there will have been communication and comment throughout the GSP development process, at this stage of the process, Dudek will respond to up to 100 comments.

Task 9.2: Public Draft GSP

Dudek will incorporate the comments made on the administrative draft and submit (electronically only) a final redline draft document as a check copy to the District before releasing the Public GSP for public review. The check copy will be provided to the GSA two (2) weeks before release to the public. It is anticipated that the comments received on the check copy will be minimal and mostly editorial in nature. Substantive comments requiring a second round of substantial edits would require an amendment to the proposed budget.

Responses to comments will be generated following closure of the public comment period (90 days). Dudek assumes that no more than 20 substantive discrete comments will be received on the Public Draft GSP; note that one comment letter can contain multiple substantive comments. Since the actual scope and extent of public comments (in either written or oral format) cannot be definitively determined at this time, if additional staff hours are needed to prepare responses to comments, the scope of work and budget provided in this proposal would be amended.

Task 9.3: Final GSP

Dudek will produce a Final GSP that incorporates comments on the administrative and public draft GSPs.

Deliverables

- Two (2) printed and bound copies of the final GSP
- One (1) electronic copy of the Final GSP in Word format
- One (1) electronic copy of the final GSP in Web-ready PDF format

Process Deliverables

As discussed in the project work plan, there will be ongoing collaboration and information exchange between Dudek, the GSA, and the District. **Table 1** contains a list of deliverables to be provided by Dudek throughout the process. Note that the actual number of deliverables will likely be higher and will depend, to some extent, on the developing needs and requirements of the process.

Table 1. Partial List of Project Deliverables

| Task | Deliverables |
|---|---|
| 1 – Project Management | Agenda and materials for project kickoff meeting. Kickoff meeting minutes Weekly project updates via email Monthly progress reports Preparation of materials for, and attendance at, 20 GSA Board, advisory, or technical meetings |
| 2 – Public and Stakeholder Communications and Engagement | SGMA outreach requirements and materials presentation to the GSA Board. Facilitation of Board determination of communications and engagement discussion and Basin-specific strategy Communications and engagement plan Prepare materials for and conduct four stakeholder workshops in accordance with the communications and engagement plan |
| 3 – Funding Options | GSA Board updates on emerging funding opportunities as appropriate |
| 3.2 – Funding options analysis (Optional) | See Appendix A for list of task deliverables |
| 4 - Data Management System | Data management plan technical memorandum. Up to two rounds of review and comment by GSA A web-based data management system tool including documentation. Dudek will host the system throughout GSP preparation and for a nominal fee thereafter TM detailing available data sources, data input, and validation procedures |
| 5 – Basin Setting and Existing Conditions | MWD data and literature request Hydrogeologic conceptual model in written and graphical format. A TM identifying data gaps and related scopes, schedules, and costs for filling those gaps Mathematical basin water budget spreadsheet. TM providing sustainable yield estimates and estimated impacts of potential projects, climate change, land-use changes, and other required parameters |
| 5.5 – Development of Basin Numerical Model (Optional) | Numerical Basin Model Analysis and documentation of two future climate scenarios Three GSA or technical committee meeting presentations on the Model Up to six coordination conference calls as needed |
| 6 - Development of Sustainable Management Criteria | TM and graphical materials illustrating Sustainable Management Criteria options as they apply to the Basin |



| Task | Deliverables |
|--|---|
| 7 – Development of a Monitoring Program | TM documenting the capabilities of the existing monitoring network. A monitoring and measurement plan |
| 8 - Development and Assessment of Projects and Management Actions | A TM with a list and description of potential projects and management actions for consideration and evaluation |
| | Prioritization of potential projects and management actions based on agreed upon criteria |
| | Decision matrix evaluation and ranking of potential projects and management actions |
| 9 - Groundwater Sustainability Plan | Administrative draft of the GSP Particular for COOR in the line COOR |
| Document Preparation | Public draft of GSP including GSA input Final GSP including GSA and public input |

GSA = Groundwater Sustainability Agency; SGMA = Sustainable Groundwater Management Act; TM = technical memorandum; MWD = Montecito Water District; GSP = Groundwater Sustainability Plan.

Project Schedule

As a reprioritized basin from "very low" to "medium," the Basin is not bound to the original SGMA schedule for medium- and high-priority basins. Instead, GSA formation (formed as of November 26, 2018, for the Basin) must be formed within 2 years of the final basin prioritization, and the GSP must be submitted within 5 years of final basin prioritization. Therefore, the Basin GSP must be submitted to DWR by May 2024. Achieving Basin sustainability is still required within 20 years of GSP submittal for non-critically overdrafted basins.

Despite being allowed the extended preparation period, Dudek recommends that the GSP be prepared in a shorter period of time. The reasons for this include maintaining the interest and engagement of stakeholders, minimizing costs associated with ongoing administration of the process, and implementing projects and management actions that will ultimately lead to achieving basin sustainability. Therefore, we have prepared a detailed schedule that results in GSP draft submittal in less than 4 years. The schedule on the following pages assumes a project start date of March 25, 2019 but may be adjusted as requested.

Montecito Groundwater Basin GSP Development **Project Schedule** Start Finish Task Name Duration 2022 Q1 Q2 Q3 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 3/25/19 Groundwater Sustainability Plan Preparation for the Montecito Groundwater 920 days 9/30/22 Basin Task 1: Project Management 734 days 3/25/19 1/13/22 2 3 GSA Board, Advisory, or Technical Meetings 734 days 3/25/19 1/13/22 24 Task 2: Stakeholder Outreach and Egangement 650 days 4/1/19 9/27/21 4/1/19 6/21/19 25 Task 2.1: Stakeholder Engagment Plan Preparation 60 days 7/1/19 26 Task 2.2: Stakeholder Workshops 585 days 9/27/21 \star * * 3/25/19 Task 3: Funding Options 750 days 2/4/22 31 3/25/19 32 Task 3.1: Monitor Funding Opportunities 750 days 2/4/22 33 Task 3.2: Funding Options Analysis (Optional) 635 days 4/8/19 9/10/21 Task 4: Data Management System 4/8/19 34 640 days 9/17/21 35 Task 4.1: Data Management Plan 90 days 4/8/19 8/9/19 4/8/19 36 Task 4.2: Data Management System Development 120 days 9/20/19 37 Task 4.3: Data Compilation and Review 640 days 4/8/19 9/17/21 3/25/19 38 Task 5: Basin Setting and Existing Conditions 670 days 10/15/21 39 Task 5.1: Data Collection and Literature Review 60 days 3/25/19 6/14/19 6/17/19 40 Task 5.2: Plan Area Description 120 days 11/29/19 6/17/19 41 Task 5.3: Hydrogeologic Conceptual Model 150 days 1/10/20 42 200 days 6/17/19 3/20/20 Task 5.4: Water Budget and Sustainable Yield 43 Task 5.5: Develop Basin numerical Model (Optional) 485 days 12/9/19 10/15/21 44 Task 5.5.1: Numerical Model Design and Construction 110 days 12/9/19 5/8/20 45 Task 5.5.2: Numerical Model Calibration 180 days 5/11/20 1/15/21 Task 5.5.3: Develop Baseline Water Budget 1/18/21 10/15/21 46 195 days 47 Task 5.5.4: Model Uncertainty 195 days 1/18/21 10/15/21 1/18/21 48 Task 5.5.5: Analyze Future Simulations 195 days 10/15/21 49 Task 6: Develop Sustainable Management Criteria 565 days 12/9/19 2/4/22 12/9/19 50 Sustainability Goal 565 days 2/4/22 51 Measurable Objectives 520 days 2/10/20 2/4/22 52 **Undesireable Results** 520 days 2/10/20 2/4/22 53 Minimum thresholds 520 days 2/10/20 2/4/22 2/10/20 54 Interim Milestones 520 days 2/4/22 55 Task 7: Develop Monitoring and Measurement Program 400 days 11/4/19 5/14/21 56 Task 8: Develop and Assess Projects and Management Actions 530 days 9/9/19 9/17/21 57 Task 8.1: Identify Projects and Management Actions 365 days 9/9/19 1/29/21 11/16/20 58 Task 8.2: Prioritize Projects and Management Actions 120 days 4/30/21 59 Task 8.3: Evaluate and Select Projects and Management Actions 100 days 5/3/21 9/17/21 60 Task 9: Groundwater Sustainability Plan Document Preparation 270 days 9/20/21 9/30/22 61 Task 9.1: Develop Administrative Draft GSP 90 days 9/20/21 1/21/22 3/7/22 62 Task 9.2: Public Draft GSP 90 days 7/8/22 63 Task 9.3: Final GSP 60 days 7/11/22 9/30/22

Project Budget

Dudek has prepared a cost estimate that accurately reflects the level of effort required to complete the scope of services based on the project requirements and our experience having prepared draft GSPs. We will use as much information as applicable from historical reports and recently prepared analyses in the area so as to recognize schedule and cost efficiencies.

Factors that would increase the scope of work and estimated costs outlined in this proposal include, but are not necessarily limited to, any of the following:

- Attendance at additional meetings;
- Additional printing of copies of reports;
- Analysis of additional issues beyond those discussed in this proposal, or a more detailed level of analysis than described in this proposal;
- Changes in the project requiring re-analysis or rewriting of report sections; and/or
- Collection of additional data.

Table 2 presents Dudek's cost estimate for this project. The hourly rates include fringe benefits, indirect costs and profit. The Dudek team will bill on a time-and-materials, not to exceed without previous written approval from the GSA Board, basis. Each invoice will identify the hours expended by each staff member and the percentage of the budget, by task, which has been expended to date.

Table 2. Cost Estimate

| | | | | | | | | Labor Hou | rs and Ra | ntes | | | | | | | | | | |
|---------|--|----------------|-------------------------|-----------------|---------------------------|-------------------------------|-------------------------------|---------------------------|--------------------|--------------------|----------------------------------|----------------------------------|----------------------------------|---------------|-------------------------------|--------|------------|---------------|--------------------------|-----------|
| | t Team Role: | PIC | Quality Control Manager | Project Manager | Deputy Project Manager | Hydrogeology/ Water Budget | Hydrogeology/ Water Budget | Stakeholder Engagement | Data Management | Data Management | GSP/Projects and Man. Actions | Hydrogeolgist II/ Basin Model | Hydrogeolgist II/ Basin Model | Hydrogeology | Hydrogeology/ Water Budget | Hours | bor | or Services | Equipment & Other Direct | |
| Firm: | Member: | Dudek | Dudek Ron | Dudek Matt | Dudek Jane | Dudek Steve | Dudek Jill | Dudek Lila | Dudek Kyle | Dudek D. Pritchard | Dudek Dylan | Dudek Trevor | Dudek Nicole | Dudek Hugh | Dudek Daniel | 위 표 | Team Labor | racto | ipme | Φ |
| ream | Menber. | T. Driscoll | Schnabel | Naftaly | Gray | Stuart | Weinberger | Spring | Harper | -Petersen | Duverge | Jones | Tucker | McManus | Ritter | Team | Tea | Subcontractor | Equ | Total Fee |
| Billabl | e Rate : | \$240 | \$225 | \$240 | \$230 | \$240 | \$240 | \$160 | \$185 | \$115 | \$185 | \$125 | \$115 | \$125 | \$155 | Hours | Costs | Sul | Costs | Tot |
| Task | | | _ | | | | | | | | _ | | | | | | | | | |
| 1 | Project Management | 20 | | 120 | | | | | | | | | | | | 140 | \$33,600 | | | \$33,600 |
| 1.1 | GSA Board Meeting Preparation and Attendance | 4 | | 62 | 20 | | | | | | | | | | | 86 | \$20,440 | | | \$20,440 |
| 1.2 | Advisory Meeting Preparation and Attendance | 4 | | 70 | 32 | 20 | 28 | | | | | | | | | 154 | \$36,640 | | \$3,000 | \$39,640 |
| | Task 1 Total | 28 | | 252 | 52 | 20 | 28 | | | | | | | | | 380 | \$90,680 | | \$3,000 | \$93,680 |
| 2 | Public and Stakeholder Communications and Engagement | | | | | | | | | | | | | | | | | | | |
| 2.1 | Communication and Engagement Plan Preparation | 2 | | 18 | 24 | | | 42 | | 10 | | | | | | 96 | \$18,190 | | | \$18,190 |
| 2.2 | Stakeholder Workshops | 2 | | 30 | 60 | | 10 | 68 | | 20 | | | | | | 190 | \$37,060 | | | \$37,060 |
| | Task 2 Total | 4 | | 48 | 84 | | 10 | 110 | | 30 | | | | | | 286 | \$55,250 | | | \$55,250 |
| 3 | Funding Options | | | | | | | | | | | | | | | | | | | |
| 3.1 | Monitor Funding Opportunities | 2 | | 4 | 24 | | | 10 | | | | | | | | 40 | \$8,560 | | | \$8,560 |
| 3.2 | Funding Options Analysis (Optional) | See Appe | endix A For Sc | cope and St | aff | | | | | | | | | | | | | \$49,778 | | \$49,778 |
| | Task 3 Total | 2 | | 4 | 24 | | | 10 | | | | | | | | 40 | \$8,560 | | | \$8,560 |
| 4 | Data Management System | | | | | | | | | | | | | | | | | | | |
| 4.1 | Prepare Data Management Plan | | 2 | 8 | | | | | 36 | 16 | | | | | | 62 | \$10,870 | | | \$10,870 |
| 4.2 | Data Management System Development | | 2 | 16 | | | | | 38 | 10 | | | | | | 66 | \$12,470 | | | \$12,470 |
| 4.3 | Data Compilation and Review | | 2 | 18 | | | 10 | | 32 | 60 | | | | | | 122 | \$19,990 | | \$800 | \$20,790 |
| | Task 4 Total | | 6 | 42 | | | 10 | | 106 | 86 | | | | | | 250 | \$43,330 | | \$800 | \$44,130 |
| 5 | Task 5: Basin Setting and Existing Conditions | | | | | | | | | | | | | | | | | | | |
| 5.1 | Data Collection and Review | | | 26 | | | | | | 24 | 6 | | | | 14 | 70 | \$12,280 | | | \$12,280 |
| 5.2 | Plan Area Description | 4 | | 22 | | | 20 | | | | 28 | | | | 18 | 92 | \$19,010 | | | \$19,010 |
| 5.3 | Hydrogeologic Conceptual Model | 6 | | 26 | | 22 | 30 | | | | | | | | 58 | 142 | \$29,150 | | | \$29,150 |
| 5.4 | Water Budget and Sustainable Yield | 10 | | 36 | | 44 | 14 | | | 18 | | | | | 90 | 212 | \$40,980 | | | \$40,980 |
| 5.5 | Develop Basin Numerical Model (Optional) | | | | | | | | | | | | | | | | | | | |
| 5.5.1 | Numerical Model Design and Construction | | | | | 20 | | | | | | 60 | 100 | | 32 | 212 | \$28,760 | | | \$28,760 |

Table 2. Cost Estimate

| | | | | | | | | Labor Hou | rs and Ra | ntes | | | | | | | | | | |
|----------------|--|----------------|----------------------------------|-----------------|------------------------------|----------------------------------|----------------------------------|-----------------------------|--------------------|---------------------------|----------------------------------|----------------------------------|-------------------------------------|-----------------|----------------------------------|-------|---------------|----------------|--------------------------|-----------|
| Proje Firm: | ct Team Role: | 일 Dudek | nd Quality Control ap Manager | Project Manager | Deputy Project ap Manager | Hydrogeology/ ap Water Budget | Hydrogeology/ ap Water Budget | Stakeholder p Engagement | Data yanagement | Data yanagement | GSP/Projects and Man. Actions | Hydrogeolgist II/ Basin Model | Hydrogeolgist II/ ap Basin Model | Hydrogeology ek | Hydrogeology/ ap Water Budget | Hours | Team Labor | actor Services | Equipment & Other Direct | |
| Tean | n Member: | T. Driscoll | Ron Schnabel | Matt Naftaly | Jane Gray | Steve Stuart | Jill Weinberger | Lila Spring | Kyle Harper | D. Pritchard -Petersen | Dylan Duverge | Trevor Jones | Nicole Tucker | Hugh McManus | Daniel Ritter | Team | Subcontractor | | Equip Fee | Total Fee |
| Billal | ole Rate : | \$240 | \$225 | \$240 | \$230 | \$240 | \$240 | \$160 | \$185 | \$115 | \$185 | \$125 | \$115 | \$125 | \$155 | Hours | Costs | Sub | Costs | Tota |
| Task | | | | • | | | | | | | _ | | | | | | | | | |
| 5.5.2 | Numerical Model Calibration | | | | | 24 | | | | | | 260 | 80 | | 60 | 424 | \$56,760 | | | \$56,760 |
| 5.5.3 | Develop Baseline Water Budget | | | | | 8 | | | | | | 60 | | | 40 | 108 | \$15,620 | | | \$15,620 |
| 5.5.4 | Model Uncertainty | | | | | 16 | | | | | | 100 | | | 80 | 196 | \$28,740 | | | \$28,740 |
| 5.5.5 | Analyze Future Simulations | | | | | 8 | | | | | | 16 | 60 | | 24 | 108 | \$14,540 | | | \$14,540 |
| 5.5.6 | Conference Calls, meetings | | | 20 | | 40 | | | | | | | | | 40 | 100 | \$20,600 | | | \$20,600 |
| | Task 5.5 Total (Optional) | | | 20 | | 116 | | | | | | 496 | 240 | | 276 | 1148 | \$165,020 | | | \$165,020 |
| | Task 5 Total | 20 | | 110 | | 66 | 64 | | | 42 | 34 | | | | 180 | 516 | \$101,420 | | | \$101,420 |
| 6 | Develop Sustainable Management Criteria | 1 | 32 | 92 | 32 | 40 | 34 | | | 12 | 32 | | | | 80 | 355 | \$74,340 | | | \$74,340 |
| | Task 6 Total | 1 | 32 | 92 | 32 | 40 | 34 | | | 12 | 32 | | | | 80 | 355 | \$74,340 | | | \$74,340 |
| 7 | Develop Monitoring and Measurement Program | 2 | 10 | 38 | | 24 | 98 | | | 30 | | | | | 58 | 260 | \$53,570 | | | \$53,570 |
| | Task 7 Total | 2 | 10 | 38 | | 24 | 98 | | | 30 | | | | | 58 | 260 | \$53,570 | | | \$53,570 |
| 8 | Develop and Assess Projects and Management Actions | | | | | | | | | | | | | | | | | | | |
| 8.1 | Identify Projects and Management Actions | 4 | 4 | 26 | 28 | | | | | | 8 | | | 30 | | 100 | \$19,770 | | | \$19,770 |
| 8.2 | Prioritize Projects and Management Actions | 2 | 2 | 22 | 12 | | | | | | 8 | | | 28 | | 74 | \$13,950 | | | \$13,950 |
| 8.3 | Evaluate and Select Projects and Management Actions | 2 | 2 | 38 | 12 | | | | | | 20 | | | 42 | | 116 | \$21,760 | | | \$21,760 |
| | Task 8 Total | 8 | 8 | 86 | 52 | | | | | | 36 | | | 100 | | 290 | \$55,480 | | | \$55,480 |
| 9 | Groundwater Sustainability Plan Document Preparation | | | | | | | | | | | | | | | | | | | |
| 9.1 | Develop Draft Groundwater Sustainability Plan | 8 | 4 | 65 | | | 60 | | | 60 | 160 | | | | | 357 | \$69,320 | | | \$69,320 |
| 9.2 | Address Comments and Finalize Groundwater Sustainability Plan | 2 | 2 | 48 | | | 60 | | | | 42 | | | | | 154 | \$34,620 | | | \$34,620 |
| | Task 9 Total | 10 | 6 | 113 | | | 120 | | | 60 | 202 | | | | | 511 | \$103,940 | | | \$103,940 |
| | Total Optional Costs | | | | | | | | _ | | | | | | | | | | | \$214,798 |
| | Total Non-Optional Cost | 75 | 62 | 785 | 244 | 150 | 364 | 120 | 106 | 260 | 304 | | | 100 | 318 | 2,888 | \$586,570 | | \$3,800 | \$590,370 |

Qualifications and Experience

Firm Profile

We are a California-based environmental firm with 12 offices and more than 400 planners, hydrogeologists, geologists, biologists, civil engineers, contractors, and support staff. We assist private and public clients on a broad range of projects that improve our clients' communities, infrastructure, and natural environment. From planning, design, and permitting through construction, we help move projects forward through the complexities of regulatory compliance, budgetary and schedule constraints, and conflicting stakeholder interests.

Our professionals find practical, cost-effective approaches to help you achieve your specific project goals. We work to build your trust, which allows us to offer constructive solutions with your project's long-term success in mind.

As a mid-size firm, we provide the personal service of project managers who stay with your project from start to finish, combined with the breadth and depth of capabilities characteristic of larger firms to meet your project's requirements. Our project managers are empowered to be problem solvers with the ability to make decisions in a timely fashion to keep project momentum moving forward. We are proud of our low employee turnover; our staff's long tenure means the project manager you see at the bidding stage will likely be with you at project completion.

Groundwater Sustainability Experience

The Dudek team offers the full range of groundwater expertise required to develop a comprehensive groundwater sustainability estimate for the Basin. This expertise includes extensive water policy and planning, numerical modeling, hydrological and geologic analysis, and local stakeholder engagement. Additionally, as the only team to have produced preliminary draft GSPs under the SGMA for public review, we bring a perspective that has been shaped by lessons learned in other basins.

Lessons Learned

Communication Is Critical

The single most-important factor in determining the success of a groundwater sustainability study is communication. This includes communication between Dudek and MWD, between MWD and stakeholders, and between MWD and oversight authorities. When open lines of communication are maintained, the project remains on schedule, stakeholder feedback is incorporated into the development of the sustainable yield estimate, and the needs and concerns of adjacent basins, or adjudicated areas, have been addressed. Each of these is vital to obtaining buy-in from stakeholders.

The Past Is Not the Key to the Present (Or the Future)

Although a determination of the historical safe yield is a required component of the GSP, and has already been estimated for the Basin, this determination will not be used to manage the Subbasin moving forward. Rather, the Subbasin management strategies will derive from the determination of the sustainable management criteria and local definitions of significance and unreasonableness for each sustainability indicator.

Defining the Sustainable Yield Is an Iterative Process

Local determination of sustainability hinges on understanding the impacts of pumping on beneficial uses and users of the Basin. These impacts and the amount of sustainable pumping will vary depending on the objectives and thresholds adopted by the stakeholders, the project implemented, and the management strategies employed. Initial results of the water budget mathematical model will be used to inform subsequent model runs to optimize the beneficial use of groundwater and minimize impacts to the sustainability indicators. This process is likely to take several iterations before the final minimum thresholds and measurable objectives are incorporated into the GSP.

Uncertainty Is Expected

To be successful, the project must acknowledge and embrace uncertainty. Initially, this takes the form of a data gap assessment, which will guide the understanding of the context for the HCM update and water budget mathematical model results, and eventually quantify the confidence intervals that will be assigned to the sustainable yield. By acknowledging uncertainty, the project will be able to adopt an adaptive management strategy that relies not necessarily on a single number for the sustainable yield, but rather on the monitoring thresholds developed in conjunction with MWA.

Water Resource Planning and Documentation Expertise

Our team's experts specialize in preparing environmental documentation for water resource projects. We have worked on Assembly Bill 3030 groundwater management plans (GMPs), the predecessor to GSPs, and are currently the only firm that has developed publically released GSPs in California. We have in-depth outreach experience, including coordinating and managing outreach for the FCGMA and Borrego Valley GSPs development process, Santa Barbara Countywide IRWM Program, San Luis Obispo Countywide IRWM Program, and Carpinteria Stormwater Management Plan.

Dudek is the only firm to have developed preliminary draft GSPs for public review in California.

Relevant Project Experience

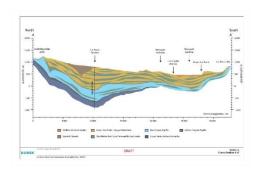
Below are some of Dudek's relevant projects. Additional project experience from the DGS team is included in Table 3.

Fox Canyon GSPs

Client: FCGMA

Dates: 2016-Ongoing

The FCGMA retained Dudek in 2016 to prepare the GSPs for the Oxnard, Las Posas, and Pleasant Valley basins in Ventura County. These basins were designated high priority by DWR for overdraft and water quality. The plan requirements include historical basin and water use conditions, including an annual water budget for the 30-year period from 1985 to 2015, determination of sustainable basin yield and associated uncertainty, definition of undesirable results and minimum thresholds, and identification of water resource projects or management actions necessary to achieve sustainable management by 2040.





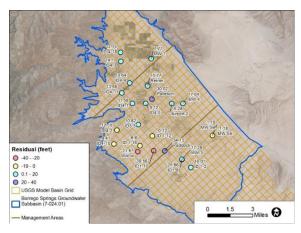
After compiling and evaluating existing data from multiple agencies, Dudek completed preliminary drafts of the GSPs in November 2017, which were released for public review. Dudek has led stakeholder outreach efforts throughout the development of the GSPs, including development of an outreach and engagement plan, ongoing communication with more than 400 interested parties through electronic newsletters, facilitating six stakeholder meetings and leading two workshops for the FCGMA board of directors. We are proceeding with incorporating the feedback received from stakeholders during the review process and revising the initial conditions for the numerical model simulations of future conditions. The plans are scheduled for completion by summer 2019.

SGMA Project Management and Engineering and Hydrogeology Services

Client: Borrego Water District (BWD) and County of San Diego

Dates: 2013-Ongoing

Dudek is managing the development of a GSP for the critically overdrafted Borrego Valley Groundwater Basin for BWD and the County of San Diego. Dudek, has been developing the GSP for the Borrego Valley Groundwater Basin since March 2017 and has been working on BWD groundwater issues since 2013. Dudek has completed a Draft GSP that is expected to be released for public review and comment in March 2019. Dudek developed a GIS based data management system (DMS), summarized the existing data for the basin to identify data gaps, developed and implemented a monitoring program, prepared a groundwater sampling and analysis plan, and implemented the use of a USGS numerical groundwater model to represent a refined groundwater



budget and hydrologic conceptual model, scoped and evaluated several projects and management actions, and completed a draft of the GSP for GSA review. As a critically over-drafted basin there are multiple constraints on groundwater supply development including lack of any imported water, limited recharge and water quality issues (arsenic). Dudek has prepared cost estimates for the GSP, completed a technical analysis of the existing BWD and County Demand Offset Water Credit Policy, conducted a scientific and jurisdictional analysis of the basin boundaries to support application for a Bulletin 118 BBM, completed a water replacement cost analysis, and conducted an analysis on managing proportional groundwater production cutbacks through a water market approach. Dudek provided on-call grant application preparation services and support for various projects through numerous chapters of Proposition 1 for BWD.

Dudek worked collaboratively with USGS in modifying the Borrego Valley Hydrologic Model, a finite-difference groundwater flow numerical model developed by USGS using the MODFLOW-OWHM code, to extend the simulation period from 2010 to 2016. Dudek updated the numerical model by incorporating known and estimated pumping at wells in the basin up to the end of 2016. The model was validated by simulating conditions from 2010 to 2016 and comparing the simulated results to observed water level data collected from 2010 to 2016. Model validation is a measure of the uncertainty in model predictions. Improvements in model accuracy may be made after identifying the model parameters that result in the greatest uncertainty and implementing future investigations and data collection to reduce the uncertainty. Dudek identified three conditions, or parameters, that contributed most to uncertainty: (1) estimated pumping in lieu of actual metered pumping, (2) aquifer storage, and (3) recharge from infiltrating stream flow. Additional information on pumping, storage, and recharge will be collected over the next 5-year period to reduce uncertainty and generate more-accurate simulations.

SGMA Services for Montecito Groundwater

Client: MWD

Dates: 2016-Ongoing

MWD contracted with Dudek in 2016 to assist in MWD's implementation and funding of its SGMA program. The SGMA requires the sustainable management of California's groundwater basins, including the creation of a GSA and a GSP to mitigate negative impacts, including groundwater depletion, water quality degradation, and land subsidence. Although a low-priority groundwater basin, the Basin is a critical component of the community of Montecito's drinking water supply, and MWD deemed it prudent to implement new components of the SGMA to better protect groundwater quality and quantity for the future. Thus, Dudek helped MWD personnel implement the following phases:

Phase 1 – BBM Process;

• Phase 2 - GSA Formation and Governance:

Phase 3 – Grant Tracking and Application; and

Phase 4 – GSP Preparation.

Basin Boundary Modification and GSA Formation for Cuyama Valley and San Antonio Creek Groundwater Basins

Client: Santa Barbara County Water Agency (SBCWA)

Dates: 2014-2016

Dudek assisted SBCWA with the BBMs and formation of GSAs in two medium-priority groundwater basins in Santa Barbara County. To meet the March 2016 deadline for BBM applications, Dudek initiated stakeholder outreach in December 2015, and held two public meetings in San Antonio on January 12, 2016, and 13 in Cuyama. After completing both BBM applications, Dudek facilitated GSA formation discussions and filed for GSA formation with DWR in both San Antonio and Cuyama.

Additionally, Dudek reached out to the DWR early in the BBM process to secure the well completion reports necessary to inform future decision making and to open channels of communication regarding the rapidly evolving SGMA



guidelines. Dudek hydrogeologists conducted a literature review of existing studies for both basin boundaries to fulfill the technical information requirements for a scientific boundary modification and to identify data gaps and goals for the GSP development process. Dudek prepared a successful application for the County of Santa Barbara under DWR's Sustainable Groundwater Planning Grant Program and will continue to monitor, track, and prepare applications on behalf of the county for SGMA compliance and groundwater basin benefit.

Dudek provided extensive engagement and facilitation services for the formation of GSAs for the Cuyama and San Antonio Groundwater Basins. The engagement entailed public outreach to communities, some of which had language, cultural, and economic barriers to overcome. The GSA facilitation for both GSAs was an 18-month process working with all eligible local agencies, agricultural interests, and the public to form new governmental agencies for the judicious apportioning of groundwater in a collaborative and sustainable manner. The process culminated in the successful formation of the GSAs and an advisory group for one of the GSAs. The public aspects of the outreach were addressed differently in each of the basin areas and entailed coordination with non-governmental organizations, the University of Santa Barbara, and the local resource conservation district.

As-Needed Hydrogeological Support

Client: BWD

Dates: 2013-Ongoing

Dudek assisted BWD in drafting a long-term cooperation agreement with the Rams Hill Golf Course to avoid litigation of water rights. As part of the agreement, Dudek characterized the hydrogeology of the southern portion of the Borrego Valley Groundwater Basin to estimate safe yield. Dudek performed multiple aquifer tests, drilled three test holes, installed a new production well, and completed water level monitoring and water quality sampling. Dudek installed a telemetry system to monitor production and water levels for several wells. We are using the recently updated USGS groundwater numerical model to optimize pumping of the basin and project water level decline. By pumping non-potable poor-quality water from the southern Borrego Valley Groundwater Basin for use on the Rams Hill Golf Course and fallowing 800 acre-feet of agricultural production over the next 4 years, Rams Hill Golf Course will improve the long-term availability and sustainability of water in the Borrego Valley Groundwater Basin.



Well Development for the Rams Hill Water Supply Project

Hydrogeological, Engineering, and Grant Services

Client: Jacumba Community Services District

Dates: 2015-Ongoing

Worked in collaboration with Jacumba Community Services District and Jacumba Solar LLC to develop a water supply agreement for the Jacumba Solar Farm. Trey Driscoll was the project manager for subsurface geophysical survey, well locating, design, and drilling oversight of the new Highland Center Well completed in October 2016. Implemented a groundwater level monitoring and water quality testing program for the Jacumba Valley Groundwater Basin to evaluate pumping and localized historical groundwater contamination from a gas station. Prepared a preliminary



engineering report and assisted with U.S. Department of Agriculture Rural Development grant application for Manganese Treatment System Water Supply Wells No. 7 and 8, Photovoltaic Solar Array, and Pipeline Replacement. Successfully assisted the Jacumba Community Services District in obtaining a grant totaling \$1.671 million from U.S. Department of Agriculture Rural Development. Oversaw design and construction of the Manganese Treatment System that is expected to go online in Spring 2019.

Paradise Valley Groundwater Study

Client: Glorious Land Company

Dates: 2014-2017

Dudek evaluated the feasibility of storing and recovering imported Colorado River water in Shavers Valley, located 15 miles east of Coachella Valley in Riverside County, and the availability of local groundwater for future use. The feasibility study included the development of geological cross sections using data from previous hydrogeological investigations, the installations of wells to perform aquifer tests and monitor groundwater levels, and infiltration tests to design and operate a spreading basin to facilitate groundwater recharge.



Additionally, Dudek modified an existing MODFLOW groundwater flow model to simulate the potential effects of groundwater recharge on aquifer storage via the proposed spreading basin. Modifications to the

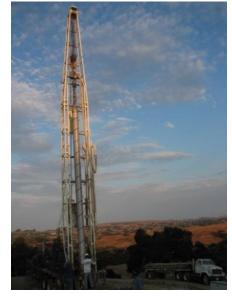
numerical model included adding the North and South Chiriaco faults and simulating their apparent effects on groundwater flow in the basin, refining the model grid at pumping centers, and redefining inflows at mountain front boundaries based on reviews of local precipitation data and estimates of surface water runoff. The modified numerical model was calibrated to observed hydraulic heads and a sensitivity analysis conducted to quantify the uncertainty in hydraulic conductivity and subsurface inflow defined in the model. Results indicated that the proposed use of a spreading basin to recharge the aquifer was feasible, and no detrimental impacts were anticipated.

Santa Ynez Upland Basin Wells Drilling and Hexavalent Chromium Study

Client: Santa Ynez River Water Conservation District, Improvement District (ID) No. 1

Project Dates: 2005-Ongoing

Dudek provided as-needed services under a professional services agreement for the Santa Ynez River Water Conservation District, ID No. 1, to assist in the construction of four new municipal supply water wells with funding from the Federal Emergency Management Agency after several river wells were impacted by flooding. ID No. 1 contracted Dudek again in December 2013 to evaluate Upland Basin wells affected with elevated concentrations of hexavalent chromium (Cr6). ID No. 1 currently operates 12 groundwater wells in the Upland Basin, generally located north of Santa Ynez in the Alamo Pintado Creek Watershed. Of the 12 groundwater wells, half currently exceed the California maximum contaminant level for Cr6 of 10 micrograms per liter. Wellhead treatment or construction of a centralized treatment facility potentially will be required for up to six wells.



Cr6 occurs naturally in the Upland Basin, and the source is likely the serpentine matrix associated with the Franciscan basement complex in the San Rafael Mountains. Given limited historical data for Cr6, the temporal and both the areal and vertical distribution of Cr6 in the Upland Basin aquifer is not well understood. District wells are typically cross-screened among thin beds of sand, gravel, and clay associated with the Paso Robles Formation. In some instances, thick beds of clay separate distinct water producing zones. The district wants to identify potential discrete zones of elevated Cr6 that could impair water quality and, consequently, develop a plan to better manage and improve the quality of water supplied by the wells. Preliminary results of flow data and depth-discrete water quality samples suggest vertical variation of Cr6 concentrations in the aquifer and the potential to selectively pump from distinct aquifer zones to meet the proposed Cr6 maximum contaminant level without wellhead treatment in some wells.

Dudek performed isolated pumping of select aquifer zones using an inflatable packer to prove feasibility of this option. Additionally, Dudek recently completed the drilling and construction oversight, lithological logging, geophysical interpretation, and water quality sampling of the Office Test Well to determine production capability and Cr6 concentrations in the southern portion of the Upland Basin. Dudek also assisted in various portions of the State Water Resources Control Board planning and construction grant applications.

Table 3. Regional Water Planning and Groundwater Experience

| Project | Client | Applicability to GSP Process | Consultant |
|---|---|---|------------|
| Santa Barbara Countywide IRWM Program Grant Applications | SBCWA | Stakeholder outreach and countywide water planning | Dudek |
| Santa Barbara Countywide IRWM Proposition 50 | SBCWA | Stakeholder outreach and countywide water planning | Dudek |
| SGMA Services | MWD | Implementation and funding of SGMA program, stakeholder outreach, boundary modification, GSA formation and governance, grant tracking and application | Dudek |
| Stakeholder Outreach and Preparation of Plan Sections for the Update to Santa Barbara County's 2007 IRWM Plan | County of Santa Barbara | Regionwide stakeholder outreach for the 2007 IRWM update and stakeholder outreach for salt nutrient management planning | Dudek |
| GSP Project Management, Water Supply and Aquifer Characterization | BWD | GSP project management and planning, hydrogeologic characterization | Dudek |
| Santa Catalina Island Groundwater Management and Sustainability Program | Southern California Edison | Groundwater management monitoring, design and planning, seawater intrusion | Dudek |
| Upland Basin Hexavalent Chromium Well Profiling and Treatment Planning | Santa Ynez River Water Conservation District ID No. 1 | Groundwater management monitoring, design and planning | Dudek |

Table 3. Regional Water Planning and Groundwater Experience

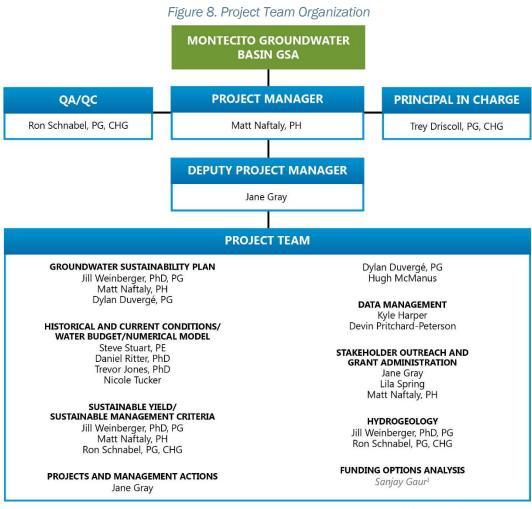
| Project | Client | Applicability to GSP Process | Consultant |
|--|--|---|------------|
| Exploration of San Diego Groundwater Formation and Preparation of AB 3030 GMP | Tia Juana Valley County Water District (now City of San Diego) | GMP | Dudek |
| Rainbow AB 3030 GMP | Rainbow Municipal Water District | GMP | Dudek |
| Shavers Valley Groundwater Basin for the Paradise Valley Groundwater Banking Project | Glorious Land Company (Coachella Valley Water District) | GMP | Dudek |
| San Ricardo Well Flow Profiling and Well Liner Design, Master Plan Rehabilitation of Seven Wells | Goleta Water District | Groundwater management monitoring, design, and planning | Dudek |

Project Manager and Key Personnel

Dudek has assembled a team led by some of California's leading groundwater and policy experts to develop the GSP for MWD. Matt Naftaly, PH, will serve as project manager and will be the primary point of contact for MWD. Mr. Naftaly was formerly the manager of the SBCWA and is currently project manager for the Basin SGMA Activities, as well as deputy project manager for the development of the three GSPs for the FCGMA. He has extensive experience overseeing regional water projects requiring cooperation among multiple and sometimes conflicting interests.

Mr. Naftaly will be supported by Principal in Charge Trey Driscoll, PG, CHG, QSD/QSP, and Deputy Project Manager Jane Gray. Mr. Driscoll has 18 years' experience managing complex projects, including GSPs, GMPs, and well installations. With 23 years' experience, Ms. Gray specializes in agricultural resource and policy planning, policy analysis, land use planning, and project development and entitlement services. She has provided management, grant writing and administration, and planning services to numerous GSPs and IRWM plans throughout the state.

The project management team will be supported by a team of technical experts with extensive experience preparing groundwater sustainability plans. **Figure 8** depicts key personnel organization and lines of communication, and resumes for all staff listed can be found in **Appendix B**.



References

Table 4 outlines client references for the relevant projects referenced earlier in this proposal.

Table 4. Client References

| Project | Client | Contact Information |
|---|-----------------------------|---|
| Fox Canyon GSPs | FCGMA | Jeff Pratt, Director of Watershed Protection District, 805.645.2014, jeff.pratt@ventura.org |
| SGMA Project Management and Development of a GSP and As- Needed Hydrogeological Support | BWD and County of San Diego | Geoff Poole, BWD General Manager, 760.767.5806, geoff@borregowd.org |
| GSA Formation and IRWM Planning | SBCWA | Fray Crease, Water Agency Manager, 805.568.3542, fcrease@cosbpw.net |

Appendix A

Raftelis Scope of Work



February 21, 2018

Mr. Matt Naftaly Dudek 621 Chapala Street Santa Barbara, CA 93101

Subject: Montecito Water District Groundwater Sustainability Plan Funding Evaluation

Dear Mr. Naftaly:

It is our understanding that the Montecito Water District would like to examine different funding options to fund the development of the Groundwater Sustainability Plan (GSP) for the Montecito Groundwater Basin Groundwater Sustainability Agency (GSA). The District would like to evaluate all the options available to it for plan development funding based on the characteristics of the Montecito Groundwater Basin and the affected stakeholders. The District manages the Basin and most private well owners are also customers of the District in some capacity. In addition to the wells identified by the District, it must also incorporate consideration for unpermitted private wells drilled during the most recent drought.

The attached proposal provides detail on the steps involved in not only developing a funding strategy, but also in providing the Board of Directors with the knowledge and tools they need to make an informed decision on that strategy and the ongoing financial management of the GSA while developing the GSP. I will serve as Project Director and Kevin Kostiuk will serve as Project Manager. Together, we have assisted both the Borrego Water District and the County of Santa Cruz, in addition to other basins across California, with developing a funding plan for their groundwater basins. Mr. Kostiuk is located in Santa Barbara, and readily available for the day-to-day management of the project. Habib Isaac will serve as technical reviewer and has conducted numerous studies throughout California over the last 15 years.

We are pleased to submit this proposal. Should you have any questions, please do not hesitate to call me at (213) 262-9304 or Kevin Kostiuk at (760) 519-8520.

Sincerely,

Sanjay Gaur Vice President

Scope of Work

TASK 1 - PROJECT MANAGEMENT, KICK-OFF MEETING, AND DATA COLLECTION

Task 1.1 - Ongoing Project Management and Quality Assurance/Quality Control Process

This task includes general administrative duties including client correspondence, billing, project documentation, and administration of the study control plan. Our Project Managers provide competent project management to ensure that all deadlines and objectives are met in a timely and efficient manner. We believe in a no-surprise approach and communicate with clients on a regular basis.

Raftelis' quality assurance / quality control (QA/QC) process ensures high quality, accurate work. The QA/QC process begins at the outset of the project when the Raftelis consulting team is assembled. For this engagement we have three layers of review: Project Manager, Project Director, and Technical Reviewer.

Task 1.2 -Kick-off Meeting and Data Collection

The kick-off meeting is our due diligence to ensure that project participants agree to the project's goals, approach, work plan, schedule and study priorities. A detailed data request list is submitted to the District prior to the kick-off meeting so that the appropriate data can be assembled in the required format.

Meetings: One (1) in-person Kick off meeting with District staff **Deliverables:** Data request list, Kick-off Meeting presentation in Microsoft PowerPoint format

TASK 2 - POLICY WORKSHOPS AND REGULATORY REQUIREMENTS

The proposed policy discussions will be used to identify the different fee structures for evaluation. With direction from the District on the most important objectives, Raftelis can develop the appropriate fee structure. Raftelis has assisted numerous agencies in conducting policy and pricing objectives exercises and developing appropriate fee structures. By receiving policy direction early in the study, we garner support of the proposed fee structure(s). Additionally, Raftelis will review and discuss with the District and its legal counsel any regulatory requirements of the proposed fee structure related to Proposition 218 and or Proposition 26. Raftelis proposes to hold one meeting with District staff and one separate meeting with Basin stakeholders.

Meetings: Two (2) policy discussion meetings with District staff and stakeholders **Deliverables:** Presentations for discussions in Microsoft PowerPoint format

TASK 3 - BUDGET DEVELOPMENT

Raftelis will develop an operational budget for the development of the Groundwater Sustainability Plan (GSP). The District will incur costs relating to their existing staff in developing and writing the plan to be submitted to the Department of Water Resources (DWR), consulting costs for professional and technical services, fee collection and customer service costs to Basin users and stakeholders, and indirect costs of facilities, equipment, and supplies, among others. Raftelis will work with the District to gather all information necessary to estimate total expenses in drafting the GSP, estimate required revenues to recover those costs, and develop the financing plan model in Task 4.

Meetings: Two (2) webinars with District staff

Deliverables: Presentations for discussion in Microsoft PowerPoint format

TASK 4 - FINANCING PLAN MODEL

Raftelis will design a financial plan model with the flexibility to evaluate different scenarios- in real timeto achieve different policy objectives and/or enhance financial stability. The Dashboard, which displays key variables and results on-screen, will show the results of each scenario and facilitate discussion for quick consensus building. This has proven to be particularly useful when making presentations, allowing attendees to fully appreciate the impacts of changes instantly.

Meetings: Two (2) webinars with District Staff to review the proposed financing plan **Deliverable(s):** Presentations for webinars if necessary in Microsoft PowerPoint format

TASK 5 - GSP FEE DESIGN

With input received from the policy workshops, and the development of a budget and financial plan in Tasks 3 and 4, Raftelis will design up to three fee structures for evaluation. If necessary, Raftelis will also develop non-compliance deterrents for the District's evaluation. Penalties for water service charges do not fall under Proposition 218. Raftelis will consider specific socio-economic conditions to determine the appropriate deterrent (penalty) for non-compliance. We will also obtain the District's legal counsel's input on the applicability of Propositions 26 and 218.

Meetings: Two (2) webinars with District Staff

Deliverables: Presentations for webinars if necessary in Microsoft PowerPoint format

TASK 6 - STAKEHOLDER WORKSHOP

Raftelis will hold a second workshop with Basin stakeholders to discuss the broader study, the GSP financing plan, and the development of proposed fees. This meeting allows for the community to give input to the project team and to District staff for incorporation into the final fee proposal.

Meetings: One (1) stakeholder workshop with Basin stakeholders and District staff **Deliverables:** Presentations for workshop in Microsoft PowerPoint format

TASK 7 - REPORT DEVELOPMENT

Raftelis will develop a draft and final report for the GSP development financing plan and proposed fees and charges. The draft report will include an executive summary highlighting the major issues and decisions

MONTECITO WATER DISTRICT MONTECITO GROUNDWATER BASIN SUSTAINABILITY PLAN FUNDING EVALUATION

reached during financing and fee development meetings with staff and stakeholders. The main body of the report will include a discussion on the GSP financing plan, fee structure selection, study assumptions, and methodologies used to develop the fees. The District will provide comments for incorporation into the Final Draft.

Meetings: One (1) webinar to discuss comments and edits to the Draft Report

Deliverables: Draft & Final Report

Fee Schedule

Raftelis proposes to complete the scope of work outlined above on a time-and-materials basis with a not-to-exceed cost of \$49,788. The following work plan provides a breakdown of the estimated level of effort required for completing each task described and the hourly billing rates for the personnel scheduled to complete the project.

| | | | Hours | | | | | | |
|---|-----------------|-----------------------|----------|----------|----------|---------|-------|----------|--------------------------|
| Tasks | Web Meetings | Number of Meetings | PD | PM | sc | TR | Admin | Total | Total Fees & Expenses |
| Project Management, Kickoff Meeting, and Data Collection | 0 | 1 | 8 | 10 | 4 | 2 | 4 | 28 | \$6,482 |
| 2. Policy Workshops and Regulatory Requirements | 0 | 2 | 18 | 18 | 4 | 2 | 0 | 42 | \$11,238 |
| 3. Budget Development | 2 | 0 | 2 | 8 | 10 | 1 | 0 | 21 | \$4,595 |
| 4. Financing Plan Model | 2 | 0 | 4 | 8 | 10 | 1 | 0 | 23 | \$5,205 |
| 5. GSP Fee Design | 2 | 0 | 6 | 12 | 16 | 2 | 0 | 36 | \$8,140 |
| 6. Stakeholder Workshop | 0 | 1 | 12 | 12 | 4 | 2 | 0 | 30 | \$7,782 |
| 7. Report Development | 1 | 0 | 3 | 8 | 16 | 2 | 0 | 29 | \$6,345 |
| Total Estimated Meetings / Hours | 7 | 4 | 53 | 76 | 64 | 12 | 4 | 209 | |
| Hourly Billing Rate | | | \$295 | \$210 | \$185 | \$265 | \$80 | | |
| Total Professional Fees | | | \$15,635 | \$15,960 | \$11,840 | \$3,180 | \$320 | \$46,935 | |

Total Fees

\$46,935

Total Expenses

\$2,853

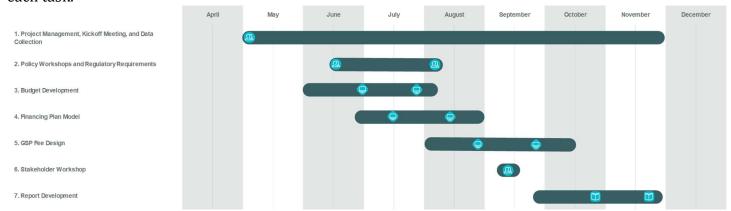
Total Fees & Expenses

\$49,788

PD - Project Director, Sanjay Gaur PM - Project Manager, Kevin Kostiuk SC - Staff Consultants Admin - Administrative Staff

Project Schedule

Raftelis proposes to complete the scope of work outlined above in calendar year 2019. This assumes a project start date in May 2019, with tasks progressing along the proposed timeline, allowing study documentation to the District in November 2019. The schedule below provides am estimated timeline for each task.



Appendix B

Resumes

Matt Naftaly, PH

Principal Hydrologist

Matt Naftaly is a hydrologist with 27 years' professional experience in groundwater management, surface water allocation, State Water Project administration, regional water conservation programs, and drought response. Mr. Naftaly has overseen and coordinated significant water-related projects and programs with water districts; cities; and local, state, and federal agencies. He is currently implementing the requirements of the Sustainable Groundwater Management Act (SGMA) as a project manager and technical expert. His SGMA experience is as both an agency manger and consultant. As project manager for a diverse group of water and grant programs, he has experience effectively fostering communication and



gaining consensus among groups with varied interests and backgrounds. Mr. Naftaly has a range of technical skills, including groundwater basin analyses, reservoir reoperation, hydrologic data collection systems, and hydrologic analyses.

Project Experience

SGMA Compliance, Santa Barbara County, California. Coordinated and oversaw Santa Barbara County's compliance with the SGMA requirements for the San Antonio and Cuyama Valley Groundwater Basins. Oversaw technical groundwater basin studies, Board of Supervisor approvals, stakeholder communications, Department of Water Resources collaboration, and other aspects of SGMA requirements.

SGMA, Montecito Groundwater Basin. Assisting the Montecito Water District with implementation of SGMA requirements including Basin Boundary Modification, Groundwater Sustainability Agency formation, and technical evaluation of the groundwater basin.

Education

University of California, Santa Barbara BA, Geological Sciences

Certifications

Professional Hydrologist (PH), No. 13-H-5003

Professional Affiliations

Engineers without Borders, Santa Barbara/Ventura Chapter, Technical Co-Lead on Tanzania Water Supply Project

SGMA, Fox Canyon Groundwater Management Agency Groundwater Sustainability Plan (GSP) Preparation. Served as deputy project manager for GSP preparation for the three groundwater basins in Ventura County. Duties included participation in stakeholder engagement, Board reporting, project planning, budgeting, and GSP section preparation and review.

Long-Term Supplemental Water Supply Alternatives Study, Santa Barbara County, California. Managed a comprehensive study to examine and evaluate all potential water supplies available to Santa Barbara County now and in the coming decades. The study examined the relative feasibility of various alternatives, taking into consideration cost and regulatory obstacles, and regional alternatives that would benefit from the economies of scale.

Emergency Water Supply Project, Santa Barbara County, California. Co-managed a project to bring emergency water supplies to Santa Barbara County in response to the 1986–1991 drought. The project necessitated construction of temporary water supply pipelines and coordination with the State Department of Water Resources and several water supply districts to trade state water credits for delivery of local supplies.

Cachuma Reservoir Operational Modification, Santa Barbara, California. Participated in development and implementation of modified reservoir operations protocol to reduce downstream flooding while increasing water supply. Developed a real-time outflow monitoring method using an automated flood-warning system.

Regional Stormwater Runoff Model, Santa Barbara, California. Developed region-specific "Rational Method" program using Excel/VBA, a program used by developers to determine drainage capacity requirements for new developments based on property characteristics, climate, location, and land use.

Integrated Regional Water Management (IRWM) Grant Program, Santa Barbara, California. Oversaw grant applications for the state's IRWM Program, including the production of the Integrated Regional Water Management Plan. The program successfully obtained more than \$30 million in competitive grant funds.

Cloud Seeding Program, Santa Barbara County, California. Administered and oversaw Santa Barbara County's cloud seeding program, including environmental approvals, participant collaboration, and operations oversight.

Professional Experience

Santa Barbara County Water Agency, Santa Barbara, California. Served as manager. Supervised up to five employees. Led water-related programs, with particular emphasis on groundwater management, drought response, water supply, water conservation, water quality, and technical studies. Supervised staff in carrying out projects and policy. Recommended action and reports to executive management and the County Board of Supervisors regarding water-related policy. Responsible for Water Agency budgets and staffing. Coordinated with County Purveyors, Cachuma Reservoir Boards, and other water-related agencies for regional issues such as reservoir operations, conservation efforts, water supply programs, and grant implementation. (2008–2015)

Santa Barbara County Flood Control District, Santa Barbara, California. Served as Senior Hydrologist/Section Manager of the Hydrology Division. Supervised one to two employees. Responsible for installation, operation, and maintenance of a comprehensive, real-time automated flood warning system. Responsible for hydrologic data collection, analysis, archiving, and dissemination. Duties included budgeting, hiring, Board of Supervisors approvals, and coordinating flood warning activities with various local, state, and federal entities. Responsible for stream flow measurements and development of rating curves. Conducted interviews with the media regarding flooding, drought, and other hydrologic and meteorological subjects. Supervised development and maintenance of a website displaying hydrologic data. In charge of storm monitoring, coordination, and modeling during flood events. Supervised production of various flood reports and other documents. (1997–2008)

Santa Barbara County Water Agency, Santa Barbara, California. Served as hydrologist. Under emergency drought declaration, co-managed a \$13 million emergency water supply project involving the trade of water and water rights with several entities. Managed Santa Barbara County's cloud seeding program, including coordination, budgeting, contracts, and operations oversight. Collected, analyzed, and disseminated groundwater data. Performed hydrologic analysis of groundwater and surface water. Interacted with the media. (1991–1997)

Petroleum Industry Consultants Inc., Huntington Beach, California. Served as geologist. Project manager/environmental geologist for geologic/environmental consulting firm. Conducted soil and groundwater contamination studies, contaminant remediation projects, and other geologic hazards research. Responsible for all phases of projects, including, budgeting, permitting, field work, and reporting. (1987–1990)

Trey Driscoll, PG, CHG

Principal Hydrogeologist

Trey Driscoll is a principal hydrogeologist with 18 years' experience overseeing and managing projects in the environmental field. Mr. Driscoll specializes in water resource planning, watershed evaluations, environmental investigations, well locating and drilling, and well design. Mr. Driscoll brings diverse experience to the project team and has supported numerous projects encompassing a wide range of areas. Mr. Driscoll's project experience includes negotiation of water supply contracts, water rights testimony, preparation of groundwater monitoring and mitigation plans, water quality and hydrology technical reports, and exploratory groundwater investigations.

Project Experience

Water Supply, Aguifer Characterization and SGMA Support Services, Borrego Water District, Borrego Springs, California. Dudek was retained by the Borrego Water District (BWD) in 2013 to evaluate water supply options for the Rams Hill Golf Course. Dudek completed a series of technical memoranda to evaluate water supply options and provided the BWD technical support to develop the Agreement for the Delivery of Water to the Rams Hill Golf Course. Subsequently, Mr. Driscoll led a drilling program to explore the aquifer underlying Rams Hill. This included drilling and logging five test holes, completing four of the five test holes as production water wells, performing aquifer tests and analysis, water quality sampling, and oversaw installation of wireless system for remote groundwater level and production monitoring. Dudek used the integrated hydrologic numerical model, USGS code, MODFLOW-OWHM, to assist in completing analysis of the sustainable vield of the Southern Management Area of the Borrego Springs Subbasin. Mr. Driscoll prepared technical analysis of the existing BWD and County Demand Offset Water Credit Policy, water cost analysis,



Trey Driscoll

Education

Hobart and William Smith Colleges BS, Geoscience and Environmental Studies

Certifications

Professional Geologist (PG), CA No. 8511

Certified Hydrogeologist (CHG), CA No. 936

Qualified SWPPP Developer/Practitioner (QSD/QSP), No. 20167

Professional Affiliations

Groundwater Resource
Association of California –
San Diego Branch President
National Groundwater Association
San Diego Association of Geologists

economic analysis, and evaluated water quality and water supply options for District customers. Mr. Driscoll is the project manager for Sustainable Groundwater Management Act (SGMA) support services Dudek provided to the BWD. Dudek prepared the Bulletin 118 basin boundary modification request, which was approved by the Department of Water Resources on October 6, 2016.



Hexavalent Chromium Study and Municipal Water Wells Installation Project, Santa Ynez River Water Conservation District, Santa Ynez, California. Project manager for design and implementation of a well profiling study to evaluate the potential for naturally occurring hexavalent chromium [Cr(VI)] to impact the water quality at Upland Basin production wells owned and operated by the Santa Ynez River Water Conservation District (SYRWD). SYRWCD operates 12 groundwater wells in the Upland Basin located north of Santa Ynez in the Alamo Pintado Creek Watershed. Cr(VI) concentrations exceeded the California maximum contaminant level (MCL) for Cr(VI) of 10 micrograms per liter (µg/L) in half of the Upland Basin wells. The SYRWCD sought to identify potential discrete zones of naturally occurring Cr(VI) concentrations that exceed the MCL. Preliminary flow data and depth discrete water quality samples indicated vertical variation of Cr(VI) concentrations in aquifer. Dudek used the results of the well profiling study to develop a plan to improve the quality of water supplied by the wells. Dudek designed an inflatable packer with Baski Inc., to selectively pump from aquifer zones with lower Cr(VI) concentrations to reduce the wellhead concentration of Cr(VI) without wellhead treatment.

For wells that will require wellhead treatment, Dudek is working with a multi-consultant team to evaluate potential treatment alternatives. As site geologist, supervised installation of four municipal production wells and one monitoring well in the Upland Basin. Conducted aquifer pump tests, logged lithology of boreholes and assisted with well design. Currently assisting SYRWCD with locating and design of replacement water wells.

Well Screen Liner Design, Well Rehabilitation Master Planning and Groundwater Supply Drought Planning, Goleta Water District, Goleta, California. Led team of engineers and hydrogeologists for design and installation of unique combination Muni-Pak pre-packed screen and traditional well screen with filter pack design to line well damaged due to casing embrittlement. Increased well yield and eliminated sanding issues. Well liner was featured in the August 2015 issue of Water Well Journal. Hydrogeology lead for well rehabilitation master planning of seven water wells. Conducing aquifer testing, mechanical and chemical redevelopment, water quality sampling, and analysis of historical water levels and production. Optimizing pump intake depth, and pump and motor sizing to allow for sustained production from basin during drought.

Hydrogeology, Engineering and Project Management Services, Jacumba Community Services District, Jacumba Hot Springs, California. Worked in collaboration with Jacumba Community Services District (JCSD) and Jacumba Solar, LLC to develop Water Supply Agreement for the Jacumba Solar Farm. Project manager for subsurface geophysical survey, well locating, design and drilling oversight of the new Highland Center Well completed in October 2016. Implemented a groundwater level monitoring and water quality testing program for the Jacumba Valley Groundwater Basin to evaluate pumping and localized historical groundwater contamination from a gas station. Prepared Preliminary Engineering Report and assisted with U.S. Department of Agriculture (USDA) Rural Development grant application for Manganese Treatment System Water Supply Wells No. 7 and 8, Photovoltaic Solar Array and Pipeline Replacement. Successfully assisted the JCSD obtain a grant totaling \$1.671 million from USDA Rural Development.

Municipal Water Well Installation Project, Santa Ynez River Water Conservation District Los Olivos, Santa Barbara, California. As site geologist, supervised installation of five municipal water wells. Conducted aquifer pump tests and logged lithology of borehole for a project funded by the Federal Emergency Management Agency.

Municipal Assessment to Determine the Suitability for Groundwater Development, Lee Lake Water District Corona, Riverside County, California. Project manager for assessment to determine the suitability for groundwater development. Evaluated potential well sites in context of local geology and fault zones, existing wells, water levels, and water quality. Oversaw seismic and refraction surface geophysics to optimize well location in alluvial channel. Drilled two boreholes and successfully completed installation of two new water wells. Performed aquifer testing and pump selection.



Municipal Water Supply Well Project, U.S. Department of Agriculture, Joshua Tree, San Bernardino, California. As project geologist, prepared all contract documents, including technical specifications, for project funded by a U.S. Department of Agriculture Rural Development Grant.

Recycled Water Storage Project, City of San Diego, San Diego, California. Project geologist for the City of San Diego in cooperation with the U.S. Geological Survey evaluating the potential to use the Tijuana River Alluvial Basin for seasonal storage of recycled water. Estimated available alluvial storage and suitability to inject recycled water.

Groundwater Management Plan, Rainbow, San Diego County, California. Served as researcher on lithology and hydrology of the Rainbow valley for a groundwater management plan.

Senate Bill (SB) 610 Water Supply Assessments, Multiple Renewable Energy Projects, California. Mr. Driscoll have overseen the preparation of over ten SB 610 Water Supply Assessments (WSAs) for renewable energy projects since Assembly Bill 2561 sunsetted on January 1, 2018 that previously exempted most renewable energy projects from preparing WSAs. WSAs have been prepared for projects located in the Antelope Valley, Fremont Valley, Jacumba Valley, Livermore Valley, Mojave, and San Joaquin Valley Bulletin 118 alluvial groundwater basins and for projects located outside of designated basins overlying fractured rock aquifers.

Multiple Solar Projects, San Diego County, California. Prepared County required Groundwater Resource Investigation Reports for the Rugged (80 MW), Tierra del Sol (60 MW) and Jacumba (20 MW) Solar Projects including preparation of water balance studies and evaluation of potential impacts to storage, well interference and groundwater dependent ecosystems. Established groundwater monitoring network for 26 private wells located in fractured rock aquifer. Drilled a new production well to depth of 1,311 feet. Performed aquifer testing of multiple wells to establish transmissivity and storage coefficients. Performed additional studies for the Pine Valley Mutual Water Company and Jacumba Community Services District. Prepared multiple Groundwater Monitoring and Mitigation Plans to sustainably mange groundwater resources.

Groundwater Availability Report, Ord Mountain Solar Energy Project, San Bernardino County, California. Dudek prepared a Groundwater Availability Report for a 60 MW solar photovoltaic facility. Site-specific aquifer testing and groundwater quality sampling were conducted to provide information for the aquifer in the vicinity of the Project site and to verify the suitability of existing wells for providing groundwater supply for construction and operation of the Project. Dudek performed a review of water rights including verification of rights under the 1996 Mojave Basin area adjudication.

Groundwater Monitoring and Reporting, Stateline Solar Farm, Ivanpah Valley, San Bernardino, California. Dudek has prepared semi-annual groundwater monitoring and reporting for the 300 MW solar photovoltaic facility since 2016.

Groundwater Resources and Rights Evaluation, Dodge Flat Solar Energy Project, Washoe County, Nevada. Completed evaluation of groundwater resources and water rights to document availability of existing water wells to provide for construction and operation of the project. Oversaw well investigation including down-well video surveys and review of recent aquifer test data to verify well condition and suitability of wells to provide supply. Identified alternative off-site secondary sources of water supply.

Weldon Solar Project, Renewable Resources Group, Kern, California. Performed a hydrology and water quality analysis to determine the potential impact of the project on drainage and to downstream water bodies.

Beach Replenishment Material Evaluation, Unified Port of San Diego, California. Project geologist and manager for the project, which involved determining the compatibility of previously dredged material for beach replenishment in accordance with U.S. Army Corps of Engineers guidance.

Monitoring Well Installation Project, Former Crazy Horse Landfill, City of Salinas, Monterey, California. Geologist for project that included installation of six monitoring wells at a landfill. Responsible for characterizing vertical and horizontal movement of contamination in conjunction with litigation.



High Groundwater Conditions Evaluation, Cal Sorrento Ltd., San Diego County, California. Geologist for project that involved installation of multiple wells. Conducted 5-day aquifer test to determine hydraulic properties of alluvial aquifer. Estimated theoretical well spacing required to dewater the site.

Gas Station Site Contamination, Las Vegas, Nevada. As project geologist, oversaw the installation of four monitoring wells and 10 soil borings to characterize site lithology and the vertical and horizontal extent of contamination.

Expansion of Water Treatment Facilities, City of Irvine and City of Indio, Orange and Riverside Counties, California. Prepared water quality and hydrology technical reports in conjunction with environmental impact reports performed under the California Environmental Quality Act (CEQA) for water treatment facilities undergoing expansion.

Water Supply Well Installation Project, City of Vista, San Diego, California. Project geologist/manager for the installation of a water irrigation supply well for Vista Sports Park. Supervised drilling, construction, and pumping of an artesian well completed in fractured granite.

Recycled Water Storage Project, City of San Diego, San Diego, California. Project geologist for the City of San Diego in cooperation with the U.S. Geological Survey evaluating the potential to use the Tijuana River Alluvial Basin for seasonal storage of recycled water.

Remediation Technologies Research, SPX Corporation, City of Stockton, San Joaquin, California. Researched remediation technologies, including in situ redox manipulation, for use at a site contaminated with metals including hexavalent chromium. Also conducted stormwater investigation to determine source of metals in water. Determined that the degrading asphalt layer at the site was the primary source and developed list of potential remedial options, including phytoremediation.

Sewage Treatment Facility Percolation Study, Rancho Santa Fe, San Diego, California. Investigated treated effluent wastewater discharges to percolation beds. Installed piezometers and monitored water levels during a percolation study.

Water Treatment Plant Hydrology Study, City of Indio, Riverside, California. Prepared hydrology study for water treatment plant in Indio under CEQA for plan to update the facility.

Groundwater Management Plan, Rainbow, San Diego, California. Served as researcher on lithology and hydrology of the Rainbow valley for a groundwater management plan.

Dangermond Preserve Safe Yield Report Wells Project, Santa Barbara County, California. Dudek prepared the safe yield report to support the use of 13 groundwater wells and 28 groundwater monitoring wells on the 24,500-acre Dangermond Preserve (formerly known as the Cojo-Jalama Ranch).

Groundwater Impacts Assessment, Sunburst Ranch, Santa Barbara County, California. Performed Water balance in accordance with Santa Barbara County Groundwater Thresholds Manual to evaluate increased groundwater production on the 4,000-acre Sunburst Ranch. Evaluated potential impacts to groundwater storage and stream flow. Compiled baseflow contribution analysis based on available stream gauge data. Evaluated impacts to groundwater levels in vicinity of salmonid creek from proposed pumping.

Monitoring Well Installation and Pump Testing, Santa Barbara County, California. Project geologist for the installation of two monitoring wells in the Monterey formation along the Gaviota Coast. Supervised the drilling, construction, and logging of the wells. Currently conducting pump testing to determine the sustainable yield in accordance with County of Santa Barbara guidelines.

Water Resources Evaluation and Exploration Drilling Project Lompoc, California. Completed site specific water resources evaluation for 335 acre property located in the Lompoc Plain and Lompoc Upland Groundwater Basin including review of available hydrogeologic data. Oversaw drilling and completion of a new agricultural production well.

Jane Gray

Environmental Specialist, Project Manager

Jane Gray is an environmental specialist and project manager with 23 years' project management experience. Ms. Gray has more than a decade of environmental planning experience, specializing in water planning, agricultural resource and policy planning, policy analysis, land use planning, and project development and entitlement services as well as grant writing and administration. She has worked as a project manager, analyst, and environmental planner for various nongovernmental and public agencies responsible for projects varying from small-scale development and infrastructure planning in developing economies to private residential and commercial development.

Project Experience

Groundwater Sustainability Agency Engagement and Facilitation Services, Cuyama and San Antonio Groundwater Basins, California. Provided engagement and facilitation services for the formation of Groundwater Sustainability Agencies (mandated under the 2014 Sustainable Groundwater Management Act) in the Cuyama and San Antonio Groundwater Basins. The project was an 18-month process working with all eligible local agencies, agricultural interests, and the public to form new governmental agencies for the judicious apportioning of groundwater in a collaborative and sustainable manner.

Groundwater Sustainability Agency Engagement and Facilitation Services, Montecito Water District, Montecito Groundwater Basins, California. Provided engagement and facilitation services for the formation of a Groundwater Sustainability Agency that was originally prioritized very low priority when the GSA formation commenced. Held public and stakeholder workshops, sent out informational emails and attended Montecito Water District (MWD) Board meetings and other



Jane Gray

Education

Universität Dortmund, Dortmund, Germany MS, Regional Planning and Management State University of New York, Buffalo

BS, Social Work

Professional Affiliations

Central Coast Regional Water Quality Control Board, Gubernatorial Appointee Santa Barbara County Agricultural Advisory Committee, 2nd District Supervisorial Appointee

community organization's meetings to provide information and updates on SGMA and the GSA formation process in the local basin. The MWD was recently re-prioritized by DWR as a medium priority basin, which occurred at the close of the GSA formation process.

Santa Barbara Countywide Integrated Regional Water Management (IRWM) Program Santa Barbara County Water Agency, California. Since 2007, has been part of the overall management of the IRWM Program as an extension of County Staff. Currently, leading the IRWM Plan 2018 Update and conducing conducting communication, education and outreach to the DAC/SDAC/URC and Economically Disadvantaged Area communities as well as the stakeholders and public. The position entails overall program management as well as assistance and coordination of the 27 agencies and non-profits involved in regional benefit projects for competitive grant applications and the over 150 stakeholders. Regularly communicates with Department of Water Resources (DWR)



staff and coordinates and manages the public stakeholder process and all public outreach efforts associated with the IRWM Program, including inter and intraregional discussions, coordination and planning. Prepares reports, presents to numerous community organizations, commissions, committees, boards and councils on the IRWM, leads and participates in Regional Water Management Group meetings and assists in providing for the contours and direction for the IRWM program in the IRWM region.

Part of a team that generated a Regional Acceptance Process application required for competition in the multiple rounds of funding associated with Proposition 84 and Proposition 1E under IRWM provisions. Participated in the generation of the Prop 84 Planning Grant Application submitted to DWR on September 28, 2010 and on the Prop 84 Implementation Application submitted to DWR on January 7, 2011. The Implementation Grant Application was prepared on behalf of Santa Barbara County and six other jurisdictions/districts. The Santa Barbara region was successful in receiving its full grant requests for both Round 1 Planning and Implementation Grant awards as well as the most recent Drought Grant.

Santa Barbara Countywide IRWM Plan Update, Santa Barbara County Water Agency, California. Part of the consultant team preparing the Update to the 2007 Santa Barbara IRWM Plan. Specifically, led the Public and Stakeholder Outreach process, writing the Stakeholder Outreach Plan for inclusion in the IRWM and drafting other sections of the overall IRWM Plan for conformance with current DWR standards. Spearheaded the agricultural outreach, tribal outreach and serves as the liaison to the land use entities in the IRWM region. In addition, has been a Region representative on the Water Bond Coalition and has worked with local and statewide elected officials on the measure. Presented at the 68th Annual CARCD Meeting on the IRWM process and the nexus between IRWM, Rural and Agricultural Land and Water Uses and the role of RCD's in bridging some of the gaps and has been involved in other public presentations on the linkage between water use and land use in jurisdictional planning.

San Luis Obispo Countywide IRWM Program, San Luis Obispo County Department of Public Works, California. Led the public and stakeholder Outreach, communication, education and engagement process, writing the Communications Plans, Stakeholder Outreach Plan for inclusion in the IRWM and drafted other sections of the overall IRWM Plan for conformance with current DWR standards. Spearheaded the agricultural outreach, rural outreach and DAC outreach in the IRWM Region. Also assisted the SLO Region on the 2014 Drought Grant project solicitation and application.

San Luis Obispo Countywide IRWM Program, San Luis Obispo County Department of Public Works, California Responsible for the management and administration of the quarterly invoicing and project reporting associated with all awarded grant funding through the Proposition 84 Round 1 Implementation as well as the Proposition 84 Round 1 Planning Grant.

Upper Santa Clara River IRWM Program, Castaic Lake Water Agency, Santa Clarita, California. Responsible for the management of the projects and all grant funding awarded through the Proposition 84 Round 1 Implementation to the Castaic Lake Water Agency and its Sub-Grantees. Manages the timeline, deliverables and ongoing eligibility requirements as well as prepares all the invoices and reimbursement requests on behalf of the project proponents and Castaic Lake Water Agency.

Pajaro River Watershed IRWM Program, Pajaro River Watershed Partners, San Benito, Santa Clara, Santa Cruz, and Monterey Counties, California. Assisted with generation and drafting of various sections for the recent successful Drought Grant application included in the IRWM program for the Pajaro River Watershed IRWM.

Santa Barbara Countywide IRWM Proposition 50, Santa Barbara County Water Agency, Santa Barbara, California. Provided project management assistance as extension of staff for the County Water Agency in administration of grant funds received under Proposition 50. In addition to reviewing and coordinating the data gathering and reporting requirements associated with the 14 projects under the IRWM, her role has expanded to liaising with State

Water Resources Control Board (SWRCB) on a variety of contentious issues related to select projects. Provided key and effective support to the project proponents, County and State to facilitate solutions and ease strained relations.

Carpinteria Stormwater Management Plan (SWMP), City of Carpinteria, California. Responsible for project management and preparation of the City of Carpinteria's SWMP, as well as leadership and implementation of the city's first-year permit requirements under the National Pollutant Discharge Elimination System (NPDES) Small Municipal Separate Storm Sewer Systems General permit. The city's final SWMP was approved by the Central Coast Regional Water Quality Control Board (RWQCB) in November 2009. This effort included revising the existing SWMP document, forging productive relationships with interested stakeholder groups, building consensus, and spearheading public education and outreach, and public participation campaigns and programs, as well as working with neighboring jurisdictions on collaborative management of pollutants of concern. Spearheaded implementation of the public education and outreach component and played a key role in developing the watershed awareness curriculum that is implemented in the Carpinteria Unified School District's afterschool program for at-risk elementary school students.

Project Manager, Casmalia Community Services District, Casmalia, California. Managed the contractor and construction management team completing the construction of the District's Water Tank through Prop. 50. Prepared construction summaries, worked with the District, contractor and construction management team to seek solutions, kept the project on schedule and within budget as well as within the requirements of the grant.

On-Call Grant Services, San Mateo County, California. Works with various departments at San Mateo County to prioritize projects for funding and has written 8 successfully funded grant applications.

On-Call Grant Services, City/County Area Governments of San Mateo County, California. Contracted with C/CAG to write grant funding applications for various jurisdictions under C/CAG.

On-Call Grant Services, Joshua Basin Water District, Joshua Tree, **California.** Prepared a successful Prop 84, Section 75025 Grant for the Joshua Basin Water District in amount of \$3 million. The project is now beginning the construction phase.

Grant Manager, Cuyama Community Services District, New Cuyama, California. Managed and administered the grant funds received by the District for two projects funded under Proposition 50. Prepared project assessment evaluation plans, quality assurance project plans (PAEP), and other requirements of the state contracts, including quarterly reports. Prepared and submitted all invoices and supporting documentation in fulfillment of the state contract requirements, and assisted in determination of grant eligible work tasks and project scoping. Ensured that all labor compliance requirements are met and documents this to the SWRCB quarterly. Interfaced with the county, state, and RWQCB on project-related issues and NPDES and waste discharge requirements and compliance. Liaised with the California Department of Public Health on water system compliance and other grant opportunities for the District and prepared a successful application for project funding.

Grant Manager, Casmalia Community Services District, Casmalia, California. Managed and administered the grant funds received by the District through Prop. 50 for the District's Water Supply project. The project entailed the construction of a new water storage tank in the community of Casmalia. Prepares PAEP, quality assurance project plans, and other requirements of the state contract. Prepared and submitted all invoices and supporting documentation in fulfillment of the state contract requirements, and assisted in determination of grant eligible work tasks and project scoping. Prepared all quarterly invoices and submitted these to the SWRCB. Maintained regular and ongoing contact with the SWRCB project manager and ensured that all labor compliance requirements are met and documents this to the SWRCB quarterly.

On-Call Grant Services, Water and Wastewater Divisions of Public Works, City of Santa Barbara, California.

Assessed priority projects for the city and their alignment with relevant state and federal grant programs. Served as



liaison for various funding organizations and entities and the city for successful project presentation. Prepared grant applications for the city's Water and Wastewater Divisions, advocated on behalf of the projects, and carried them through to funding realization.

Grant Manager and Proposition 50 Grant Administration, City of Guadalupe, California. Managed and administered the grant funds received by the city for the Wastewater Treatment Plant Improvement project under Proposition 50. Complied with all reporting requirements and interfaced with the county, state, and RWQCB on project-related issues and waste discharge requirements and compliance. Specifically, prepared invoice packages, prepared quarterly invoices and annual updates to the PAEP requirements of the SWRCB. Upon project completion, prepared the Final Component Report and the 1 year certification as well as the Final Performance Report. Ensured that all labor compliance requirements were met and documents this to the SWRCB quarterly.

Public and Stakeholder Outreach, Planning and Land Use Department, County of Fresno, California. Led a regional outreach effort to farmers, ranchers, agriculturalists, conservation districts, tourist operators, and the public to facilitate development and implementation of an agricultural tourism ordinance. The outreach included a sustained effort of meetings, workshops, and charrettes to elicit input and craft a responsive, flexible, and industry- and public-supported ordinance for the county. Successfully developed relationships, fostered understanding of the process, and was able to build consensus within the community. Also wrote the agricultural tourism ordinance adopted by the county.

Agricultural Policy Planning, Planning and Land Use Department, County of Fresno, California. As a planner in the Policy Planning Division of the Planning and Land Use Department, drafted policies for agricultural sections of the general plan, worked on water resource planning, provided Williamson Act program administration and policy, worked on policies for agricultural land uses and divisions, and sat on various countywide agricultural committees through the Agricultural Commissioner's Office and the Planning and Land Use Department.

Public and Stakeholder Outreach, Planning and Development Department, Santa Barbara County, California. In conjunction with the rezoning of agricultural land from an antiquated ordinance, was involved in a countywide public outreach effort that included meetings and workshops designed to educate the public about changes, elicit comments and suggestions from affected landowners, and work with a dedicated group of stakeholders to craft sensible and required language for ordinance changes. Wrote the associated environmental document and assisted in drafting policy language.

Public and Stakeholder Outreach, Planning and Development Department, Santa Barbara County, California. To complete an update to the Uniform Rules for Agricultural Preserves countywide, public meetings and workshops were begun with local agricultural organizations and advisory committees, the Cattlemen, and a broad group of growers, shippers, greenhouse operators, landowners, nongovernmental organizations, and others. These were designed to create a more rational and flexible program that provided for more supportive language, flexibility, and a greater variety of allowed uses countywide. Was involved in the stakeholder and public outreach portion in addition to the actual generation of policy and environmental documents associated with the program.

Miramar Beach Resort and Bungalows, Caruso Affiliated, Montecito, California. Project manager for development of the 170-room luxury resort, including two restaurants, a spa, beach club, meeting and event facilities and small screening room, and a beachfront boardwalk along Miramar Beach in Montecito. The project entitlements included demolition of the dilapidated buildings and bungalows associated with the Miramar Hotel, a complete redevelopment, and recontouring of the site. A focused environmental impact report (EIR) was prepared on the issue of historic resources and other contentious issues, including flooding and drainage in the Oak Creek Channel and aesthetics. The project was approved on appeal by the Santa Barbara County Board of Supervisors in December 2008 and successfully resolved litigation out of court in spring 2009. An amendment to the Plan was approved by the Board of Supervisors in 2011 and the applicant is currently processing a revision to the Plan.

Ronald Schnabel, PG, CHG

Senior Hydrogeologist

Ronald Schnabel is a senior hydrogeologist with 40 years' experience as a geologist, and more than 15 years as a hydrogeologist. Mr. Schnabel has used his thorough understanding of geology and hydrogeology to develop clients requiring planning, permitting, design and operational expertise with water banking and artificial groundwater recharge. He has served as project manager and key team member on over twenty groundwater banking and recharge projects in California, and for numerous other types of projects. His regulatory experience includes environmental permitting, plans of operation, CEQA, EIR, and NEPA compliance and permitting. He aims to use his experience to help further develop clients needing surface water and groundwater related investigations, artificial recharge projects for aquifer storage and recovery, well design, construction and testing. Mr. Schnabel's experience includes groundwater modeling, GIS, statistics, surface-water-measurement methods, and geophysics.

Project Experience

Develop and Prepare Groundwater Sustainability Plans for Multiple Basins, Fox Canyon Groundwater Agency, Ventura County, California. Project manager and senior hydrogeologist developing Groundwater Sustainability Plans for the Fox Canyon Groundwater Management Agency. The Groundwater



Ronald Schnabel

Education California State University, Sacramento BS, Geology

Certifications

Professional Geologist (PG), CA No. 7836; OR No. 2020; WA No. 463

Certified Hydrogeologist (CHG), No., 867

Sustainability Plans include the high prioritized basins of Pleasant Valley, and Las Posas, and the Oxnard Subbasin, and the medium prioritized basin of Arroyo Santa Rosa. Duties include collaboration with the Agency, the Technical Advisory Group, Charter Water Allocation Groups, stakeholders, and the public in order to produce technically proficient and adaptive Groundwater Sustainability Plans. The Groundwater Sustainability Plan development addresses developing equitable methods for controlling groundwater extractions and reaching agreement on how these controls are accomplished and implemented.

Final Design Report for San Jacinto Valley Enhanced Groundwater Recharge and Recovery Program Mountain Avenue West, Eastern Municipal Water District, Riverside County, California. Provided the final design services for the San Jacinto Valley Enhanced Recharge and Recovery Program (SJVERRP) Mountain Avenue West. A large part of the Mountain Avenue West site work consisted of hydrogeological investigation services for recharging with imported water and extracting using local production wells. Dudek conducted 18 continuous core hole borings to a depth of 200 feet, constructed eight detailed geological cross-sections and a fence diagram using Golden Software's Voxler program. Additionally, Dudek work with their subconsultant on geochemical solubility modeling and soil leaching tests.



Preliminary Design Report for San Jacinto Valley Enhanced Groundwater Recharge and Recovery Program, Eastern Municipal Water District, Riverside County, California. Provided the preliminary design services for the San Jacinto Valley Enhanced Recharge and Recovery Program (SJVERRP). Dudek conducted subsurface hydrogeological investigations which included hollow stem auger borings, and Cone Penetrometer Testing (CPT) test hole drilling, piezometers, and pilot percolation rate tests.

Well 205 Construction Management and Testing, Eastern Municipal Water District, Riverside County, California.

Dudek worked the District on the drilling, construction, isolation zone testing, development, and well testing of Well 205. Dudek provided 24/7 staffing during the well construction and testing phases requested by the District. Dudek provided will be providing the District with a well completion report at the end of the well construction.

Centennial Hydrogeologic Investigation, Centennial Founders LLC, Los Angeles, California. Conducted a hydrogeologic study to assess the quantity and quality of groundwater. Performed preliminary design and cost estimating for groundwater recharge and recovery facilities consisting of approximately 100 acres of spreading grounds and seven recovery wells. Conducted an extensive hydrogeologic study that included drilling and installing eight monitoring wells, designing and constructing a groundwater recharge test basin, and estimating the safe groundwater yield for local groundwater supply. This investigation was a portion of the water resource assessment study for a major planned community.

Preliminary Conceptual Design, Lower May Sediment Placement Site, Los Angeles County Department of Public Works, Los Angeles County, California. Project Manager for the conceptual civil engineering and landscape design for the facility. Supervised work of the hydrological and landscape architectural subconsultants. Managed project budget and deliverables.

Percolation Basin Testing and Design Recommendations, Coachella Canal Lining Coordination Committee
Technical Memorandum, San Bernardino County, California. Conducted percolation basin testing at Coachella
Valley Water District's (CVWD) Unlined Canal and at the Dos Palmas Aqua Farms percolation basins to estimates
infiltration rates. Used falling-head and constant-head percolation tests to estimate percolation rates. Results
were then used to plan new percolation ponds on the CVWD Unlined Canal and at the Dos Palmas Aqua Farms.

Santa Ana River Groundwater Recharge Optimization Study, San Bernardino Valley Water Conservation District and San Bernardino Valley Municipal Water District, San Bernardino, California. Conducted recharge infiltration rate studies as part of a team to evaluate potential recharge and optimization for the upper Santa Ana River. Conducted fallinghead and constant-rate recharge tests on existing recharge basins and worked with team to plan new facility locations.

Centennial Hydrogeologic Investigation, Centennial Founders, LLC, Los Angeles, California. Conducted a hydrogeologic study to assess the quantity and quality of groundwater. Performed preliminary design and cost estimating for groundwater recharge and recovery facilities consisting of approximately 100 acres of spreading grounds and seven recovery wells. Conducted an extensive hydrogeologic study that included drilling and installing eight monitoring wells, designing and constructing a groundwater recharge test basin, and estimating the safe groundwater yield for local groundwater supply. This investigation was a portion of the water resource assessment study for a major planned community.

Groundwater Resource and Quality Investigation, Blackwell Land, LLC, Bakersfield, California. Evaluated the quality and availability of groundwater for approximately 45 square miles of the Berrenda Mesa Water District in western Kern County. Examined historic groundwater levels and water quality, characterized the groundwater basin and provided estimates of current groundwater quantities and quality. Performed pumping tests to obtain aquifer parameters and for water quality testing.



Groundwater Storage and Recovery Pilot Project in White Wolf Basin, Wheeler Ridge-Maricopa Water Storage District, Kern County, California. Conducted a detailed hydrogeologic investigation on recharging State Water Project water in the White Wolf Basin for groundwater banking. The investigation included field work and reviewing reports, well construction information, groundwater quality and level data, oil and gas well information, and geophysical investigations. The investigation included surface recharge pond tests, design and construction of monitoring wells, water quality sampling, and conducting three aquifer pumping tests to estimate storage aquifer parameters.

Semitropic Ridge Groundwater Quality Investigation, Semitropic Water Storage District, Wasco, California. Studied historical water uses, groundwater quality and production information, oil and gas production data, and well construction information to evaluate the nature and occurrence of high saline groundwater.

2005 Groundwater Monitoring Improvement Project, Semitropic Water Storage District, Wasco, California. As the Project Manager for this project, 21 wells were equipped with continuous groundwater level measuring devices (data loggers), and two aquifer tests were conducted to estimate aquifer parameters within unconfined and semiconfined aquifers.

Water Master Plan, The Huntington Library, Art Collections, and Botanical Garden, California. Three groundwater production wells were evaluated as part of the Huntington's WMP. The evaluation included review of historical information, such as power usage and redevelopment procedures, and estimating specific capacity. Based on the findings of this evaluation one well will be replaced to provide groundwater reliability.

Washingtonville, US Gypsum, Pennsylvania. Analyzed groundwater pumping test data from a fractured rock aquifer to evaluate potential groundwater production effects on local groundwater levels and supplies.

Well No. 5 MTBE Study, Crescenta Valley Water District, California. Used available reports and data, well construction information, groundwater quality, and groundwater level information to characterize the hydrogeology of the Verdugo Basin. This effort was conducted to assist with the review of site contamination data to evaluate potential sources of MTBE contamination observed at one of the District's wells.

High Desert Power Project, High Desert Power Project LLC, San Bernardino County, California. Collected and analyzed surface and groundwater quality data and incorporated USEPA statistical guidance procedures to prepare the drafts "Statistical Analysis of Background Water Quality Data and Proposed Approach to Determine SWP Water Treatment Levels" "Sampling and Analysis Plan" (SAP) and the "Draft Treatment and Monitoring Plan" for groundwater banking operations.

Evaluation of the Proposed Fremont Valley Preservation Project Groundwater Bank, AquaHelio Resources, LLC, Kern County, California. Conducted an evaluation of the Fremont Valley Groundwater Basin to determine the effects of groundwater banking on the basin. Conducted twenty-three test borings and twelve hydraulic conductivity tests to evaluate surface recharge potentials. Constructed three percolation test basins to estimate infiltration rates. Conducted five aquifer pumping tests to estimate aquifer parameters to construct a conceptual geologic groundwater model to evaluate the groundwater banking operations. Estimated the safe yield of the Basin by precipitation and change in storage methods.

Jill Weinberger, PhD, PG

Principal Hydrogeologist

Jill Weinberger is a principal hydrogeologist with 19 years' experience in the fields of groundwater supply and development, water resource management, and groundwater contamination. Dr. Weinberger has been the technical lead on projects assessing alternative intake locations for desalination projects along the California coastline, investigating the potential for on-shore pumping to induce seawater intrusion in coastal aquifers, evaluating the complex interactions between surface water and groundwater in fractured rock aquifers, and quantifying the transpiration demands of native vegetation in a changing climate. Her current professional responsibilities include assisting water districts, municipalities, and agencies in preparing for and implementing the requirements of the Sustainable Groundwater Management Act, designing and implementing water resource investigations, evaluating the interaction between surface water infiltration and aquifer recharge, and assessing sources and movement of groundwater contamination plumes. Prior to joining Dudek in 2008, Dr. Weinberger worked for the Ocean Drilling Program and the Integrated Ocean Drilling Program on projects incorporating marine hydrogeology, sediment physical properties, and borehole geophysics in the marine environment.



Jill Weinberger

Education

University of California, San Diego Scripps Institution of Oceanography PhD, Earth Sciences, 2005 Rice University

BA, Geology, 1997

Certification

Professional Geologist (PG), CA No. 8940

Project Experience

Sustainable Groundwater Management Act

- Prepared preliminary draft groundwater sustainability plans for the Oxnard subbasin of the Santa Clara River
 Valley Groundwater Basin, the Las Posas Valley Groundwater Basin, and the Pleasant Valley Groundwater Basin.
- Presented key technical concepts, proposed sustainability criteria, including measurable objectives and minimum thresholds, and data gap analysis at stakeholder meetings and workshops for the Fox Canyon Groundwater Management Agency Board of Directors.
- Prepared hydrogeologic conceptual model for the Las Posas Valley, Pleasant Valley, and portions of the Arroyo Santa Rosa Groundwater Basins, as well as for the Oxnard subbasin of the Santa Clara River Valley Groundwater Basin in Ventura County.
- Conducted an assessment of groundwater elevation data, production records and historical precipitation
 in order to link water levels and sustainability goals for the Las Posas Valley and Pleasant Valley
 Groundwater Basins, as well as for the Oxnard subbasin of the Santa Clara River Valley Groundwater
 Basin within the jurisdiction of the Fox Canyon Groundwater Management Agency.
- Participant in technical advisory group meetings, and stakeholder outreach planning for preparation of the Groundwater Sustainability Plans for the Fox Canyon Groundwater Management Agency.
- Prepared subsurface geologic analysis of Borrego Valley Groundwater Basin hydrogeologic boundaries for submission of Basin Boundary Modification Request to Department of Water Resources, under the Sustainable Groundwater Management Act.

Groundwater Supply and Sustainable Yield

- Analyzed groundwater quality trends for naturally occurring constituents of concern in the Borrego basin.
- Conducted peer review and analysis of geologic and hydrologic evidence used to prepare submission of Basin Boundary Modification Request for the Cuyama and San Antonio Groundwater Basins, under the Sustainable Groundwater Management Act.
- Prepared a Groundwater Quality and Source Water Assessment for the City of Ontario. Analysis included an assessment of potential sources of perchlorate and trends in perchlorate concentration in wells for the City of Ontario wellfield.
- Assessed sustainable yield using network of groundwater wells, stream gauges, and soil moisture probes for a private ranch in eastern San Diego County.
- Prepared technical memorandum regarding comparing the County of San Diego methodology for assessing sustainable yield to site specific data on stream flow and runoff.
- Prepared recharge and sustainable groundwater production estimate for a 25,000 acre private ranch
 using the Santa Barbara County methodology for determining CEQA significance thresholds.
- Evaluated the impacts of naturally occurring hexavalent chromium on water quality at production wells owned and operated by the Santa Ynez River Water Conservation District. Compiled and analyzed intraborehole flow data and depth discrete water quality sample results documenting vertical variation of hexavalent chromium concentrations in aquifer.
- Prepared County Groundwater Investigation Report update to County of San Diego Pine Valley Cumulative Groundwater Study.
- Assisted with analysis of aquifer test data and water quality sample results for a groundwater resources assessment for a large concentrating photovoltaic solar projects encompassing 1,473 acres of land.
- Provided peer review for Groundwater Resources Investigation Report for a 765 acre solar energy system in eastern San Diego County.

Groundwater/Surface Water/Habitat Interaction – Ecohydrology

- Evaluated transpiration data collected as part of an assessment of the potential for groundwater development to impact native plant populations in the upland and riparian areas of a watershed in eastern San Diego County.
- Estimated habitat water requirements using changes in soil moisture in order to assess the water demands of native plant populations on a private ranch in Santa Barbara County.
- Conducted an ecohydrology study evaluating water demands of riparian plant population supported by wastewater effluent in Imperial County in order to assess the potential impact of a reduced water supply.

Litigation Support

- Prepared Draft Feasibility Study analyzing alternatives for both water supply and remediation in the Chino Basin necessitated by TCE contamination in a groundwater aquifer with municipal supply wells. Identified potentially responsible parties and potential groundwater pathways from upgradient sources.
- Assisted with the geochemical analysis evaluating the potential contribution of Bradley Landfill to groundwater contamination in the North Hollywood Operable Unit of the San Fernando Valley Superfund Site.
- Evaluated the subsurface geologic constraints, generated geochemical history, and created an operational ranking matrix, to assist with cost allocation for perchlorate contamination at the Bermite site in Saugus, California.
- Evaluated the geologic setting and structural controls on the potential hydraulic connection between the San Diego River and the San Diego Formation. Assisted with the assessment of the potential for seawater intrusion to result from the expansion of well fields in the San Diego Formation.

Dylan Duvergé, PG

Senior Hydrogeologist

Dylan Duvergé is an environmental analyst and hydrogeologist with 11 years' experience assessing program and project impacts to surface water and groundwater resources; geologic and hydrologic hazards; and soil, mineral, and paleontological resources. Mr. Duvergé assists large-scale planning efforts and individual project proposals through California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) compliance. He has prepared, contributed to, and/or peer reviewed groundwater resource investigations, hydrology and drainage studies, geotechnical reports, Phase I Environmental Site Assessments, and paleontological resource assessments for various projects throughout California, effectively communicating scientific and regulatory aspects of hydrologic and geologic issues.

Project Experience

Borrego Groundwater Sustainability Plan, County of San Diego and Borrego Water District (BWD). Authoring the Draft Groundwater Sustainability Plan (GSP) for the critically overdrafted Borrego Valley Basin. Assisted in the compilation of current and historical data related to groundwater levels, water quality, and pumping. Working with team members to develop the

Education

San Francisco State University MS, Geosciences

University of California, Santa Cruz BA, Environmental Studies

Certifications

Professional Geologist (PG), CA No. 9244

Qualified SWPPP Developer, CA No. G09244

40-Hour HAZWOPER, as per 29 CFR 1910.120(e), and RCRA DOT

Professional Affiliations

Association of Environmental and Engineering Geology

Association of Environmental Professionals

Groundwater Resources Association of California

basin's data management system. The Borrego Valley Basin must submit a GSP to the California Department of Water Resources (DWR) by 2020. Dudek has been assisting the County of San Diego and the BWD for years with numerous aspects of groundwater management, including technical analysis of the existing BWD Demand Offset Water Credits Policy, scientific and jurisdictional analysis of the basin boundaries to obtain a Bulletin 118 basin boundary modification, water replacement cost analysis, and analysis on managing proportional groundwater production cutbacks through a water market approach. Dudek is also providing on-call grant application preparation services and support for various projects through numerous chapters of Proposition 1 for the BWD.

GSPs, Fox Canyon Groundwater Management Agency, Ventura County, California. Developed the sections of four Draft GSPs related to population growth, land use development patterns/trends, and relevant land use goals and policies directing growth within each basin. Dudek is working with a technical advisory group to prepare four comprehensive GSPs in accordance with state requirements. The plans consist of historic basin and water use conditions and determination of sustainable basin yield, undesirable results, and thresholds for monitoring. Future conditions are evaluated in terms of potential changes to land use and climate and a plan for proactive management, including data monitoring and implementation of projects and policies will be developed.

Cojo-Jalama Ranch Groundwater Sustainability, Bixby Management Inc., Santa Barbara, California. Completed a Safe Yield Report on a 25,000-acre ranch in Santa Barbara County using county-approved soil moisture balance method to quantify recharge and sustainable groundwater production, and evaluate potential impacts on groundwater-dependent ecosystems. The study was completed to document that the water demand of the

ranch's existing and future cattle operation would fall within the consolidated rock aquifer's sustainable yield, and to comply with county thresholds for determining impact significance under CEQA. The evaluation summarized the hydrogeologic setting, groundwater well distribution and depths, and the results of water level monitoring on the ranch. Prior to the acquisition of the property by the California Nature Conservancy, Dudek had been assisting the client resource evaluation work on the ranch by installing and monitoring gauges to measure rainfall, soil moisture content, and transpiration.

Lehigh Permanente Quarry Reclamation Plan EIR, Santa Clara County, Cupertino, California. Prepared the paleontological resources, mineral resources, and the geology, soils, and seismicity chapters of the EIR. Performed field work in support of the EIR, including rock sampling for analysis of asbestos, and water quality sampling to develop data on selenium concentrations in runoff from overburdened storage areas. The reclamation plan amendment was submitted in accordance with the Surface Mining and Reclamation Act to reclaim lands within an approximately 1,095-acre area that have been affected by surface mining activities since 1975.

Roblar Road Quarry EIR, North Bay Construction Inc., Sonoma County, California. Reviewed and responded to public comments on the Draft EIR for the project related to issues of groundwater, slope stability, naturally occurring asbestos, and seismic hazards. The EIR evaluated a proposal to mine approximately 570,000 cubic yards of basalt annually over a 20-year use permit. The project presented a number of environmental and technical issues, including geotechnical (e.g., slope stability, geologic hazards, blasting impacts) and hydrogeologic issues (e.g., alteration of groundwater gradient and flow, potential seepage into quarry, runoff effects to local creeks), and effects to biological resources. The project was approved in October 2010.

Pilarcitos Quarry Expansion EIR, San Mateo County, Half Moon Bay, California. Prepared the paleontological resources and the geology, soils, and seismicity chapters of the EIR, in which slope stability was a major issue. Located within the Coastal Zone in the Pilarcitos Creek watershed, near Half Moon Bay, the Pilarcitos Quarry produces a variety of aggregate products from a deposit of decomposed granite and plans to continue operations for 70 years. The EIR examined a substantial expansion of operation into undisturbed areas adjacent to the existing quarry.

Kunzler Terrace Mine Use Permit and Reclamation Plan EIR, Mendocino County, Ukiah, California. Assisted in a subsurface investigation and preparation of a technical memorandum addressing the potential presence of subsurface archeological resources. Logged a series of on-site test pits for soil type and evidence of paleosols, and drafted a memorandum based on the results that described the soil stratigraphy and the potential for buried archeological artifacts. The Kunzler Terrace Mine is an aggregate mining operation at the confluence of the Russian River and Ackerman Creek. The EIR analyzed the potential impacts of a quarry pit to be developed through three phases totaling approximately 30 acres with a maximum depth of 66 feet.

Sunol and Niles Dam Removal Project, San Francisco Public Utilities Commission (SFPUC), Sunol, California. Assisted in the yearly collection of stream data along two reaches of Alameda Creek, including the collection of topographic data (profiles and cross sections) using a total station, streambed pebble counts, and photomonitoring of the creek. The Sunol and Niles Dam Removal Project is a multiyear fish passage and geomorphology monitoring task to assess the annual change in stream characteristics following the removal of two dams on Alameda Creek.

Water System Improvement Program (WSIP), Habitat Reserve Program Technical Studies, SFPUC, San Francisco, California. Conducted technical studies for geology, soils, and paleontological resources. Supported the analysis of hydrology, water quality, and hazardous materials by preparing GIS field maps, as well as figures and tables of baseline physical data, including soil units, rock type, landslide potential, and liquefaction hazards. The program will provide a coordinated and consolidated approach to compensate for habitat impacts that would result from implementation of SFPUC's WSIP facility improvement projects. The Habitat Reserve Program contemplates



thousands of acres of habitat improvements located in the San Joaquin Valley, Sunol Valley, Bay Division, and Peninsula regions of the SFPUC water system.

San Francisco Groundwater Supply Project EIR, San Francisco, California. The San Francisco Groundwater Supply Project is a project under the City's WSIP, and will provide the city up to 4 million gallons of local, sustainable groundwater every day. The project proposes to utilize up to six deep water wells and associated treatment facilities in the city. Dylan prepared the analysis of aesthetics in the EIR and supported the groundwater analyses and investigations of the Westside Basin with maps, figures, and GIS data.

Steephollow Creek and Bear River EIR, Nevada Irrigation District, Grass Valley, California. Dudek prepared the EIR for the Bear River Sediment Removal at Rollins Reservoir Project for the Nevada Irrigation District. The project would restore and maintain reservoir capacity in Rollins Reservoir on an ongoing basis through re-establishment of gravel skimming operations on the Bear River below the confluence with Steephollow Creek. Completed a technical review of the hydrological and geomorphology studies completed for the project, and authored the geology and soils and the hydrology and water quality chapter of the EIR.

North Norco Stage 11 IS/MND, Riverside County Flood Control and Water Conservation District, Norco, California. Authored the bulk of the IS/MND for a stormwater channel improvement project in the City of Norco, proposed by the Riverside County Flood Control and Water Conservation District. Proposed improvements included channel deepening, road crossings, and stormwater best management practices to reduce the extent and frequency of nuisance flooding caused by inadequate channel capacity.

System Infrastructure Protection Program EIR, Metropolitan Water District of Southern California, Orange, California. Dudek was contracted by the Metropolitan Water District of Southern California for the preparation of two Program EIRs for Operations and Maintenance projects in the Orange County and San Bernardino County Operating Regions. Prepared the project description, scoped issues in the IS, and analyzed potential impacts to a variety of environmental resources, including hydrology and water quality.

San Joaquin Valley Communication System Upgrade Project, SFPUC, San Francisco, California. Served as the primary project analyst for this ongoing project, authoring over half of the technical sections of the IS/MND and creating all figures in GIS. Provided project management support including graphics, neighborhood notice, mailing lists, and project meetings. The project would provide an upgraded communication system for SFPUC's Hetch Hetchy water system facilities located primarily within the San Joaquin Valley. The project consists of installation of new microwave antennas (parabolic dishes) on existing towers, the construction of nine new radio towers up to 140 feet tall, and installation of supporting radio and power equipment.

Bay Division Pipelines 3 and 4 Seismic Retrofit at the Hayward Fault, SFPUC, San Francisco, California. Provided project management support through all phases of this project, from preparation of the Draft EIR through to Certification of the Final EIR and project approval. Environmental review was completed ahead of schedule, despite numerous changes in project design that required reanalysis. Provided technical review of a paleontological resources study; wrote the paleontological resources section; produced GIS figures for technical sections; prepared public comment responses; and provided general project support. Supported the analysis of hydrology and water quality by collecting stream flow data, watershed boundaries, and wetland delineations for two intermittent creeks. The Bay Division Pipelines 3 and 4 seismic retrofit at the Hayward Fault involves the replacement and retrofit of pipeline segments crossing the Hayward Fault, including the installation of an articulated vault designed to accommodate movement on the fault.



The Crystal Springs Pipeline No. 2 Project, SFPUC, San Francisco, California. Prepared the hydrology and water quality chapter of the Draft EIR. Helped prepare the physical setting for the geology, soils, and seismicity chapter, and completed the paleontological resources analysis for the cultural resources chapter. In support of these analyses, prepared all GIS figures for the hydrology, geology, and hazardous materials chapters. This project proposed a series of pipeline replacements, cathodic protection measures, and general improvements in order to its increase its seismic reliability. The Administrative Draft EIR for this project received praise from the client, partly due to the series of GIS figures produced in support of the hydrology, geology, and hazards chapters.

San Antonio Backup Pipeline, SFPUC, Alameda County, California. Wrote the analysis of impacts to paleontological resources and prepared several GIS figures and data tables in support of the geology and soils impact analysis. The San Antonio Backup Pipeline consists of installation of an approximately 1.3-mile long pipeline in Sunol Valley. The backup pipeline would provide reliable conveyance capacity for emergency discharges of Hetch Hetchy water during facility outages or during water quality events and would increase operational flexibility and delivery reliability during emergencies or planned maintenance.

CalAm Coastal Water Project EIR, CPUC, Monterey County, California. Prepared the aesthetic resources section of the EIR. Site visits and photographs from key observation points established the visual context, and visible project elements were simulated into site photographs to evaluate project impacts and define appropriate mitigation measures. The project goals are to increase water supply capacity and reliability for CalAm customers.

Enlargement of the East Branch of the California Aqueduct, Department of Water Resources, Palmdale, California. Performed an analysis of the paleontological productivity of rock units and associated project impacts, based on mapped geology, fossil collection database searches, and the depth and extent of project-related excavations. The project would enlarge over 98 miles of the California Aqueduct from Tehachapi through the Antelope Valley, Palmdale, and the Mojave River Basin. The goal is to increase the conveyance capacity by over 40% to Southern California State Water Contractors that are served by the aqueduct, including the Metropolitan Water District of Southern California.

Los Vaqueros Reservoir Expansion Project EIS/EIR, Contra Costa Water District (CCWD), Contra Costa County, California. Prepared the setting and impact discussion related to paleontological resources for the Los Vaqueros Expansion Project EIR. Prepared a map in GIS relating paleontological potential of bedrock units beneath the project site to proposed project elements. Assisted the CCWD with comprehensive environmental planning and compliance services, alternatives development and screening, environmental studies, permitting, and CEQA and NEPA compliance.

Vista Grande Drainage Basin Improvement Project, City of Daly City, California. Assisted with constraints and opportunity analyses, alternatives analysis, and water quality sampling and analysis at Lake Merced. Daly City is proposing the project to address storm-related flooding that currently occurs in the Basin and to provide other environmental benefits, including restoration and management of water levels within Lake Merced. The proposed drainage basin improvements include partial replacement of the existing Vista Grande Canal, replacement of the Vista Grande Tunnel and ocean outfall, a lake outfall and diversion structure, and constructed treatment wetlands.

Vallejo Marine Terminal (VMT) and Orcem Projects, City of Vallejo, California. The proposed VMT project involves construction of a new marine terminal, while the Orcem project involves reuse of the former General Mills site for the production of cement produced with less pollution than traditional cement. Conducted a peer review of applicant studies related to hydrology, water quality and geologic hazards. Authored the geology, soils and seismicity chapter; as well as the hydrology and water quality chapter of the EIR.

Steven Stuart, PE

Principal Hydrogeologist

Steven Stuart is a professional hydrogeologist with 21 years' experience managing California groundwater supply projects, subsurface remediation projects, and hydrogeological investigations. He has experience with collecting and analyzing hydrogeologic and geologic data, designing and constructing water production wells and observation wells, designing and implementing 2D and 3D finite difference numerical models to simulate groundwater flow in the unsaturated and saturated zones, and evaluating the feasibility of potential surface water infiltration projects to recharge local groundwater basins.

In addition, Mr. Stuart has managed and performed various onsite field activities such as aquifer testing to estimate aquifer properties and collecting groundwater samples to evaluate water quality. He has designed numerical groundwater models utilizing the windows based pre/post-processor Groundwater Vistas and conducted simulations with the finite-difference codes MODFLOW and MODFLOW-SURFACT. Mr. Stuart's numerical modeling experience includes the simulation of contaminant migration, well-field capture zones, and possible future effects on groundwater quality and availability due to changing well-field production rates and/or increased recharge of aquifers.

Project Experience

Water Resources and Supply

Groundwater Sustainability Plan for the Yucaipa Basin, San Bernardino

Valley Municipal Water District. Serving as project manager for the development of a GSP for the high priority Yucaipa groundwater basin. Overseeing the coordination and collaboration of nine member agencies in the Yucaipa Groundwater Sustainability Agency with the hydrogeology, public outreach, grant administration, and data management systems personnel at Dudek.

Maximum Benefits Monitoring Program for Yucaipa Valley Water District and City of Beaumont. Serving as data project manager for the Yucaipa, Beaumont and San Timoteo Groundwater Management Zones pursuant to the maximum benefit commitments specified in the 2014 amendment to the Water Quality Control Plan for the Santa Ana River Basin. The primary objective of the maximum benefit groundwater monitoring program is to collect the data needed for the triennial re-computation of ambient water quality in the Santa Ana River Basin. Responsibilities include collecting, compiling and analyzing groundwater and surface water data to evaluate how each water agency and public entity is operating to maintain the "maximum benefit" of the natural water resource in the upper northeastern section of the Chino Basin that includes San Timoteo Creek.



Steven Stuart

Education

San Diego State University MS, Geology (Hydrogeology emphasis)

University of California, San Diego BS, Physics (Earth Sciences specialization)

Certification

Professional Engineer (PE), CA No. 79764

Professional Affiliations

Member of National Ground Water Association

Water Budget Analysis for Rancho Pauma Mutual Water Company. Served as project manager in conducting a water budget analysis for an alluvial sub-basin in Pauma Valley, California. The analysis included an estimate of groundwater in storage under existing conditions and an evaluation of potential impacts to storage by anticipated increases in groundwater production from the basin. The water budget analysis evaluated how water inputs from infiltrating rainfall, applied irrigation, discharge from the San Luis Rey River, and imported water measured against outflows by evapotranspiration and pumping. The analysis estimated a level of groundwater production that may lead to overdraft and declines in groundwater storage.

Groundwater Availability Evaluation for Joshua Basin Water District. Modified an existing 3D MODFLOW numerical model developed by USGS to evaluate potential changes to groundwater storage resulting from increased pumping from the basin to meet the projected water demands of a growing population. The USGS numerical model did not account for recharge derived from septic system discharges. To estimate the contribution of septic system discharge to basin recharge, a variably saturated numerical flow model was developed using the USGS code, VS2DT. The variably saturated model results indicated a potentially marked contribution to recharge from septic systems if the systems incorporated seepage pits set 12 to 20 feet below land surface. Predictive simulations must include septic system discharges as a component of recharge to the basin to more accurately evaluate the impact of population growth on groundwater storage.

Water Availability Analysis for Water Appropriation Application, Eastern Municipal Water District. Served as project manager in preparing a supplemental WAA for EMWD's 2009 application to appropriate water from an unnamed subterranean stream tributary to the West San Jacinto Groundwater Basin. The supplemental WAA was requested by the Division of Water Rights at the State Water Resources Control Board (SWRCB) to include an evaluation of the water that is likely to be available in typical dry years as well as normal years, the water available after factoring in prior rights, and the potential impacts of diverting the subterranean stream flow on groundwater dependent ecosystems. The WAA also included a flow frequency analysis per the *Policy for Maintaining Instream Flows in Northern California Coastal Streams*. The supplemental WAA concluded that there was unappropriated water available, the flow frequency analysis indicated annual variation in locally derived water, but operations at Perris Reservoir maintained a constant flux of locally derived water to the subterranean stream, and no impacts to groundwater dependent ecosystems. The SWRCB issued a permit to appropriate water from the subterranean stream in October 2018.

Third Party Review of Hydrogeological and Biological Resources for City of Poway. Served as project manager in providing a third party review of previous hydrogeological and biological investigations related to groundwater production and riparian habitat at the Maderas Golf Club in Poway, California. Groundwater production at the Maderas Golf Club is regulated by a conditional use permit (CUP), which included an operational plan and monitoring program to minimize potential impacts to groundwater levels at adjacent residential wells and riparian habitat. Findings from reviewing the previous investigations indicated limited hydraulic connection between the golf course wells and wells in adjacent residential community; and no hydraulic connection with groundwater in shallow alluvium that supports the local riparian habitat. Modifications were made to the operational plan and monitoring program of the CUP to provide a more efficient pumping schedule, but retain the necessary monitoring protocols to protect the water resources of nearby residential well owners. Mr. Stuart presented the findings from the third-party review to the Poway City Council.

Nitrate Study for Santa Maria Wastewater Treatment Plant, Ramona Municipal Water District. Served as project manager in preparing a nitrate study per the Master Recycling Permit for the RMWD Santa Maria Wastewater Treatment Plant (SMWTP) in Ramona, California. The intent of the study was to evaluate whether or not recycled water originating from SMWTP and used for irrigation purposes would cause nitrate concentrations in groundwater to exceed the Basin Plan water quality objective. The sole user of recycled water from SMWTP is a golf course. The study estimated an agronomic rate for irrigated turf grass and evaluated the fate and transport of nitrate from land surface to the underlying groundwater table. Concurrently, a nitrate loading study was prepared to evaluate whether the use of recycled water and nitrogen fertilizer exceeded the agronomic rate of the irrigated turf and posed a potential threat to groundwater quality.

Nitrate Study for North City Water Reclamation Plant, City of San Diego. Served as project manager in preparing a nitrate study per the Master Recycling Permit (Order R9-2015-0091 issued by RWQCB) for the City of San Diego North City Water Reclamation Plant in San Diego, California. The RWQCB required that the City conduct a nitrate study to demonstrate whether or not the discharge from the NCWRP will cause groundwater to exceed the groundwater quality objective of 45 mg/L for NO₃ in areas with applicable numerical groundwater quality objectives. The nitrate study included a review and assessment of the existing treatment processes in removing nitrogen; a review of proposed modifications to the existing treatment process to enhance the removal of nitrogen and improve water quality in the recycled water effluent; a review and assessment of the fate and transport of nitrogen in recycled water from application for irrigation purposes to groundwater; a review and assessment of the application of recycled water at agronomic rates; a review of groundwater monitoring; and a review of other best management practices. Also evaluated the assimilative capacity in groundwater for nitrate in areas served with recycled water from NCWRP for irrigation purposes. The report concluded that the use of recycled water from NCWRP for irrigation purposes would not increase the ambient concentration of nitrate in groundwater above 45 mg/L.

Water Well Aquifer Study for City of San Clemente. Served as project manager investigating two City of San Clemente water supply wells that experienced degrading water quality and performance. The investigation included continuous fluid temperature and resistivity surveys under static and dynamic conditions, flow meter surveys characterizing the flow profile during pumping, and depth-discrete water quality sampling to identify the sources of poor water quality to each well. Findings from the investigation indicated that one of the wells was influenced by the presence of incipient seawater or the initial intrusion of formational saline water. Dudek provided recommendations to the City to reduce pumping at the well influenced by higher TDS water and continue monitoring, and to seal off the lower screen interval where poorer water quality enters the well.

Well Rehabilitation for Joshua Basin Water District. Served as project manager in directing well rehabilitation efforts for a major water supply well operated by Joshua Basin Water District in Joshua Tree, California. The well experienced marked degradation in water quality following initial attempts of rehabilitation. Dudek prepared a more aggressive approach utilizing a focused intake submersible pump assembly tool to isolate extraction to a 10-foot zone. Rehabilitation included aggressive agitation during mechanical development with a multidisc swab tool and disinfection with a chlorine enhancer. Dudek oversaw and documented all phases of rehabilitation, including the collection and submittal of water quality samples to evaluate progress.

Installation of a Municipal Water Supply Well for Joshua Basin Water District in Joshua Tree, California. Served as project manager in overseeing the drilling, design, construction, development and testing of a production well and observation well for the Joshua Basin Water District. Installations of the wells were funded by a grant provided by FEMA, which required detailed invoicing, progress reports, and accounting for all aspects of the project.

Groundwater Monitoring Wells at San Sevaine Spreading Basins for Inland Empire Utilities Agency. Served as project manager for locating and designing monitoring wells that satisfy the monitoring requirements established by the DPH for the use of recycled water discharged to spreading basins for the purpose of recharging groundwater. Also provide design specifications for the installation of nested lysimeters to provide pore water samples at discrete depths beneath the spreading basins to evaluate soil filtration and movement of recycled water through the upper unsaturated zone.

Feasibility Study to Use Lower Tijuana River Basin for Aquifer Storage and Recover for City of San Diego. Served as project manager in conducting a feasibility study evaluating the potential use of the lower Tijuana River valley alluvial aquifer and underlying San Diego Formation to seasonally store and recover recycled water originating from the South Bay Water Reclamation Plant in Imperial Beach, California. The study included an analysis of groundwater level data obtained from existing wells and results of previous aquifer tests conducted by Dudek. The study concluded that it was feasible to store 4 MGD recycled water in the eastern half of the lower Tijuana River basin, resulting in an approximate 5 feet rise in the water table.

Ecohydrology

Habitat Monitoring Program for Yucaipa Valley Water District. Serving as project manager for a habitat monitoring program (HMP) in the San Timoteo Creek study area to evaluate the potential impact to riparian habitat resulting from the reduced discharge of recycled water to San Timoteo Creek. The HMP includes collecting surface water and groundwater data, coupled with vegetation surveys and aerial imaging, at monitoring stations both upstream and downstream of the existing recycled water discharge point. Data was collected two years prior to reductions in discharge to establish baseline conditions for groundwater and riparian habitat, followed by biweekly to semiannual monitoring to evaluate potential effects due to reduced discharge. Responsible for preparing annual reports for Yucaipa Valley Water District and the U.S. Environmental Protection Agency (EPA) that document the findings from the previous water year and assessing conditions relative to the baseline condition.

San Diego River and San Vicente Creek Biological and Groundwater Resources Monitoring for City of San Diego. Served as project manager for designing and implementing a monitoring program to establish baseline groundwater level conditions in shallow alluvium underlying riparian habitat downstream of El Capitan Reservoir and San Vicente Reservoir for the City of San Diego. Monitoring stations were installed downstream of San Diego River and San Vicente Creek, and downstream of their confluence, with two control points located in nearby drainages not influenced by modifications to stream flow originating in the upper reach of San Diego River. Soil moisture sensors and piezometers were installed at monitoring stations located just downstream of the El Capitan earthen dam to characterize the soil moisture profile from land surface to the shallow water table.

Groundwater Site Investigation for Sweetwater Authority. Served as project manager of an investigation of existing groundwater conditions at the Upper Sweetwater Reservoir Habitat Management Program area. The October 2007 Harris Fire caused extensive fire damage to the habitat in the area. Sweetwater Authority suspected that decaying baseline vegetation, the invasion of non-native species such as giant reed and salt cedar, and low moisture content of the shallow subsurface soil contributed to the extensive damage caused by the fire. Consequently, as part of the process to develop a conceptual design to recover the habitat, an investigation into existing groundwater and soil moisture conditions was implemented to estimate the potential response of the water table to proposed modifications of the HMP area floodplain. A network of six shallow groundwater observation wells, plus two soil moisture sensor arrays, were installed to characterize the soil moisture profile from land surface to the water table. A 2-D variably saturated flow numerical model was developed to simulate the potential effects to shallow groundwater levels and soil moisture when modifying a floodplain for a riparian habitat restoration project. The numerical model was used to estimate the depth to the water table and the height of the capillary fringe above the water table. Results from the numerical model were used to design a habitat mitigation plan to sustain new riparian habitat.

Gobernadora Multipurpose Basin for Santa Margarita Water District. Conducted an investigation to assess the potential impacts to groundwater dependent habitat downstream of a proposed diversion of stream flow to a new recharge basin. The investigation included the modification of an existing 3D finite-difference numerical model to evaluate the potential impacts to groundwater levels at a downstream ecological reserve when diverting stream flow and pumping groundwater at a multipurpose basin upstream of the reserve. The modified numerical incorporated monthly stress periods to simulate monthly variations in rainfall, stream flow and evapotranspiration, which was defined using transpiration rates for riparian vegetation mapped in the reserve. The numerical model results were used to develop an operational plan for the basin to minimize the impacts to downstream habitat.

Investigation of Potential Impacts on Grapevine Canyon Wetlands for Tejon Mountain Village, LLC. Served as project manager in evaluating the potential impact of increased groundwater production on wetland habitat in Grapevine Canyon in Tejon Ranch. The investigation included identifying sources of water to Grapevine Creek, which were rainfall and storm water runoff, discharge from Tejon Lake, and springs. A network of shallow groundwater wells, plus soil moisture sensor arrays, were installed to complement existing, deeper wells in the area. Aquifer testing and water quality sampling provided data to evaluate hydraulic connections and sources of shallow groundwater supporting the local wetland habitat. A principal component analysis was conducted to identify source water contributions to the near surface groundwater.

Groundwater and Soil Moisture Content Monitoring Report for Newhall Land. Served as project manager in evaluating seasonal water quantity and quality requirements of cismontane alkali marsh on Newhall Ranch in Los Angeles County. Directed the installation and monitoring of shallow piezometers, soil moisture tensiometers, continuous groundwater level measurements and periodic water quality sampling during the project. Conducted short-term in situ hydraulic tests (i.e., slug tests) at piezometers to characterize the hydraulic conductivity of the shallow subsurface. Soil samples were analyzed to characterize the capillary pressure curves and groundwater flow in the shallow unsaturated subsurface.

Soil and Groundwater Contamination and Remediation

Soil Vapor Extraction in Los Angeles for Lonza, Inc. Served as project manager in overseeing the design, installation and operation of an aggressive soil vapor extraction and treatment program to remediate the shallow 15 feet of soil impacted by VOCs originating from former chemical manufacturing operations. The program included the installation of shallow soil vapor extraction wells at 10-foot centers with soil vapor sampling probes installed at midpoints between SVE wells. The SVE well field was designed to provide the ability to direct extraction at select areas of the treatment area. The aggressive SVE program reduced residual concentrations of chlorinated solvents to levels where the State of California issued a No Further Action letter.

Hexavalent Chromium Remediation at former Marley Cooling Tower Company Site in Stockton, California. Currently serving as project manager in overseeing data collection, monitoring and reporting requirements for remediation efforts targeting chromium-contaminated groundwater originating from the site. Supervised the installation and testing of additional wells to the groundwater monitoring network, provided oversight of a bench scale study characterizing the soil reductant demand to evaluate the effectiveness of an in situ chemical reduction program to reduce concentrations of hexavalent chromium in groundwater. Supervised the preparation of semiannual groundwater monitoring reports and 5-year Review reports for the Department of Toxic Substances Control and Regional Water Quality Control Board. Designed a 3D MODFLOW groundwater numerical model to simulate the transport of dissolved chromium in aquifer units beneath the site. The numerical model is used to evaluate the hydraulic capture and containment of a hexavalent chromium plume by a remedial well field. Proposed modifications in the pumping scheme of the remedial well field are evaluated by using the numerical model to predict the effect of such changes.

Soil Remediation for Huffy Corporation, Azusa California. Served as project manager in overseeing the installation of nested soil vapor extraction wells to remediate 400 feet of unsaturated soil impacted by volatile organic compounds (VOCs). Supervised and logged the drilling, construction, and development of SVE wells using the STRATEX air rotary drilling method. SVE included the use of a resin to remove VOCs, followed later by the use of GAC to enhance treatment system uptime and efficiency.

Rehabilitation of Groundwater Remediation Wells in Costa Mesa, California. Supervised the rehabilitation of two remedial extraction wells using Welgicide to break down bacterial slime (mostly sulfate-reducing bacteria) and mineral scale, followed by acid solution treatment, pH neutralization, and re-development.

Aquifer Testing and Simulated Well Field Capture in Orange County, California. Served as project manager in coordinating and implementing a 5-day constant-rate aquifer test of an existing remedial extraction well to estimate aquifer properties and predict the long-term sustainable extraction rate. Results from the aquifer test were incorporated into a numerical model to simulate groundwater flow and the capture zone of the remedial extraction well.

Deep Groundwater Monitoring Well Network Installation, Chico, California. Provided oversight for the drilling, construction, and development of a network of groundwater monitoring wells using mud rotary. Responsibilities included coordinating underground utilities surveys with DigAlert and local entities, logistical planning of materials and drilling activities with drilling contractors, coordinating the sampling and disposal of cuttings and drilling fluids, and coordinating the development of the wells and temporary containment of purged groundwater.



Groundwater Monitoring and Enhanced *In Situ* Bioremediation Remediation Project, Costa Mesa, California. Served as project manager for the collection, compilation, and analysis of groundwater data to evaluate and report on the cleanup of a site impacted by chlorinated solvents. Cleanup included a pump-and-treat system with an extensive remediation well field and treatment using air stripping and GAC. Responsible for submitting quarterly groundwater monitoring reports to the RWQCB. Mr. Stuart also designed and implemented an in situ bioremediation pilot program to enhance cleanup efforts by introducing ethanol to increase the sequential biodegradation of chlorinated solvents.

Numerical Modeling

Numerical Modeling with MODFLOW-OWHM for Borrego Water District. Modified an existing 3D MODFLOW-OWHM numerical model developed by USGS to incorporate recent groundwater level and pumping data for the Borrego Groundwater Basin. The updated model was used to validate calibration of the numerical model and define uncertainty in estimates of aquifer storage. The numerical model will also be used to identify data gaps in the basin and to guide additional investigative work to improve characterization of the basin. The model is being used to help develop the Groundwater Sustainability Plan for the critically overdrafted Borrego Valley Groundwater Basin.

Numerical Modeling for Paradise Valley Hydrogeological and Well Construction Services for Glorious Land Company. Modified an existing 2-D MODLFOW numerical model by expanding the model domain with additional layers to better represent the geology of the groundwater basin and incorporating site-specific aquifer characteristics derived from local aquifer testing. The numerical model was used to simulate a number of scenarios to evaluate potential changes in water table elevation resulting from additional recharge from the discharge of imported water to a proposed spreading basin.

Numerical Modeling of Potential Impacts to Groundwater Quality, Ramona Municipal Water District. Prepared a 3D groundwater flow and transport model using the MODFLOW-SURFACT code to evaluate the potential impact of population growth on the quality of groundwater in the Kimball and Gower Hydrologic Sub-Areas near Ramona, California. The numerical model was calibrated to steady-state and transient water level conditions, and to concentrations of total dissolved solids (TDS) in groundwater. A series of simulations were conducted to evaluate the potential impact on groundwater quality with an increased use of imported water in the basins for various climatic conditions.

Numerical Modeling of the Fate and Transport of Pure Phase Chlorinated Solvents in the Subsurface. Designed, constructed and implemented a 3D numerical model using the T2VOC code to simulate the multiphase transport of chlorinated solvents from land surface through the unsaturated zone and into groundwater. The numerical model incorporated the influence of a nearby leaking canal and septic discharges on groundwater flow in the unsaturated zone.

Investigation of Treated Wastewater Discharge to Percolation Beds in Rancho Santa Fe, California. Served as project manager in designing and implementing an investigation of the infiltration capacity of existing percolation beds at the Ranhco Santa Fe Water Pollution Control Facility. The goal of the investigation was to evaluate whether the existing percolation beds could accommodate an increase in treated wastewater discharge to 750,000 GPD. The investigation included the construction of a percolation test bed, the installation of shallow groundwater observation wells around the test bed and nested piezometers in the test bed, and the development of a 3D numerical model to simulate the infiltration of water through the percolation beds to the water table. The numerical model was calibrated to observations collected during the infiltration test, and used to simulate the potential effects to the water table with an increase in discharge to the percolation beds. Managed the design, construction, and implementation of a surface water infiltration experiment.

Daniel Ritter, PhD, PG

Geochemist

Daniel Ritter is a geochemist with 7 years' experience, specializing in aqueous and isotope geochemistry. Dr. Ritter's project experience includes using isotopes and geochemistry as tracers of natural and anthropogenic contaminants in groundwater and surface water, and assessing the impact of interactions between water, rock, and microbes on groundwater chemistry. He is proficient in ArcGIS and PHREEQC and has experience with groundwater flow modeling including using MODFLOW and GMS.

Education

University of Arizona PhD, Hydrology and Water Resources

Brigham Young University MS, Geology BS, Geology

Certifications

Professional Geologist (PG), CA No. 9618

Project Experience

Groundwater Sustainability Plan, Fox Canyon Groundwater Management Agency, Ventura County, California. As part of Groundwater Sustainability Plan (GSP) preparation, reviewed and analyzed groundwater and surface water data and numerical groundwater model output data. Prepared figures and GSP sections based on data analysis. Reviewed and edited GSP sections based on comments from Technical Advisory Group.

Borrego Valley Groundwater District. Analyzed the MODFLOW input and output files for the USGS numerical groundwater flow model of the Borrego Valley in order to assess how future pumping can be simulated in the basin and determine whether the model can be used as a tool to assist in understanding how groundwater quality may change with additional pumping. Review historical water quality data to assess trends and determine potential impacts to wells. Updated model simulation files to run the model through the current period. Updated the model to run future climate scenarios as part of GSP preparation.

Soil Vapor Intrusion Risk and Human Health Risk Report, City of Ontario, California. Analyzed lithology, historical water quality data, changes in depth to groundwater and site environmental conditions to prepare a soil vapor intrusion risk and human health risk report for VOC contamination in a groundwater aquifer. Updated and modified groundwater model to simulate flow of groundwater and contaminants to wells.

Volatile Organic Compounds Analysis, 400 Wilshire Boulevard, California. Collected indoor air samples for VOC analysis. Plan and oversee soil vapor sampling for VOCs. Used the Johnson and Ettinger model to determine potential indoor air concentrations of VOCs and the associated human health risk, based on site specific lithology, depth to groundwater and groundwater concentrations of VOCs.

Private Ranch, San Diego County. Collected water levels and pumping rates during a 3 day aquifer test. Compiled data and analyzed the aquifer properties using AQTESOLV. Prepared distance drawdown plots for assessment of long-term pumping affects and compared anisotropic water level responses. Collect samples for tritium and analyze results.



SPX Corporation Marley Cooling Towers Site. Assist in the preparation of semi-annual groundwater quality monitoring reports. Oversee well maintenance activities. Supervise drilling and construction of 2 monitoring wells.

Multiple Phase I Environmental Site Assessments and Hazards Assessments for CEQA Documents. Performed site inspections, reviewed regulatory records, reviewed historical reports, prepared vapor intrusion assessments, and assessed whether or not there are recognized environmental concerns that would warrant further investigation for sites in Southern California.

Sycuan Band of the Kumeyaay Nation. Plan and carry out water quality sampling of a reservoir as part of Natural Resources Monitoring Plan. Analyze and prepare a report assessing the impact of measured water quality parameters.

Multiple well installation, construction dewatering, and stormwater runoff projects. Analyze water chemistry results to investigate source of nutrients and other inorganic constituents. Use PHREEQC to evaluate equilibrium states and saturation of mineral species.

Relevant Previous Experience

Research Assistant, University of Arizona. Collected, prepared, and analyzed water and gas samples for analysis of major ion chemistry and isotopes. Contacted natural gas companies to obtain permission to sample their wells. Planned and carried out sampling trips to collect samples from both natural gas producing wells and monitoring wells.

Physical Scientist, United States Geological Survey (USGS) GS-09, STEP Program. Assisted with USGS fieldwork and research on methanogenesis in oil fields in Louisiana. Collected and analyzed samples and helped prepare and edit final report.

Teaching Assistant, Brigham Young University. Graded assignments and set up labs for Hydrogeology and Hydrogeochemistry classes. Graded assignments and assisted students in Groundwater Modeling (GMS/MODFLOW) class.

Hydrogeochemistry Lab Assistant, Brigham Young University. Prepared and analyzed samples for solutes, tritium, and stable isotopes (oxygen, hydrogen, nitrogen, carbon). Supervised other students in carrying out these same tasks. When supervisor was gone, helped ensure the smooth running of day-to-day operations in the lab.

Trevor Jones, PhD

Hydrogeologist

Trevor Jones is a hydrogeologist with 4 years' experience developing and benchmarking groundwater flow and transport models. Mr. Jones specializes in the development of reactive transport models used to quantify coupled fluid and chemical—chemical interactions in heterogeneous environments. In addition, he has helped in the assessment of large-scale groundwater flow models used to guide the sustainable management of groundwater basins in Southern California.

Education

University of California, Irvine PhD, Civil and Environmental Engineering MS, Civil and Environmental Engineering BS, Civil and Environmental Engineering

Project Experience

Fox Canyon Groundwater Sustainability Plan, Ventura County, California. Helped assess uncertainty in regional and sub-basin-scale models used to evaluate availability and usability of groundwater resources in the Oxnard Plain and adjacent basins. For the regional-scale model, this involved the analysis of Monte Carlo simulations to quantify the sensitivity of key metrics, such a seawater flux, to uncertainty in model parameters that constrain hydraulic conductivity, storage, and recharge. For the sub-basin-scale model, developed a 1D unsaturated flow model to assess key assumptions about areal recharge across the sub-basin. Helped draft an independent peer review of the two groundwater models that communicated these results to the Fox Canyon Groundwater Management Agency.

Yucaipa Basin Groundwater Sustainability Plan, Yucaipa, California. Assessed the modeling approach used by the USGS to quantify availability of groundwater resources in the Yucaipa Basin. Quantified initial conditions, boundary conditions, and model forcings used to develop the calibrated model and compared the methods alternative models developed by additional consulting agencies. Highlighted uncertainty in the model development that requires further investigation. Quantified hydrologic modeling methods and the approach to coupling surface and subsurface processes in the integrated model, GSFLOW. This ongoing project includes further exploration of the modeling methods to quantify basin-scale water budgets and sustainable management under various pumping, recharge, and climate scenarios.

Relevant Previous Experience

Mineral Precipitation in Fractured Rocks, University of California, Irvine, California. Developed an open-source reactive transport software that simulates 3-D fluid-rock reactions in heterogeneous fractured rocks. Model development included formulation and numerical solution of the governing reactive transport equations, as well as the implementation of a novel embedded boundary method for tracking the evolution each fracture-surface. Performed experiments of mineral precipitation in fractures to quantify the role of local heterogeneities on time-dependent flow, transport, and reaction processes. Used results from these experiments to calibrate and constrain the conceptual framework of the mechanistic reactive transport model.

Technical Support in Claim against Regional Oil Producer, Aquilogic, Central Valley, California. Served as technical support in claim against region oil producer in the Central Valley. Drafted geological cross-sections used to quantify the location and extent of hydrologic flow barriers that limited contaminant transport across aquifer systems. Mapped historic TDS and groundwater elevations to demonstrate potential migration of contaminants across aquifer boundaries, and assisted in the development of a sampling and analysis plan to further quantify the source and extent of contaminated fluids in the region.

Upper Coachella Valley Basin Boundary Adjudication, Aquilogic, Coachella Valley, California. Reviewed geology and hydrogeology reports of the Upper Coachella Valley to better constrain natural basin boundaries, water availability, water quality, sources of recharge, and historical withdrawals in the region. Drafted a white paper on the basin-wide hydrogeology used in SGMA-related basin boundary adjudication.

Countywide Assessment of Contaminated Sites, Aquilogic, Los Angeles, California. Reviewed environmental site assessment and environmental impact reports to assess remediation efforts at contaminated sites across the Los Angeles Basin. Drafted summaries of the remedial efforts and progress used in a basin-wide assessment by the Water Replenishment District of Los Angeles. Contaminants of concern included heavy metals, gasoline byproducts, and chlorinated solvents.

Statewide MTBE Contamination Litigation, Aquilogic, New Jersey. Reviewed expert witness reports and testimonies in a statewide MTBE contamination case. Drafted rebuttal reports used in litigation support for the State.

Publications

- Arshadi, M., H. Rajaram, T. Jones, and R. L. Detwiler. 2015. High-resolution experiments on chemical oxidation of DNAPL in variable-aperture fractures: Delineation of three time regimes. *Water Resources Research*.
- Jones, Trevor and Detwiler, Russell. 2019. Mineral precipitation in fractures: Using the level set method to quantify the role of mineral heterogeneities on transport properties. *Under Review*
- Jones, Trevor and Detwiler, Russell. 2019. Mineral precipitation in fractures: When do surface heterogeneities matter? *Manuscript in Preparation*.
- Jones, Trevor and Detwiler, Russell. 2016. Fractures sealing by mineral precipitation: The role of small-scale mineral heterogeneity. Geophysical Research Letters.

Presentations

- "Fracture sealing caused by mineral precipitation: The role of aperture and mineral heterogeneity on precipitation-induced permeability loss", 2017. Presented at 2017 Fall Meeting AGU (Invited). New Orleans, Louisiana.
- "Predicting mineral precipitation in fractures: The role of local heterogeneity on the feedback between precipitation and permeability", 2016. Presented at 2016 Fall Meeting AGU. San Francisco, California.
- "Experimental observations of calcite precipitation in fractures: The role of physical and chemical heterogeneity on the persistence of preferential flow paths", 2015. Presented at 2015 Fall Meeting AGU. San Francisco, California.
- "Fracture aperture alteration induced by calcite precipitation", 2015. Presented at 49th U.S. Rock Mechanics/Geomechanics Symposium, American Rock Mechanics Association. San Francisco, California.
- "Fracture aperture alteration induced by calcite precipitation", 2013. Presented at 2013 Fall Meeting AGU. San Francisco, California.

Nicole Tucker

Hydrogeologist

Nicole Tucker is a hydrogeologist with 3 years' experience as a staff scientist, specializing in geotechnical and hydrologic lab tests, data analysis, geophysical field work and modeling, and saltwater interface groundwater modeling.

Relevant Previous Experience

Heap Leach Characterization Studies, Tucson, Arizona. Served as

Education

Florida International University MS, Geoscience Shippensburg University BS, Physics

Professional Affiliations

Geological Society of America

staff scientist and lab manager for secondary ore recovery projects from USA, Mexico, Chile, Australia, and Finland. Characterization studies were conducted to measure the physical, hydraulic, and chemical properties of ore material and assist in heap leach mine design and operational improvements. Tasks included lab testing, data analysis, lab management, geophysical survey design, and improving lab techniques.

Geophysical Characterization of Saltwater/Freshwater Interface, Big Pine Key and Sugarloaf Key, Florida. Served as field assistant and researcher to characterize the seasonal and tidal changes in the saltwater/freshwater interface on the National Key Deer Refuge with time-series electrical resistivity tomography. Conducted field work and geophysical inversions. Determined a formation factor based on shallow well measurements and resistivity data to provide an estimate of the salinity profile.

Groundwater Modeling of Saltwater/Freshwater Interface, Big Pine Key and Sugarloaf Key, Florida. Created a SEAWAT model to test previously established hydrogeologic parameters and replicate the tidal electrical resistivity tomography data. Constructed a temporary tidal station and collected tidal and well-level measurements in the field to determine parameters for model. Used field measurements to adjust hydrogeologic parameter estimates.

Specialized Training

Phase I Environmental Site Assessment training, ASTM International. April 2018

Conference Presentations

"Understanding Tidal Effects on the Big Pine Key Freshwater Lens with Time-Lapse ERT." 2012. Presented at GSA Annual Meeting and Exposition, Charlotte, NC.

Hugh McManus

Hydrogeologist

Hugh McManus is a hydrogeologist with 4 years' professional experience as a geologic field technician specializing in groundwater elevation monitoring, groundwater supply investigation review, surface mine enforcement, and compliance with groundwater programs mandated by the California Department of Water Resources (DWR).

Relevant Previous Experience

Education

San Diego State University BS, Geology

Certifications

OSHA 40-Hour HAZWOPER

Professional Affiliations

Geologic Society of America

Surface Mine Enforcement – Surface Mining and Reclamation Act (SMARA), County of San Diego, California. Conduct site inspections and review reclamation plans for the County of San Diego (County) Surface Mine Enforcement program to verify that mines meet SMARA requirements, which includes assessment of property boundaries, sloped-grading (Cut and fill slopes), erosion control, ponds, soil and stockpile management, and revegetation. Perform site evaluations during construction activities to ensure as-built geotechnical plans conform to approved reclamation plans. Conduct budget inquiries and annual report reviews for surface mines within the County to confirm adequacy of Financial Assurance Cost Estimate (FACE).

Groundwater Supply Investigation Review, County of San Diego, California. Reviewed groundwater supply investigations for technical accuracy and compliance with the California Environmental Quality Act (CEQA), County Guidelines for Determining Significance, and the County of San Diego Groundwater Ordinance. Researched land use and zoning densities to determine maximum basin buildout and projected groundwater use. Manage and review Groundwater Monitoring and Mitigation Plans (GMMPs) for various groundwater-dependent projects, including golf courses and outdoor camping/recreation facilities that obtain a Municipal Use Permit through the County. Prepared correspondence, provided direction, and interfaced with clients regarding adequacy and changes needed to GMMPs.

Groundwater Monitoring Program, County of San Diego, California. Maintained, updated, and managed a groundwater monitoring network of more than 250 privately owned wells through the county. Prepared and created the County Groundwater Monitoring Procedures document and mapping application to streamline quarterly groundwater monitoring. Procured new equipment and repaired existing equipment. Effectively presented scientific information to internal staff and the general public. Maintained a positive relationship with members of the public as a representative of the County of San Diego and assisted in educating residents about groundwater information and conditions.

California Statewide Groundwater Elevation Monitoring (CASGEM), County of San Diego, California. Provided support to the County of San Diego Planning and Development Services (PDS) to ensure compliance with Statemandated CASGEM requirements on four medium priority basins within San Diego County, including Borrego Valley, San Diego River Valley, San Pasqual Valley, and San Luis Rey River Valley. Duties included coordinating with consultants, the DWR, State Parks, the City of Oceanside, water districts, and individuals to incorporate new groundwater wells and acquire well completion and monitoring data for CASGEM monitoring reports. Additional task included ongoing monitoring and reporting to ensure County of San Diego compliance with CASGEM by performing semi-annual groundwater monitoring and coordinating with various agencies.



Sustainable Groundwater Management Act (SGMA), County of San Diego, California. Aided in the development of basin boundary and jurisdictional maps for the public and presentations to the County Board of Supervisors. Collaborated with internal staff to address positive outcomes for public relations regarding the implementation of SGMA within four communities in the county. Duties also included providing support and attending planning group meetings, planning commission hearings, and County Board of Supervisors hearings for SGMA-related items.

Kyle Harper

Application Developer

Kyle Harper is an application developer with 16 years' experience in information technology, database architecture, computer programming, and Web application development. Mr. Harper has managed an agile software development team and built websites from the ground up using HTML5/CSS/JavaScript/PHP. He places an emphasis on user

Education

University of California, San Diego BS, Environmental Systems (Ecology, Behavior, and Evolution)

experience/engagement and team collaboration as the keys to developing successful software products.

In addition to his programming experience, Mr. Harper has 6 years' focused experience in the biological field, with emphases on botany, plant ecology, and wetland ecology. He has participated in projects requiring vegetation mapping, focused rare plant surveys, regulatory permitting, and habitat restoration. During this time, Mr. Harper designed and implemented several applications for the collection, quality assurance (QA), analysis, and reporting of ecological findings. Many of his projects required rigorous statistical analyses in R, Python, Systat, and PC-ORD; several applications relied on spatial data and were built to interface with the ESRI ArcGIS suite of software, including Web-based maps using ArcGIS Server and ArcSDE.

Mr. Harper's dual experience in the natural sciences and technology sector aligns with his passion for developing better data collection and analysis tools, packaging complex data into meaningful, actionable information, and delivering an elegant user experience to allow data-driven decisions to shine in environmental stewardship.

Project Experience

Groundwater Sustainability Plan for Borrego Valley Groundwater Basin, County of San Diego, California. Architects an ESRI Enterprise Geodatabase and Web application for the Borrego Valley Groundwater Basin Groundwater Sustainability Plan. Implements Python scripts for database creation; data extraction, transformation, and loading (ETL) operations; and recurring jobs to import and sync from external data sources (e.g., Microsoft Excel workbooks with water quality results, online HTTPS historical and real-time weather station data). Provides custom query and export functionality for enhanced data accessibility within the Web-based user interface.

Phase I Data Management System Development, Yucaipa Valley Water District, San Bernardino County, California. Assesses current state of Yucaipa Valley Water District's data, processes, and workflows through collaborative meetings and on-site visits. Designs Data Management System to integrate disconnected systems and platforms, including Supervisory Control and Data Acquisition (SCADA), Maintenance Connection Asset Management Software, Zerion/iFormBuilder mobile data collection, ESRI Enterprise Geodatabases, Microsoft SQL Server databases, and Web-based data sources. Develops Administrative Web Portal for managing users, alerts, reports, assets, and data readings from one central hub. Implements data warehouse connectors for appurtenant Sustainable Groundwater Management (SGMA) database, Laserfiche document storage, and general unstructured file store data.

GIS Updates, Rancho Santa Fe Community Service District, San Diego, California. Develops and maintains enterprise geodatabase for water and sewer assets, including as-built plans and closed-circuit television feeds of pipe internals. Provides secured Web and mobile applications for maintenance crews and project managers to locate and query assets, even in areas with no internet connectivity. Designs and implements automated Python



scripts to update base data (such as parcels) and send notifications to the team if changes require review. Deploys WordPress site that can be maintained by staff without programming experience to enable public access to certain information.

GIS Services, Fairbanks Ranch Community Services District, San Diego, California. Develops and maintains enterprise geodatabase for water and sewer assets, including as-built plans and closed-circuit television feeds of pipe internals. Provides secured Web and mobile applications for maintenance crews and project managers to locate and query assets, even in areas with no internet connectivity. Designs and implements automated Python scripts to update base data (such as parcels) and send notifications to the team if changes require review. Deploys WordPress site that can be maintained by staff without programming experience to enable public access to certain information.

GIS Services, Whispering Palms Community Services District, San Diego, California. Develops and maintains enterprise geodatabase for water and sewer assets, including as-built plans and closed-circuit television feeds of pipe internals. Provides secured Web and mobile applications for maintenance crews and project managers to locate and query assets, even in areas with no internet connectivity. Designs and implements automated Python scripts to update base data (such as parcels) and send notifications to the team if changes require review. Deploys WordPress site that can be maintained by staff without programming experience to enable public access to certain information.

Online GIS Updates, Temescal Valley Water District, Corona, California. Implements custom Web GIS solutions for the Temescal Valley Water District operations team, including a map-based Web application for viewing the TVWD infrastructure, including custom querying, filtering, data export, custom map printing, and document linking to asbuilt PDF plan drawings. Links the same data to an ESRI Collector for ArcGIS map, enabling field crews to access as-built plans and locate infrastructure while in the field, whether connected to the internet or offline.

Year 3 GIS Services, Ramona Municipal Water District, San Diego County, California. Provides support and maintenance to the Ramona Municipal Water District (RMWD) and Dudek GIS team, including a browser-based Web application for viewing and querying the RMWD infrastructure and locating as-built PDF plans. The implementation includes a mobile-friendly Web application for accessing the same data in the field from mobile smart devices. Develops integrations with RMWD's asset management system, and collaborates with the GIS team to provide creative reviews of data management workflows.

Online GIS Updates, Temescal Valley Water District, Corona, California. Implements custom Web GIS solutions for the Temescal Valley Water District operations team, including a map-based Web application for viewing the TVWD infrastructure, including custom querying, filtering, data export, custom map printing, and document linking to asbuilt PDF plan drawings. Links data to an ESRI Collector for ArcGIS map, enabling field crews to access as-built plans and locate infrastructure while in the field, whether connected to the internet or offline.

Habitat Plan Data Management Solutions Visioning Process, Santa Clara Valley Habitat Agency, Morgan Hill, California. Met with the Santa Clara Valley Habitat Agency (SCVHA) and co-permittees to the Santa Clara Valley Habitat Conservation Plan (HCP) for the purpose of scoping and offering preliminary conceptual designs of an HCP Data Management System (DMS). Identified several key priorities for DMS design from the interviews, and laid the groundwork for development once the project is funded. The DMS will integrate many data sources including ESRI Enterprise Geodatabases, Microsoft SQL Server Databases, Microsoft Access Databases, online resources (e.g., California Natural Diversity Database (CNDDB)), and provide a user-friendly interface for different user groups to access, query, upload, and export HCP-related data, including SCVHA administrators, co-permittees, and project stakeholders.



Vegetation, Exotic Weeds, and Tecate Cypress Mapping of Western San Diego County, San Diego Association of Governments (SANDAG), San Diego County, California. As biologist, participated in remote vegetation mapping and field ground-truthing of more than 500,000 acres of vegetation within western San Diego County. As software developer/database administrator, created an electronic field form for ground-truthing of vegetation mapping, exotic weed mapping, and Tecate cypress (*Hesperocyparis forbesii*) mapping.

Vegetation Classification System Development, SANDAG, San Diego County, California. As biologist, completed numerous vegetation samples and participated in post-field statistical analyses using statistical packages, such as Systat, R, and PC-ORD, and co-authored the multichotomous key for the *Vegetation Classification Manual* for Western San Diego County. As software developer, created an electronic data entry program integrating camera, GPS, and paperless field forms for use with ruggedized field computers. This software has built-in data validation and saved the project an estimated \$30,000 in paper, printing, manual data entry, and error-checking costs, which earned this project the AECOM Green Ribbon Award for integration of sustainable practices. Created an updated vegetation classification system for San Diego County, based on the Sawyer Keeler-Wolf classification system, and integrated quantitative/statistical methods.

Regional Transportation Plan Environmental Impact Report (TO No. 14), SANDAG, San Diego, California. As biologist, compiled a comprehensive table listing sensitive plant and wildlife species occurring in San Diego County, including federal and state listings and any applicable listings under the various natural community conservation plans (Multiple Species Conservation Program and Multiple Species Habitat Conservation Plan) subarea plans.

Vegetation Classification and Mapping Project, Nature Reserve of Orange County, Orange County, California. As biologist, completed vegetation samples and participated in post-field quality control/QA and statistical analyses using the statistical packages PC-ORD. As software developer, created an electronic data entry program with built-in data validation, integrating camera, GPS, and paperless field forms for use with ruggedized field computers. Created an updated vegetation classification system for Orange County, based on the Sawyer Keeler-Wolf Classification System, and integrated quantitative/statistical methods.

Regional General Permit, Metropolitan Water District of Southern California, Los Angeles, California. As database administrator, oversaw the creation of a database and associated user interface for tracking impacts, mitigation, and agency notification/reporting. As biologist, evaluated baseline data; participated in preliminary field visits with the client to lay groundwork for programmatic permitting; and prepared programmatic permits for operations and maintenance projects throughout the Metropolitan Water District of Southern California service area, focusing on Orange County infrastructure.

Ocotillo Wells State Vehicular Recreation Area General Plan Update and Environmental Impact Report, California State Parks, Ocotillo Wells, California. As biologist, developed a remote vegetation mapping method using historical data, high-resolution aerial imagery, and Light Detection and Ranging (LIDAR) data. Applied this methodology to the approximately 80,000-acre Ocotillo Wells State Vehicular Recreation Area to produce a complete vegetation map with a 1-hectare minimum mapping unit.

High-Speed Rail Compliance Monitoring, Dragados-Flatiron Joint Venture, Fresno, California. Meets with project team to review and refine data collection methods, and implements customizations to the existing data collection forms in Dudek's mobile data collection app. Implements automated data processing jobs to extract, transform, and load data between non-GIS and GIS databases, including automated exclusion buffer creation for active Environmentally Sensitive Areas identified in the field. Supports mobile app (Collector for ArcGIS) to display the results of the automated data processing jobs on a map for crews to use in the field (online or offline).

High-Speed Rail Geotechnical, Dragados-Flatiron Joint Venture, Fresno, California. Develops Web interface for tracking parcel clearance, project compliance, survey requirements, and data collection. Integrates mobile GIS



data collection and GIS model statistics with back-end Microsoft SQL Server database to provide automated status updates. Creates QA workflows, report auto-generation, and a representational state transfer (REST) application programming interface (API) to securely post and receive data between project stakeholders and their respective Web applications, facilitating and expediting project reviews.

Construction Management Services for the Mid-Coast Corridor Project, PGH Wong Engineering Inc., San Diego, California. Develops mobile field data collection forms, and deploys a Web-based Quality Assurance/Quality Control (QA/QC) dashboard tool for processing the field-collected data through to the client's compliance software platform, which includes role-based record assignment through a pre-defined workflow through various departments and personnel. Performs security audits and performance tuning as the project's multiyear, multidiscipline monitoring database grows in size.

High-Speed Rail Environmental Services, Dragados-Flatiron Joint Venture, Fresno, California. Develops Web interface for tracking parcel clearance, project compliance, survey requirements, and data collection. Integrates mobile GIS data collection and GIS model statistics with back-end Microsoft SQL Server database to provide automated status updates. Creates QA workflows, report auto-generation, and a representational state transfer (REST) application programming interface (API) to securely post and receive data between project stakeholders and their respective Web applications, facilitating and expediting project reviews.

Geographic Information System (GIS) Portal for Rapid Ohi'a Death, Department of Land and Natural Resources, Honolulu, Hawai'i. Designs and implements customizations to an ESRI Survey123 for ArcGIS form, including rerouting the form to submit to a custom REST endpoint housed in an Enterprise Geodatabase. Creates a secure Web application user interface to accommodate several access/permission levels and teams, and includes view/edit capability, as well as custom export-to-Geodatabase functionality. Develops server-side Python script for monitoring incoming data and performing quality control (QC) checks, propagating status updates, and sending email alerts to relevant team members.

Avian and Vegetation Pilot Monitoring Studies, Rancho Mission Viejo Land Trust, Orange County, California. Creates Web-based tiled basemap services for Unmanned Aerial System (UAS) imagery flown in 2012 and 2017, and makes the imagery services available as offline-capable, high-performance caches for ESRI mobile data collection apps (e.g., Collector for ArcGIS). Provides data collection support, participates in creative reviews for applying technology to maximize project efficiency and effectiveness.

Interim Ranch-Wide Management Plan, Tejon Ranch Corporation, Kern County, California. Develops Web interface for work order tracking and project compliance audits. Leverages proprietary data collection applications and third-party platforms (ESRI ArcGIS) to facilitate constraints analyses, field navigation, task prioritization, data collection, QA workflows, automated report generation, and real-time communication between teams in offices and those out in the field.

Newhall Ranch Resource Management and Development Plan, Newhall Land and Farming Inc., Los Angeles and Ventura Counties, California. Reviews and contributes to Dudek's proprietary information management application to facilitate electronic data collection in the field. Develops back-end reporting strategies using Structured Query Language (SQL) Server Reporting Services (SSRS) and custom Web interfaces to streamline project QA and reporting workflows.

Sunrise Powerlink Project, San Diego Gas and Electric, San Diego and Imperial Counties, California. As database administrator, managed the data collection and data QA processes. Developed a Microsoft Access data structure to allow for a flexible design-build project. Developed and deployed field data forms using third-party digital pen recognition software, which imported into an Access database. Developed a front-end user console for the Access database to allow for automated report and table outputs for restoration plans, progress reports, and other queries.

Lila Spring

Environmental Specialist/Planner

Lila Spring is an planner whose project management experience includes the development of a sustainable water master plan and section updates for a number of urban water management plans (UWMPs). She has coordinated a water-energy nexus pilot project, including quantifying energy savings, testing effectiveness of a water-energy cost calculator, and creating and implementing calculations to distribute savings with greater precision. Her technical skills include MATLAB, R, and ArcGIS.

Education

University of California, Santa Barbara MS, Environmental Science and Management University of Vermont BS, Community and International Development

Relevant Previous Experience

Fremont Basin Integrated Regional Water Management Plan (IRWMP) Support, California City, California. Served as project planner and assisted the Fremont Basin Integrated Regional Water Management Group in stakeholder outreach and the pursuit of grant funding with the goal of developing an IRWMP in one of the few remaining regions that lacks one. Tracked funding opportunities and generated outreach materials in support of the strategic pursuit of funding to achieve regional goals.

Paso Basin Supplemental Water Supply Options Study, County of San Luis Obispo, California. Served as project engineer. Provided mapping, alternatives development, and evaluation support to supplement groundwater with Nacimiento Project water and recycled water. The study aims to identify potential new water supplies within the Paso Robles Groundwater Basin, which was designated as critically overdrafted by the state. The recycled water options considered non-potable uses and groundwater recharge options, such as surface spreading and injection. The Nacimiento project options considered direct use of treated and untreated water as well as groundwater recharge options.

Potable Reuse Facilities Plan, Goleta Water District, California. Served as project planner and worked with Goleta Water District to evaluate potable reuse options to maximize this underutilized water supply source. Contributed to the development of a matrix of reuse options based on potential receptors and water treatment requirements.

2015 Urban Water Management Plan (UWMP), Bellflower-Somerset Mutual Water Company (BSMWC), Los Angeles County, California. Served as project planner and worked closely with BSMWC to generate an UWMP that accurately and effectively communicates the current and future water resource management for the agency. Developed language for the system description, system water use, baselines and targets, system supplies, water supply reliability assessment, and water shortage contingency plan chapters of the UWMP. In addition, generated geographic information system (GIS) maps of BSMWC's current and historic service area and major infrastructure through conversations and collaboration with BSMWC staff. Also projected population growth, water supply, and water demands to the year 2040 in order to evaluate the reliability of BSMWC's water resources.



2015 UWMP, Pasadena Water and Power (PWP), California. As project planner, provided support in the development of Pasadena Water and Power's 2015 UWMP, including drafting the outline, reviewing baseline calculations and climate data, updating demand management measures, drafting supply tables, and incorporating comments from the public and PWP staff into the final UWMP. Uploaded the final UWMP to the Department of Water Resources (DWR) and verifying consistency between information in the UWMP and entered into DWR's standardized tables.

2015 UWMP, Goleta Water District, California. Served as project planner and worked closely with Goleta Water District to draft a 2015 UWMP to accurately reflect current water management strategies and to satisfy required changes since the 2010 UWMP was written. Worked to update and improve population and water use projections to the year 2040, to update system and program descriptions, and to refine water supply projections.

Greater Los Angeles County (GLAC) IRWMP Proposition 84 Final Solicitation Grant, Los Angeles County Department of Public Works (LADPW), California. Served as project planner and provided support in the preparation of a GLAC IRWMP Proposition 84 Grant application, including developing budget templates, updating schedules and tables, creating the Gateway recycled disadvantage community (DAC) map, performing quality assurance (QA)/quality control (QC) regarding budget updates and schedules. LADPW received 75 percent grant funding.

Title XVI Fiscal Year (FY) 2016 Grant Support, Padre Dam Municipal Water District, Santee, California. Served as project planner. Provided support in the preparation of a Title XVI 2016 grant application, including developing cost tables, reviewing data tables, and writing application sections (environmental compliance, permitting, and costs).

FY 2014–2015 Grant Funding Support, Carlsbad Municipal Water District, California. Served as project planner. Developed a cash flow analysis to assist Carlsbad Municipal Water District in the strategic utilization of multiple funding sources. In addition, drafted a quarterly report on the use of Clean Water State Revolving Fund project funding.

Water Recycling Funding Program Grant Application, Goleta Water District, California. As project engineer, provided primary support in preparing the Goleta Water District's grant application to the State Water Resources Controls Board (SWRCB) regarding a recycled water funding program. Work included application, service map, forms, and schedule updates.

Title XVI FY 2016 Grant Support, Sweetwater Authority, Chula Vista, California. Served as project engineer and provided primary support in preparation of the grant application, including forms, permit, cost review, and updates.

Development of a Sustainable Water Master Plan, Burbank Water and Power, California. Served as project manager for this Master's Thesis group project. Worked as part of a multidisciplinary team to address long-term resource sustainability. Identified opportunities for increased water-use efficiency and cost-effective resource utilization engagement in efficiency initiatives. Managed project tasks, client communication, budget, timeline, and data collection.

Water-Energy Nexus Pilot Project, The Energy Coalition, Santa Barbara, California. As project coordinator, quantified energy savings attributable to water efficiency measures implemented by 26 Metropolitan Water District (MWD) member agencies using the California Public Utilities Commission's (CPUC) Water-Energy Cost-Effectiveness Calculator. Tested the effectiveness of the tool and provided feedback for improvements. Created and implemented refining calculations to distribute savings with greater precision.

Burbank Water and Power Projects, California. As water conservation intern, assessed the need for quantification of water use impacts for individual conservation strategies. Created a template for quantifying the impact of turf conversion projects on water use in single-family homes. Conducted a review of proposed species recommendations for turf conversion projects.



Sanjay Gaur Vice President

Profile

Mr. Gaur has over 20 years of public-sector consulting experience, primarily focusing on providing financial and rate consulting services to water and wastewater utilities. His experience includes providing rate structure design, cost of service studies, financial analysis, cost benefit analysis, capacity fee studies, conservation studies, and demand forecasting for utilities spanning the west coast. He has provided consulting service to over 100 different agencies. Mr. Gaur is considered one of the leading experts in developing rates that meet Proposition 218 requirements, has exceptional public speaking skills and, due to these qualities, he is often sought out to provide assistance on rate studies that are complex and controversial. He has often provided his insight into utility rate and conservation-related matters for various publications and industry forums including: authoring articles in *Journal AWWA*; being quoted in various newspaper articles including the Los Angeles Times and the New York Times; participating in a forum regarding the future of water in Southern California sponsored by the Milken Institute; being quoted on National Public Radio; speaking at various industry conferences including American Water Works Association (AWWA), the Utility Management Conference, Association of California Water Agencies, and California Society of Municipal Finance Officers; and, co-authoring several industry guide books including AWWA's Manual M1 Principles of Water Rates, Fees and Charges, 7th Edition as well as AWWA's Water Rates, Fees, and the Legal Environment, Second Edition. Mr. Gaur co-authored a chapter entitled, "Understanding Conservation and Efficiency Rate Structures," for the Fourth Edition of the industry guidebook, Water and Wastewater Finance and Pricing: The Changing Landscape. Mr. Gaur is also active in a number of utility-related associations, including serving as a member of AWWA's Rates and Charges Committee.

Relevant Project Experience

- Alameda County Water District (CA) Financial Plan Study and Annual Updates, Conservation Tiered Rate Feasibility Analysis, Drought Rate Study, Water Cost of Service and Rate Study, and other Ad-hoc Support
- Borrego Water District (CA) Financial Planning Study, Groundwater Sustainability Plan, Water Rate Study, and Basin Management Evaluation

Professional History
Raftelis Financial
Consultants, Inc.: Vice
President (2015present); Senior
Manager (2012-2014);
Manager (2009-2012)
Red Oak Consulting,
Division of Malcolm
Pirnie (2007-2009)
MuniFinancial (20052006)
A & N Technical
Services (1999–2003)
United States Peace
Corps, Bulgaria (1995-

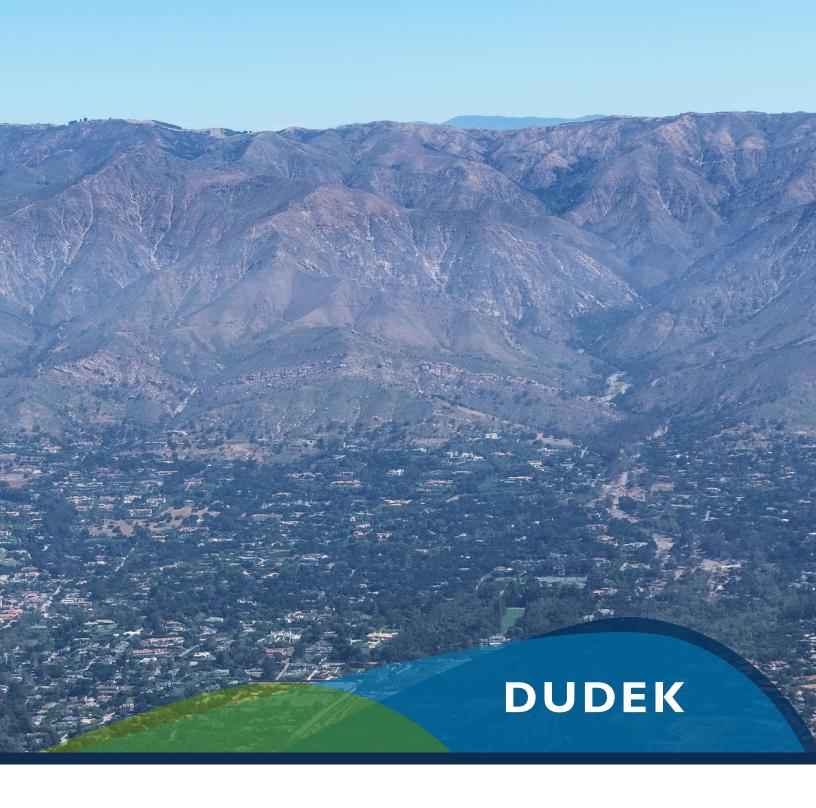
Education

Master of Public
Administration, Public
Administration/Intern
ational Development,
Kennedy School of
Government - Harvard
University (2003)
Master of Science,
Applied Economics University of
California, Santa Cruz
(1994)
Bachelor of Arts,
Economics and
Environmental Studies
- University of
California, Santa Cruz
(1992)

Professional
Memberships
American Water
Works Association Rates and Charges
Committee
California Society of
Municipal Finance
Officers



- City of Camarillo (CA) Water and Wastewater Rate Study, Financial Plan Study, and Cost of Service Study,
- Carpinteria Sanitary District (CA) Sewer Rate and Fee Study
- Castaic Lake Water Agency (CA) Wholesale Water Rate Study, Drought Rates, Rate Analysis, and Facility Capacity Fees
- Central Basin Municipal Water District (CA) Financial Plan
- Contra Costa Water District (CA) Financial Plan Study, Water Rate Study and Drought Rates
- City of Corona (CA) Water Budget Rate Study, Wastewater Capacity Fees Study
- Cucamonga Valley Water District (CA) Financial Plan, Water Conservation Rate Study, and Drought Rates
- East Bay Municipal Utility District (CA) Water and Wastewater Cost of Service and Rate Study
- Eastern Municipal Water District (CA) Water Budget Study and Financial Plan Study
- Elsinore Valley Municipal Water District (CA) Financial Model, Drought Rate Analysis, Water and Recycled Water Rate Study, Capacity Fee Study, and Wastewater Rate Study
- La Habra Heights County Water District (CA) Wheeling Rate Study and Financial Plan Study
- City of Malibu (CA) Wastewater and Recycled Water Rate Study
- Mesa Consolidated Water District (CA) Financial Plan Study, Cost Comparison Study, Water and Recycled Water Cost of Service and Rate Design Study
- Metropolitan Water District of Southern California (CA) Drought Allocation Model, Long Range Financial Plan, and Cost of Service Evaluation
- Mojave Water Agency (CA) Financial Plan Study, Financial Impact Analysis for Water Exchange and Leasing Programs and Water Reliability Rate Development
- Monterey Peninsula Water Management District (CA) Water Budget Study
- Municipal Water District of Orange County (CA) Conservation Potential Study and Rate Study
- Pasadena Water and Power (CA) Water Cost-of-Service and Rate Design Study
- Placer County Water Agency (CA) Cost of Service, Rate, and Financial Plan Study
- City of San Clemente (CA) Water and Wastewater Rate Study
- San Diego County Water Authority (CA) Indexing Model and Wholesale Water Rate
- City of San Juan Capistrano (CA) Water Rate Study
- Santa Clara Valley Water District (CA) Project Evaluation Water Conservation Project
- Santa Clarita Water District (CA) Retail Water Rate Study
- City of Santa Cruz (CA) Financial Plan, Water Budget Feasibility Analysis, Cost of Service and Rate Study, Drought Rate Study, Capacity Fees Update and Water Demand Offset Fees Analysis, and Alternative Water Supply Feasibility Analysis
- Soquel Creek Water District (CA) Water Rate Structure Study
- Temescal Valley Water District (CA) Water and Sewer Rate Study and Capacity Fee Study
- Western Municipal Water District (CA) Financial Plan, Capacity Fees, and Water Budget Rate Studies



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SOUTHERN CALIFORNIA

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Pasadena
Riverside
San Juan Capistrano

CENTRAL COAST

Santa Barbara Santa Cruz

NORTHERN CALIFORNIA

Auburn Oakland Sacramento

HAWAI'I

Kailua, Oʻahu

OREGON

Portland

HABITAT RESTORATION SCIENCES

A Dudek Subsidiary

MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 5-B

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: GENERAL MANAGER

SUBJECT: RESOLUTION NO. 2180, DESIGNATING SIGNATORY FOR SWRCB

GRANT APPLICATION FOR POSSIBLE FUNDING FOR A GROUNDWATER AUGMENTATION FEASIBILITY STUDY

This item was reviewed by the Strategic Planning Committee at their meeting on March 15, 2019 and the Committee concurs with the staff recommendation.

RECOMMENDATION:

That the Board adopt Resolution No. 2180 authorizing the District's General Manager to sign and file, for and on behalf of the District, a Financial Assistance Application for a grant agreement from the State Water Resources Control Board for the development of a Groundwater Augmentation Feasibility Study.

DISCUSSION:

District staff is pursuing grant funding through the State Water Resource Control Board (SWRCB) Clean Water State Revolving Fund Program for the development of a Groundwater Augmentation Feasibility Study for the District. This technical study is included as a recommendation of the recently completed 2019 Recycled Water Feasibility Study. The SWRCB grants cover 50% of eligible costs up to \$75,000 for feasibility studies.

The SWRCB grant application requires that the District provide a resolution designating an authorized representative to sign and file the grant application and to provide the assurances, certifications, and commitments required for the financial assistance application, including executing a financial assistance agreement from the State Water Resources Control Board and any amendments or changes. The Authorized Representative is also designated to represent the District in carrying out the District's responsibilities under the grant agreement, including certifying disbursement requests on behalf of the District and compliance with applicable state and federal laws.

Attached is a copy of draft Resolution No. 2180. This resolution has been reviewed by District General Legal Counsel with all comments being incorporated.

RESOLUTION NO. 2180

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MONTECITO WATER DISTRICT DESIGNATING AN AUTHORIZED REPRESENTATIVE FOR SWRCB FINANCIAL ASSISTANCE

WHEREAS the Montecito Water District (District) wishes to pursue State Water Resource Control Board (SWRCB) financial assistance through the Clean Water State Revolving Fund Program for the planning, design and construction of recycled water projects including groundwater augmentation facilities within the District service area; and

WHEREAS the SWRCB requires the District to pass a resolution identifying an Authorized Representative and to submit the resolution with the application for financial assistance.

NOW, THEREFORE BE IT RESOLVED by the Board of Directors of the District, AS FOLLOWS:

- 1. The General Manager (the "Authorized Representative) or his/her designee is hereby authorized and directed to sign and file, for and on behalf of the District, a Financial Assistance Application for a grant agreement from the State Water Resources Control Board for the planning, design, and construction of a Montecito Recycled Water Groundwater Augmentation Feasibility Study (the "Project").
- 2. This Authorized Representative, or his/her designee, is designated to provide the assurances, certifications, and commitments required for the financial assistance application, including executing a financial assistance agreement from the State Water Resources Control Board and any amendments or changes thereto.
- The Authorized Representative, or his/her designee, is designated to represent the
 District in carrying out the District's responsibilities under the grant agreement, including
 certifying disbursement requests on behalf of the District and compliance with applicable
 state and federal laws.

PASSED AND ADOPTED by the Board of Directors of the Montecito Water District this 18th day of March, 2019 by the following roll call vote:

| Flovd Wicks | s, President | Nick Turner, Secretary |
|-------------|--------------|------------------------|
| APPROVED | : | ATTEST |
| | ABSENT: | |
| | ABSTAIN: | |
| | NOES: | |
| | AYES: | |
| | | |

| STATE OF CALIFORNIA |) |
|---|--|
| |) ss. |
| COUNTY OF SANTA BARBARA | .) |
| the above and foregoing is a full, District, adopted at a meeting of t | y of the Montecito Water District, do hereby certify that true and correct copy of Resolution No.2180 of said the Board of Directors held on March 18, 2019, at coard of Directors was present and acting throughout, amended or repealed. |
| DATED: | |
| | |
| | |
| Nicholas Turner, Secretary | |

WATER RECYCLING FUNDING PROGRAM PLANNING GRANT APPLICATION

| I. APPLICANT INFORMATION | ON | | | |
|--|----------------------------------|--|------------------------------|--|
| Agency Name: | | | | |
| Agency Type: ☐ Public – Loc | cal Public - State | Indian Tribe Nonprofit | ☐ Other: Specify | |
| Charter City/County: □ Y | ′es □ No | | | |
| Street Address: | | | | |
| Mailing Address: | | | | |
| Congressional District(s): | | State Senate District(s): | | |
| State Assembly District(s): | | County (or Counties): | | |
| • | 4 (Los Angeles) | 1 (North Coast) ☐ 2 (Sar 5 (Central Valley) ☐ 6 (Lah 9 (San Diego) | n Francisco Bay) nontan) | |
| Federal ID No.: | | | | |
| Authorized Representative Nar | me, Title: | | | |
| Phone No.: | Phone No.: Email Address: | | | |
| General Contact Person Name | e, Title: | | | |
| Phone No.: | Phone No.: Email Address: | | | |
| II. PROJECT INFORMATION | | | | |
| Project Title: | | | | |
| Total Study Cost: \$ | | | | |
| Grant Amount Requested: \$ | | | | |
| Note: The maximum grant | is 50 percent of the total eligi | ble study cost up to a maximum | n grant of \$75,000 | |
| | Study starting date | Submit draft facilities plan | Submit final facilities plan | |
| Estimated Project Schedule | | | | |
| Funds for Cash Flow: The Agency is expected to have funds available to handle cash flow of the entire study cost, Pending receipt of grant disbursements. Does the Agency have local funds on hand to cover the entire study cost? Yes No | | | | |
| Describe any other loans, grants, or other financial assistance provided to the grant applicant to assist in this study: | | | | |

| State | Use Only |
|-----------------|----------|
| WRFP Project # | |
| Project Manager | |
| Date Received | |

| III. REGULATORY INFORMATION | | |
|--|---|----------------------|
| NPDES Permit and/or WDR Order No.: | | |
| Has enforcement action occurred as a result of the water quality problem | ? □ Yes | □ No |
| IV. COMPLIANCE WITH URBAN WATER MANAGEMENT AND WAT | ER RIGHTS REQUIREMEN | NTS |
| Are you an Urban Water Supplier*? | ☐ Yes | □ No |
| If yes, have you submitted an Urban Water Management Plan to the Department of Water Resources? | ☐ Yes | □ No |
| *An Urban Water Supplier provides water for municipal purposes either or supplies more than 3,000 acre-feet of water annually. The Urban Water Section 10631.5, requires every urban water supplier to prepare and addincludes specific elements. | ter Management Planning A | ct, Water Code, |
| Is your entity a water diverter and subject to section 5103 of the Water C | ode? Yes | □ No |
| V. DISCUSSION OF MATERIAL EVENTS, MATERIAL OBLIGATION (| CONDITIONS, AND ANY D | EBT LIMIT |
| Identify any current, prior or pending material events such as bankruptcy unscheduled draws on reserve funds, substitution of insurers or their fail enhancements, actions taken in anticipation of filing Chapter 9, rating ch and any local debt limit: | ure to perform, unscheduled | draws on credit |
| VI. ATTACHMENTS | | |
| □ 1 – Study Scope (see WRFP Guidelines for suggested form http://www.waterboards.ca.gov/water_issues/prograi | | cling/docs/tbl1.pdf |
| □ 2 – Authorizing Resolution/ Ordinance (see attached exa | mple) | |
| ☐ 3 – Compliance with the Division of Financial Assistance W | ater Conservation Plan requ | uirements |
| ☐ 4 – Proof of Submittal of an Urban Water Management Plan to the Department of Water Resources | | |
| 5 – Proof of Compliance with Demand Management Measurettp://www.water.ca.gov/wateruseefficiency/docs/cor/ | | Practices |
| $\ \Box$ 6 – Certification for Compliance with Water Metering (see a | ttached) | |
| ☐ 7 – Relevant Service, Management, Operating or Joint Pow | vers Agreements (if applicab | le) |
| CERTIFICATION AND SIGNATURE OF AUTHORIZED REPRESENTATION To the best of my knowledge and belief, I certify that I am authorized to sthis application is true and correct; the documentation has been duly authority to apply for the financing and Water Resources Control Board and to finance and construct the proposition. | submit this application; the in horized by the governing bo d enter into a financing agre | dy of the applicant; |
| Name of Authorized Representative: | Title: | |
| Signature of Authorized Representative: | Date: | |

CERTIFICATION FOR COMPLIANCE WITH WATER METERING REQUIREMENTS FOR FUNDING APPLICATIONS





| Funding Entity name: | State Water Resource | es Control Board |
|--|---|--|
| Funding Program name: | Water Recycling Fu | unding Program |
| Applicant (Entity name): | | |
| Please check one of the box | kes below and sign ar | d date this form. |
| | ater supplier, as that | cant Entity, I certify under penalty of perjury that term is understood pursuant to the provisions of |
| the applicant Entity has fully California Water Code (sect | complied with the proions 525 through 529 | cant Entity, I certify under penalty of perjury that ovisions of Division 1, Chapter 8, Article 3.5 of the 7 inclusive) and that the ordinances, rules, or ed below have been duly adopted and are in |
| and that false and/or inaccu all funds awarded to the app | rate representations in plicant for its project. | is signed certification in order to approve funding this Certification Statement may result in loss of Additionally, for the aforementioned reasons, the ect funds, and/or pursue any other applicable |
| Name of Authorized Represe | entative | Title |
| (Please print) | | |
| Signature of Authorized Rep | resentative | Date |

Montecito Water District, Groundwater Augmentation Facilities Plan Water Recycling Funding Program Planning Grant Application Attachment 1 – Study Scope

The Water Recycling Funding Program Guidelines (SWRCB, 2015) specifies 15 Study Scope components in Appendix A (Water Recycling Facilities Planning Grant Application). They are presented here.

1. Recycled Water Service Area

The Study's recycled water service area consists of Montecito Water District's (District or MWD) service area. The District's service area currently includes the unincorporated Montecito and Summerland communities, as well as Toro Canyon, and portions of the western Carpinteria Valley and an eastern portion of the City of Santa Barbara.

2. Recycled Water Sources

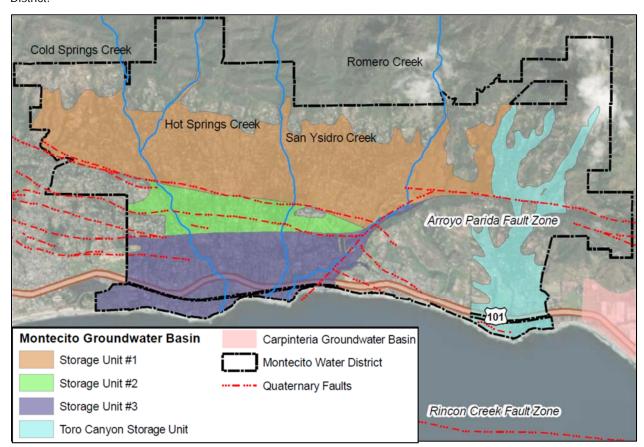
The source of recycled water in the Study Area is wastewater from the Montecito Sanitary District Wastewater Treatment Plant (Montecito WWTP). The Montecito WWTP currently treats approximately 0.45 million gallons per day (MGD) to secondary treatment level.

3. Current Disposal / Reuse

The Montecito WWTP discharges treated effluent to the Pacific Ocean via an ocean outfall dedicated to the treatment plant.

4. Study Area Map

The Study Area consists of the District's boundaries, which also encompass the boundaries of the Montecito Sanitary District.



Montecito Water District, Groundwater Augmentation Facilities Plan Water Recycling Funding Program Planning Grant Application Attachment 1 – Study Scope

5. Current Water Supplies

The District has a diverse variety of local, regional and State water supply sources and continues to align with other water purveyors in the area to identify, investigate and implement new local and drought proof sources. Currently the District receives water from the following sources:

- State Water Project (SWP) / Central Coast Water Authority State Surface Water
- Supplemental Water Purchases
- Cachuma Lake / Cachuma Project Regional Surface Water
- Jameson Lake Surface Water from the Santa Ynez River
- Doulton Tunnel Infiltration Local Groundwater
- Groundwater Wells Local Groundwater

6. Water / Wastewater Agencies

Montecito Water District is preparing the Study. The District will coordinate with the Montecito Sanitary District as needed.

7. Recycled Water and Fresh Water Alternatives

Given the long-term risks and low reliability associated with the SWP and local reservoir supplies, the District is committed to pursuing local, drought proof supplies. The District is committed to achieving 85% local, reliable drought proof supplies by 2025 to include District groundwater, Doulton tunnel infiltration, locally or regionally imported/purchased water, local or regional banked water, and recycled water (MWD UWMP, 2017).

The District is currently implementing or is in the process of developing long-term programs and/or projects to meet future water supply needs. These programs and projects include:

- Demand Reduction/Conservation Program (in accordance with the CUWCC BMPs)
- Groundwater Management (in accordance with the 2014 Sustainable Groundwater Management Act)
- Groundwater Banking local and State wide groundwater banking programs to bank water during wet years to meet dry year demands and increase water supply reliability.
- Desalination –long-term water supply agreement for imported/purchased water from the City of Santa Barbara resulting from the Charles E. Meyer desalination facility.
- Recycled Water alternatives discussed below

MWD's 2019 Recycled Water Facilities Plan evaluated non-potable reuse, indirect potable reuse, and direct potable reuse options. The plan recommended 1) a non-potable reuse project from the Montecito WWTP and 2) an evaluation of groundwater augmentation in the Montecito Basin. The focus of the Groundwater Augmentation Facilities Plan is indirect potable reuse within the Montecito Basin, which is within the MWD service area.

8. Stakeholder Participation

Stakeholder participation opportunities as part of the Study may include: 1) public meeting with the local community members; 2) meeting(s) with individual or group of potential recycled water users; and 3) meetings with local and adjacent agencies that have a stake in the study.

9. Schedule

The Study is estimated to take 9 months to complete. Major milestones are summarized in the following tables based on a start date of April 1, 2019.

| Task # | Task / Milestone | Start Date | End Date |
|-----------|------------------|---------------|----------|
| 1 | Kickoff Meeting | April 1, 2019 | |

| 2 | Initial Hydrogeologic Evaluation | April 2019 | July 2019 |
|---|--|--------------|---------------|
| 3 | Focused Hydrogeologic Evaluation | August 2019 | January 2020 |
| 4 | Recommended Project & Implementation Plan | January 2020 | February 2020 |
| 5 | Draft Groundwater Augmentation Facilities Plan | January 2020 | February 2020 |
| 5 | Final Groundwater Augmentation Facilities Plan | March 2020 | April 2020 |

10. Potential Problems

Potential problems that may cause delay in the progress of the study are setting up meetings with local and adjacent agencies in a timely manner and getting feedback in a timely manner from these stakeholders. The District will be proactive in outreach to these stakeholders to avoid potential problems.

11. Study Entities

The Montecito Water District will lead and fund the Study. The District intends to use consultant staff to develop the Facilities Plan with District staff providing input and review throughout.

12. Proposed Budget

The proposed budget is \$150,000.

| # | Task | Budget |
|---|---|-----------|
| 1 | Project Management & Meetings | \$15,000 |
| 2 | Initial Hydrogeologic Evaluation | \$50,000 |
| 3 | Focused Hydrogeologic Evaluation | \$50,000 |
| 4 | Recommended Project & Implementation Plan | \$15,000 |
| 5 | Groundwater Augmentation Facilities Plan | \$20,000 |
| | Total | \$150,000 |

^{*}This task will only be performed if previous tasks can be completed under their projected budget.

13. Study Funding Sources

The Montecito Water District will fund the Study using unrestricted cash reserves, including for cash flow until grant reimbursement for 50% of expenditures.

14. Study Outline

The following Study outline was developed using the 2015 Water Recycling Funding Program Guidelines, Appendix B (Recommended Outline for Recycled Water Project Reports) for guidance and identifying components relevant to the District's Study:

- 1. Study Setting & Market Assessment (will rely on 2019 MWD Recycled Water Facilities Plan)
 - 1.1. Study Setting: Study area characteristics, water supply characteristics and facilities, wastewater supply characteristics and facilities,
 - 1.2. Regulatory Setting: Treatment and other requirements for discharge and reuse
 - 1.3. Recycled Water Market: Review previous efforts, meet with potential customers (if appropriate), define potential customers demand profiles and water quality requirements
- 2. Alternatives Development & Analysis (will rely on 2019 MWD Recycled Water Facilities Plan)
 - 2.1. Evaluation Basis: Planning and design assumptions, evaluation criteria

Montecito Water District, Groundwater Augmentation Facilities Plan Water Recycling Funding Program Planning Grant Application Attachment 1 – Study Scope

- 2.2. Recycled Water Alternatives Development: Review previous efforts, define non-potable system option(s), define potable option(s), define regional project option(s)
- 2.3. Recycled Water Alternatives Evaluation: Evaluate recycled water alternatives based on cost and qualitative factors
- 2.4. Non-Recycled Water Alternatives: Define fresh water alternative(s) and No Project Alternative, Compare with recycled water alternatives
- 3. Initial Hydrogeologic Evaluation
 - 3.1. Hydrogeologic Characterization
 - 3.2. Preliminary Feasibility Analysis
- 4. Focused Hydrogeologic Evaluation
 - 4.1. (scope to be determined based on the initial hydrogeologic evaluation results
- 5. Recommended Project
 - 5.1. Recommended Project Description: Facilities, cost, customers
 - 5.2. Implementation Plan (includes Construction Financing Plan): Prepare schedule and describe its components: permitting, environmental documentation, design, institutional coordination, funding / financing, operations

15. Project Schedule

The project schedule will be dependent on the selected Recommended Project and will be defined as part of the Implementation Plan to be included in the Groundwater Augmentation Facilities Plan.

16. References

MWD UWMP, 2017. Montecito Water District. 2015 Urban Water Management Plan Update.

Montecito Water District Water Recycling Funding Program Planning Grant Application Attachments 2 to 5

Attachment 2 - Authorizing Resolution/ Ordinance

The authorizing resolution is scheduled for approval by the District's Board of Directors on March 18, 2019

Attachment 3 – Compliance with the Division of Financial Assistance Water Conservation Plan requirements

The District is a signatory to the California Urban Water Conservation Council (CUWCC).

Attachment 4 – Proof of Submittal of an Urban Water Management Plan to the Department of Water Resources

The District submitted its 2015 UWMP on May 22, 2017.

Attachment 5 – Proof of Compliance with Demand Management Measures and Best Management Practices

The District submitted its 2015 UWMP on May 22, 2017 and is a signatory to the CUWCC.

MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 5-D

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: GENERAL MANAGER

SUBJECT: DISASTER-RELATED REPAIR PROJECT – BID EVALUATION AND

AWARD RECOMMENDATION FOR WATERMAIN REPAIR AT PARRA

GRANDE BRIDGE

RECOMMENDATION:

That the Board of Directors approve the award of a construction contract to Tierra Contracting in the amount of \$119,350 for the Water Main Repair at Parra Grande Bridge (Disaster Related Repair Project), and authorize the execution of the contract and other necessary documents for the work.

DISCUSSION:

The subject project involves the reconstruction of a water main located at the Parra Grande Bridge (Montecito Creek at East Valley Lane) that was destroyed as a result of the January 9 debris flow disaster. This project qualifies for reimbursement by FEMA.

The competitive bidding process for this project concluded on March 15, 2019. Table 1 below provides a summary of the bid results.

Table 1: Bid Results

| Contractor | Bid Price |
|--------------------|-----------|
| Tierra Contracting | \$119,350 |
| Lash Construction | \$132,285 |

Staff recommends awarding the contract for this project to Tierra Contracting, the lowest responsive bidder, in the amount of \$119,350. Prior to beginning work on this permanent repair project, a contract must be awarded and executed. Staff will use construction contracts previously approved by the Board of Directors.

FISCAL IMPACT:

In accordance with CalOES (FEMA) processes, the District must fund project-related expenses initially before requesting and receiving reimbursement. \$2.8 M of the total estimated \$5.5 M FEMA reimbursable projected expense has been obligated by FEMA. This means FEMA has reviewed the project, deemed it eligible for funding, and the District can submit a request for reimbursement from CalOES (FEMA) immediately following completion of the work.

The District's payment of project-related expenses over the next several months could have a short-term negative impact on cash flow. Payments will be made using operating revenues and if needed, unrestricted cash reserves. This shortfall will be remedied once CalOES (FEMA) provides payment to the District for the completed work. A request for reimbursement for completed work can be made as-needed. Based on District experience, total reimbursement time from date of invoice submittal to CalOES to the date of check receipt is 60 days. Staff will remain diligent in the timely submittal of FEMA-related invoices to CalOES (FEMA). During this same period, it is possible that reimbursement for some of the "emergency work", could be received, which would greatly improve cash flow.

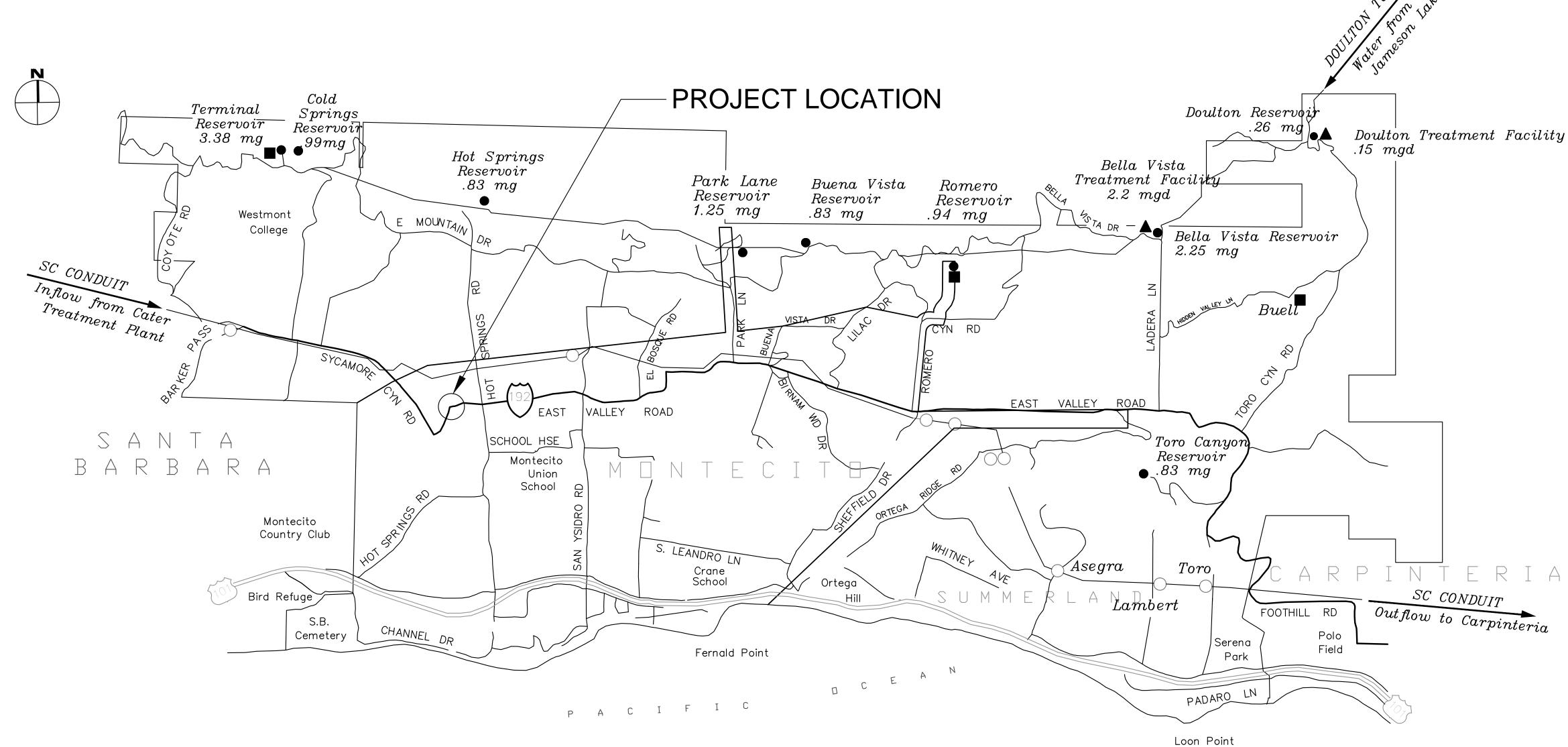
SCHEDULE:

The schedule for construction is dependent upon Caltrans' construction schedule for completion of the bridge. District water main work is expected to require 7-14 days of construction. The project will likely be completed by mid-May 2019. The District has been and will continue to coordinate with other utilities including Caltrans and the Gas Company for this project.

PARRA GRANDE BRIDGE WATER MAIN REPLACEMENT PROJECT

MONTECITO WATER DISTRICT





DRAWING INDEX

| SHEET | DESCRIPTION |
|-------|------------------|
| 1 | TITLE SHEET |
| 2 | NOTES |
| 3 | PLAN AND DETAILS |
| 4 | BRIDGE PLAN |
| 5 | BRIDGE PROFILE |
| 6 | BRIDGE DETAILS |

WATER DISTRICT

JGE MAIN REPLACEMENT

MONTECITO WATER DISTRICT STANDARDS

- 1. CONTRACTOR SHALL MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CONSTRUCTION CHANGES NOT SHOWN IN THESE PLANS AND SPECIFICATIONS FOR RECORD DRAWING INFORMATION. NO CHANGES IN CONSTRUCTION SHALL BE MADE WITHOUT PRIOR WRITTEN CONSENT OF THE DISTRICT'S ENGINEER OR DESIGNATED INSPECTOR.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE DISTRICT PROJECT REPRESENTATIVE UPON THE DISCOVERY OF, AND PRIOR TO DISTURBING, ANY PHYSICAL CONDITIONS WHICH DIFFER FROM THOSE REPRESENTED IN THESE PLANS AND SPECIFICATIONS.
- 3. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE IN EFFECT CONTINUOUSLY DURING THE CONSTRUCTION PERIOD AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- 4. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR PROTECTION OF PUBLIC AND PRIVATE PROPERTY IN THE VICINITY OF THE JOB SITE AND FURTHER AGREES TO REPAIR OR REPLACE ALL EXISTING IMPROVEMENTS DAMAGED DURING THE COURSE OF CONSTRUCTION TO A CONDITION EQUAL TO OR BETTER THAN THAT PRIOR TO BEING DISTURBED. COSTS ASSOCIATED WITH REPAIR OR REPLACEMENT OF DAMAGED PUBLIC OR PRIVATE PROPERTY WHICH ARE CAUSED DUE TO CONTRACTOR'S NEGLIGENCE SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 5. AN EFFORT HAS BEEN MADE TO DEFINE THE LOCATION OF EXISTING UNDERGROUND FACILITIES WITHIN THE JOB SITE. HOWEVER. ALL EXISTING UTILITY AND OTHER UNDERGROUND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS AND THEIR SHOWN LOCATION IS APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND FACILITIES INCLUDING SERVICE CONNECTIONS WHICH MAY BE AFFECTED DURING THE COURSE OF CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING UNDERGROUND SERVICES ALERT AT 811 A MINIMUM OF 48 HRS PRIOR TO THE START OF EXCAVATION.
- 6. UNLESS OTHERWISE SPECIFIED HEREIN, ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AWWA C600 AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE GREEN BOOK) LATEST EDITION EXCEPT AS MODIFIED BY THE MONTECITO WATER DISTRICT'S LATEST APPOVED STANDARD SPECIFICATIONS FOR THE INSTALLATION OF WATER MAINS AND THE CONSTRUCTION STANDARD DRAWINGS.
- 7. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS INCLUDING ALL REQUIREMENTS OF THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY.
- 8. CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS AND CONDITIONS OF THE ENTITY HAVING JURISDICTION OVER RIGHT OF WAY ENCROACHMENT PERMITS.
- 9. CONTRACTOR SHALL CONTACT THE MONTECITO WATER DISTRICT'S ENGINEERING DEPT AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION AT (805) 969-2271
- 10. ALL PIPE SHALL CONFORM WITH THE LATEST REVISIONS OF AWWA STANDARDS C104, C105, C110, C111, C151, AND C600.
- 11. PIPE JOINTS SHALL BE MECHANICAL OR PUSH ON TYPE FLEXIBLE JOINT EMPLOYING A SINGLE GASKET TO EFFECT A WATERTIGHT SEAL. THE JOINT SHALL CONFORM WITH THE LATEST REVISIONS OF STANDARDS A.N.S.I. A21.11 AND AWWA C-111.
- 12. ALL PIPE SHALL BE CEMENT MORTAR LINED PER AWWA C-104 AND HAVE A SEAL COAT. ALL PIPE SHALL BE ASPHALTIC COATED PER AWWA C-151. ALL PIPE FITTINGS SHALL CONFORM WITH THE LATEST REVISIONS OF STANDARDS A.N.S.I. A21.10 AND AWWA C-153 AND SHALL BE CEMENT LINED.
- 13. ALL VALVES SHALL BE MUELLER RESILIENT-SEAT GATE VALVES OR APPROVED EQUAL WITH MECHANICAL JOINT ENDS, EXCEPT FOR FIRE HYDRANT CONTROL VALVES WHICH SHALL BE PER CONSTRUCTION STD DWG NO 102. THE VALVE BODY AND VANE SHALL BE COATED WITH MANUFACTURER'S FACTORY-APPLIED EPOXY.
- 14. ALL DUCTILE IRON PIPE, FITTINGS AND VALVES SHALL BE WRAPPED W/8 MIL POLYETHYLENE ENCASEMENT PER AWWA C105, UNLESS ABOVE GROUND.
- 15. ALL BENDS AND OTHER FITTINGS SHALL HAVE CONCRETE THRUST BLOCKS CONSTRUCTED PER CONSTRUCTION STANDARD DRAWING NO. 113.
- 16. ALL MECHANICAL JOINT FITTINGS SHALL BE INSTALLED WITH MEGALUG RETAINING GLANDS OR APPROVED EQUAL.
- 17. ALL VALVE BOX COVERS SHALL BE ADJUSTED TO FINISH GRADE. ALL METER BOXES LOCATED IN WALKWAYS SHALL BE CAREFULLY ADJUSTED TO FINISH GRADE TO PROVIDE A FLUSH, UNIFORM SURFACE WITH THE WALKWAY.
- 18. WATERLINE PRESSURE TESTING & DISINFECTION SHALL BE IN ACCORDANCE WITH AWWA REQUIREMENTS. PRESSURE TEST SHALL BE AT 1.5 X EXISTING STATIC PRESSURE FOR A FOUR (4) HOUR DURATION.
- 19. ALL NEW WATER MAIN CONSTRUCTION SHALL NOT BE INSTALLED IN A COMMON TRENCH WITH OTHER PUBLIC OR PRIVATE UTILITIES UNLESS APPROVED IN WRITING BY THE DISTRICT.
- 20. SEPARATION OF WATER MAINS AND SANITARY SEWERS SHALL BE IN ACCORDANCE WITH THE "CALIFORNIA WATERWORKS STANDARDS", SECTION 64630, TITLE 22 OF THE CALIFORNIA ADMINISTRATIVE CODE AND THE CALIFORNIA STATE HEALTH DEPARTMENT'S "CRITERIA FOR SEPARATION OF WATER MAINS AND SANITARY SEWERS.
- 21. VERTICAL SEPARATION OF WATER MAINS FROM OTHER UTILITIES EXCEPT FOR SANITARY SEWERS SHALL BE A MINIMUM OF 12 INCHES CLEARANCE BELOW DISTRICT PIPELINE. PROPOSED CONSTRUCTION THAT DOES NOT MEET THIS STANDARD SHALL BE SUBMITTED TO DISTRICT FOR APPROVAL.
- 22. ALL WATER VALVE RISERS SHALL BE CONSTRUCTED PER MWD CONSTRUCTION STD DRAWING 112, INCLUDING TYLER LIDS.
- 23. ALL FIRE HYDRANT INSTALLATIONS SHALL BE CONSTRUCTED PER MWD CONSTRUCTION STD DRAWING 102 AND SHALL INCLUDE INSTALLATION OF TWO (2) GUARD POSTS TO BE CONSTRUCTED PER MWD CONSTRUCTION STD 114.
- 24. INSTALL EBAA IRON MEGALUG SERIES 1100 RETAINING GLANDS AT ALL MECHANICAL JOINT FITTINGS AND VALVES.
- 25. AFTER SUCCESSFUL COMPLETION OF BAC-T AND PRESSURE TEST, AND WITH MWD APPROVAL, CONNECT NEW 12" DIP TO EXISTING 12" WATER LINE.

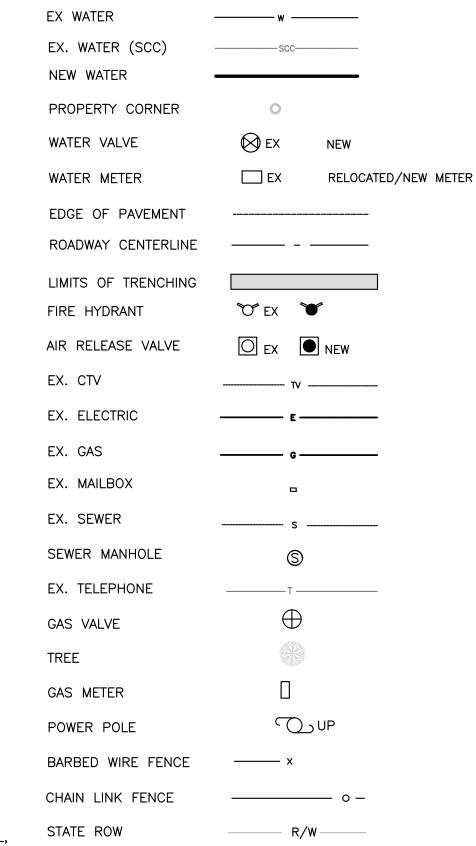
GENERAL NOTES

- 1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, (GREEN BOOK), LATEST EDITION, PUBLISHED BY BUILDING NEWS, INC., LOS ANGELES AND THE NOTES THAT FOLLOW.
- 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL
- 3. WORK DONE IN CONFLICT WITH THESE PLANS WILL BE SUBJECT TO REJECTION.
- 4. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS BETWEEN 8:00 A.M.
- 5. CONTRACTOR SHALL POSSESS A CONTRACTOR'S LICENSE FOR THE STATE OF CALIFORNIA OF A TYPE APPROPRIATE FOR THE WORK AND SHALL FURNISH
- 6. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO (2) FULL
- 7. CONTRACTOR SHALL CONTACT THE FOLLOWING 72 HOURS PRIOR TO

MONTECITO WATER DISTRICT AT 805-969-2271

- 8. UNDERGROUND UTILITIES AND SUBSTRUCTURES AS SHOWN HEREON WERE ALL EXISTING UTILITIES AND SUBSTRUCTURES PRIOR TO CONSTRUCTION. AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADEQUATE BRACING AND SHORING FOR EXCAVATIONS, TEMPORARY STRUCTURES, AND ANY AND ALL PARTIALLY COMPLETED PORTIONS OF THE WORK. SHEETING, SHORING, BRACING OR EQUIVALENT PROTECTION FOR ALL EXCAVATIONS SHALL BE PROVIDED AS REQUIRED BY INDUSTRIAL SAFETY LAWS.
- 10. CONSTRUCTION EQUIPMENT AND MATERIALS ON SITE SHALL BE USED IN SUCH A MANNER AS TO AVOID CREATING A PUBLIC NUISANCE. ROADWAYS AND GRADED AREAS SHALL BE SURFACED OR WETTED SUFFICIENTLY TO PREVENT
- 11. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGE TO PRIVATE AND PUBLIC PROPERTY CAUSED BY HIS ACTIVITIES, AND SHALL REPAIR ALL DAMAGE TO A CONDITION EQUAL TO OR BETTER THAN PRIOR TO ITS DISTURBANCE.

LEGEND



0+00

ABBREVIATIONS

- AND 4:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE APPROVED BY MWD.
- EVIDENCE OF THE SAME AT THE TIME THE CONTRACT IS AWARDED.
- DAYS IN ADVANCE OF COMMENCING CONSTRUCTION AT 811.
- EXCAVATION WORK:
- OBTAINED FROM AVAILABLE SOURCES, THE ACCURACY OF WHICH HAS NOT BEEN DETERMINED. CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF
- THE GENERATION OF EXCESSIVE DUST AT ALL TIMES.

STATION LINE

- = ASPHALT CONCRETE = BELOW FINISHED SURFACE
- = BENCHMARK
- = BUTTERFLY VALVE = CENTER LINE
- CMP = CORRUGATED METAL PIPE
- = CONCRETE
- CONST = CONSTRUCT
- = CABLE TELEVISION
- = DUCTILE IRON PIPE
- DIA = DIAMETER
- = ELEVATION
- = EDGE OF PAVEMENT

= ELECTRICAL

- = EDGE OF ROADWAY
- = EUCALYPTUS
- = EXISTING
- = FOUND = FIRE HYDRAN1
- = FLANGE
- = FROM
- = GAS LINE
- = GALVANIZED
- = GAS METER
- = GRADE
- = GATE VALVE
- = INSIDE DIAMETER
- = LINEAR FEET
- = MAIL BOX
- = MINIMUM
- = MECHANICAL JOINT
- = MONTECITO WATER DISTRICT
- OD = OUTSIDE DIAMETER
- POC = POINT OF CONNECTION
- = POLYVINYL CHLORIDE
- = REINFORCED CONCRETE PIPE
- = SOUTH COAST CONDUIT = SQUARE FEET
- STA = STATION
- = STANDARD
- = THRUST BLOCK
- = TELEPHONE
- = TOP OF PIPE = TOP OF PAVEMENT
- = TELEVISION
- = TYPICAL
- = WATER LINE
- = WITH
- = WATER SERVICE
- = WATER METER

UTILITY CONTACT INFORMATION

MONTECITO WATER DISTRICT 583 San Ysidro Road Santa Barbara, CA 93108

805-969-2271

805-683-5212

MONTECITO SANITARY DISTRICT 1042 Monte Cristo Lane Santa Barbara, CA 93108

805-969-4200 COX COMMUNICATIONS 22 SOUTH FAIRVIEW AVENUE GOLETA, CA 805-683-7751

SOUTHERN CALIFORNIA EDISON 103 DAVID LOVE PLACE GOLETA, CA 93111

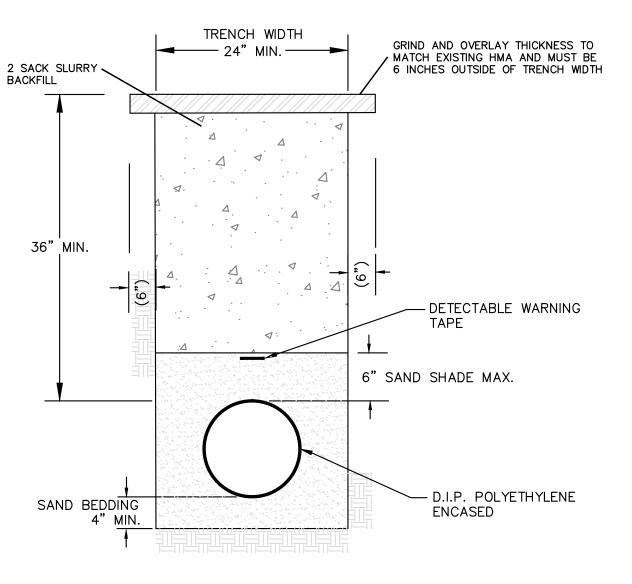
THE GAS COMPANY - DISTRIBUTION PO BOX 818 GOLETA, CA 93116-0818

THE GAS COMPANY - TRANSMISSION 818-701-4546

VERIZON 424 PATTERSON AVENUE GOLETA, CA 931117

805-681-7945

805-967-2865



NOTES:

TRENCH DETAIL CALTRANS ROW

NTS

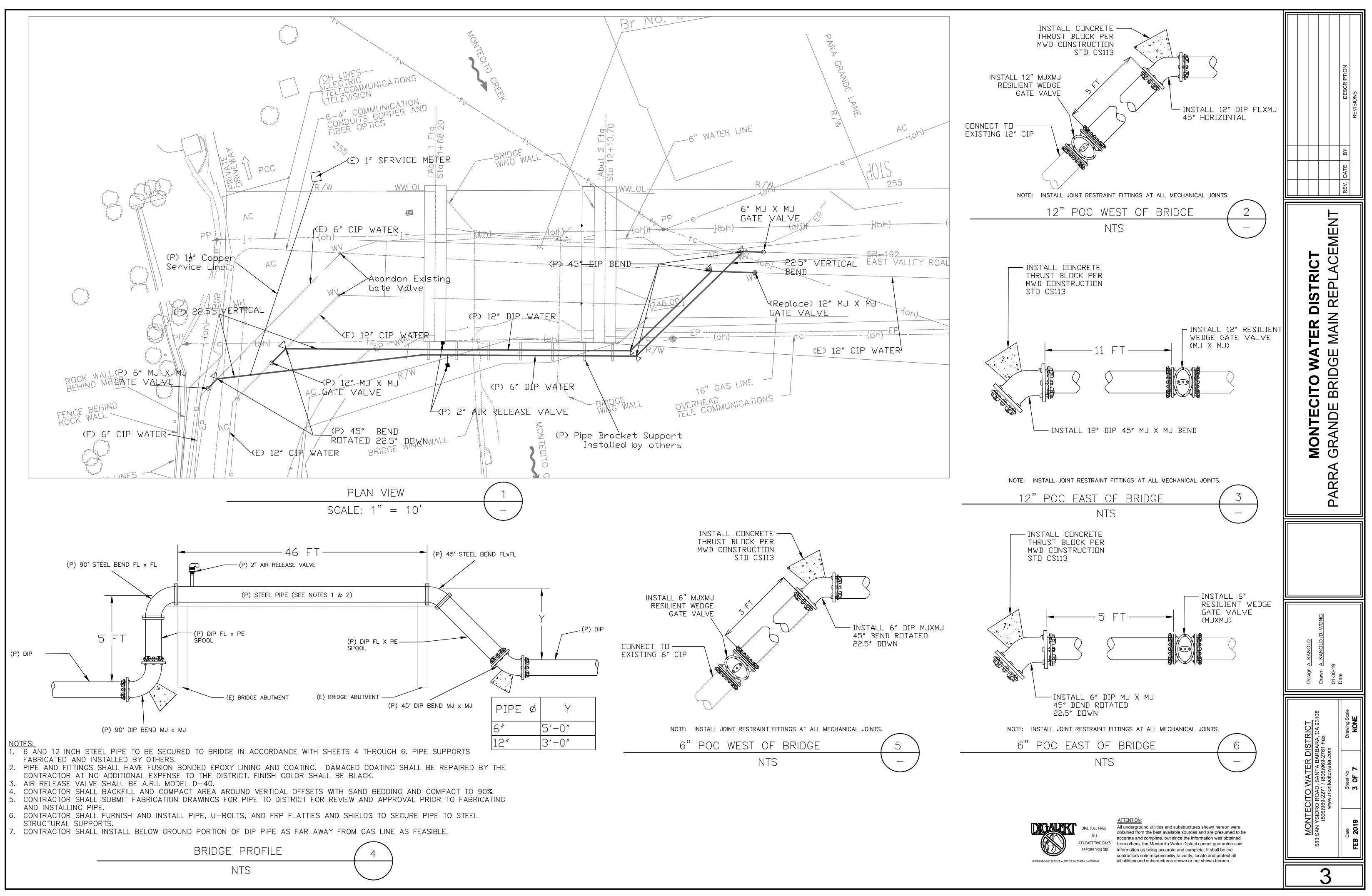
2

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DIAL TOLL FREE

All underground utilities and substructures shown hereon were obtained from the best available sources and are presumed to be accurate and complete, but since the information was obtained AT LEAST TWO DAYS from others, the Montecito Water District cannot guarantee said BEFORE YOU DIG information as being accurate and complete. It shall be the contractors sole responsibility to verify, locate and protect all all utilities and substructures shown or not shown hereon.





MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 5-E

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: BOARD PRESIDENT / GENERAL MANAGER

SUBJECT: DISTRICT SUPPORT OF SB 669 - SAFE DRINKING WATER TRUST

This item was reviewed by the Operations and Customer Relations Committee at their meeting on March 11, 2019 and the Committee concurs with the staff recommendation.

RECOMMENDATION:

That the Board approve the submittal of letter of support for Senate Bill 669 to the members of the California Senate Environmental Quality Committee.

DISCUSSION:

California Senate Bill 669 proposes the creation of a Safe Drinking Water Trust to help community water systems in disadvantaged communities provide safe drinking water. The proposed trust would be funded with General Fund dollars during a state budget surplus year. The principal would be invested and the net income from the Trust would be transferred to a Safe Drinking Water Fund, which the State Water Resources Control Board would administer.

ACWA encourages water districts to support this Senate Bill, as opposed to a statewide water tax, which has been proposed by Governor Newsome.

Attachments:

ACWA Outreach Alert on SB 669 Sample letter of support for SB 669 From: **ACWA** <acwabox@acwa.com> Date: Fri, Feb 22, 2019 at 4:52 PM

Subject: Outreach Alert: Members Urged to Support SB 669 (Caballero) - Safe Drinking Water

Trust To: <floyd1647@gmail.com>



Click here to view it in your browser.



SAFE DRINKING WATER TRUST/DRINKING WATER TAX

Feb. 22, 2019

Members Urged to Support SB 669 (Caballero) - Safe - Drinking Water Trust

Member Agencies Asked to Support ACWA/CMUA-Sponsored Safe Drinking Water Trust Legislation and Maintain Opposition to Proposed Statewide Water Tax

ACWA is urging members to support SB 669, which would create a Safe Drinking Water Trust that will help community water systems in disadvantaged communities provide access to safe drinking water. ACWA and the California Municipal Utilities Association (CMUA) are sponsoring the bill by

Senator Anna Caballero (D-Salinas).

The Trust would be created in the State Treasury and funded with General Fund dollars during a state budget surplus year. The principal would be invested and the net income from the Trust would be transferred to a Safe Drinking Water Fund, which the State Water Resources Control Board would administer.

This proposal would create a durable funding source for costs associated with operation and maintenance (O&M) and consolidation efforts and would complement existing federal and state funding sources for capital costs. The record budget surplus for the 2019-'20 fiscal year makes this the perfect time to create and fund the Trust.

This solution is a better approach than the statewide water tax, which is being proposed by Gov. Gavin Newsom through budget trailer bill language (very similar to the 2018 budget trailer bill language). ACWA urges members to continue opposition to the proposed water tax, which could also be advanced in a regular bill.

Take Action Now

ACWA is requesting that member agencies take the following actions immediately:

1. Send a Support Letter for SB 669 to the Senate Environmental Quality Committee Members, the Committee's Chief Consultant and the Author. A sample support letter is available for your use. Following are fax numbers for the Committee Members, the Committee's Chief Consultant, and the bill's Author – Senator Caballero.

| Contact | Fax Number |
|--|----------------|
| Senator Benjamin Allen (Chair) | (916) 651-4926 |
| Senator Patricia C. Bates (Vice Chair) | (916) 651-4936 |
| Senator Jerry Hill | (916) 651-4913 |
| Senator Nancy Skinner | (916) 651-4909 |
| Senator Henry Stern | (916) 651-4927 |
| Senator Jeff Stone | (916) 651-4928 |
| Senator Bob Wieckowski | (916) 651-4910 |
| Chief Consultant Gabrielle Meindl | (916) 322-3519 |
| Senator Anna Caballero (cc) | (916) 651-4912 |

2. Send Your Agency's SB 669 Support Letter to Your Local Senator(s) and Assembly Member(s) via a Fax. Legislators' contact information can be found on the California Legislature's website.

3. Contact Your Senator(s) and Assembly Member(s) by phone. Explain why your agency opposes the proposed statewide water tax and supports the Safe Drinking Water Trust in SB 669 as the better approach. Talking points are available for your use.

Please Note: For member agencies that opposed the statewide water tax budget trailer bill in 2018, ACWA plans to continue using your organization's name on coalition letters opposing the 2019 statewide water tax budget trailer bill (and any policy bills that are amended to include the proposal) which has essentially the same proposed water tax provisions.

- **4. Send an Electronic Copy of the Letter to ACWA.** Please send electronic copies of your letter to outreach@acwa.com and sorenn@acwa.com.
- **5. Testify at Upcoming Hearings.** Please plan to have an agency representative testify in opposition to the proposed statewide water tax budget trailer and in support of the Trust bill as a better approach at the following two hearings:
 - 1. Assembly Budget Subcommittee No. 3, Wed., March 20, 3:30 p.m., State Capitol Room 447
 - 2. Senate Budget Subcommittee No. 2, Thur., March 21, on adjournment of Senate Floor Session, State Capitol Room 112.

Please provide the information of the person(s) who will be giving brief testimony (e.g., name, agency name, and position) at the hearing by contacting ACWA State Legislative Analyst Soren Nelson at soren@acwa.com

The Senate Environmental Quality Committee hearing date on SB 669 has not been scheduled yet. ACWA will send out a notification when the hearing has been scheduled and will be asking member agencies to testify in support of the bill at the first policy committee hearing.

Updated Toolkit

In addition to the immediate requested actions listed above, ACWA urges its members to use the following updated materials to help educate key audiences about how the proposed Safe Drinking Water Trust would work and the potential negative impacts of the proposed tax.

• Educate Key Audiences. Talk to your customers, news media, local leaders and other key stakeholders about the investments your agency has made to ensure safe drinking water in your community and why these types of investments are often financially out of reach for disadvantaged communities. Educate them about how the Safe Drinking Water Trust would work and the potential negative impacts of a tax on your agency and the customers who would pay it. ACWA has updated the informational

website www.WaterTaxFacts.org and created a new fact sheet and infographic about the Trust.

- Pass a Board Resolution. ACWA members interested in adopting a resolution in support of SB 669 (the Safe Drinking Water Trust) may use this sample resolution.
- Work with ACWA to Place a Local Op-Ed. During the past two years, op-eds have played a critical role in educating Californians about the negative impacts of a proposed drinking water tax. ACWA is writing and coordinating placement of op-eds throughout the state. If you would like to work with ACWA on this effort, please contact ACWA Communications Specialist Will Holbert at (916) 441-4545.
- Educate Using Social Media and Other Platforms. ACWA members are encouraged to share educational messages on their social media accounts, websites, newsletters, or other platforms. ACWA has created sample social media posts for your use.

These tools and other resources have been posted on ACWA's website at www.acwa.com/trust. Log-in is required to access members-only tools.

Questions

For questions about SB 669 (the Safe Drinking Water Trust) or opposition to a statewide water tax, please contact ACWA Deputy Executive Director for Government Relations Cindy Tuck at (916) 441-4545.

For questions about the toolkit items, please contact ACWA Director of Communications Heather Engel at (916) 441-4545.



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March 19, 2019

The Honorable Monique Limón State Capitol 6031 Sacramento, CA 95814

RE: SB 669 (Caballero): Safe Drinking Water Trust - SUPPORT

Board of Directors

Floyd Wicks President

Tobe Plough
Vice President

Ken Coates

Director

Cori Hayman **Director**

Brian Goebel Director

General Manager and Board Secretary Nick Turner

583 San Ysidro Road Santa Barbara, CA 93108-2124

Ph 805.969.2271 Fax 805.969.7261 Dear Assembly Member Limón,

Montecito Water District supports SB 669 (Caballero), which would create the Safe Drinking Water Trust (Trust) at the state Treasury. The purpose of the Trust would be to provide a durable funding source to help community water systems in disadvantaged communities provide their customers with access to safe drinking water. The Trust is a better approach than a statewide water tax.

There currently exists a funding gap for operation and maintenance (O&M) costs for the treatment of drinking water by community water systems in disadvantaged communities. O&M costs generally cannot be financed with existing federal and state safe drinking water funding sources that are available for capital costs. In some situations, the consolidation of a failing community water system with one or more systems may be the most effective solution. The Safe Drinking Water Trust proposed in SB 669 would provide a durable funding source to provide financial assistance for replacement water as a short-term solution, consolidation and ongoing O&M costs.

The Trust would be funded with an infusion of General Fund dollars during a budget surplus year. With the record budget surplus for the 2019-20 Fiscal Year, this is the perfect year to create and fund the Trust. The state would invest the Trust's principal, and the net income from the Trust would be transferred on an ongoing basis to a Safe Drinking Water Fund that would be administered by the State Water Resources Control Board.

The Trust is a better approach than a statewide water tax because it is not sound policy to tax a resource that is essential to life. Unlike a regressive water tax and

info@montecitowater.com www.montecitowater.com

the associated implementation costs at about 3,000 local water systems, the Trust would not drive up water costs and work against the state's Human Right to Water policy of affordable water.

For the above reasons, Montecito Water District respectfully asks you to vote "Aye" for SB 669.

Sincerely,

Floyd Wicks, President

cc: The Honorable Anna Caballero

MONTECITO WATER DISTRICT MEMORANDUM

SECTION: 6-A

DATE: MARCH 18, 2019

TO: BOARD OF DIRECTORS

FROM: BUSINESS MANAGER

SUBJECT: FEBRUARY 2019 FINANCIAL REPORTS

RECOMMENDATION:

For information and discussion only.

BACKGROUND:

Each month, staff prepares a financial package that contains information comparing actual results against the budget, historical activity and other statistical data in order to identify potential fluctuations and/or trends. The information is reported to the Finance Committee and then to the Board of Directors, on a timely basis, for further discussion and appropriate Board action, if applicable.

Included in this financial package are the **Monthly Financial Statements** which include the <u>Statement of Revenue and Expenditures</u> and accompanying footnotes, the <u>Statement of Net Position</u> and the <u>Statement of Cash Flows</u>. These reports are prepared on an accrual basis and formatted much the same as the Annual Audited Financial Statements. These reports are prepared to provide the Board of Directors and customers with information about the activities and performance of the District during the month using accounting methods similar to those used by private sector companies and consistent with generally accepted accounting principles.

The financial package also includes **Dashboard Reports** which graphically depict various water sales data including water sales by classification, water sales for trailing 12, 24 and 36 months, water sales by tier and several other key trend indicators. The **Water Sales Analysis** and the **Metered Water Sales Report** track current year activity in both units of water sold (acre feet) and metered water sales.

ANALYSIS:

1. WATER SALES ANALYSIS - FEBRUARY 2019

| MONTH TO DATE WATER SALES (AF) | | | | | | | |
|--------------------------------|--------|---------------|----------|---------|--|--|--|
| CLASSIFICATION | ACTUAL | ACTUAL BUDGET | | ANCE | | | |
| CLASSII ICATION | ACTUAL | BODGLI | AF | % | | | |
| Single Family | 76.71 | 173.22 | (96.51) | (55.7%) | | | |
| Multi Family | 3.90 | 3.84 | 0.07 | 1.7% | | | |
| Agricultural | 2.47 | 22.49 | (20.02) | (89.0%) | | | |
| Institutional | 8.54 | 13.78 | (5.24) | (38.0%) | | | |
| Commercial | 14.71 | 16.53 | (1.83) | (11.0%) | | | |
| Non-Potable | 0.22 | 3.09 | (2.87) | (92.9%) | | | |
| Monthly Total | 106.55 | 232.96 | (126.41) | (54.3%) | | | |

| YEAR TO DATE WATER SALES (AF) | | | | | | | |
|-------------------------------|----------|----------|----------|---------|--|--|--|
| CLASSIFICATION | ACTUAL | BUDGET | VARIA | ANCE | | | |
| CLASSII ICATION | ACTUAL | BODGET | AF | % | | | |
| Single Family | 1,785.67 | 1,948.81 | (163.14) | (8.4%) | | | |
| Multi Family | 40.32 | 41.69 | (1.38) | (3.3%) | | | |
| Agricultural | 200.73 | 225.90 | (25.17) | (11.1%) | | | |
| Institutional | 187.57 | 167.38 | 20.19 | 12.1% | | | |
| Commercial | 148.60 | 161.61 | (13.01) | (8.1%) | | | |
| Non-Potable | 77.03 | 98.66 | (21.64) | (21.9%) | | | |
| Yearly Total | 2,439.92 | 2,644.06 | (204.14) | (7.7%) | | | |

A. Water Sales in Acre Feet (AF)

During the month of February 2019, MWD sold 106.6 AF of water to its customers compared to a budgeted amount of 233.0 AF which translates to a budget variance of -126.4 AF or -54.3%. Factors influencing the variance include the cooler weather and 5.7 inches of rain during the month.

B. Sales by Classification

| YEAR TO DATE WATER SALES (\$) | | | | | | | | |
|-------------------------------|--------------|--------------|--------------|---------|--|--|--|--|
| CLASSIFICATION | CURRENT | BUDGET | VARIANCE | | | | | |
| CLASSIFICATION | YTD | YTD | \$ | % | | | | |
| Single Family | \$ 4,616,002 | \$ 4,828,777 | \$ (212,775) | (4.4%) | | | | |
| Multi Family | 94,764 | 98,091 | (3,327) | (3.4%) | | | | |
| Agricultural | 281,022 | 314,823 | (33,801) | (10.7%) | | | | |
| Institutional | 496,186 | 458,401 | 37,785 | 8.2% | | | | |
| Commercial | 409,022 | 437,431 | (28,409) | (6.5%) | | | | |
| Non-Potable | 46,974 | 60,169 | (13,195) | (21.9%) | | | | |
| Adjustments | - | - | - | 0.0% | | | | |
| Monthly Total | \$ 5,943,970 | \$ 6,197,692 | \$ (253,722) | (4.1%) | | | | |

2. STATEMENT OF REVENUE AND EXPENDITURES - FEBRUARY 2019

A. Revenues

Total Revenue YTD as of February 28, 2019 is \$13,187,813 compared to the YTD Budget of \$13,189,382 for a budget variance of -\$1,569 or -0.01%.

| | YTD | YTD | FAVORABLE |
|----------------------------|---------------|---------------|---------------|
| REVENUE | ACTUAL | BUDGET | (UNFAVORABLE) |
| WATER SALES | 5,943,969 | 6,197,691 | (253,722) |
| WSE SURCHARGE | 3,515,954 | 3,636,177 | (120,223) |
| SERVICE CHARGES | 2,841,618 | 2,830,298 | 11,320 |
| WATER AVAILABILITY CHARGE | 180,341 | 172,289 | 8,051 |
| PRIVATE FIRE HYDRANT | 47,774 | 47,441 | 333 |
| LATE CHARGES | 51,923 | 44,848 | 7,075 |
| SERVICE CONNECTION FEES | 28,442 | 21,293 | 7,149 |
| CAPITAL COST RECOVERY FEES | 213,390 | 42,678 | 170,712 |
| INTEREST REVENUE - GENERAL | 160,374 | 133,333 | 27,041 |
| OTHER REVENUE (LOSS) | 190,566 | 47,333 | 143,233 |
| REIMBURSEMENTS | 13,461 | 16,000 | (2,539) |
| TOTAL REVENUE | \$ 13,187,813 | \$ 13,189,382 | (\$ 1,569) |

B. Expenses:

1. JPA Expenses

Total JPA Expenses YTD through February 28, 2019 are \$6,444,325 compared to the YTD budget of \$5,647,062 which is <u>above</u> budget by \$797,263. This variance is due mainly as a result of the COMB budget increasing after the MWD budget was completed \$3,836, payment of the USBR prior year deficits, offset by current year savings \$78,538, additional costs invoiced from Cater \$329,924 and the increased costs from CCWA for the DWR SWP Reach 33A, also offset by current year savings \$384,973.

2. MWD Expenses

Total MWD Expenses YTD as of February 28, 2019 are \$5,012,861 compared to the YTD budget of \$5,073,526 which is <u>below</u> budget by \$60,665. This variance is primarily due to the following factors – **Engineering**, SGMA Study has not incurred expected costs (\$121,844), anticipated Professional Services have not yet been incurred (\$63,207) offset by the Recycled Water Feasibility Study \$82,013 as well as other combined variances of (\$21,054); **Administration**, Legal expenses have been lower than anticipated (\$37,898), Rate Study costs have not been incurred (\$5,374), local water supply negotiations have not been as costly as anticipated (\$174,151) as well as other combined variances of (\$13,177); **Extraordinary Expenses** of \$79,933 for BVTP filtration enhancements, \$47,028 for legal, \$21,912 for District salaries and wages, \$13,660 for lab services and other combined expenses of \$15,630.

ATTACHMENTS:

1) Financial Package - February 2019



BOARD OF DIRECTORS

FINANCIAL REPORTS

For the Month of February 2019

March 18, 2019

MONTECITO WATER DISTRICT STATEMENT OF REVENUE AND EXPENDITURES February 28, 2019

| | MTD | MTD | FAVORABLE |
|---|------------|--------------|---------------|
| REVENUE | ACTUAL | BUDGET | (UNFAVORABLE) |
| WATER SALES | 265,524 | 531,382 | (265,859) |
| WSE SURCHARGE | 156,302 | 233,309 | (77,008) |
| SERVICE CHARGES | 355,779 | 353,787 | 1,992 |
| WATER AVAILABILITY CHARGE | - | 18 | (18) |
| PRIVATE FIRE HYDRANT | 5,992 | 5,930 | 62 |
| LATE CHARGES | 6,127 | 5,606 | 521 |
| SERVICE CONNECTION FEES | - | 3,638 | (3,638) |
| CAPITAL COST RECOVERY FEES | - | - | - |
| INTEREST REVENUE - GENERAL | 23,847 | 16,667 | 7,181 |
| OTHER REVENUE (LOSS) | 157,250 | 5,917 | 151,333 |
| REIMBURSEMENTS | 311 | 2,000 | (1,689) |
| TOTAL REVENUE | \$ 971,132 | \$ 1,158,255 | (\$ 187,122) |
| | | | |
| OPERATING EXPENSE | | | |
| DIRECT EXPENSE | | | |
| JPA OPERATING EXPENSE | | | |
| CACHUMA OPERATIONS & MAINT BOARD (COMB) | 47,697 | 48,661 | 964 |
| CACHUMA CONSERVATION & RELEASE BOARD (CCRB) | 11,588 | 11,589 | 0 |
| US BUREAU OF RECLAMATION (USBR) | 6,717 | 25,576 | 18,859 |
| CATER WATER TREATMENT PLANT | 221,070 | 105,000 | (116,070) |
| STATE WATER PROJECT (SWP) - FIXED | 430,011 | 430,012 | 1 |
| STATE WATER PROJECT (SWP) - VARIABLE | 57,665 | 85,046 | 27,381 |
| SUPPLEMENTAL WATER PURCHASE | - | - | - |
| TOTAL JPA OPERATING EXPENSE | \$ 774,749 | \$ 705,883 | (\$ 68,866) |
| | | | |
| MWD DIRECT EXPENSE | | | |
| JAMESON | 6,913 | 9,106 | 2,193 |
| TRANSMISSION & DISTRIBUTION | 118,593 | 112,426 | (6,167) |
| TREATMENT | 88,469 | 89,826 | 1,358 |
| TOTAL MWD DIRECT EXPENSE | \$ 213,974 | \$ 211,358 | (\$ 2,616) |
| MINE INDIDENT EVENING | | | |
| MWD INDIRECT EXPENSE | 20.050 | | 05.040 |
| ENGINEERING | 29,858 | 55,071 | 25,213 |
| CUSTOMER SERVICE | 30,429 | 26,870 | (3,559) |
| PUBLIC INFORMATION / CONSERVATION | 8,831 | 9,659 | 828 |
| FLEET | 14,801 | 16,550 | 1,749 |
| ADMINISTRATION (incl Depreciation) | 244,023 | 216,017 | (28,006) |
| EXRAORDINARY EXPENSES | 22,437 | | (22,437) |
| TOTAL MWD INDIRECT EXPENSE | \$ 350,378 | \$ 324,167 | (\$ 26,211) |

| | | | | | | Footnote |
|---|------------|----|------------|-----------|------|----------|
| | YTD | | YTD | FAVORAB | LE | |
| | ACTUAL | | BUDGET | (UNFAVORA | BLE) | |
| | 5,943,969 | | 6,197,691 | (253,7 | 22) | (1) |
| | 3,515,954 | | 3,636,177 | (120,2 | | (1) |
| | 2,841,618 | | 2,830,298 | 11,3 | 320 | |
| | 180,341 | | 172,289 | 8,0 |)51 | |
| | 47,774 | | 47,441 | | 333 | |
| | 51,923 | | 44,848 | 7,0 |)75 | |
| | 28,442 | | 21,293 | 7,1 | 149 | (2) |
| | 213,390 | | 42,678 | 170,7 | ′12 | (3) |
| | 160,374 | | 133,333 | 27,0 |)41 | |
| | 190,566 | | 47,333 | 143,2 | 233 | |
| | 13,461 | | 16,000 | (2,5 | 39) | |
| ; | 13,187,813 | \$ | 13,189,382 | (\$ 1, | 569) | l |
| | | | | | | 1 |
| | | | | | | i |
| | | | | | | i |
| | | | | | | i |
| | 393,126 | | 389,290 | (3,8 | 36) | (4) |
| | 92,707 | | 92,708 | , | 1 | ` ′ |
| | 283,146 | | 204,608 | (78,5 | 38) | (5) |
| | 1,169,924 | | 840,000 | (329,9 | 24) | (6) |
| | 3,440,086 | | 3,440,092 | • | 6 | . , |
| | 1,065,337 | | 680,364 | (384,9 | 73) | (7) |
| | | | | • | | . , |
| ; | 6,444,325 | \$ | 5,647,062 | (\$ 797, | 263) | l |
| | , , | Ė | , , | , | | i |
| | | t | | | | i |
| | 72,144 | | 86,751 | 14,6 | 07 | (8) |
| | 1,000,839 | 1 | 950,256 | (50,5 | | (9) |
| | 837,541 | t | 760,350 | (77,1 | | (10) |
| ; | 1,910,524 | \$ | 1,797,357 | (\$ 113, | | (, |
| | 1,010,021 | Ť | 1,101,001 | ψ, | , | i |
| | | t | | | | i |
| | 358,312 | | 482,404 | 124,0 | 92 | (11) |
| | 258,158 | | 249,328 | (8,8 | | l (''') |
| | 75,908 | | 85,291 | | 383 | |
| | 140,291 | | 137,042 | (3,2 | | |
| | 2,091,505 | | 2,322,103 | 230,5 | • | (12) |
| | 178,163 | | _,0,.00 | (178,1 | | (13) |
| : | 3,102,336 | \$ | 3,276,169 | | 832 | (.5) |
| , | 0,102,000 | IΨ | 3,210,103 | Ψ 1/3 | | |

MONTECITO WATER DISTRICT STATEMENT OF REVENUE AND EXPENDITURES February 28, 2019

Footnote

| | | MTD ACTUAL | MTD BUDGET | | | VORABLE AVORABLE) |
|-----------------------------------|-----|---------------|---------------|------------|-----|----------------------|
| TOTAL MWD EXPENSE | \$ | 564,353 | \$ | 535,525 | (\$ | 28,828) |
| | | | | | | |
| TOTAL OPERATING EXPENSE | \$ | 1,339,101 | \$ | 1,241,408 | (\$ | 100,309) |
| NET OPERATING SURPLUS / (DEFICIT) | (\$ | 367,969) | (\$ | 83,153) | (\$ | 284,816) |
| NON OPERATING EXPENSE | | | | | | |
| 2004 DWR ORTEGA LOAN | | - | | - | | - |
| BOND INTEREST EXPENSE | | - | | - | | - |
| CATER DWR LOAN | | - | | - | | - |
| CATER CAPITAL | | - | | (2,631) | | 2,631 |
| CATER OZONE | | - | | - | | - |
| TOTAL NON OPERATING EXPENSE | \$ | - | (\$ | 2,631) | \$ | 2,631 |
| NET OPERATING SURPLUS / (DEFICIT) | (\$ | 367,969) | (\$ | 85,784) | (\$ | 282,185) |
| NET POSITION, BEGINNING OF PERIOD | \$ | 33,367,807 | \$ | 33,701,663 | (\$ | 333,855) |
| NET POSITION, END OF PERIOD | \$ | 32,999,839 | \$ | 33,615,878 | (\$ | 616,040) |

| YTD | | YTD | F.A | VORABLE |
|---------------|-----|------------|------|-----------|
| ACTUAL | | BUDGET | (UNF | AVORABLE) |
| \$ 5,012,861 | \$ | 5,073,526 | \$ | 60,665 |
| | | | | |
| \$ 11,457,186 | \$ | 10,720,588 | (\$ | 849,766) |
| | | | | |
| \$ 1,730,627 | \$ | 2,468,795 | (\$ | 738,168) |
| | | | | |
| | | | | |
| (73,699) | | (76,450) | | 2,751 |
| (345,231) | | (345,231) | | (0) |
| (115,824) | | (115,824) | | - |
| - | | (2,631) | | 2,631 |
| (138,173) | | (138,173) | | - |
| (\$ 672,927) | (\$ | 678,308) | \$ | 5,381 |
| | | | | |
| \$ 1,057,700 | \$ | 1,790,486 | (\$ | 732,786) |
| | | | | • |
| \$ 31,942,137 | \$ | 31,903,426 | \$ | 38,711 |
| | | | | • |
| \$ 32,999,837 | \$ | 33,693,912 | (\$ | 694,075) |

February 28, 2019

FOOTNOTES

- (1) WATER SALES (in AF) MTD UNDER Actual 106.6 and Budget 233.0 = Variance -126.4; YTD UNDER Actual 2,439.9 and Budget 2,644.1 = Variance -204.2;
- (2) SERVICE CONNECTION FEES MTD UNDER by 4k Additional connections did not occur during the month; YTD OVER by \$7k Additional connections and relocations
- (3) CAPITAL COST RECOVERY YTD OVER by \$171k Additional new meter installations above budget
- (4) COMB MTD UNDER by \$1k & YTD OVER by \$4k Received a credit from COMB to offset the budget assessments added after MWD's budget was approved and accepted
- (5) <u>USBR</u> MTD UNDER by \$19k 1st period payment (10/1/18 3/30/19) was \$85,933 vs \$153,454 budgeted YTD Over \$79k - USBR Deficit payments (\$179k) offset by reduced new monthly amortization of actual charges received
- (6) <u>CATER WTP</u> MTD OVER by \$116k MWD was responsible for 70% of Q2 2019 O&M charges at Cater based on proportiante delivery of water YTD OVER by \$330k - Anticipated actual billings are higher than budgeted amounts, Cater Capital is included in this amount
- (7) <u>STATE WATER PROJECT (VARIABLE)</u> MTD UNDER by 27k Monthly amounts are under budget YTD OVER by \$385k - 1st of 2 payments of \$517k for increase in CCWA (DWR SWP) charges offset by reduced monthly amounts
- (8) JAMESON YTD UNDER by \$15k Repairs and Maintenance (\$6k), Outside Services (\$3k), Benefits (\$3k), Supplies (\$2k)
- (9) TRANSMISSION & DISTRIBUTION MTD OVER by 6k Supplies \$6k

YTD OVER by \$44k - Repairs and Maint (inventory) \$30k, Utilities (timing) \$14k, Supplies \$6K, Professional Training (under) (\$3k), Road and paving (under) (\$3k)

- (10) TREATMENT MTD UNDER by \$2k Utilities (timing) (under) (\$2k)

 YTD OVER by \$77k Utilities (timing) \$20k, Repairs & Maint. \$11k, Chemicals \$15k (will grow, reimbursments from CVWD budgeted as revenue), and Outside Services \$10k, Supplies \$8k, Salaries & Benefits \$13k
- (11) ENGINEERING MTD UNDER by \$25k SGMA (timing) (\$17k), Professional Services (timing) (\$6k), Salaries and Benefits (\$7k), Outside Services (OVER) \$5k
 YTD UNDER by \$124k SGMA (timing) (\$121k), Professional Services (\$63k), Salaries & Benefits (\$42k) Recycled Water Feasibility Study (anticipate \$75k grant funding to offset costs) (OVER) \$82k
 and Outside Services (OVER) \$24k
- (12) <u>ADMINISTRATION</u> MTD OVER by \$28k Local Water Supply Negotiations (timing) \$22k, Legal \$10k, Outside Services (OVER) \$4k

 YTD UNDER by \$231k Legal (\$37k), Local Water Supply Negotiations (timing) (\$174k), Benefits (\$27k) and Rate Study(timing) (\$5k), Outside Services (OVER) \$14k
- (13) EXTRAORDINARY EXPENSES MTD \$22k Legal \$13k, Salaries and Benefits \$8k

 YTD \$178K BVTP filtration enhancements \$80k, Legal \$47k, Lab Services \$14k, Salaries & Benefits \$22k Professional Services \$8k, Repairs and Maintenance \$4k

MONTECITO WATER DISTRICT **STATEMENT OF NET POSITION - UNAUDITED** February 28, 2019

TOTAL COMBINED ASSETS:

| ASSETS | | | | | | | | |
|---------------|---|----|-----------|-----------|----------|------------|------------|--|
| 0 | | | | | | | | |
| Current: | Cash and investments | | | | | | | |
| | Operating accounts | | | | | | | |
| | Board reserves: | | | | | | | |
| | Reserve for Operations | \$ | 3,400,000 | | | | | |
| | Reserve for Emergencies | Ś | 1,000,000 | | | | | |
| | Reserve for Unanticipated Projects | Ś | 1,000,000 | | | | | |
| | 1000 To Onumorpatou 110,0000 | | \$ | 5,400,000 | | | | |
| | | | | | | | | |
| | Unreserved Cash | | \$ | 7,820,955 | _ | | | |
| | Total unrestricted cash and investments | | | | \$ | 13,220,955 | | |
| | Restricted - cash and investments | | | | \$ | 3,501,107 | | |
| | Total Cash (unrestricted & restricted) | | | | | | 16,722,062 | |
| | Other Investments - Semitropic Shares | | | | \$ | 1,924,510 | 1,924,510 | |
| | Receivables: | | | | | | | |
| | Accounts receivable - water sales & services, net | | | | \$ | 820,293 | | |
| | Accounts receivable - other | | | | \$ | 8,413 | | |
| | Accrued Interest | | | | \$ | 20,503 | | |
| | FEMA Reimbursable | | | | \$ | 4,950 | | |
| | ACWA/JPIA receivable | | | | \$ | (995,027) | | |
| | Materials and supplies inventory | | | | \$ | 303,878 | | |
| | Prepaid water charges (SWP and other prepaid water) | | | | \$ | 5,000,148 | | |
| | Prepaid expenses and other deposits | | | | \$ | 196,226 | | |
| | Total Current Assets | | | | | | 5,359,384 | |
| Noncurren | t: | | | | | | | |
| | Capital assets - not being depreciated | | | | \$ | 1,900,191 | | |
| | Capital assets - being depreciated, net | | | | Ś | 30,646,336 | | |
| | Total Noncurrent Assets | | | | <u> </u> | • | 32,546,526 | |
| DEFERRE | O OUTFLOWS OF RESOURCES | | | | | | | |
| | Deferred pensions | | | | Ś | 1,395,169 | | |
| | Total Deferred Outflows of Resources | | | | <u> </u> | 1,395,169 | 1,395,169 | |
| | Total Deletted Outilows of Resources | | | | | • | 1,333,103 | |

57,947,651

MONTECITO WATER DISTRICT STATEMENT OF NET POSITION - UNAUDITED

February 28, 2018 (Continued)

LIABILITIES

| Current: | | | |
|---|------------------|------------------|---------------|
| Accounts payable and accrued expenses | \$ 2,895 | | |
| Accrued wages and related payables | \$ 1,185 | | |
| Unearned revenue and other deposits | \$ 84,702 | | |
| Accrued interest payable | \$ - | | |
| Long-term liabilities - due within one year: | | | |
| Accrued compensated absences | | | |
| Bonds Payable | \$ - | | |
| Loan Payable | \$ 582,092 | | |
| Total Current Liabilities | | \$ 670,874 | |
| | | | |
| Noncurrent: | | | |
| Accrued compensated absences | \$ 394,753 | | |
| Accrued water exchange transfer | \$ - | | |
| Bonds payable | \$ 13,360,000 | | |
| Loan payable | \$ 5,643,479 | | |
| Other post-employment benefits payable | \$ 1,741,357 | | |
| Net pension liability | \$ 4,469,835 | | |
| Total Noncurrent Liabilities | | \$ 25,609,425 | |
| Total Liabilities | • | \$ 26,280,298 | |
| DEFERRED INFLOWS OF RESOURCES | | | |
| Deferred pensions | \$ 517,403 | | |
| Total Deferred Inflows of Resources | · | \$ 517,403 | |
| NET POSITION | | | |
| | | | |
| Net investment in capital assets | \$ 12,072,809 | | |
| Restricted | \$ 3,501,107 | | |
| Unrestricted | \$ 15,576,033 | | |
| Total Net Position | | \$ 31,149,949 | |
| TOTAL COMBINED LIABILITIES, DEFERRALS AND NET POSITION: | | : | \$ 57,947,651 |

MONTECITO WATER DISTRICT STATEMENT OF CASH FLOWS - UNAUDITED February 28, 2019

| <u></u> | MTD | | YTD |
|--|-----------------|-----------|-------------|
| Operating Income (loss) | \$ (391,816) | \$ | 1,570,252 |
| Adjustments to reconcile operating (loss) to net | • • • | | |
| cash provided by operating activities: | | | |
| Depreciation | 99,142 | | 795,854 |
| Change in assets, deferred outflows of resources, | | | |
| liabilities, and deferred inflows of resources: | | | |
| Accounts receivable | 330,612 | | 2,586,851 |
| Materials and supplies inventory | (285) | | 59,051 |
| Prepaid water charges | 343,679 | | 3,815,616 |
| Prepaid expenses and other deposits | 39,208 | | (82,968) |
| Accounts payable | (1,542) | | (904,308) |
| Accrued wages and related payables | 6,792 | | (53,067) |
| Unearned revenue and other deposits | (1,200) | | (2,927) |
| Accrued water exchange transfer | - | | - |
| Compensated absences | 782 | | 25,548 |
| Net cash provided (used) by operating activities | \$ 425,372 | _\$ | 8,669,004 |
| CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES | | | |
| Acquisition and construction of capital assets Interest Payable | (94,943) | \$ | (1,955,316) |
| Net cash provided (used) by capital financing and related activities | \$ (94,943) | \$ | (1,955,316) |

MONTECITO WATER DISTRICT STATEMENT OF CASH FLOWS - UNAUDITED February 28, 2018 (Continued)

| CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES | | | | |
|--|----|-------------------------|------|-------------------------|
| | | MTD | | YTD |
| Ortega Interest | \$ | - | \$ | (73,699) |
| Bond Interest | | - | | (345,231) |
| Cater DWR Loan | | - | | 105,686 |
| Cater Capital | | - | | - |
| Cater Ozone | | | | (138,173) |
| Net cash provided (used) by noncapital financing activites | \$ | - | _\$_ | (451,417) |
| CASH FLOWS FROM INVESTING ACTIVITIES | | | | |
| Interest earnings | \$ | 23,847 | \$ | 160,373 |
| Purchase of underground water banking shares | \$ | - | \$ | (1,294,510) |
| i dicitase of different water building states | Ψ | | | (1,234,010) |
| Net cash provided by (used) by investing activities | \$ | 23,847 | \$ | (1,134,137) |
| NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS | \$ | 353,175 | \$ | 5,128,134 |
| Cash and cash equivalents, beginning of period | \$ | 16,368,887 | _\$_ | 11,593,928 |
| Cash and cash equivalents, end of period | \$ | 16,722,062 | \$ | 16,722,062 |
| RECONCILIATION TO STATEMENT OF NET POSITION: | | | | |
| Cash and investments - cash equivalents Restricted cash and investments - cash equivalents | \$ | 13,220,955 3,501,107 | \$ | 13,220,955 3,501,107 |
| | \$ | 16,722,062 | \$ | 16,722,062 |



DASHBOARD REPORT WATER SALES (AF)

| M | MONTH TO DATE WATER SALES (AF) | | | | | | | | | | | |
|-----------------|--------------------------------|--------|----------|---------|--|--|--|--|--|--|--|--|
| CLASSIFICATION | ACTUAL | BUDGET | VARIA | ANCE | | | | | | | | |
| CLASSII ICATION | ACTUAL | BODGLI | AF | % | | | | | | | | |
| Single Family | 76.71 | 173.22 | (96.51) | (55.7%) | | | | | | | | |
| Multi Family | 3.90 | 3.84 | 0.07 | 1.7% | | | | | | | | |
| Agricultural | 2.47 | 22.49 | (20.02) | (89.0%) | | | | | | | | |
| Institutional | 8.54 | 13.78 | (5.24) | (38.0%) | | | | | | | | |
| Commercial | 14.71 | 16.53 | (1.83) | (11.0%) | | | | | | | | |
| Non-Potable | 0.22 | 3.09 | (2.87) | (92.9%) | | | | | | | | |
| Monthly Total | 106.55 | 232.96 | (126.41) | (54.3%) | | | | | | | | |

| Y | YEAR TO DATE WATER SALES (AF) | | | | | | | | | | | |
|----------------|-------------------------------|----------|----------|---------|--|--|--|--|--|--|--|--|
| CLASSIFICATION | ACTUAL | BUDGET | VARI | ANCE | | | | | | | | |
| CLASSIFICATION | ACTUAL | BODGET | AF | % | | | | | | | | |
| Single Family | 1,785.67 | 1,948.81 | (163.14) | (8.4%) | | | | | | | | |
| Multi Family | 40.32 | 41.69 | (1.38) | (3.3%) | | | | | | | | |
| Agricultural | 200.73 | 225.90 | (25.17) | (11.1%) | | | | | | | | |
| Institutional | 187.57 | 167.38 | 20.19 | 12.1% | | | | | | | | |
| Commercial | 148.60 | 161.61 | (13.01) | (8.1%) | | | | | | | | |
| Non-Potable | 77.03 | 98.66 | (21.64) | (21.9%) | | | | | | | | |
| Yearly Total | 2,439.92 | 2,644.06 | (204.14) | (7.7%) | | | | | | | | |

Fiscal Year = July thru June

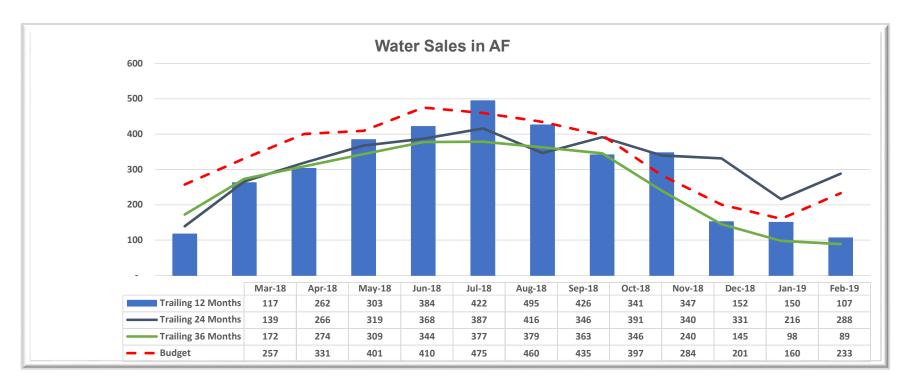


DASHBOARD REPORT WATER SALES (\$)

| MONTH TO DATE WATER SALES (\$) | | | | | | | | | | | |
|--------------------------------|----|---------|----|---------|----|-----------|---------|--|--|--|--|
| CL ACCIFICATION | C | URRENT | | BUDGET | | VARIA | NCE | | | | |
| CLASSIFICATION | | MONTH | | MONTH | | \$ | % | | | | |
| Single Family | \$ | 183,190 | \$ | 403,547 | \$ | (220,357) | (54.6%) | | | | |
| Multi Family | | 9,188 | | 9,032 | | 156 | 1.7% | | | | |
| Agricultural | | 4,963 | | 31,424 | | (26,461) | (84.2%) | | | | |
| Institutional | | 22,284 | | 37,586 | | (15,302) | (40.7%) | | | | |
| Commercial | | 45,765 | | 47,911 | | (2,146) | (4.5%) | | | | |
| Non-Potable | | 133 | | 1,883 | | (1,750) | (92.9%) | | | | |
| Adjustments | | - | - | | | - | 0.0% | | | | |
| Monthly Total | \$ | 265,523 | \$ | 531,383 | \$ | (265,860) | (50.0%) | | | | |

| YEAR TO DATE WATER SALES (\$) | | | | | | | | | | | |
|-------------------------------|--------------|--------------|--------------|---------|--|--|--|--|--|--|--|
| CLASSIFICATION | CURRENT | BUDGET | VARIAI | NCE | | | | | | | |
| CLASSIFICATION | YTD | YTD | \$ | % | | | | | | | |
| Single Family | \$ 4,616,002 | \$ 4,828,777 | \$ (212,775) | (4.4%) | | | | | | | |
| Multi Family | 94,764 | 98,091 | (3,327) | (3.4%) | | | | | | | |
| Agricultural | 281,022 | 314,823 | (33,801) | (10.7%) | | | | | | | |
| Institutional | 496,186 | 458,401 | 37,785 | 8.2% | | | | | | | |
| Commercial | 409,022 | 437,431 | (28,409) | (6.5%) | | | | | | | |
| Non-Potable | 46,974 | 60,169 | (13,195) | (21.9%) | | | | | | | |
| Adjustments | - | - | - | 0.0% | | | | | | | |
| Monthly Total | \$ 5,943,970 | \$ 6,197,692 | \$ (253,722) | (4.1%) | | | | | | | |

Fiscal Year = July thru June



Trailing 12 Months 3,507 AF

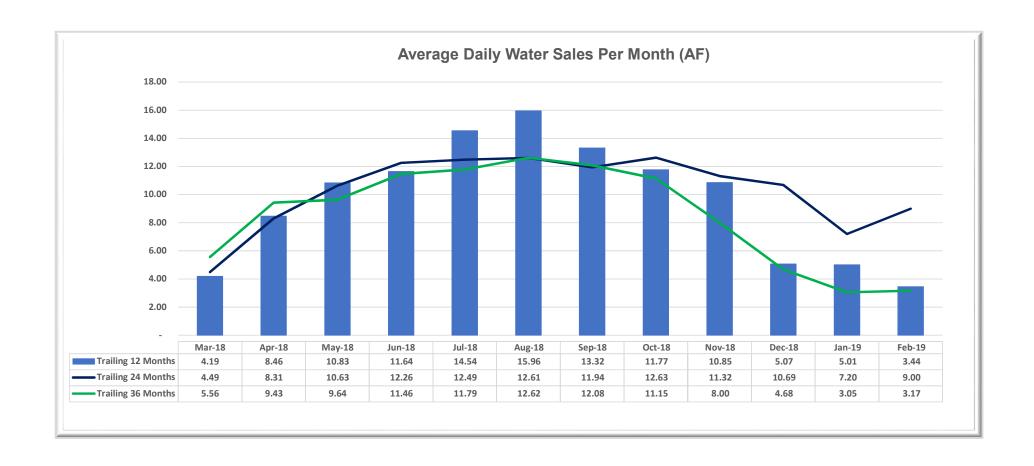
Year Ended 02/28/18 3,808 AF

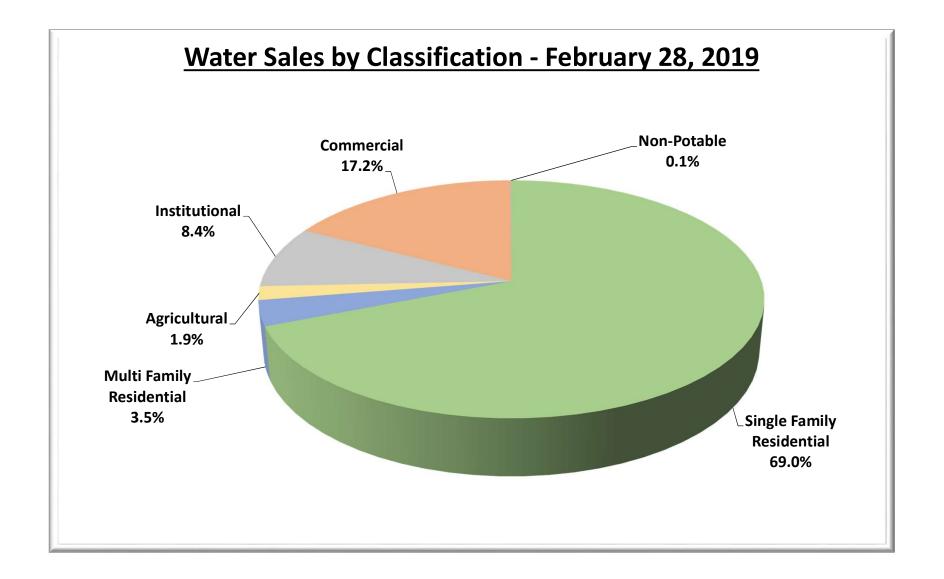
Year Ended 02/28/17 3,133 AF

Budget 4,043 AF

Trailing 12 Months vs. Year Ended 02/28/18: (7.9%)
Trailing 12 Months vs. Year Ended 02/28/17: 11.9%
Trailing 12 Months vs. Budget: (13.3%)



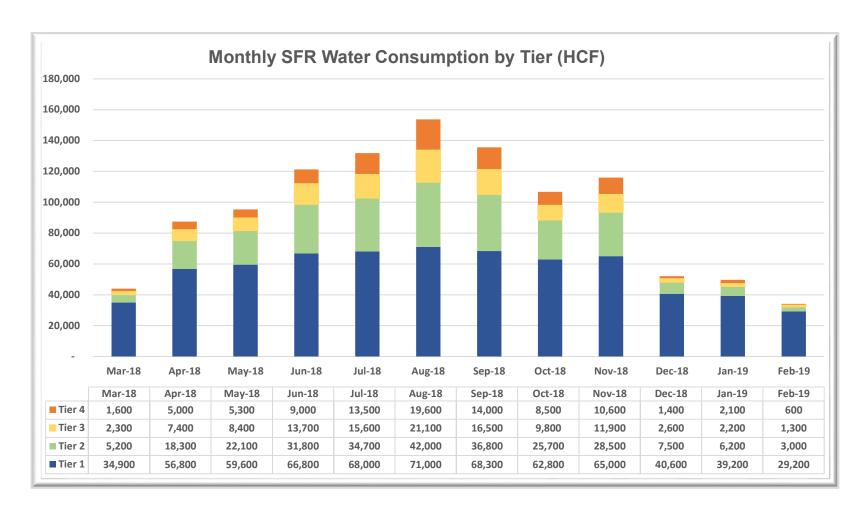






DASHBOARD REPORT SFR CONSUMPTION TRENDS

2/28/2019

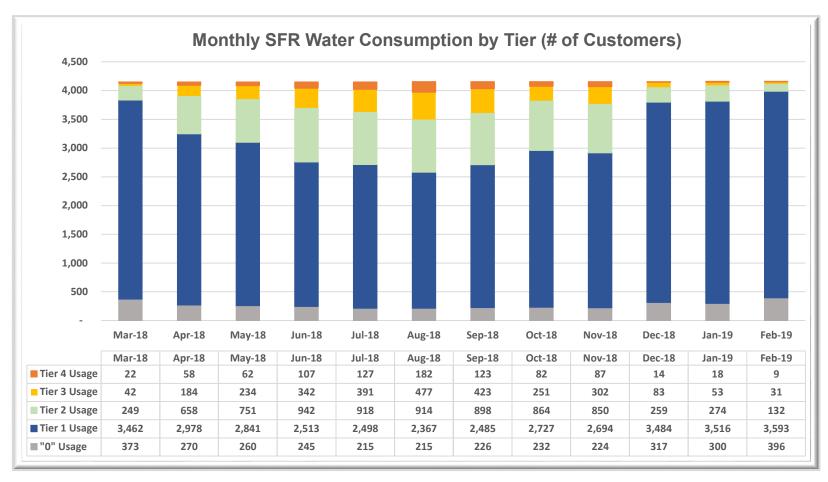


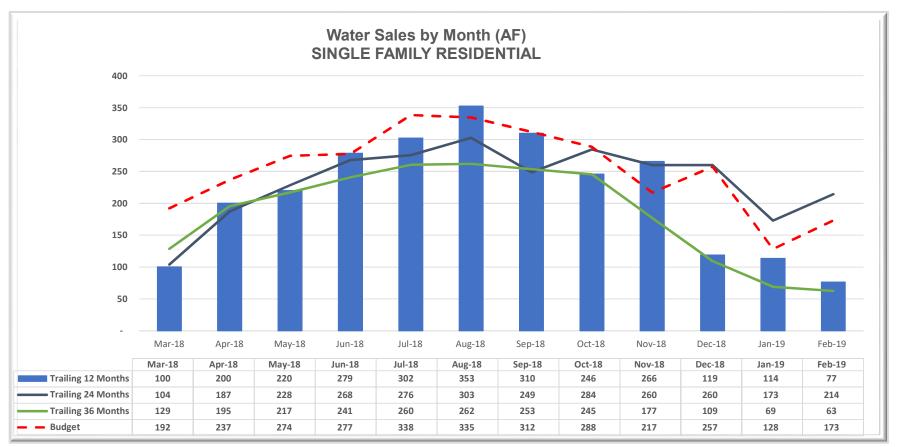


DASHBOARD REPORT SFR CONSUMPTION TRENDS

MONTH ENDING

2/28/2019

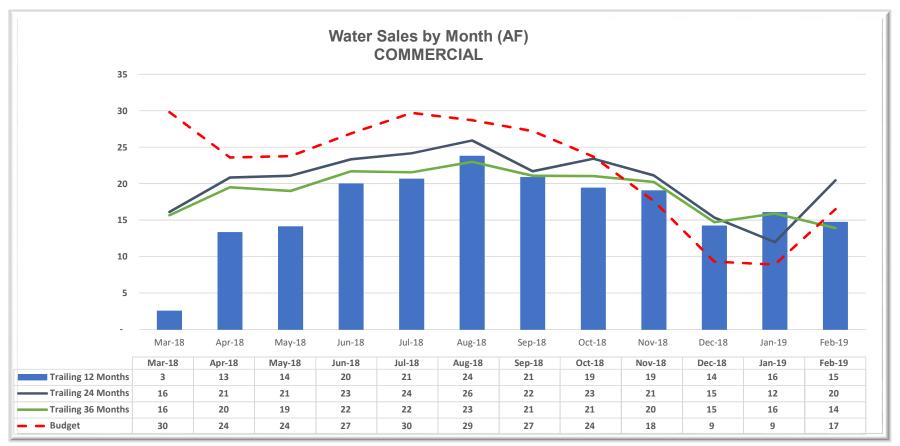




Trailing 12 Months(SINGLE FAMILY RESIDENTIAL) 2,585 AF
Year Ended 02/28/18 (SINGLE FAMILY RESIDENTIAL) 2,805 AF
Year Ended 02/28/17 (SINGLE FAMILY RESIDENTIAL) 2,221 AF
Budget(SINGLE FAMILY RESIDENTIAL) 3,205 AF

Trailing 12 Months vs. Year Ended 02/28/18: (7.8%)
Trailing 12 Months vs. Year Ended 02/28/17: 16.4%

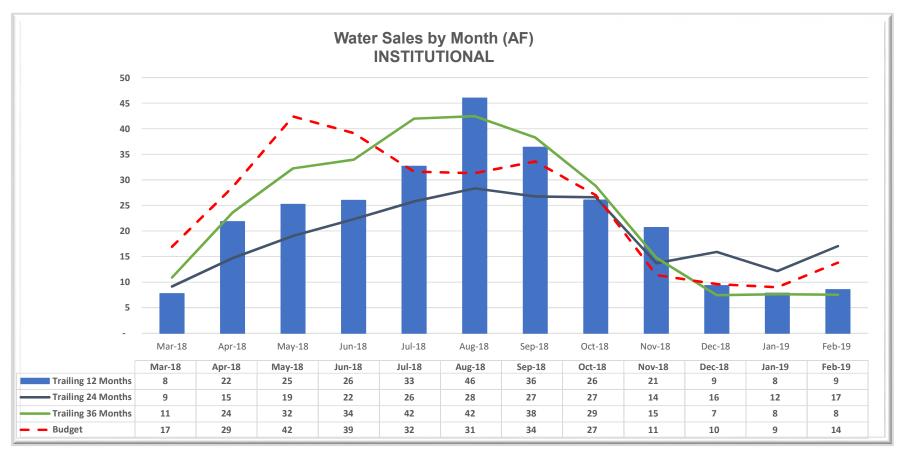
Trailing 12 Months vs. Budget (19.3%)



Trailing 12 Months (COMMERCIAL) 198 AF
Year Ended 02/28/18 (COMMERCIAL) 245 AF
Year Ended 02/28/17 (COMMERCIAL) 227 AF
Budget (COMMERCIAL) 305 AF
Trailing 12 Months vs. Year Ended 02/28/18: (19.2%)

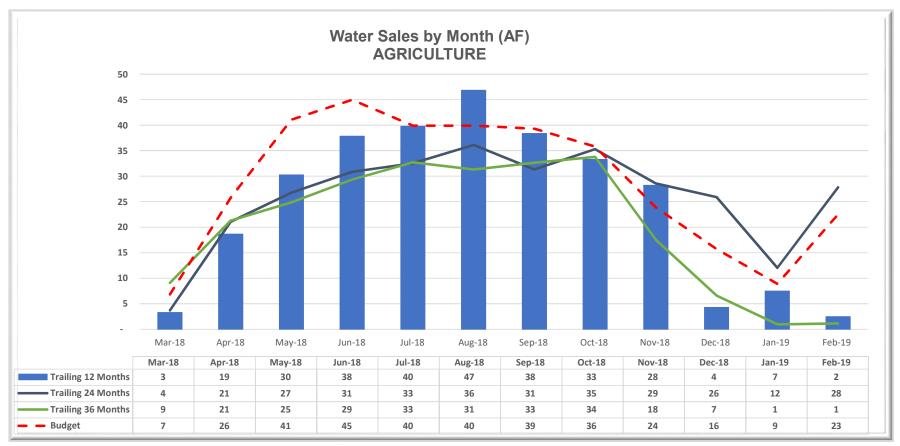
Trailing 12 Months vs. Year Ended 02/28/17: (12.7%)

Trailing 12 Months vs. Budget (34.9%)



Trailing 12 Months (INSTITUTIONAL) 268 AF
Year Ended 02/28/18 (INSTITUTIONAL) 231 AF
Year Ended 02/28/17 (INSTITUTIONAL) 290 AF
Budget (INSTITUTIONAL) 315 AF
Trailing 12 Months vs. Year Ended 02/28/18: 16.0%

Trailing 12 Months vs. Year Ended 02/28/17: (7.3%)
Trailing 12 Months vs. Budget (14.9%)

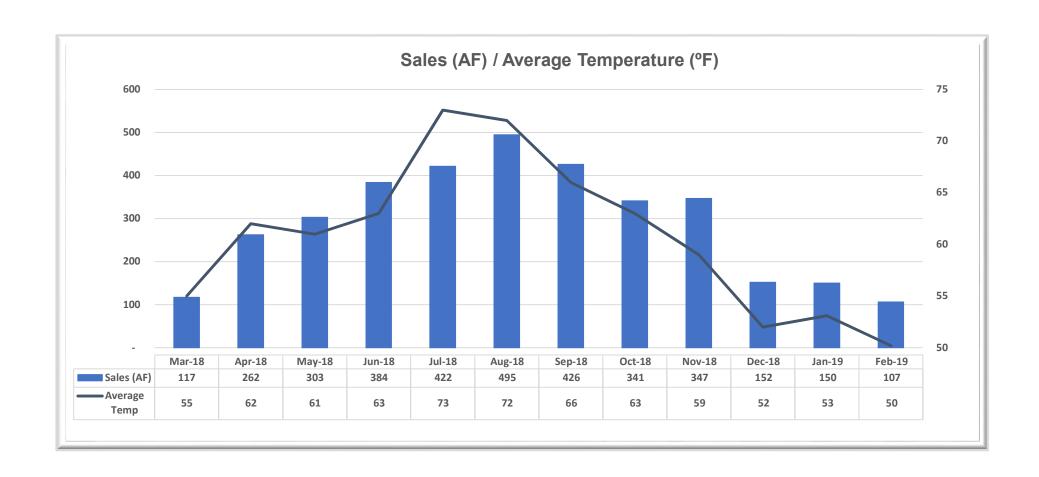


Trailing 12 Months (AGRICULTURE) 291 AF
Year Ended 02/28/18 (AGRICULTURE) 312 AF
Year Ended 02/28/17 (AGRICULTURE) 241 AF
Budget (AGRICULTURE) 348 AF
Trailing 12 Months vs. Year Ended 02/28/18: (6.8%)

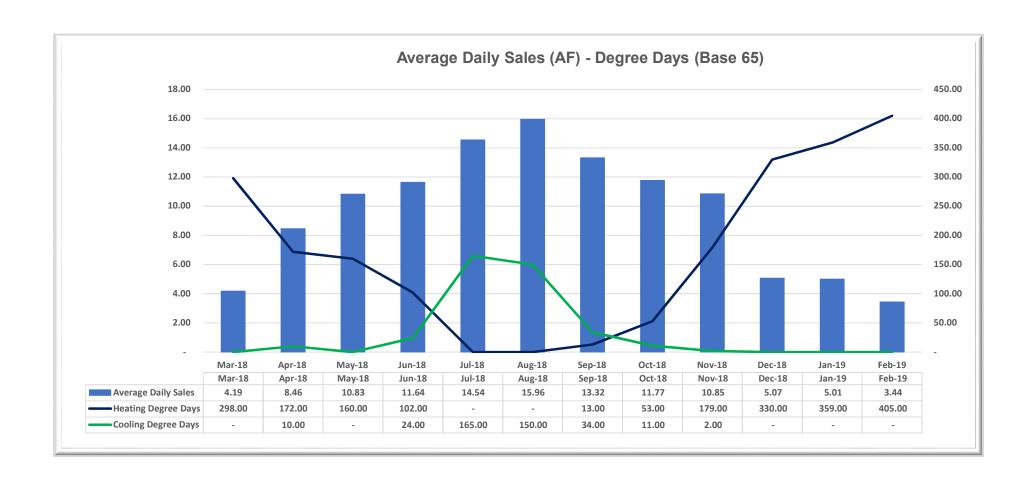
Trailing 12 Months vs. Year Ended 02/28/17: 20.5%

Trailing 12 Months vs. Budget (16.4%)







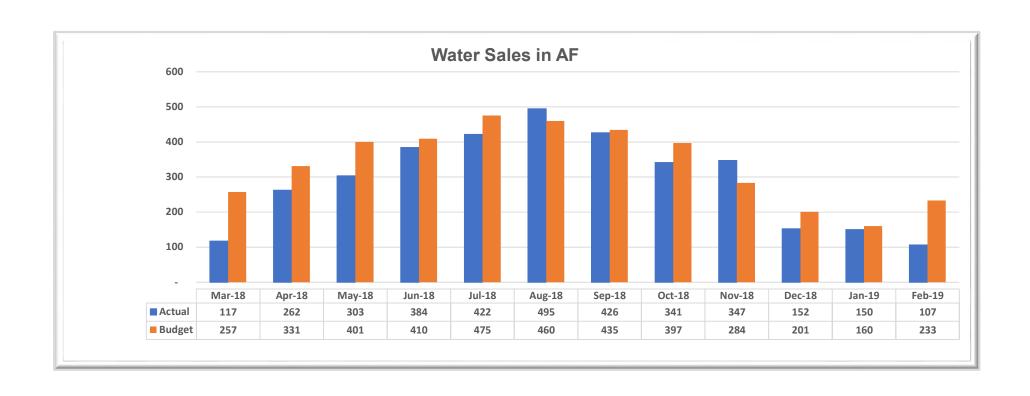








DASHBOARD REPORT WATER SALES (AF)



MONTECITO WATER DISTRICT WATER SALES ANALYSIS FOR FISCAL YEAR 2018/19

| | % SALES | | 017/18 L SALES (*) | l | 2018/19 GET SALES | | 2018/19 SALES (*) | DD | | ARIANCE S. CURRENT YE | ΛD | | | ARIANCE /S. ACTUAL | |
|-------|------------|---------|-----------------------|---------|----------------------|---------|----------------------|---------|---------|--------------------------|---------|---------|---------|-----------------------|---------|
| MONTH | | | L SALLS () | | SET SALLS | | | | | . CORRENT TE | | | | 73. ACTUAL | ٠, ا |
| | BREAKDOWN | AF | \$ | AF | \$ | AF | SALES | AF | % | \$ | % | AF | % | \$ | % |
| JUL | 11.8% | 387.1 | 909,119 | 475.2 | \$1,115,891 | 421.5 | \$1,014,800 | 34.4 | 8.9% | \$105,681 | 11.6% | (53.7) | (11.3%) | (101,091) | (9.1%) |
| AUG | 11.6% | 416.1 | 997, 265 | 459.9 | \$1,102,283 | 494.7 | \$1,212,868 | 78.6 | 18.9% | \$215,603 | 21.6% | 34.8 | 7.6% | 110,584 | 10.0% |
| SEP | 11.0% | 346.4 | 828,165 | 434.7 | \$1,039,311 | 426.2 | \$1,047,748 | 79.8 | 23.0% | \$219,583 | 26.5% | (8.5) | (2.0%) | \$8,437 | 0.8% |
| ОСТ | 10.0% | 391.5 | 933,549 | 396.9 | \$946,478 | 341.4 | \$815,274 | (50.1) | (12.8%) | -\$118,275 | (12.7%) | (55.5) | (14.0%) | -\$131,203 | (13.9%) |
| NOV | 7.2% | 339.6 | 815,859 | 283.5 | \$680,991 | 347.1 | \$854,511 | 7.5 | 2.2% | \$38,652 | 4.7% | 63.6 | 22.4% | \$173,520 | 25.5% |
| DEC | 5.1% | 331.4 | 799,566 | 200.7 | \$484,287 | 152.2 | \$367,617 | (179.2) | (54.1%) | -\$431,950 | (54.0%) | (48.5) | (24.2%) | -\$116,670 | (24.1%) |
| JAN | 3.1% | 216.0 | 400,615 | 160.2 | \$297,067 | 150.3 | \$365,256 | (65.7) | (30.4%) | -\$35,358 | (8.8%) | (9.9) | (6.2%) | \$68,189 | 23.0% |
| FEB | 5.6% | 288.1 | 657,160 | 233.0 | \$531,382 | 106.5 | \$265,524 | (181.6) | (63.0%) | -\$391,636 | (59.6%) | (126.5) | (54.3%) | -\$265,859 | (50.0%) |
| MAR | 5.8% | 117.2 | 266,987 | 242.1 | \$551,244 | 0.0 | \$0 | 0.0 | 0.0% | \$0 | 0.0% | 0.0 | 0.0% | \$0 | 0.0% |
| APR | 8.1% | 262.3 | 628,625 | 321.2 | \$769,848 | 0.0 | \$0 | 0.0 | 0.0% | \$0 | 0.0% | 0.0 | 0.0% | \$0 | 0.0% |
| MAY | 10.6% | 303.2 | 719,008 | 398.6 | \$1,008,415 | 0.0 | \$0 | 0.0 | 0.0% | \$0 | 0.0% | 0.0 | 0.0% | \$0 | 0.0% |
| JUN | 10.1% | 384.1 | 918,746 | 409.5 | \$955,734 | 0.0 | \$0 | 0.0 | 0.0% | \$0 | 0.0% | 0.0 | 0.0% | \$0 | 0.0% |
| TOTAL | 100.0% | 3,783.0 | 8,874,664 | 4,015.4 | \$9,482,932 | 2,439.9 | \$5,943,598 | (276.3) | (10.2%) | (\$397,700) | (6.3%) | (204.2) | (7.7%) | (\$254,093) | (4.1%) |

YTD ACTUAL WATER SALES COMPARISON FOR FISCAL YEAR 2018/19

| | 2017/18 | | 2 | 2018/19 | 20 | 18/19 | | YTD VA | RIANCE | | | YTD VA | RIANCE | |
|-------------------|----------|-------------|---------|---------------|----------|-------------|-----------------------------|---------|-------------|----------|-----------|--------|-------------|--------|
| | ACTUAL S | SALES (YTD) | BUDGE | T SALES (YTD) | ACTUAL S | ALES (YTD) | PRIOR YEAR VS. CURRENT YEAR | | | BUDGET V | S. ACTUAL | | | |
| | AF | \$ | AF | \$ | AF | \$ | AF | % | \$ | % | AF | % | \$ | % |
| Cummulative (YTD) | 2,716.2 | 6,341,298 | 2,644.1 | \$6,197,691 | 2,439.9 | \$5,943,598 | (276.3) | (10.2%) | (\$397,700) | (6.3%) | (204.2) | (7.7%) | (\$254,093) | (4.1%) |

QUARTERLY COMPARISON - ACTUALS THROUGH FEBRUARY 2018 (*)

| _ | 20 | 2017/18 | | 2018/19 | | 018/19 | VARIANCE | | VARIANCE | | | VARI | ANCE | |
|------------------|---------|-------------|--------------|-------------|--|-------------|----------|---------|-------------|-----------|---------|---------|-------------|---------|
| | ACTU. | AL SALES | BUDGET SALES | | ACTUAL SALES (*) PRIOR YEAR VS. CURRENT YEAR | | <u>R</u> | | BUDGET V | S. ACTUAL | | | | |
| | AF | \$ | AF | \$ | AF | \$ | AF | % | \$ | % | AF | % | \$ | % |
| Jul-Sep (Actual) | 1,149.6 | \$2,734,549 | 1,369.8 | \$3,257,486 | 1,342.4 | \$3,275,416 | 192.8 | 16.8% | \$540,867 | 19.8% | (27.4) | (2.0%) | \$17,930 | 0.6% |
| Oct-Dec (Actual) | 1,062.5 | 2,548,974 | 881.1 | 2,111,756 | 840.7 | \$2,037,402 | (221.8) | (20.9%) | (\$511,572) | (20.1%) | (40.4) | (4.6%) | (\$74,353) | (3.5%) |
| Jan-Mar (Actual) | 621.3 | 1,324,762 | 635.2 | 1,379,694 | 256.8 | \$630,780 | (364.5) | (58.7%) | (\$693,982) | (52.4%) | (378.4) | (59.6%) | (\$748,914) | (54.3%) |
| Apr-Jun (Actual) | 949.6 | 2,266,379 | 1,129.3 | 2,733,997 | 0.0 | \$0 | 0.0 | 0.0% | \$0 | 0.0% | 0.0 | 0.0% | \$0 | 0.0% |
| Total (Actual) | 3,783.0 | \$8,874,664 | 4,015.4 | \$9,482,932 | 2,440.0 | \$5,943,598 | (393.5) | (10.2%) | (\$664,687) | (6.3%) | (446.2) | (7.7%) | (\$805,338) | (4.1%) |

^(*) Sales figures reported are as of the close of billing for that period and do not reflect final financial amounts. Budgeted amounts are used prior to actual figures being available for comparative purposes

MONTECITO WATER DISTRICT **METERED WATER SALES - ACRE FEET ACTUALS THROUGH FEBRUARY 2019 (*)**

| MONTH | JUL | AUG | SEP | ОСТ | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | YR TOTAL |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| 1996-97 | 541.74 | 608.10 | 490.40 | 441.30 | 240.80 | 167.50 | 146.40 | 253.70 | 405.00 | 527.50 | 616.60 | 535.40 | 4974.44 |
| 1997-98 | 627.20 | 629.90 | 624.60 | 590.00 | 235.40 | 179.90 | 159.40 | 128.70 | 186.06 | 242.03 | 290.00 | 415.40 | 4308.59 |
| 1998-99 | 567.80 | 566.30 | 447.60 | 548.00 | 352.67 | 297.30 | 279.40 | 202.90 | 252.80 | 310.00 | 440.10 | 547.97 | 4812.84 |
| 1999-00 | 656.44 | 621.80 | 542.90 | 541.00 | 341.90 | 501.30 | 285.90 | 146.30 | 288.20 | 329.59 | 529.63 | 556.20 | 5341.16 |
| 2000-01 | 574.40 | 719.30 | 568.50 | 368.20 | 381.30 | 364.00 | 224.90 | 162.00 | 257.00 | 318.60 | 438.00 | 534.20 | 4910.40 |
| 2001-02 | 571.70 | 631.20 | 501.40 | 436.70 | 214.10 | 191.70 | 235.20 | 331.20 | 378.90 | 499.80 | 655.70 | 586.40 | 5234.00 |
| 2002-03 | 714.96 | 691.72 | 572.91 | 543.09 | 316.16 | 228.56 | 323.44 | 236.50 | 312.70 | 372.00 | 423.10 | 458.72 | 5193.86 |
| 2003-04 | 707.18 | 677.68 | 675.26 | 528.96 | 286.21 | 320.92 | 275.41 | 267.97 | 398.04 | 624.78 | 623.60 | 668.60 | 6054.61 |
| 2004-05 | 693.71 | 763.52 | 753.31 | 408.50 | 367.50 | 301.60 | 158.00 | 195.30 | 189.00 | 516.50 | 493.40 | 607.50 | 5447.84 |
| 2005-06 | 659.00 | 695.60 | 656.00 | 413.00 | 372.00 | 294.80 | 265.08 | 345.20 | 180.50 | 203.40 | 357.30 | 623.30 | 5065.18 |
| 2006-07 | 681.40 | 707.50 | 606.70 | 540.80 | 530.70 | 359.80 | 415.50 | 201.10 | 462.90 | 469.10 | 703.00 | 655.00 | 6333.50 |
| 2007-08 | 739.40 | 832.60 | 642.00 | 594.20 | 509.30 | 328.80 | 188.00 | 212.00 | 474.10 | 629.00 | 694.00 | 675.00 | 6518.40 |
| 2008-09 | 798.00 | 724.64 | 633.87 | 674.67 | 384.67 | 225.41 | 325.87 | 159.67 | 370.15 | 504.98 | 596.33 | 566.11 | 5964.37 |
| 2009/10 | 742.30 | 631.10 | 657.00 | 458.30 | 445.12 | 227.74 | 190.35 | 139.34 | 294.99 | 348.93 | 571.75 | 538.61 | 5245.53 |
| 2010/11 | 538.41 | 727.65 | 548.36 | 380.37 | 305.68 | 190.81 | 200.96 | 261.47 | 203.60 | 366.94 | 544.19 | 447.14 | 4715.58 |
| 2011/12 | 617.27 | 555.95 | 610.01 | 446.47 | 294.66 | 316.66 | 337.17 | 394.72 | 371.30 | 271.33 | 504.24 | 582.64 | 5302.42 |
| 2012/13 | 638.77 | 712.13 | 681.09 | 650.89 | 415.54 | 149.43 | 240.86 | 311.99 | 388.90 | 536.67 | 601.32 | 617.82 | 5945.40 |
| 2013/14 | 697.66 | 730.90 | 684.30 | 662.58 | 496.06 | 378.50 | 530.73 | 357.85 | 206.59 | 305.52 | 373.14 | 352.27 | 5776.10 |
| 2014/15 | 362.48 | 360.73 | 368.36 | 345.56 | 233.41 | 166.23 | 158.11 | 188.53 | 227.57 | 308.96 | 300.16 | 311.07 | 3331.17 |
| 2015/16 | 353.90 | 371.40 | 373.74 | 342.06 | 293.71 | 289.17 | 139.62 | 178.14 | 172.29 | 273.55 | 308.50 | 343.65 | 3439.73 |
| 2016/17 | 377.38 | 378.68 | 362.54 | 345.53 | 239.92 | 145.00 | 97.59 | 88.78 | 139.09 | 266.01 | 318.90 | 367.79 | 3127.21 |
| 2017/18 | 387.15 | 416.08 | 346.39 | 391.48 | 339.65 | 331.36 | 216.04 | 288.10 | 117.24 | 262.30 | 303.20 | 384.10 | 3783.09 |
| 2018/19 | 440.10 | 494.70 | 426.15 | 341.40 | 347.12 | 152.18 | 150.28 | 106.55 | | | | | 2458.48 |
| | | | | | | | | | | | | | |
| AVERAGE | 595.15 | 619.53 | 555.36 | 477.96 | 345.37 | 265.59 | 241.05 | 224.26 | 285.31 | 385.79 | 485.73 | 517.04 | 4925.39 |
| MAXIMUM | 798.00 | 832.60 | 753.31 | 674.67 | 530.70 | 501.30 | 530.73 | 394.72 | 474.10 | 629.00 | 703.00 | 675.00 | 6518.40 |
| MINIMUM | 353.90 | 360.73 | 346.39 | 341.40 | 214.10 | 145.00 | 97.59 | 88.78 | 117.24 | 203.40 | 290.00 | 311.07 | 2458.48 |
| 18/19 % VS AVERAGE | 74% | 80% | 77% | 71% | 101% | 57% | 62% | 48% | 0% | 0% | 0% | 0% | 50% |
| | | | | | | | | | | | | | |
| 17/18 % VS MAXIMUM | 55% | 59% | 57% | 51% | 65% | 30% | 28% | 27% | 0% | 0% | 0% | 0% | 38% |

| | Total MET | ER Conn | ections = | 4,613 |
|---|------------------|----------|-----------|-------|
| | | | | |
| | Total C | OFF Conn | ections = | 41 |
| | | | | |
| 7 | Total ACTIVE MET | ER Conn | ections = | 4,572 |
| | | | | Secur |