DESERT WATER AGENCY
OCTOBER 15, 2019

BOARD OF DIRECTORS
REGULAR MEETING AGENDA

REGULAR MEETING 8:00 A.M. OPERATIONS CENTER - 1200 SOUTH GENE AUTRY TRAIL – PALM SPRINGS – CALIFORNIA

Desert Water Agency operates independently of any other local government. Its autonomous elected board members are directly accountable to the people they serve. The Agency is one of the desert's two State Water Contractors and provides water and resource management, including recycling, for a 325-square-mile area of Western Riverside County, encompassing parts of Cathedral City, Desert Hot Springs, outlying Riverside County and Palm Springs.

1. PLEDGE OF ALLEGIANCE

2. APPROVAL OF MINUTES October 1, 2019 STUART

3. GENERAL MANAGER'S REPORT KRAUSE

4. COMMITTEE REPORT Executive – October 10, 2019 STUART

5. PUBLIC COMMENT: Members of the public may comment on any item not listed on the agenda, but within the jurisdiction of the Agency. In addition, members of the public may speak on any item listed on the agenda as that item comes up for consideration. Speakers are requested to keep their comments to no more than three (3) minutes. As provided in the Brown Act, the Board is prohibited from acting on items not listed on the agenda.

6. ACTION ITEMS
   - A. Request Authorization to Participate in 2019-2020 USGS Cooperative Water Resources Program KRAUSE
   - B. Request Authorization for General Manager to Execute Memorandum of Understanding for the First Five-Year Update of the Alternative Plan for the Mission Creek Subbasin KRAUSE
   - C. Request Authorization for General Manager to Execute Letter of Agreement for the Coachella Valley Urban Water Management Plan METZGER

7. DISCUSSION ITEM
   - A. September Water Use Reduction Figure METZGER

8. DIRECTORS COMMENTS AND REQUESTS

9. CLOSED SESSION

   A. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Agua Caliente Band of Cahuilla Indians vs. Coachella Valley Water District, et al

   B. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Mission Springs Water District vs. Desert Water Agency

   C. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Albrecht et al vs. County of Riverside

   D. CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (1)
   Name of Case: Abbey et al vs. County of Riverside

   E. CONFERENCE WITH LEGAL COUNSEL – EXPOSURE TO LITIGATION
   Pursuant to Government Code Section 54956.9 (d) (2)
   Alan Neil Freiman, et al vs. Safari Park, Inc.
   Riverside County Superior Court Case No. PSC1806308

   F. CONFERENCE WITH REAL PROPERTY NEGOTIATORS
   Pursuant to Government Code Section 54956.8
   Property: APN No. 669-191-007, 669-191-008, 669-680-024
   Agency Negotiators: Mark S. Krause, General Manager and Steve Johnson, Asst. General Manager
   Negotiating Parties: Desert Water Agency and DFI Properties, LLC
   Under Negotiation: Price and Terms

10. RECONVENE INTO OPEN SESSION – REPORT FROM CLOSED SESSION

11. ADJOURN

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, as required by Section 202 of the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting is asked to contact Desert Water Agency's Assistant Secretary of the Board, at (760) 323-4971, at least 48 working hours prior to the meeting to enable the Agency to make reasonable arrangements. Copies of records provided to Board members that relate to any agenda item to be discussed in open session may be obtained from the Agency at the address indicated on the agenda.

MINUTES
OF THE REGULAR MEETING
OF THE
DESERT WATER AGENCY
BOARD OF DIRECTORS

2

October 1, 2019

DWA Board:	Joseph K. Stuart, President	)
	Kristin Bloomer, Vice President	)
	Craig Ewing, Secretary-Treasurer	)
	Patricia G. Oygar, Director	)
	James Cioffi, Director	)
DWA Staff:	Mark S. Krause, General Manager	)
	Steve Johnson, Assistant General Manager	)
	Esther Saenz, Finance Director	)
	Sylvia Baca, Asst. Secretary of the Board	)
	Ashley Metzger, Outreach & Cons. Manager	)
	Kris Hopping, Human Resources Manager	)
Consultant:	Michael T. Riddell, Best Best & Krieger	)

Pledge of Allegiance

18545. President Stuart opened the meeting at 8:00 a.m. and asked everyone to join Secretary-Treasurer Ewing in the Pledge of Allegiance.

Approval of 9/17/19 Regular Board Mtg. Minutes

18546. President Stuart called for approval of the September 17, 2019 Regular Board Meeting Minutes.

Director Cioffi moved for approval. After a second by Director Oygar, the minutes were approved by the following vote:

AYES:	Cioffi, Oygar, Stuart, Bloomer
NOES:	None
ABSENT:	None
ABSTAIN:	Ewing (Due to his absence)

General Manager's Report

18547. President Stuart called upon General Manager Krause to provide an update on Agency operations.

Mr. Krause provided an update on Agency operations and noted his meetings and activities for the past several weeks.

General Manager's Report (Cont.)

In response to Secretary-Treasurer Ewing, Mr. Krause advised Outreach and Conservation Manager Metzger to contact the management at the Palm Springs Aerial Tramway regarding water conservation.

Committee Reports: Executive 09/24/19

18548. President Stuart noted the minutes for the September 24, 2019 Executive Committee meeting were provided in the Board's packet.

Secretary-Treasurer's Report (August)

18549. President Stuart called upon Secretary-Treasurer Ewing to present an overview of financial activities for the month of August 2019.

Operating Fund

Mr. Ewing reported that the Operating Fund received $3,687,758 in Water Sales Revenue, $228,042 in Reclamation Sales Revenue, and $48,924 from Baxter Construction for deposit (Desert Lexus). Included in Miscellaneous Receipts were $100,000 from CPV for the Smart Controller Program and $142,740 from Baxter Constructions (Desert Lexus) for Sewer Capacity Charges (Transferred to the Wastewater Fund). $2,863,461 was paid out in Accounts Payable. YTD Water Sales are 9% under budget, YTD Total Revenues are 6% under budget and YTD Total Expenses are 14% under budget. There were 23,258 active services as of August 31, 2019 compared to 23,253 active services as of July 31, 2019 (net addition of 5 active services).

General Fund

Reporting on the General Fund, Mr. Ewing stated that $913,171 was received in Property Tax Revenues, $353,525 was received in Groundwater Assessments from private pumpers, and $64,183 was received from SCE for Whitewater Hydro Power Sales for July 2019. $553,121 was paid out in State Water Project charges (YTD $3,751,462), 484,965 was paid out to CVWD for Whitewater Spreading Basin Capital Cost Share (per agreement) and $92,909 was paid out to CVWD for Whitewater Basin Management for April – June 2019 (per agreement).

Wastewater Fund

Reporting on the Wastewater Fund, Mr. Ewing reported $142,740 was received in Sewer Capacity Charges (Baxter Construction-Desert Lexus) and $956 in Sewer Contract payments. There are 32 contracts remaining (Cathedral City Cove). No contracts were paid in full. Total delinquents are 3 (9%). $197,738 was paid out in Accounts Payable.

Public Comment

18550. President Stuart opened the meeting for public comment.

There being no one from the public wishing to address the Board, President Stuart closed the public comment period.

Items for Action: Authorization for GM to Execute Lease Agreement with CPS

18551. President Stuart called upon Assistant General Manager Johnson to present staff's request to authorize the General Manager to Execute a Lease Agreement with the City of Palm Springs for the Golf Course Driving Range APN No. 680-180-047.

Mr. Johnson explained in 2007, the Agency purchased property from the City of Palm Springs, to allow the future expansion of the recycled water plant. At that time, the Agency entered into a lease agreement with the City to provide the City with continued use of its golf course driving range on said parcel. The original lease extended through 2013, at which time an amendment of the lease agreement extended the terms through September 2019 at a fixed rent of $31,840 annually.

He noted with the current lease expiring in September 2019, the City requested the Agency consider a long-term lease agreement for the property. DWA Management authorized an appraisal to determine a fair market value of the property. In determining an appropriate market value, the appraisal considered a 6% yield rate, resulting in an annual rent calculated at 6% of the fair market value, or $80,400 annually. The rent was then adjusted to exclude the northerly 60 feet of the property which is used by the Agency for access to the recycled water plant and for two shallow groundwater wells. The adjustment reduced the proposed annual rent to $74,135. Based on the new annual rent, the Agency prepared a new lease agreement for ten years, with an annual Consumer Price Index (CPI) adjustment based on CPI-All Urban Consumers, Los Angeles-Orange-Riverside County (All items; 1982-84 equals 100) issued by the U.S. Department of Labor, Bureau of Labor Statistics or any successor agency ("CPI-U"). Mr. Johnson reported that three changes were made to the draft by Agency Counsel Riddell, with the City of Palm Springs agreeing to the changes.

Staff requests Board authorization for the General Manager to execute the Lease Agreement with the City of Palm Springs.

Director Oygar moved to approve staff's request After a second by Director Cioffi, the motion carried by the following vote:

AYES:	Oygar, Cioffi, Stuart, Bloomer, Ewing
NOES:	None
ABSENT:	None
ABSTAIN:	None

Discussion Items: Director's Report on CSDA Conference Attendance

Bloomer

18552. Vice President Bloomer noted her attendance at the CSDA Conference in Anaheim and that she attended a session on how to collect unpaid bills and an update on SB 998 and Legislative updates that have passed; SB13, AB849, and AB1486; she also attended Ethics Training.

Discussion Items: (Cont.) Director's Report on CSDA Conference Attendance

Stuart

President Stuart reported his attendance at the CSDA Conference and noted there were excellent key note speakers. He noted he attended a session entitled; "Are Your Electronic Devices Spying On You?" He also attended a session on District Dissolutions, and a presentation on Drones and regulations. He noted his attendance at Sexual Harassment Prevention Training

Outreach & Conservation - September 2019

18553. President Stuart noted that Board packets included Outreach & Conservation reports for September 2019.

Mrs. Metzger reported she is working with Mr. Riddell and Mr. Krause on a Letter of Agreement regarding Coachella Valley Urban Water Management Plan.

In response to Director Oygar, Mrs. Metzger reported 50% of the residential funds and 40% of the commercial funds have been used so far on the rebate program. She will provide an update in the future. In response to Vice President Bloomer, Mrs. Metzger noted, at this time, there is not a commercial washer rebate program.

Secretary-Treasurer Ewing noted he did not attend the All Valley Mayor and Tribal Chair Lunch.

Director's Comments/Requests

Secretary-Treasurer Ewing

18554. Secretary-Treasurer Ewing noted he will not be attending the November 5 Board Meeting.

President Stuart

President Stuart noted he attended a Q & A at the Palm Springs Board of Realtors at Mizell Senior Center

Closed Session:
A. Existing Litigation – ACBCI vs. CVWD, et al.
B. Existing Litigation – MSWD vs. DWA
C. Existing Litigation – Albrecht et al vs. Riverside County
D. Existing Litigation – Abbey et al vs. Riverside County
E. Existing Litigation – Thurman W. Arnold III vs. Rupp, Medjian, Rupp, Levy, DWA
F. Exposure to Litigation – Alan Neil Freiman, et al vs. Safari Park, Inc.

18555. At 9:16 a.m., President Stuart convened into Closed Session for the purpose of Conference with Legal Counsel, (A) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (1), Agua Caliente Band of Cahuilla Indians vs. Coachella Valley Water District, et al; (B) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (1), Mission Springs Water District vs. Desert Water Agency; (C) Existing Litigation, pursuant to Government Code Section 54959.9 (d) (1), Albrecht et al vs. County of Riverside; (D) Existing Litigation, pursuant to Government Code Section 54959.9 (d) (1), Abbey et al vs. County of Riverside; (E) Existing Litigation, pursuant to Government Code Section 54956.9 (d) (2), Thurman W. Arnold III vs. Rupp, Medjian, Rupp, Levy, DWA; (F) Exposure to Litigation, pursuant to Government Code Section 54956.9 (d) (2), Alan Neil Freiman et al vs. Safari Park, Inc.

Reconvene – No Reportable Action

18556. At 12:10 p.m., President Stuart reconvened the meeting into open session and announced there was no reportable action taken.

Adjournment

18557. In the absence of any further business, President Stuart adjourned the meeting at 12:11 p.m.

_____
Joseph K. Stuart, President

ATTEST:

_____
Craig Ewing, Secretary-Treasurer

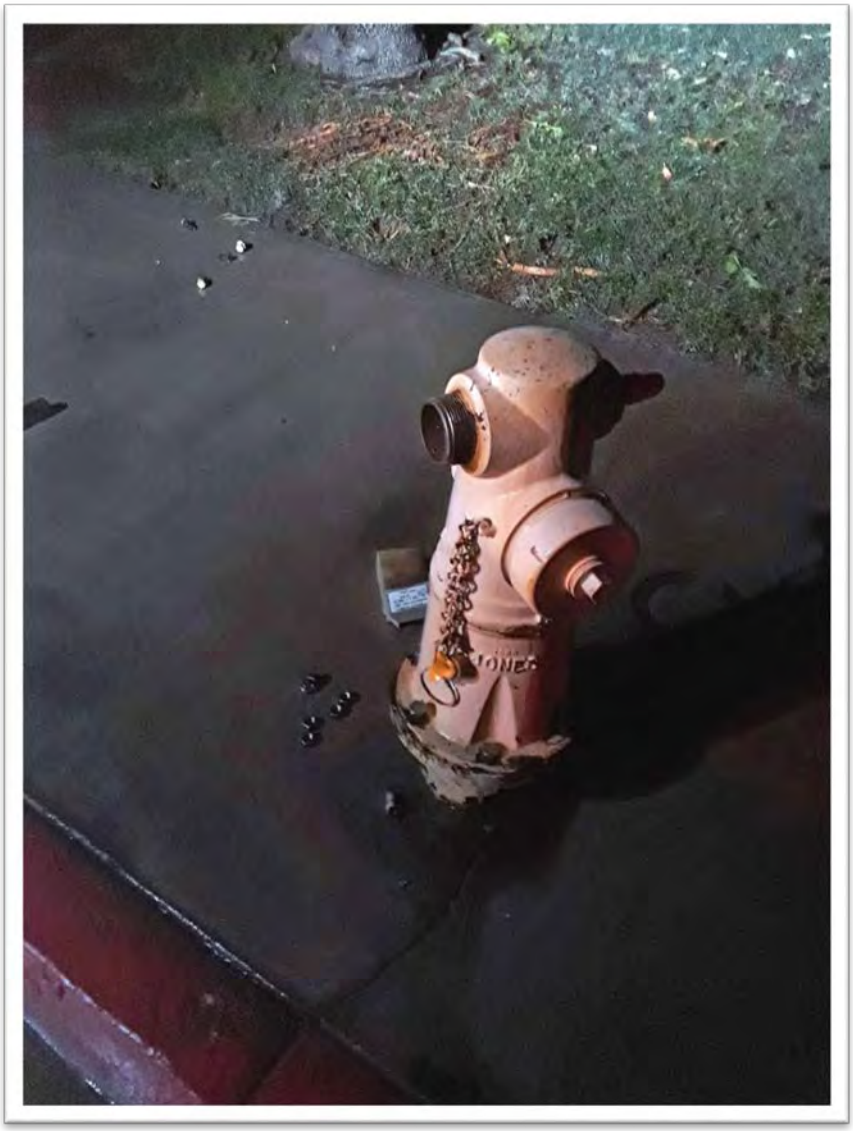
GENERAL MANAGER'S REPORT
OCTOBER 15, 2019

Village Racquet Club HOA Leak

On September 28 at approximately 4:30 a.m., Construction stand-by responded to a service leak at Village Square East, inside Village Racquet Club HOA. There was a blow out on a 2-inch polyethelene service line. The leak caused damage to the road, undermined part of a driveway, corner of a garage and caused mud to run down Avenida Caballeros and Ramon Road. Staff replaced the service line and the one next to it and completed the cleanup.

South Cerritos Dr. Damaged Fire Hydrant

On September 30 at approximately 4:30 a.m., Construction stand-by responded to a damaged fire hydrant on South Cerritos Drive; it was a hit and run. Staff replaced the gasket and bolts and placed the hydrant back in service. The water loss was from a fully open 6-inch fire hydrant bury which ran for approximately 30 minutes. Staff filed a police report.



Human Resources Meetings and Activities

Meetings:

09/17/19	United Way Board Meeting	UWD Offices
09/20/19	United Way Heroes Luncheon	Indian Wells
09/24/19	New Employee Orientation – new Fleet Mechanic	DWA
09/25/19	End of Summer Employee Appreciation Luncheon	DWA
09/26/19	Meeting to Discuss Salary Survey with GM and AGM	DWA
10/01/19	DWA Board Meeting	DWA
10/01/19	Account Clerk III Interviews	DWA
10/02/19	United Way Executive Board Meeting	UWD Offices
10/03/19	Meeting with AFLAC Representative	DWA
10/07/19	Weekly Staff Meeting	DWA
10/14/19	Weekly Staff Meeting	DWA
10/15/19	DWA Board Meeting	DWA

Activities:

1) Accounting Clerk III Testing
2) DOT Testing 9/30/19 and 10/01/19
3) Lincoln Financial Representative Visit 10/1/19
4) Benefits Fair, Blood Drive, and Flu Shots 10/8/19

SYSTEM LEAK DATA

(PERIOD BEGINNING SEPTEMBER 25, 2019 THRU OCTOBER 8, 2019)

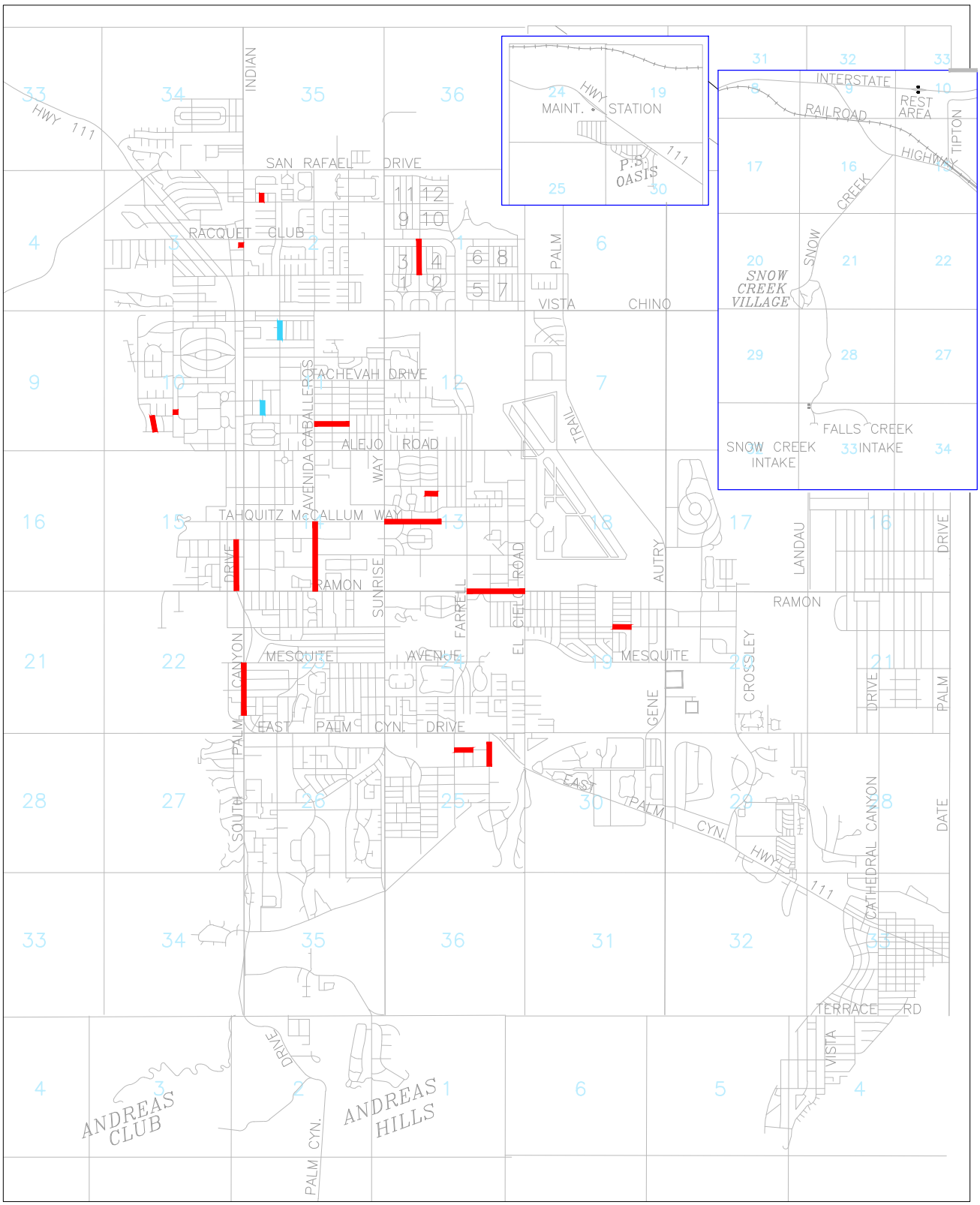
STREET NAME	NUMBER OF LEAKS	PIPE DIAMETER (INCHES)	YEAR INSTALLED	PIPE MATERIAL	PIPE CONSTRUCTION
HIGH RD	3	4	1953	STEEL	BARE/UNLINED
AVENIDA CABALLEROS	2	14	1953	STEEL	BARE/UNLINED
TAHQUITZ CANYON WY	2	8	1946	STEEL	BARE/UNLINED
S INDIAN CANYON DR	2	6	1951	STEEL	BARE/UNLINED
SANDCLIFF RD	2	6	1954	STEEL	BARE/UNLINED
AVENIDA PALOS VERDES	2	4	1954	STEEL	BARE/UNLINED
RAMON RD	1	12	1956	STEEL	BARE/UNLINED
S PALM CANYON DR	1	10	1938	STEEL	BARE/UNLINED
VIA MIRALESTE	1	6	1946	STEEL	BARE/UNLINED
SUNNY DUNES RD	1	6	1946	STEEL	BARE/UNLINED
CERRITOS RD	1	6	1955	STEEL	BARE/UNLINED
MOUNTAIN VIEW PL	1	6	1950	STEEL	BARE/UNLINED
ARABY DR	1	6	1947	STEEL	BARE/UNLINED
WYMAN DR	1	4	1957	STEEL	BARE/UNLINED
TERRY LN	1	4	1956	STEEL	BARE/UNLINED
ROCHELLE RD	1	4	1946	STEEL	BARE/UNLINED
VIA ALTAMIRA	1	4	1954	STEEL	BARE/UNLINED
TOTAL LEAKS IN SYSTEM:	**24**				

Streets highlighted in blue are being proposed as part of the
2018/2019 Replacement Pipeline Project

SYSTEM INFORMATION:	
*OLDEST PIPE IN THE SYSTEM (YEAR OF INSTALLATION):	1925
AVERAGE YEAR OF INSTALLATION OF UNLINED STEEL PIPE (SYSTEMWIDE):	1952
AVERAGE AGE OF UNLINED STEEL PIPE (SYSTEMWIDE):	66 YEARS
AVERAGE AGE OF PIPELINE AT THE TIME OF REPLACEMENT:	68 YEARS
TOTAL LENGTH OF PIPE IN SYSTEM OLDER THAN 68 YEARS (LINEAR FEET):	**142,113**
TOTAL LENGTH OF UNLINED PIPE SYSTEMWIDE (LINEAR FEET):	303,391
**AVERAGE LENGTH OF PIPE REPLACED ANNUALLY (LINEAR FEET):	14,500
PROJECTED TIME FRAME FOR 100% REPLACEMENT OF UNLINED STEEL PIPE:	21 YEARS
PROJECTED TIME FRAME FOR 100% REPLACEMENT OF PIPE OLDER THAN 68 YEARS:	**10 YEARS**
YEAR AGENCY TRANSITIONED TO CEMENT LINED STEEL PIPE:	1960

*** THIS PIPELINE IS BEING REPLACED AS PART OF THE 2018/2019 REPLACEMENT PIPELINES PROJECT.**

**** PLEASE NOTE THIS FIGURE REPRESENTS THE AVERAGE LINEAR FOOTAGE OF PIPELINE REPLACED ANNUALLY GIVEN AN AVERAGE ANNUAL BUDGET OF $3 MILLION.**



SYSTEM LEAKS

(Period beginning September 25, 2019 thru October 8, 2019)

DESERT WATER AGENCY

PALM SPRINGS, CALIFORNIA

LEGEND

- LEAK(S) RECORDED
- LEAK(S) RECORDED; INCLUDED IN PROPOSED LIST OF STREETS FOR 2018/2019 REPLACEMENT PIPELINES

DWG. BY	DATE	SCALE
SR	10/19	NTS

EXHIBIT "A"

General Manager's Meetings and Activities

Meetings:

10/01/19	DWA Bi-Monthly Board Meeting	DWA
10/02/19	SWC's Delta Conveyance Small Contractor's Caucus	Conf. Call
10/03/19	BLM WW Grant – All Team Monthly Meeting	Conf. Call
10/07/19	DWA Weekly Department Meeting	DWA
10/08/19	BLM WW Grant – Cooperating Agencies Meeting	Conf. Call
10/09/19	SWC Delta Conveyance Small Contractor's Caucus	Conf. Call
10/10/19	DWA Executive Committee	DWA
10/10/19	DWA Conservation and Public Affairs Committee	DWA
10/11/19	SWP East Branch Enlargement	SBVMWD
10/14/19	DWA Weekly Department Meeting	DWA
10/15/19	DWA Bi-Monthly Board Meeting	DWA

Activities:

1) SWP – CWF Voluntary Settlement Agreement Framework
2) SWP Contract Extension Amendment
3) DWA Remote Meter Reading Fixed Network
4) Whitewater Hydro – Automatic Re-start
5) State and Federal Contractors Water Authority and Delta Specific Project Committee (Standing)
6) Whitewater River Surface Water Recharge
7) ACBCI Section 14 Facilities & Easements
8) Lake Oroville Spillway Damage
9) Replacement Pipelines 2019-2020
10) DC Project – Finance JPA Committee (Standing)
11) DWA/CVWD/MWD Operations Coordination/Article 21/Pool A/Pool B/Yuba Water
12) DWA/CVWD/MWD Agreements Meetings (Meeting #8)
13) SWP 2019 Water Supply
14) ACBCI Water Rights Lawsuit
15) Whitewater Hydro Operations Coordination with Recharge Basin O&M
16) SGMA Tribal Stakeholder Meetings
17) Whitewater Spreading Basins – BLM Permits
18) Lake Perris Dam Seepage Recovery Project Participation
19) Delta Conveyance Project Cost Allocation
20) DWA Surface Water Filtration Feasibility Snow Creek Village/Palm Oasis
21) MCSB Delivery Updates
22) Well 6 Meaders Cleaners RWQB Meetings
23) SGMA – Indio Subbasin Classification
24) SGMA – San Gorgonio Pass Subbasin
25) UWMP Population Calculation Update/Valley-Wide UWMP
26) RWQCB Update to the SNMP

Minutes
Executive Committee Meeting
October 10, 2019

Directors Present: Joe Stuart, Kristin Bloomer
Staff Present: Mark Krause, Steve Johnson, Esther Saenz

1. Discussion Items

A. Review Agenda for October 15, 2019 Regular Board Meeting
The proposed agenda for the October 15, 2019 Regular Board meeting was reviewed.

2. Other - None

3. Adjourn

6-A

STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

OCTOBER 15, 2019

RE: REQUEST AUTHORIZATION TO PARTICIPATE IN THE 2019-2020 UNITED STATES GEOLOGICAL SURVEY COOPERATIVE WATER RESOURCES PROGRAM

Attached for your review is a letter dated September 26, 2019 from the United States Geological Survey ("USGS"), which outlines the cost for Agency participation in the 2019-2020 Cooperative Water Resources Program. As in previous years, the Agency, along with Coachella Valley Water District, the Riverside County Flood Control and Water Conservation District ("Agencies") and the USGS will share the costs for the operation and maintenance of a number of stream gaging facilities, as well as a ground and surface water quality program.

The cost share ratio of the program remains at 60:40 between the agencies and the USGS The USGS absorbs $2,550 of administration costs per gaging station ($28,050 total) This amount is not shown in said letter and is necessary to add to the total USGS cost in order to calculate the 60:40 ratio. The true overall USGS cost is $118,700.

The amount requested for the 2019-2020 test year is $88,965 which is approximately a 1% increase over last year. This amount covers the operation and maintenance costs for 12 gaging stations ($83,040) and the cost of ground water and surface water quality sampling ($5,925).

Staff wishes to continue participation in the USGS Cooperative Water Resources Program in order to maintain the monitoring of our water supplies and uses throughout the upper Coachella Valley, and requests Board approval of the Agency's participation in the 2019-2020 program in the amount of $88,965.

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
6000 J Street, Placer Hall
California State University
Sacramento, California 95819-6129
Phone: (916) 278-3000 Fax: (916) 278-3070
https://ca.water.usgs.gov

September 26, 2019

Mr. Mark Krause, General Manager
Desert Water Agency
Post Office Box 1710
Palm Springs, California 92263-1710

Dear Mr. Krause:

This letter confirms discussions between our respective staffs concerning the continuation of our cooperative water resources program between the Desert Water Agency (DWA) and the U.S. Geological Survey (USGS), for the period November 1, 2019 to October 31, 2020.

The proposed program and associated costs to DWA, Coachella Valley Water District (CVWD), Riverside County Flood Control and Water Conservation District (RCFC&WCD), and the U.S. Geological Survey (USGS) are as follows:

Part 1. Stream-gaging program

We will continue to operate and maintain the following thirteen gaging stations:

Station number and name		DWA Funds	CVWD Funds	RCFC &WCD Funds	USGS Funds	Total Funds
10256000	Whitewater River at Whitewater[1]	$ 2,100	$ 2,100	$ -0-	$ -0-	$ 4,200
10256500	Snow Creek near White Water including diversion	7,675	7,675	5,300	10,400	31,050
10257500	Falls Creek near White Water including diversion	7,675	7,675	5,300	10,400	31,050
10257550	Whitewater River at Windy Point[1]	7,675	7,675	5,300	10,400	31,050
10257720	Chino Canyon Creek below Tramway near Palm Springs	5,265	5,270	5,265	7,950	23,750
10258000	Tahquitz Creek near Palm Springs	5,265	5,265	5,270	7,950	23,750
10258500	Palm Canyon Creek near Palm Springs[2]	-0-	-0-	-0-	-0-	-0-

Station number and name		DWA Funds	CVWD Funds	RCFC &WCD Funds	USGS Funds	Total Funds
10258700	Murray Canyon Creek near Palm Springs	13,150	13,150	-0-	-0-	26,300
10259000	Andreas Creek near Palm Springs	5,270	5,265	5,265	7,950	23,750
10259050	Palm Canyon Wash near Cathedral City	5,265	5,270	5,265	7,950	23,750
10259100	Whitewater River at Rancho Mirage	7,900	7,900	-0-	7,950	23,750
10259200	Deep Creek near Palm Desert	7,900	7,900	-0-	7,950	23,750
10259300	Whitewater River at Indio	7,900	7,900	-0-	7,950	23,750
10259540	Whitewater River near Mecca[1, 2]	-0-	-0-	-0-	-0-	-0-
	TOTAL	**$83,040**	**$83,045**	**$36,965**	**$86,850**	**$289,900**

Part 2. Water-Quality Monitoring Program

A. Ground-water quality - We will collect water-quality samples from the following two wells and six piezometers on an annual basis (in the spring):

Piezometers	Wells
3S/4E-20F1	3S/4E-29R1
3S/4E-20J1	3S/4E-30C1
3S/4E-20F2	
3S/4E-20J2	
3S/4E-20F3	
3S/4E-20J3	

B. Surface-water quality - We will sample the following three surface-water stations on an annual basis (in November):

10256000	Whitewater River at White Water
10257720	Chino Canyon Creek below Tramway near Palm Springs
10256500	Snow Creek near White Water

[1] See enclosed notes on operating limitations.

[2] Funding for this gage is provided by the Groundwater and Streamflow Information Program as a Federal Priority Streamgage (formerly under the National Streamflow Information Program (NSIP)). These funds are subject to annual review of Federal Appropriations Availability.

Mr. Mark Krause, General Manager- Desert Water Agency

All water-quality samples will be analyzed, reviewed, and copies of the tabulated data will be furnished to your agency. List A, enclosed, shows the chemical constituents to be analyzed. In addition to this list all ground-water samples will also be tested for Perchlorate.

Total cost of the water-quality program is $15,650. Total cost to your agency will be $5,925.

A summary of the distribution of costs to each agency is as follows:

Program Element	DWA Funds	CVWD Funds	RCFC &WCD Funds	USGS Funds	Total Funds
Part 1 – Stream gaging program	$83,040	$83,045	$36,965	$86,850	$289,900
Part 2 - Water-quality program					
A. Ground-water quality	3,775	3,775	-0-	3,800	11,350
B. Surface-water quality	2,150	2,150	-0-	-0-	4,300
Total of Part 2	$ 5,925	$ 5,925	$ -0-	$ 3,800	$ 15,650
GRAND TOTAL	**$88,965**	**$88,970**	**$36,965**	**$90,650**	**$305,550**

Total cost of the proposed program is $305,550. Cost to your agency will be $88,965 and, subject to the availability of Federal matching funds, the U.S. Geological Survey (USGS) will provide $90,650.

Enclosed are two originals of Joint Funding Agreement (JFA) 20ZGJFA01200, signed by our agency, for your approval. If you are in agreement with this proposed program, please return one fully executed JFA to our office. Work performed with funds from this agreement will be conducted on a fixed-price basis. Billing for this agreement will be rendered quarterly.

The USGS is required to have an agreement in place prior to any work being performed on a project. We request that a fully executed JFA be returned prior to November 1, 2019. If it is not received by November 1, we will be required to suspend operations until an agreement is received.

If you have any questions concerning this program, please contact Scott Patterson, in our Poway Field Office, at (858) 679-4015. If you have any administrative questions, please contact David Penisten in our Sacramento Office, at (916) 278-9200.

Sincerely,

Eric G. Reichard
Director, USGS California Water Science Center

Enclosures

cc: Scott Patterson, USGS CAWSC

Mr. Mark Krause, General Manager- Desert Water Agency

List A

Chemical Constituents
(mg/L or as indicated)

Dissolved boron (µg/L)	Dissolved sulfate
Dissolved bromide	Dissolved arsenic
Dissolved calcium	Dissolved solids
Dissolved chloride	Sodium adsorption ratio
Dissolved fluoride	Percent sodium
Dissolved iron (µg/L)	Total alkalinity ($CaCO_3$)
Dissolved manganese (µg/L)	Carbonate (CO_3)
Dissolved magnesium	Bicarbonate (HCO_3)
Dissolved nitrogen (ammonia)	Total hardness ($CaCO_3$)
Dissolved nitrogen (ammonia + organic)	
Dissolved nitrogen (nitrite)	Noncarbonate hardness
Dissolved nitrogen (nitrate + nitrite)	Temperature °C
Dissolved orthophosphorus (P)	pH
Dissolved phosphorus (P)	Specific conductance (microsiemens)
Dissolved potassium	Total organic carbon
Dissolved silica	Perchlorate (wells only)
Dissolved sodium	

Schedules used: 1034, 117, LC27, LC2160, LC1246, LC0114

[1]Notes on operating limitations of selected stations

10256000 - Whitewater River at Whitewater -- Due to the physical conditions at this site and the difficulty in maintaining a gage pool and stable control for which a rating can be developed, data collection will be limited to monthly discharge measurements (with additional measurements made at the request of the DWA and/or CVWD during period of high aqueduct release). No attempt will be made to compute or publish a continuous streamflow record and no peak flow measurements or estimates will be made.

10257550 - Whitewater at Windy Point -- Obtaining an accurate record of discharge for this station is contingent on adequate channel maintenance, to be performed by DWA and/or CVWD as described here. The station has two separate gage height sensors and recorders, one for the right-side weir (with the walkway) and one for the left-side (overflow) weir. The channel above and below both weirs will be maintained to insure that the weirs do not become buried by sediment. The channel downstream from both weirs will be kept clear of sediment to the degree necessary to allow an adequate drop over both weirs. The channel above the right-side weir will be cleaned out to maintain a pool upstream from the right-side weir. To insure the greatest accuracy, the upstream dike which directs flow to the right-side weir will be maintained. When destroyed by high flow, the dike will be reestablished as soon as practical.

High flow in the left channel cannot be measured directly with a current meter. Instead, a theoretical stage-discharge rating will be used. A single record representing the total flow over both weirs will be published.

10259540 - Whitewater River near Mecca -- Because of the traffic control dikes in the channel normal to all flow except that in the incised low flow channel, measurements and computation of record will be limited to a stage of about 6 feet which translates from the existing rating curve as about 200 cfs. Above this maximum, streamflow will begin to erode the material in the dikes and a rating curve for the channel cannot be established. No attempt will be made to measure or estimate higher flows.

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer#: 6000000847
Agreement#: 20ZGJFA01200
Project #: ZG00GZV
TIN #: 95-2408471

Fixed Cost Agreement YES[X] NO[ ]

THIS AGREEMENT is entered into as of the 1st day of November, 2019, by the U.S. GEOLOGICAL SURVEY, California Water Science Center, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the DESERT WATER AGENCY, party of the second part.

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for cooperative water resources investigations in the Desert Water Agency area as outlined in the USGS program letter dated September 26, 2019 (Scope of Work), herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50, and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) include In-Kind-Services in the amount of $0.00.

(a) $36,050.00 by the party of the first part during the period November 1, 2019 to October 31, 2020

(b) $88,965.00 by the party of the second part during the period November 1, 2019 to October 31, 2020

(c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of : $0.00

Description of the USGS regional/national program:
Not Applicable

(d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request; be furnished by the party of the first part; at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties. The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements, which are available on the USGS Fundamental Science Practices website (https://www2.usgs.gov/fsp/).

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer#: 6000000847
Agreement#: 20ZGJFA01200
Project #: ZG00GZV
TIN #: 95-2408471

9. Billing for this agreement will be rendered **quarterly**. Invoices not paid within 60 days from the billing date will bear Interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C § 3717) established by the U.S. Treasury.

USGS Technical Point of Contact

Name: Scott Patterson
Supervisory Hydrologic Technician
Address: 12110 Tech Center Drive
Poway, CA 92064
Telephone: (858) 679-4015
Fax: (858) 679-4019
Email: rspatter@usgs.gov

Customer Technical Point of Contact

Name: Mr. Mark Krause
General Manager
Address: Post Office Box 1710
Palm Springs, CA 92263-1710
Telephone:
Fax:
Email:

USGS Billing Point of Contact

Name: David Penisten
Supervisory Budget Analyst
Address: 6000 J Street - Placer Hall
Sacramento, CA 95819
Telephone: (916) 278-9200
Fax: (916) 278-3070
Email: dpenisten@usgs.gov

Customer Billing Point of Contact

Name:
Address:
Telephone:
Fax:
Email:

U.S. Geological Survey
United States
Department of Interior

Signature

By _____ Date: 9/26/2019
Name: Eric G. Reichard
Title: Director, USGS California Water Science Center

DESERT WATER AGENCY

Signatures

By_____ Date: _____
Name:
Title:

By_____ Date: _____
Name:
Title:

By_____ Date: _____
Name:
Title:

6-B

STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

OCTOBER 15, 2019

RE: REQUEST AUTHORIZATION FOR GENERAL MANAGER TO EXECUTE MEMORANDUM OF UNDERSTANDING FOR THE FIRST FIVE-YEAR UPDATE OF THE ALTERNATIVE PLAN FOR THE MISSION CREEK SUBBASIN

On July 17, the Department of Water Resources (DWR) announced and notified us that our Alternative Groundwater Management Plans (Alternative) for the Mission Creek satisfied the objectives of the Sustainable Groundwater Management Act (SGMA) and therefore was approved. DWR Staff issued a report with recommendations including a statement of findings. The staff report also proposes recommended actions for consideration that it believe will enhance the Alternative and facilitate future evaluation by the Department.

The Alternatives were submitted to DWR in late December 2016 and accompanied by Bridge Documents prepared to explain how the elements of the Alternatives are functionally equivalent to the elements of a groundwater sustainability plan. Approved alternatives are required to submit annual reports due each year by April 1; annual reports were submitted in April 2018 and 2019. Agencies must resubmit the Alternative by January 1 every five years. The first five-year update is due by January 1, 2022.

Staff finds (findings) that the Alternative satisfies the objectives of SGMA, the Agencies are authorized to continue to manage the Subbasins to that alternative, without the need to develop a Groundwater Management Plan (GSP). The evaluation and assessment of the Alternative undertaken by DWR states that it creates no foreseeable indirect impacts, and any impacts that might occur would be difficult to predict with any accuracy and too speculative to allow DWR to provide for meaningful analysis and review.

The MOU is an agreement for the first five-year update of the alternative plan for the Mission Creek Subbasin between Desert Water Agency, Coachella Valley Water District (Parties) and Mission Springs Water District. It is a cost sharing agreement between the Parties (attached).

The purpose is to memorialize the intent of the Parties to share consultant costs to prepare and submit the Alternative plan update. The MOU does not address governance. Wood Environment and Infrastructure Solutions, Inc. (Wood) is the consultant the parties have selected. The term of the agreement with Wood is from September 25, 2019 through September 24, 2021 (2 years). The contract may be extended for an additional 3 years or terminated collectively by the Parties.

Coachella Valley Water District will be the administrator of the consultant agreement. Each Party agrees to pay one-third (1/3) of the costs. The Wood proposal for the 5 year update to the Alternative plan is $1.17 Million. The Parties are currently putting together a grant application for Prop 68 funds ($850 for updating the plan and $1 Million for monitoring well construction). We should be given a priority having not received previous grant funding from this proposition.

Staff requests approval for the General Manager to execute the consultant cost sharing MOU for the first five-year update of the Mission Creek Subbasin Alternate plan between Desert Water Agency, Coachella Valley Water District and Mission Springs Water District.

MEMORANDUM OF UNDERSTANDING

FOR THE FIRST FIVE-YEAR UPDATE OF THE

ALTERNATIVE PLAN FOR THE MISSION CREEK SUBBASIN

This memorandum of understanding (MOU) is effective as of September 19, 2019 and is entered into by and among the Coachella Valley Water District (CVWD), Desert Water Agency (DWA), and the Mission Springs Water District (MSWD) (collectively referred to herein as "the Parties") as a cost sharing agreement related to the First Five-Year Plan Update ("Update") of the Alternative Plan for the Mission Creek Subbasin.

SECTION 1:

AUTHORITY OF THE PARTIES

1.1 Coachella Valley Water District (CVWD) is a public agency, organized and operating pursuant to the County Water District Law (CWC sections 30000 *et seq*.), and the Coachella Valley Water District Merger Law, (CWC sections 33100, *et seq*.). CVWD has groundwater management powers under its enabling legislation and other applicable law.

1.2 Desert Water Agency is an independent special district created by a special act of the State Legislature contained in chapter 100 of the appendix of the CWC. Desert Water Agency Law has groundwater management powers including the power to replenish local groundwater supplies and collect assessments necessary to support a groundwater replenishment program for recharge activities that benefit the Subbasin as provided for in the Desert Water Agency Law, and has statutory authority over water supply.

1.3 Mission Springs Water District is a public agency of the State of California, formed in 1953 as the Desert Hot Springs County Water District, organized and operating pursuant to the County Water District law (CWC sections 30000 *et seq*.). MSWD has groundwater management powers under its enabling legislation and other applicable law, and statutory authority over retail municipal water supply and wastewater management within its service area.

SECTION 2:

PURPOSES AND GOALS OF THIS MOU

2.1 The purpose of this MOU is to memorialize the intent of the Parties to share consultant costs to prepare and submit the Update of the Alternative Plan for the Mission Creek Subbasin to DWR by January 1, 2022.

2.2 This MOU does not address governance issues related to implementation of the Sustainable Groundwater Management Act ("SGMA") and the Alternative Plan for the Mission Creek Subbasin.

SECTION 3:

CONSULTANT

3.1 Wood Environment and Infrastructure Solutions, Inc. (Wood) is the consultant the Parties selected to perform on-call consulting services for maintaining compliance with the SGMA in the Mission Creek Subbasin.

3.2 The term of the agreement with Wood is from September 25, 2019 to September 24, 2021, unless earlier terminated as provided in the agreement. The Parties shall have the option to renew the agreement and negotiate a revised price, if any, for no more than three additional one-year terms. The Parties retain the right to collectively terminate the agreement with Wood, retain the services of an additional consultant, retain the services of a consultant to replace Wood, and otherwise exercise rights under the agreement or to otherwise change the relationship and work described herein.

3.3 Wood shall be retained by CVWD in accordance with all Procurement Policies of the CVWD to prepare the Update of the Alternative Plan for the Mission Creek Subbasin.

SECTION 4:

BILLING

4.1 CVWD shall administer the agreement with Wood and pay invoices from Wood per the terms of the agreement.

4.2 CVWD shall invoice each Party for reimbursement of one-third (1/3) of the payments that are made to Wood.

4.3 Each Party shall pay CVWD invoices within 30 days of receipt of the invoice.

SECTION 5:

GENERAL PROVISIONS GOVERNING THIS MOU

5.1 Term. The term of this MOU shall commence on the date the last of the Parties signs this MOU ("Effective date").

5.2 Termination. Any Party may terminate its participation in this MOU upon thirty (30) days' prior written notice to the other Parties, with or without cause. Any Party terminating or otherwise ceasing its participation in this MOU shall be responsible for its share of the costs, as set forth herein, which are incurred on or before the effective date of said termination.

5.3 Counterparts. This MOU may be executed in one or more counterparts, each of which shall be deemed to be an original.

IN WITNESS WHEREOF, the Parties have executed this MOU as of the day and year established by Section 5.1 herein.

COACHELLA VALLEY WATER DISTRICT

Dated: _____

_____
Jim Barrett
General Manager

DESERT WATER AGENCY

Dated: _____

_____
Mark Krause
General Manager

MISSION SPRINGS WATER DISTRICT

Dated: _____

_____
Arden Wallum
General Manager

6-C

STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

OCTOBER 15, 2019

RE: REQUEST AUTHORIZATION FOR GENERAL MANAGER TO EXECUTE A LETTER OF AGREEMENT FOR THE COACHELLA VALLEY URBAN WATER MANAGEMENT PLAN

The six local water agencies (Desert Water Agency, Coachella Valley Water District, Coachella Water Authority, Indio Water Authority, Mission Springs Water District and Myoma Dunes Water Company) plan to develop a regional Urban Water Management Plan to submit in 2021 per Department of Water Resource requirements.

Agencies are required to submit an Urban Water Management Plan every five years. Prior to this effort, all of the local agencies have submitted their own individual plans. This effort will streamline cost, staff time and data. It will also allow for a greater level of consistency, which will improve the value of the plans.

The agencies put out a Request for Proposals in July and received three proposals. After interviewing two of the firms, the group selected Water Systems Consulting (WSC). The proposal that they submitted is attached.

Desert Water Agency will act as the contract manager for this project and will invoice its five partner agencies for their share of the costs. In order to document and enforce the cost-sharing agreement, staff developed a letter attached to this memo.

After Desert Water Agency signs the Letter of Agreement, which has been reviewed by legal counsel, staff will transmit to partner agencies for signature. The other agencies have all had an opportunity to review the Letter of Agreement attached and have had an opportunity to request changes or voice concerns. We do not anticipate any substantive changes.

Staff requests authorization for the General Manager to sign a Letter of Agreement for the Coachella Valley Urban Water Management Plan for cost sharing.

LETTER OF AGREEMENT

October 16, 2019

Mr. Jim Barrett, General Manager
Coachella Valley Water District
75525 Hovley Lane
Palm Desert, CA 92211

Ms. Trish Ray, General Manager
Indio Water Authority
83101 Avenue 45
Indio, CA 92201

Mr. Arden Wallum, General Manager
Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240

Mr. William Pattison, City Manager
Coachella Water Authority
53462 Enterprise Way
Coachella, CA 92236

Mr. Mark Meeler, General Manager
Myoma Dunes Water Company
79050 Ave 42
Bermuda Dunes, CA 92203

Re: Cost Sharing for the 2020 Regional Urban Water Management Plan Development
Attachments: WSC proposal

This letter of agreement ("Agreement") serves as an agreement between the Coachella Valley Water District (CVWD), Indio Water Authority (IWA), Mission Springs Water District (MSWD), Coachella Water Authority (CWA), Myoma Dunes Water Company (MDWC) and Desert Water Agency (DWA) for the cost sharing of the following activity required to comply with the Department of Water Resources' Regional Urban Water Management Planning requirements:

> The preparation of a regional Urban Water Management Plan for 2020, including regional and individual agency content, Water Shortage Contingency Plans, and other necessary elements as set forth in the 2020 UWMP Guidebook (pending release).

For the purposes of this Agreement, Water Systems Consulting, Inc. (WSC) was selected through a competitive process to complete a regional UWMP on behalf of the agencies. Each agency had the opportunity to review and provide comments on the scope of work and score all proposals received from responding firms.

For this activity, it is agreed that each agency will have the opportunity to review and provide comments on the contract, regional components, Draft Report, and Final Draft Report which are deliverables from WSC for this project. Each agency will be given an electronic and two hard copies of the Final 2020 Coachella Valley Urban Water Management Plan.

For regional meetings, all agencies agree and are required to send a representative. If there are any additional decisions, disputes or disagreements during the course of plan development, the group will vote to resolve them. A simple majority vote of the agencies will resolve issues, including contract amendments. If an agency is absent when a vote is cast, that agency's vote should be ascertained by phone or email as soon as possible. Agencies may contract directly with WSC outside the scope of this Agreement to conduct additional work as desired.

The proposal by WSC to perform this work is $179,373.00. The cost share agreed upon as is follows:

Agency	Connections	40% Equal Share of Total Cost	60% Share Based on # of Connections	Total Share	Percentage contribution
CVWD	108,000	$11,958.20	$65,607.49	$77,565.67	43.2%
DWA	23,000	$11,958.20	$13,969.57	$25,927.77	14.5%
IWA	22,560	$11,958.20	$13,700.51	$25,658.71	14.3%
MSWD	12,967	$11,958.20	$7,878.06	$19,836.26	11.1%
CWA	8,100	$11,958.20	$4,918.41	$16,876.61	9.4%
MDWC	2,550	$11,958.20	$1,549.78	$13,507.98	7.5%

DWA will administer the contract with WSC and pay invoices per the terms of this Agreement. DWA will invoice agencies for reimbursement of their share of the contract amount.

Any agency may withdraw from this Agreement at any time, for any reason or no reason, upon seven days' prior written notice to the remaining agencies. In the event that an agency withdraws from this Agreement, the withdrawing agency will be responsible for its percentage of the amount due to WSC for work performed through the date of withdrawal plus $8,968.65 (5% of WSC contract value). The remaining agencies will reallocate remaining cost in alignment with the split depicted above.

Sincerely,

_____ Date:_____

Mark Krause
General Manager
Desert Water Agency

ACCEPTED AND AGREED TO

This letter will constitute our agreement to the preceding terms. If this arrangement is acceptable to you on behalf of your agency, please acknowledge your agreement by signing this letter and returning a copy to us. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

_____ Date:_____

Jim Barrett
General Manager
Coachella Valley Water District

_____ Date:_____

Trish Ray
General Manager
Indio Water Authority

_____ Date:_____

Arden Wallum
General Manager
Mission Springs Water District

_____ Date:_____

William Pattison
City Manager
City of Coachella/Coachella Water Authority

_____ Date:_____

Mark Meeler
General Manager
Myoma Dunes Water Company

August 26, 2019

PROPOSAL FOR

COACHELLA VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WSC
WATER SYSTEMS CONSULTING, INC.

WSC
WATER SYSTEMS CONSULTING, INC.

August 26, 2019

Ashley Metzger
Outreach and Conservation Manager
Desert Water Agency
ashley@dwa.org

SUBJECT: PROPOSAL FOR THE PREPARATION OF A COACHELLA VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

Dear Ms. Metzger,

Water Systems Consulting, Inc. (WSC) is pleased to submit this proposal to prepare a Coachella Valley Regional Urban Water Management Plan (RUWMP) for the six local water providers (agencies) in the Coachella Valley. The agencies are looking for an experienced, responsive consultant to deliver a cost-effective RUWMP that meets the new California Department of Water Resources (DWR) requirements and builds off regional efforts like the Coachella Valley Integrated Regional Water Management and Stormwater Resources Plan (Integrated Plan).

WSC is a full-service engineering consulting firm that specializes in regional urban water management planning, sustainable solutions, and bringing value to our clients. Our team completed 28 UWMPs during the 2015 cycle, including RUWMPs, and has completed nearly 40 UMWPs since the 2005 cycle. WSC's approach is designed to:

- Prepare a RUWMP that meets the 2020 UWMP Guidebook requirements and is deemed complete by DWR.
- Build on previous regional planning efforts to provide regional consistency and efficient UWMP preparation.
- Provide consistent methodologies for population, demand, and supply projections across agencies and align water shortage contingency plans.
- Provide a set of tools that facilitate data collection and production of the report to economize efforts and enable RUWMP agencies to perform additional analysis and reporting.

WSC is excited for the opportunity to propose on this project. Please contact WSC's proposed Project Manager, Jeroen Olthof at (858) 397-2617, ext. 301, or Principal in Charge, Jeffery Szytel, at (805) 457-8833, ext. 101 with any questions. You can also email us at jolthof@wsc-inc.com or jszytel@wsc-inc.com. We are excited for the opportunity to partner with you on this project and look forward to collaborating with the Coachella Valley agencies.

Sincerely,
Water Systems Consulting, Inc.

Jeroen Olthof, PE, MS
Project Manager

Jeffery Szytel, PE, MS, MBA
Principal in Charge / President

Table of Contents

WHAT OUR CLIENTS SAY:

"WSC has worked seamlessly as an extension of our staff to assist us in many of our projects. Their involvement has improved our ability to stay on scope and on budget while meeting the ever-increasing number of stakeholder concerns."

Richard Svindland, PE, President, California American Water

"WSC effectively used GIS tools to perform spatial analysis of the raw data. The clear and competent presentation of the customer data allowed District policy makers to understand the information and act upon it."

Mr. Michael LeBrun, Former General Manager, Nipomo Community Services District

"The County has selected the WSC team for numerous water resource engineering projects, including the State Water Project Coastal Branch Capacity Assessment and the Paso Basin Supplemental Supply Options Study. For each of these projects, WSC supported the County in developing tailored solutions by providing strong technical competency, focused attention to detail and responsive service."

Ms. Courtney Howard, PE, Water Resources Division Manager, City of San Luis Obispo

Project Understanding

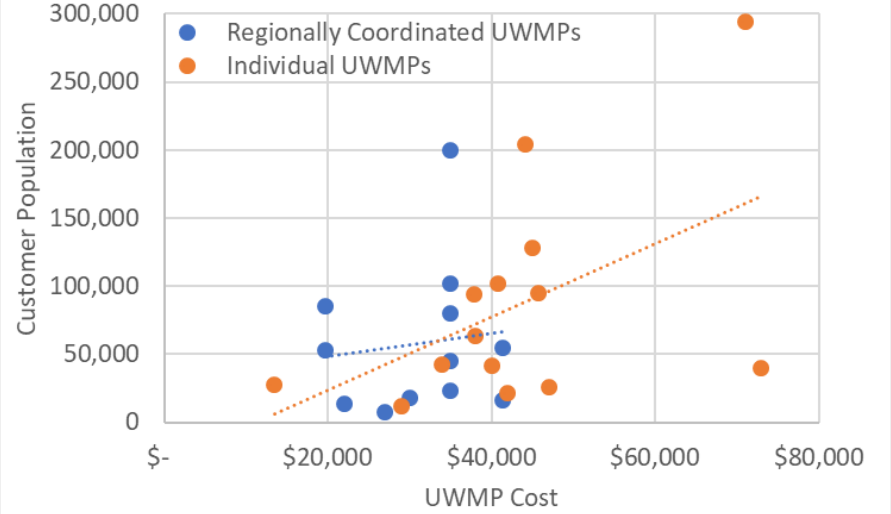
Regional UWMPs provide multiple benefits

The Coachella Valley Regional Water Management Group (CVRWMG) recently completed a comprehensive water resources plan – the Coachella Valley Integrated Regional Water Management and Stormwater Resources Plan (Coachella Valley IRWM/SWR Plan). The Coachella Valley RUWMP agencies – Coachella Valley Water District (CVWD), Coachella Valley Water Authority (CWA), Desert Water Agency (DWA), Indio Water Authority (IWA), Mission Springs Water District (MSWD), and Myoma Dunes Water Company (MDWC) – want to build on successful collaboration demonstrated in the Coachella Valley IRWM/SWR Plan and are seeking a consultant to prepare a 2020 RUWMP.

Each of the Coachella Valley RUWMP agencies prepared individual UWMPs in 2015 and now would like to participate in a 2020 RUWMP to leverage the benefits of regional planning while incorporating individual agency UWMP reporting requirements.

Regional UWMPs provide multiple benefits to participants:

1. Streamlined UWMP development for agencies with shared supplies by standardizing common UWMP elements.
2. Consistent methodologies for population, demand, and supply projections across agencies provides consistency in the UWMP and for use of data outside of the UWMP.
3. Alignment between agencies' water use efficiency programs and water shortage contingency plans avoids confusion between residents in different service areas.
4. A unified data collection and management process avoids duplication of work by individual agencies and provides economies of scale.
5. Enables incorporation of regional efforts, which provides consistent data and messaging between planning documents.
6. Encourages communication among local agencies to discuss issues outside the UWMP.
7. Single document that can be a valuable reference point for all agencies.



In 2015, Regional UWMPs and UWMPs that leverage regional planning resources by WSC were on average 30% less expensive to prepare than individual UWMPs.

Project Approach

Demonstrated Expertise and Proven UWMP Qualifications

WSC is a civil and environmental engineering firm that specializes in the planning, design, evaluation, and optimization of municipal water, wastewater, and recycled water systems. WSC is an industry leader at preparing UWMPs for agencies like those in the Coachella Valley. WSC staff completed 28 UWMPs during the 2015 cycle, including the San Bernardino Valley Municipal Water District Regional UWMP (RUWMP), and our team of UWMP experts continues to support several of these agencies in updating their analytical toolsets as new information becomes available about changes in supply and demand assumptions.

WSC serves special districts, cities, counties, investor owned utilities and regulatory agencies throughout California, and we have a strong understanding of the regulatory and political climate that our clients operate within. WSC works collaboratively with our clients, applying proven approaches, state-of-the-art tools, and expertise- driven innovation to deliver truly outstanding results. As DWR began preparation of their Guidebook for the 2015 UWMPs, they called on WSC to contribute to key areas as part of their Guidebook Advisory Committee (GAC). WSC was selected to participate in the DWR 2020 UWMP Guidebook Workgroup and is also a part of two other related DWR Workgroups developing guidance for implementation of Executive Order B-37-16 (EO), Senate Bill 606 (SB 606), and Assembly Bill 1668 (AB 1668). WSC's participation in these Workgroups, especially the UWMP Guidebook Workgroup, will directly supplement Coachella Valley agencies' representatives input from five other Workgroups to make sure the RUWMP is consistent with requirements and positioned for future reporting.

WSC's experience developing an RUWMP and other UWMPs leveraging regionally shared planning and resources provides unique experience necessary to cost-effectively prepare a RUWMP that meets each agency's needs and expectations. Based on State-level guidance development, previous statewide UWMP and RUWMP work, previous work in the Coachella Valley, and our discussions with the RUWMP agencies, WSC has identified four key success factors for this project. These success factors, along with an overview of WSC's approach to meet these objectives, are presented below.

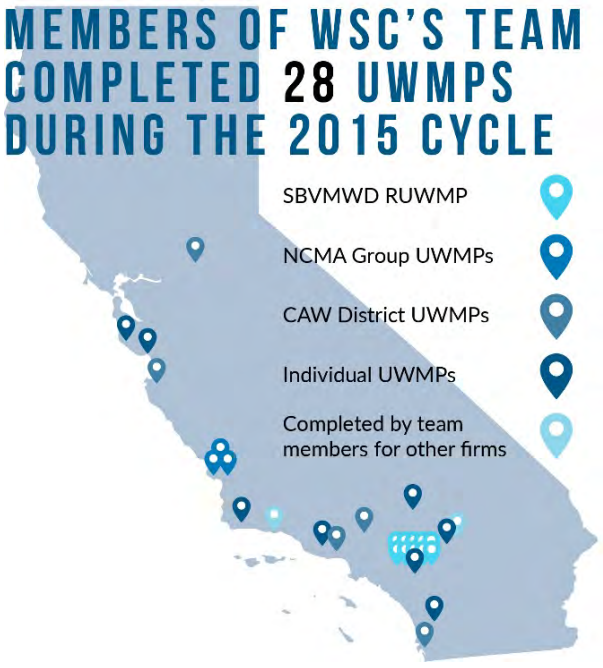
Key Success Factor	WSC Approach
Prepare an RUWMP that meets the 2020 UWMP Guidebook requirements and is deemed complete by DWR	Apply WSC's RUWMP and UWMP experience, expertise, and insight gained from participating on DWR committees efficiently incorporate new requirements and avoid mis-steps

Build on previous regional planning efforts to provide consistency and efficient UWMP preparation	WSC will apply its regional planning experience to complement and build on previous Coachella Valley regional planning efforts
Provide consistent methodologies for population, demand, and supply projections and align water shortage contingency plans	Apply UWMP experience to select the most appropriate methodologies and work with agencies to identify appropriate water shortage stages and measures
Provide a set of tools that facilitate data collection and production of the report to economize efforts and enable RUWMP agencies to perform additional analysis and reporting	Apply established data management practices and output tools to provide consistency, save costs, and reduce the chances for error. In addition, the tools will set up subsequent UWMP-related reporting.

The following sections highlight some elements of WSC's plan for achieving these key success factors and making the 2020 RUWMP a model for coordinated regional planning.

WSC will apply RUWMP and UWMP experience, expertise, and insight to operate efficiently, incorporate new requirements, and avoid mis-steps

As detailed in the qualifications section of our proposal, WSC staff completed 28 UWMPs during the 2015 UWMP cycle, including an RUWMP and two regionally leveraged UWMPs. As noted above, WSC's proposed Primary Author, Spencer Waterman is serving on the 2020 UWMP Guidebook Workgroup and two other team members are participating in other DWR workgroups related to water use efficiency legislation implementation. Spencer will be involved in the process to update the Guidebook and he will use this knowledge to start the team down the right road the first time.



There have been some significant changes to the California Water Code (CWC) since the 2015 UWMP that will need to be addressed in the 2020 UWMP. WSC will proactively monitor and report back on changes to UWMP guideline requirements through WSC staff's participation on the DWR UWMP Guidebook Workgroup, enabling the team to bring the most up-to-date knowledge to this project. Two other WSC staff will supplement Coachella Valley agencies staff's input from five other Workgroups focusing on UWMP related reporting.

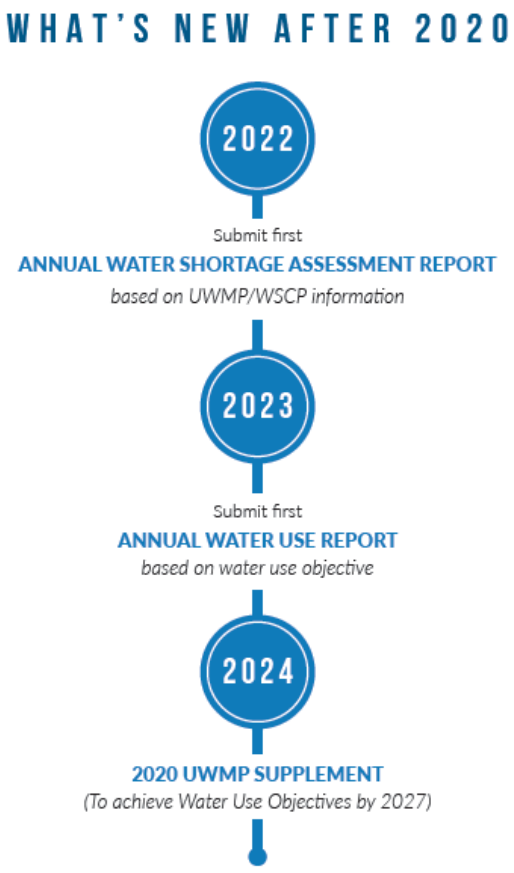
New UWMP Requirement	Implications for Coachella Valley RUWMP Agencies
Updated Water Shortage Contingency Plan (WSCP)	Adopt WSCP as part of the UWMP. WSCP guidance will be included in the forthcoming 2020 UWMP Guidebook. CWC includes requirements to: Describe the supply reliability, procedures for annual water supply and demand assessment, six water shortage levels, response actions, communications, enforcement, legal authority, financial consequence, monitoring procedures, and reevaluation procedures CWC §10620(d)(2) and §10632.
Drought Risk Assessment	Now evaluating 5-year supply reliability CWC §10635(b)).
Water Loss Standards Compliance	Provide additional information related to compliance with adopted water loss standards (CWC §10631(d)(3)(C).
Water Supply Reliability	Must describe conditions and strategy for meeting future water supply reliability needs (CWC §10630.5).
Sustainable Groundwater Management Act	Must include latest information regarding compliance with SGMA (CWC §10631(b)(4)), such as the recently approved Alternative GSPs for Indio Subbasin and Mission Creek Subbasin.

WSC's approach gets the agencies ready for post-2020 UWMP reporting and long-term water use efficiency legislation

Between submittal of the 2020 RUWMP and submittal for the 2025 RUWMP, water providers must submit three reports:

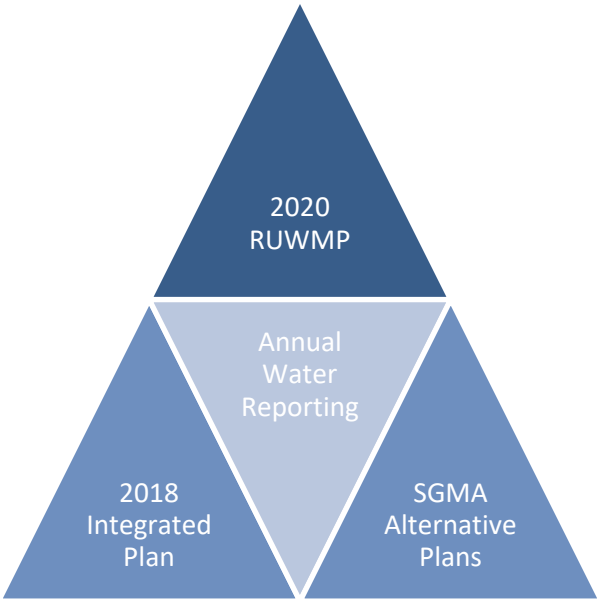
- Annual Water Shortage Assessment Report
- Annual Water Use Report
- 2020 UWMP Supplement

As noted previously, WSC will leverage knowledge from RUWMP agencies' staff and WSC staff from their participation in DWR's water conservation legislation Workgroups to position Coachella Valley agencies for post-2020 reporting. The data management discussion below includes considerations for using the data tools for these reports.



WSC will apply its regional planning experience to complement and build on previous Coachella Valley regional planning efforts

Potable water demand in the Coachella Valley is projected to nearly double from 2015 to 2035 as agricultural or vacant lands are converted to urban land uses, Tribal lands are developed, and cities grow through annexation or expanded spheres of influence. At the same time, Coachella Valley water supplies are stressed from over pumping of groundwater combined with reduced reliability and yield from imported water supplies. In addition, the region could face high costs to meet future chromium-6 MCL requirements, climate change will further stress supplies while increasing demands, and many Disadvantaged Communities (DACs) lack access to safe and affordable water supplies. These considerations require a holistic understanding of regional and statewide issues as they relate to demand and supply planning in the RUWMP.



Previous regional planning efforts will be the foundation of information for the 2020

The RUWMP agencies have completed several water resources planning efforts that will be the foundation of information incorporated into the 2020 RUWMP. The 2018 Coachella Valley Integrated Plan will provide the most regional information and will be supplemented with information from two Sustainable Groundwater Management Act (SGMA) Groundwater Sustainability Plan (GSP) Alternative Plans, individual agency annual reporting, and individual agency 2015 UWMPs.

WSC will augment the regional planning efforts with WSC's water resources experience in the Coachella Valley and across the state, including long-term State Water Project (SWP) planning and conjunctive use projects.

- Master planning reports and groundwater assessments have been prepared throughout the Coachella Valley for various RUWMP agencies. Our team members have already invested time to review existing reports and have also participated in the development of select studies, including the Indio Water Authority Recycled Water Feasibility Study. This study evaluated approaches to diversify IWA's water supply portfolio with the use of recycled water. With WSC's planning expertise and local knowledge of the water supply constraints within the region, our team will hit the ground running and collaboratively work with the CVRWMG to prepare the 2020 UWMP.

- While there are no physical facilities to deliver SWP water to the Coachella Valley, the use of exchanges and transfers makes the SWP an important consideration in long-term supply planning in the Valley. WSC has developed numerous planning studies and over 15 UWMPs for agencies that use SWP water directly and indirectly. WSC understands operations, issues, and the institutional framework for water management in California in consideration of the SWP. We have been working with existing SWP contractors to incorporate SWP operational changes associated with the Delta Conveyance Project to ensure that the contractors continue to maximize their yield from the project. Also, through our work on the SBVMWD 2015 RUWMP, we have gained insight on ways to effectively capture and convey complex SWP agreements and data into streamlined narrative, table and figures for a RUWMP. WSC will apply its SWP expertise to avoid complicated jargon and information, providing clear and usable information for retail agencies and outside users.

WSC will apply UWMP experience to select the most appropriate methodologies and work with agencies to identify appropriate water shortage stages and measures

The last ten years have been a dynamic period in the California water supply industry. Extended drought in the Colorado River Basin and northern California reduced the availability of imported supplies while new regulations and extensive education efforts have led to reductions in per-capita water consumption, but it is not clear how behaviors will change if the drought becomes less urgent. These and other factors have made the projection of water demands and supplies a challenging task.

When deciding what assumptions to make for the RUWMP, it is important to recognize how the document will be used. In water infrastructure planning, it is common to over-estimate future demands, so that infrastructure can be built ahead of growth. In financial planning, it is common to underestimate growth, so an agency does not experience actual revenues less than projected. For the UWMP, the report will be most valuable if it has the most realistic assessment of likely future conditions.

Any major capital investments will be supported by other, more focused studies; the RUWMP is intended to provide policy makers and the public with an accurate appraisal of how supplies compare to demands. To increase confidence in the results, WSC proposes to:

- Work with each retail agency to incorporate their growth projections or develop them using estimates prepared by the appropriate local government planning agency. DWR guidance regarding seasonal population fluctuations will be incorporated.

WSC will use Geographic Information Systems (GIS) to define the populations and demands being served by each agency, both to generate maps for the RUWMP and to help eliminate double counting or omissions.

- Analyze per-capita water use trends and work with the retail agencies to identify a defensible value for future forecasting based on DWR's four approved methodologies. DWR guidance regarding future water use objectives based on indoor and outdoor water use budgets should be considered.
- Incorporate the latest information on regional supply issues, including the IRWM process.

WSC's Expertise Includes Population Fluctuation Considerations

WSC staff successfully helped Big Bear Lake area agencies to prepare population projections that accounted for seasonal population fluctuations. WSC will leverage its methodologies to account for Coachella Valley winter tourism and agricultural worker population increase based on the best available data. WSC can represent the Coachella Valley as an example case in the UWMP Guidebook Workgroup meetings and to make sure that the needs of Coachella Valley agencies are considered during development of the demand forecasting methodologies.

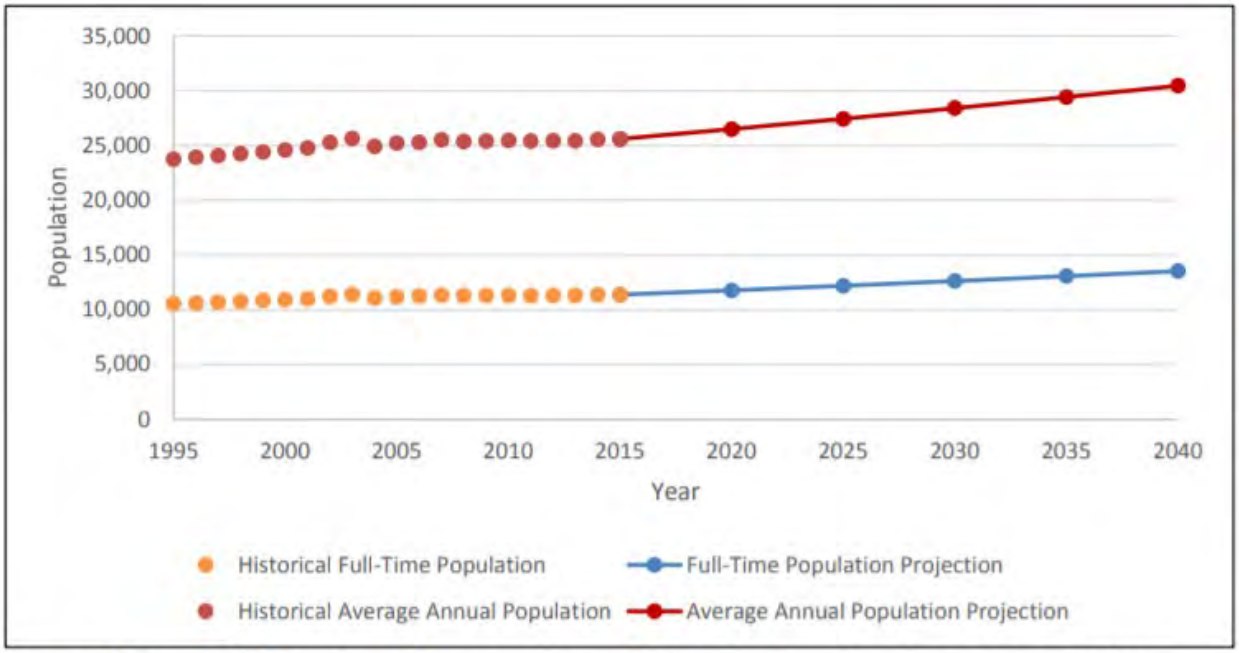


Figure 3.2 Full-Time and Average Annual Historical and Projected Population

WSC staff prepared population projections that included seasonal population estimates for Big Bear Lake agencies' and Pismo Beach's 2015 UWMPs.

WSC will recommend methodologies to comply with new Water Shortage Contingency Plan requirements

Each Coachella Valley agency has its own WSCP that will have to be updated according to forthcoming DWR guidance. It is likely that DWR's guidance will be similar to the AWWA Drought Preparedness and Response Manual (M60), which has recently been updated. Upon initial review of Coachella Valley agencies WSCPs, it appears that amendments need to be made to specifically

tie water shortage stages to a reduction in water supply conditions. The new WSCP requirements indicate that all agencies will need to incorporate consideration of six water shortage stages. WSC will provide insight from DWR UWMP Guidebook Workgroup participation to inform agencies of recommended methodologies to comply with the new water code.

WSC will apply established data management practices and output tools to provide consistency, save costs, and reduce the chances for error.

WSC will provide a set of tools that facilitate data collection and production of the report to economize efforts and enable RUWMP agencies to perform additional analysis and reporting. In addition, the tools will facilitate subsequent UWMP-related reporting.

Database approach to information storage and reporting saves costs and reduces the chances for error

Preparing a UWMP for a single agency requires a disciplined approach to data management to track the sources of information, ensure consistency with other reports, and prevent the double-counting of resources. For this project, with six inter-related agencies, data management is even more critical.

For the 2020 cycle, DWR will provide a standard set of Excel data tables to be completed by suppliers. The preliminary version from DWR has separate tabs for each chapter, with the basic structure of the required tables for each chapter on the tab. This format will facilitate uploading the information into the on-line submittal tool, and it provides a visual output that may be helpful for some users. However, for this project, the standard DWR spreadsheet does not provide the best mechanism for storing the information. If separate spreadsheets are prepared for each agency, the team will have to manage six spreadsheets with potential interconnections and duplication between each one. The same issues will remain:

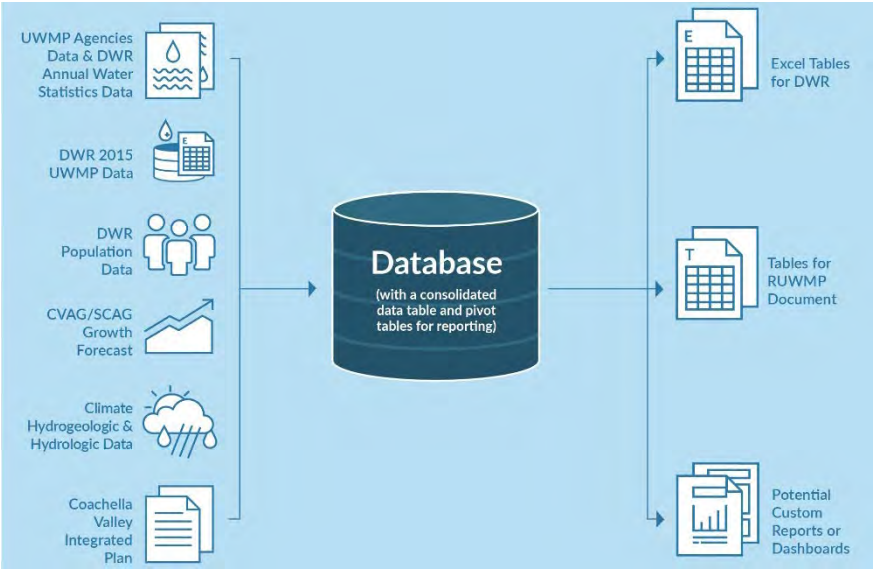
- Potential duplication or exclusion of demands or groundwater production values
- A tedious update process if information is updated during the review cycle
- An inability to easily aggregate the data for regional analysis

The RUWMP provides an opportunity to develop a more robust platform for storing regional water supply and demand information. WSC recommends compiling all information into a single database. WSC would build a data portal with information imported from the 2015 UWMPs and 2015-2020 data provided by all agencies.

WSC looks forward to working with the Coachella Valley agencies to optimize the data structure for long-term utility. Under the basic structure, each number in the RUWMP would become a single record in the database. Each record is one row in a table; each record has fields that correspond to the columns in a typical table view. The fields added by WSC are shown on the next page.

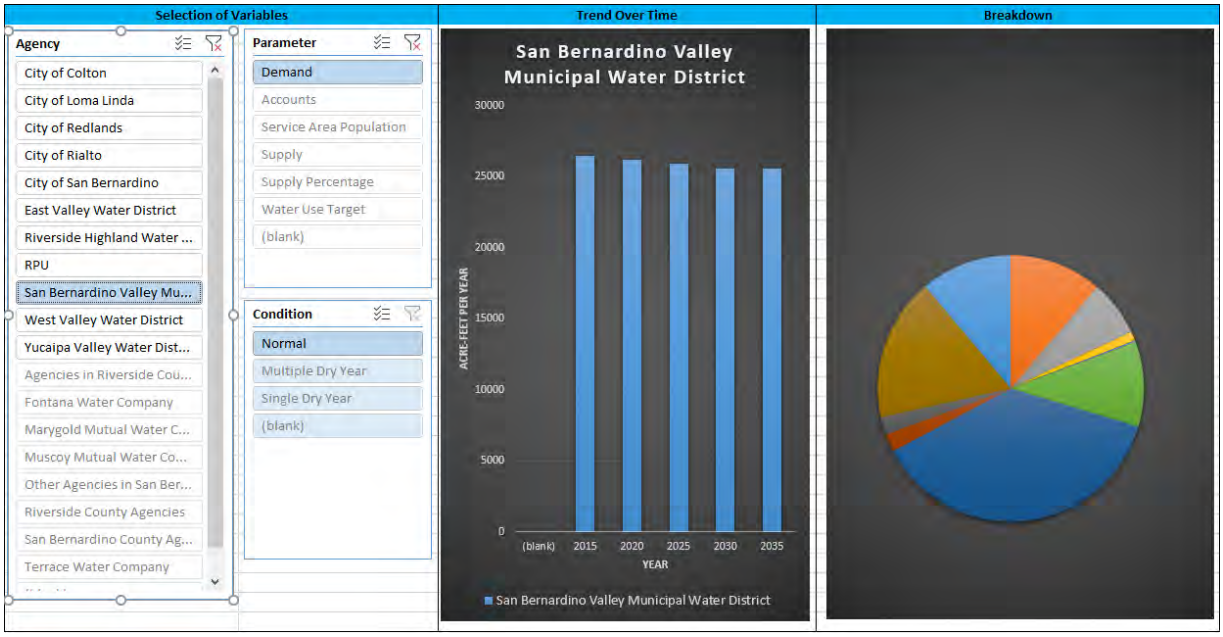
Field Name	Contents
Agency	Agency Name
Parameter	Service Area Population, Accounts, Demand, or Supply
Condition	Normal, Single Dry Year, or Multiple Dry Year
Category	For Demands: By Customer Type, By Household Income For Supplies: Groundwater, Surface Water, State Water Project, Recycled Water
Type and Sub-Type	For Demands: Customer type (single-family, multi-family, …) For Supplies: Groundwater basin, source of recycled water
Value	The number
Units	The units of measurement, typically acre-feet
Year	The relevant timeframe for the value
Source	Where the number came from

Most of these fields are auto-populated, so there is minimal additional effort to populate the data table. Once the information is in this format, it is much easier to generate output in whatever format is needed. For example, WSC would generate a version of the DWR Excel tables that referenced this consolidated database, so that the Excel tables could be re-generated whenever new information is entered. The database can also be sorted and queried to make sure that no duplicate or conflicting values are included. If conflicts are found, the sources of data can be noted and used to select the appropriate value and flag the other value for exclusion from analysis. In addition, each agency would have easy access to a consolidated view of demands and supplies in the entire service area or any sub-set of agencies. The database organization is shown conceptually in the figure below.



WSC's proposed approach includes a central database that efficiently consolidates input from various sources, enables more effective quality control of data, and provides a cohesive set of output reports.

Having information in a database format allows the rapid generation of graphs for one or more agency service areas. Dashboard-type reports could be generated for each agency and customized for their specific needs. The following page shows an example of a dashboard that could be used to communicate with retail agencies and other stakeholders.



Organizing regional water supply and demand information in a consolidated database will facilitate the development of reports and graphs for various uses, such as identifying trends over time.

WSC's proven project management approach keeps UWMP efforts on schedule and within budget.

During the 2015 cycle, WSC completed a total of 28 UWMPs. Each of these plans were completed on schedule and at or under budget. WSC was able to gain efficiencies through measures that included:

- **A collaborative internal working group for all staff working on UWMPs throughout the state.** This group shared news and ideas on updates from DWR, alternative approaches to development of key sections, innovative calculation tools, and lesson learned to avoid potential pitfalls.
- **Real-time budget progress reporting through WSC's web-based enterprise management system.** This system allows WSC's project manager to have real-time access to hours spent on each phase of each project. The system also facilitates planning of future workload to ensure that key staff are not over-scheduled and are available to meet project deadlines.
- **Regular project check-in meetings to monitor and review progress in meeting interim milestones.** The initial project schedule will accommodate adequate time for review of interim drafts by the agencies, as well as allowing for public review at the appropriate times.

Organizational Chart

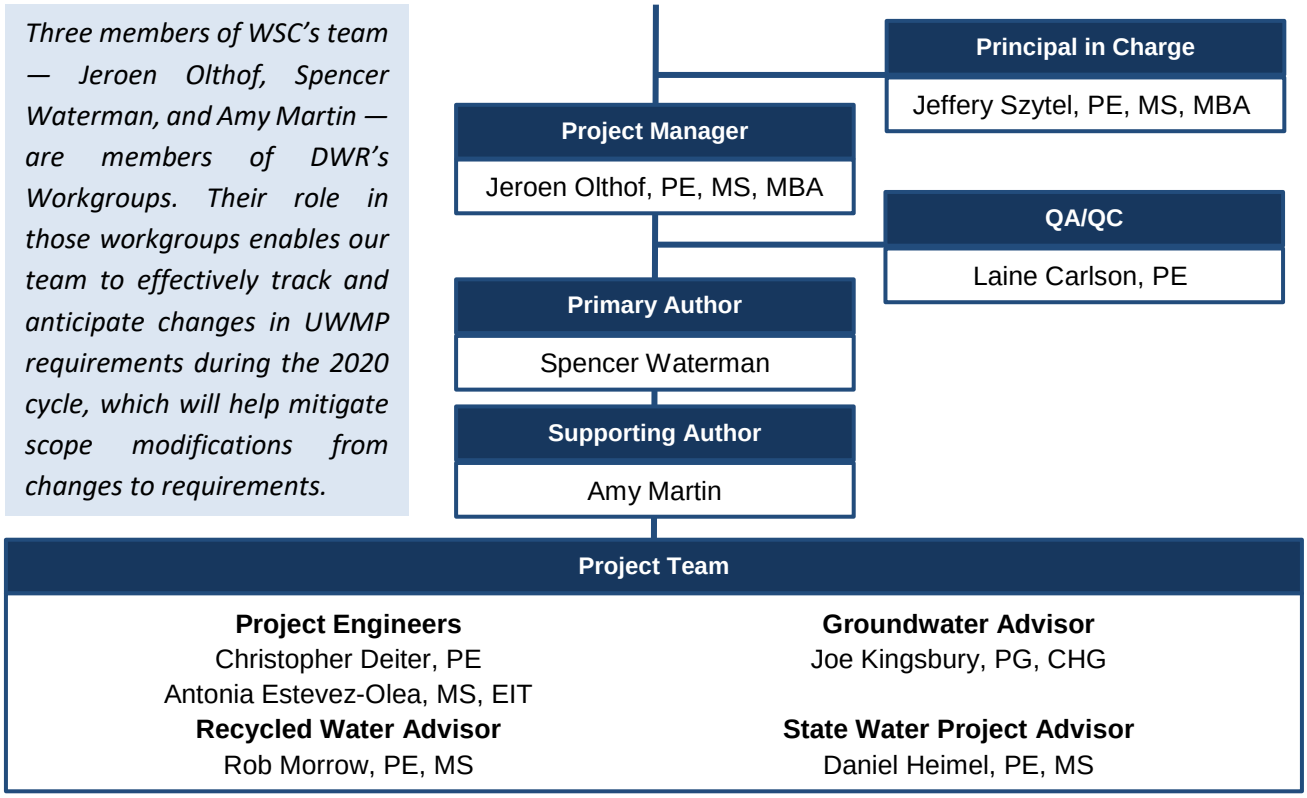
WSC is Your Premier UWMP Consulting Firm

WSC is a full-service water resources planning and engineering consulting firm that specializes in innovative and sustainable solutions, relationship building, and bringing value to our clients. We thrive and grow from the philosophy that people come first and that all water has value.

WSC's proposed Project Manager for the 2020 RUWMP is Jeroen Olthof. Mr. Olthof was the Project Manager for the 2015 RUWMP for the San Bernardino Valley Municipal Water District (SBVMWD) and its nine partner agencies. He will be supported by the experienced team that worked on 28 UWMPs during the 2015 cycle, including SBVMWD's RUWMP — which was worked on by proposed Principal in Charge, Jeffery Szytel, Primary Author, Spencer Waterman, and QA/QC, Laine Carlson.

The rest of WSC's team consists of subject matter experts and experienced engineers, planners, and hydrogeologists several of whom have relevant knowledge and experience with participating agencies and will support the development of an efficient, defensible, and compliant RUWMP document. Detailed resumes for WSC's proposed staff in the organizational chart below are included in **Appendix A**, and detailed descriptions of WSC's recent, similar projects are included in **Appendix B.**

Three members of WSC's team — Jeroen Olthof, Spencer Waterman, and Amy Martin — are members of DWR's Workgroups. Their role in those workgroups enables our team to effectively track and anticipate changes in UWMP requirements during the 2020 cycle, which will help mitigate scope modifications from changes to requirements.



Key Personnel Capabilities and Expertise

The following table includes a brief summary of the role, experience, address, phone number, and email address of each person on WSC's team. Detailed resumes are included in Appendix A.

Key Personnel

JEROEN OLTHOF, PE, MS, MBA – Project Manager

Mr. Olthof has more than 25 years of experience developing water resources planning studies, databases, and the integration of GIS with hydraulic models. He led the development of SBVMWD's 2015 RUWMP and has experience developing UWMPs for regionally-linked client groups. He has worked with the other members of WSC's team on previous UWMP cycles and will incorporate the efficiency and lessons learned from those efforts. He is currently participating in DWR's Data Streamlining Workgroup.

(858) 397-2617, ext. 301 | jolthof@wsc-inc.com | 9815 Carroll Canyon Road, Ste. 205, San Diego, CA 92131

JEFFERY SZYTEL, PE, MS, MBA – Principal in Charge

Mr. Szytel has more than 20 years of experience that includes leading or supporting the development of dozens of UWMPs. He will serve as WSC's Principal in Charge and is available to provide insight into the development of a collaborative document that all participating agencies gain benefit from. His extensive experience providing regional stakeholder facilitation support and detailed knowledge of regional water resources planning efforts helps to build consensus and buy-in.

(805) 457-8833, ext. 101 | jszytel@wsc-inc.com | 805 Aerovista Place, Ste. 201, San Luis Obispo, CA 93401

SPENCER WATERMAN – Primary Author

Mr. Waterman has 10 years of water resources planning experience which includes 38 UWMPs, including the SBVMWD 2015 RUWMP. He is a member of DWR's UWMP Guidebook Workgroup for the second consecutive cycle. He has developed tools to standardize data and efficiently produce UWMP chapters that are compliant with regulations and easy to update in future cycles. This efficient data collection and analysis bridges the information gap between agencies during regional planning efforts.

(805) 457-8833, ext. 102 | swaterman@wsc-inc.com | 805 Aerovista Place, Ste. 201, San Luis Obispo, CA 93401

AMY MARTIN – Supporting Author

Ms. Martin has more than 13 years of experience which includes engineering project management at a leading public agency in Southern California. She specializes in water resources planning and has led Integrated Water Resource Management Plans and UWMPs for public utilities throughout the Southern California. Her experience includes work for Indio Water Authority. She is currently participating in DWR's Annual Water Supply and Demand Assessment Workgroup.

(949) 528-0960, ext. 604 | amartin@wsc-inc.com | 23232 Peralta Drive, Ste. 215, Laguna Hills, CA 92653

LAINE CARLSON, PE – QA/QC

Ms. Carlson is an engineer with more than 15 years of experience specializing in water resources planning. She served in a similar QA/QC role on the SBVMWD 2015 RUWMP which included stakeholder coordination and detailed review of data, calculations, and the report. She is based in Rancho Cucamonga and has an extensive knowledge of the regional and statewide issues and regulations relating to water resources, water conservation, and urban water management planning.

(909) 483-3200, ext. 201 | lcarlson@wsc-inc.com | 9375 Archibald Avenue, Ste. 200, Rancho Cucamonga, CA 91730

CHRISTOPHER DEITER, PE – Project Engineer

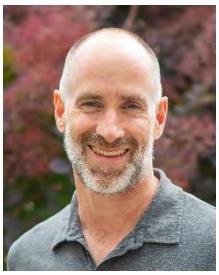
Mr. Deiter is an engineer with more than 10 years of experience which includes developing supplemental supply and master plans for agencies in the Coachella Valley. His strong working relationships and local knowledge enables WSC's RUWMP team to efficiently gather and evaluate data to align efforts with the existing regional water resources efforts in the area. He is a versatile engineer based in WSC's Rancho Cucamonga office who is available to respond quickly to project needs.

(909) 483-3200, ext. 203 | cdeiter@wsc-inc.com | 9375 Archibald Avenue, Ste. 200, Rancho Cucamonga, CA 91730

ROB MORROW, PE, MS – Recycled Water Advisor

Mr. Morrow has 19 years of water resources engineering experience focused on the implementation of recycled water projects, from concept to operation, for applications ranging from agricultural irrigation to potable reuse. He has served as the Project Manager for multiple UWMPs and has a thorough understanding of the regulations and legislation relating to recycled water, water conservation, and urban water management planning.

(805) 457-8833, ext. 128 | rmorrow@wsc-inc.com | 805 Aerovista Place, Ste. 201, San Luis Obispo, CA 93401



JOE KINGSBURY, PG, CHG – Groundwater Advisor

Mr. Kingsbury is a professional geologist and certified hydrogeologist with more than 20 years of diversified experience with groundwater, geotechnical, and environmental projects. He has extensive experience in the Coachella Valley performing well siting and rehabilitation projects. His knowledge of the groundwater basin and existing working relationships with clients means he can translate the institutional framework for water management in Coachella Valley to the UWMP process.

(909) 483-3200, ext. 202 | jkingsbury@wsc-inc.com | 9375 Archibald Avenue, Ste. 200, Rancho Cucamonga, CA 91730

DANIEL HEIMEL, PE, MS – State Water Project Advisor

Mr. Heimel is a professional engineer with 17 years of experience focused on water resources, including State Water Project feasibility studies, water quality, and recycled water. He has performed capacity evaluations of State Water Project infrastructure to assist clients in diversifying their water supplies, transferring water, and more. He also has worked on UWMPs during previous cycles and is familiar with the guidance documents and plan preparation.

(805) 457-8833, ext. 104 | dheimel@wsc-inc.com | 805 Aerovista Place, Ste. 201, San Luis Obispo, CA 93401

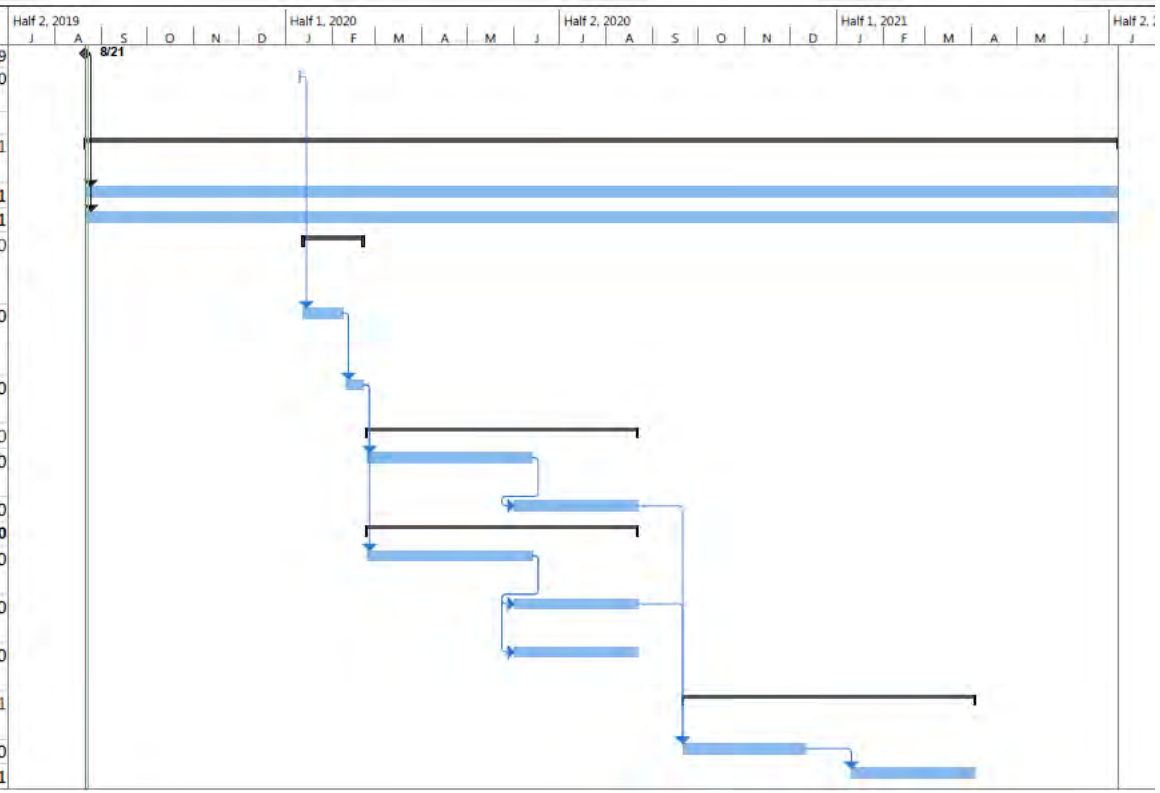
Project Schedule

WSC looks forward to working closely with the CVRUWMP agencies over the 20-month period from Notice to Proceed until the final deliverables. Over the course of this period, there will be a series of iterations and adjustments as new information becomes available. As of the anticipated notice to proceed:

- DWR's guidance documents will not be complete
- Complete consumption and production data for calendar year 2019 and 2020 will not be available

The Final Draft 2020 RUWMP will be submitted in December 2020 for review by each agency and a Final 2020 RUWMP will be submitted prior to the July 1, 2021 deadline.

ID	Task Name	Duration	Start	Finish
1	Contract Executed	0 days	Wed 8/21/19	Wed 8/21/19
2	Draft DWR UWMP Guidebook Available	1 day?	Fri 1/10/20	Fri 1/10/20
3				
4	Task 0.0 Project Management & Meetings	490 days	Wed 8/21/19	Tue 7/6/21
5	0.1 Project Administration	24.5 mons	Wed 8/21/19	Tue 7/6/21
6	0.2 Project Meetings	24.5 mons	Wed 8/21/19	Tue 7/6/21
7	Task 1.0 Legislative requirements and report format	30 days	Mon 1/13/20	Fri 2/21/20
8	1.1 Legislative Requirements Documentation	1 mon	Mon 1/13/20	Fri 2/7/20
9	1.2 Report Table of Contents	2 wks	Mon 2/10/20	Fri 2/21/20
10	Task 2.0 Regional Analysis	130 days	Mon 2/24/20	Fri 8/21/20
11	2.1 Data Collection and Analysis (Common)	4 mons	Mon 2/24/20	Fri 6/12/20
12	2.2 Common Chapters	3 mons	Mon 6/1/20	Fri 8/21/20
13	Task 3.0 Individual Analysis	**130 days**	**Mon 2/24/20**	**Fri 8/21/20**
14	3.3 Data Collection and Analysis (Individual)	4 mons	Mon 2/24/20	Fri 6/12/20
15	3.4 Individual Agency Chapters	3 mons	Mon 6/1/20	Fri 8/21/20
16	3.5 Water Shortage Contingency Plans	3 mons	Mon 6/1/20	Fri 8/21/20
17	Task 4.0 Prepare Regional Urban Water Management	140 days	Mon 9/21/20	Fri 4/2/21
18	4.1 Draft RUWMP	3 mons	Mon 9/21/20	Fri 12/11/20
19	4.2 Final RUWMP	3 mons	Mon 1/11/21	Fri 4/2/21



Fee Schedule

Task No.	Task Description	WSC														ALL FIRMS
		Principal-in-Charge	Project Manager	Technical Advisor	QA/QC	Technical Advisor	Technical Advisor	Project Engineer	Primary Author	Supporting Author	Staff Engineer	Project Admin	WSC Labor Hours	WSC Labor Fee	Expenses	WSC Fee	Total Fee
		Jeffery Szytel	Jeroen Olthof	Robert Morrow	Laine Carlson	Joseph Kingsbury	Daniel Heimel	Christopher Deiter	Spencer Waterman	Amy Martin	Antonia Estevez-Olea	Kay Merrill					
	Billing rates, $/hr	*$290*	*$265*	*$265*	*$245*	*$225*	*$225*	*$195*	*$185*	*$195*	*$155*	*$125*					
0	**Project Management & Meetings**																
0.1	Project Administration		38						59			33.5	**130.5**	**$ 25,173**	**$ 1,000**	**$ 26,173**	**$ 26,173**
0.2	Project Meetings	2	34.5						61.5				**98**	**$ 21,100**	**$ 800**	**$ 21,900**	**$ 21,900**
	SUBTOTAL	**2**	**72.5**	**0**	**0**	**0**	**0**	**0**	**120.5**	**0**	**0**	**33.5**	**228.5**	**$ 46,273**	**$ 1,800**	**$ 48,073**	**$ 48,073**
1	**Legislative Requirements and Report Format**																
1.1	Legislative Requirements Documentation		1						8				**9**	**$ 1,745**	**$ 100**	**$ 1,845**	**$ 1,845**
1.2	Report Table of Contents		1		1				6				**8**	**$ 1,620**	**$ 100**	**$ 1,720**	**$ 1,720**
	SUBTOTAL	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**17**	**$ 3,365**	**$ 200**	**$ 3,565**	**$ 3,565**
2	**Regional Analysis**																
2.1	Data Collection and Analysis (Common)		6					6	24	6			**42**	**$ 8,370**	**$ 300**	**$ 8,670**	**$ 8,670**
2.2	Common Chapters	2	2	2	2	2	2	4	12	4			**32**	**$ 6,810**	**$ 300**	**$ 7,110**	**$ 7,110**
	SUBTOTAL	**2**	**8**	**2**	**2**	**2**	**2**	**10**	**36**	**10**	**0**	**0**	**74**	**$ 15,180**	**$ 600**	**$ 15,780**	**$ 15,780**
3	**Individual Water Agency Requirements**																
3.1	Data Collection and Analysis (Individual)		6	6	2	6	6	6	24	6	48		**110**	**$ 20,590**	**$ 800**	**$ 21,390**	**$ 21,390**
3.2	Individual Agency Chapters	2	24	6	6	6	6	6	24	12	48		**140**	**$ 28,090**	**$ 1,100**	**$ 29,190**	**$ 29,190**
3.3	Water Shortage Contingency Plans		6		4				36		48		**94**	**$ 16,670**	**$ 700**	**$ 17,370**	**$ 17,370**
	SUBTOTAL	**2**	**36**	**12**	**12**	**12**	**12**	**12**	**84**	**18**	**144**	**0**	**344**	**$ 65,350**	**$ 2,600**	**$ 67,950**	**$ 67,950**
4	**Prepare Regional Urban Water Management Plan**																
4.1	Draft RUWMP	2	16	6	8	6	6	6	32	6	56		**144**	**$ 28,010**	**$ 1,100**	**$ 29,110**	**$ 29,110**
4.2	Final RUWMP	2	8	3	4	3	3	3	16	3	28		**73**	**$ 14,295**	**$ 600**	**$ 14,895**	**$ 14,895**
	SUBTOTAL	**4**	**24**	**9**	**12**	**9**	**9**	**9**	**48**	**9**	**84**	**0**	**217**	**$ 42,305**	**$ 1,700**	**$ 44,005**	**$ 44,005**
	COLUMN TOTALS	**10**	**143**	**23**	**27**	**23**	**23**	**31**	**303**	**37**	**228**	**34**	**881**	**$172,473**	**$ 6,900**	**$179,373**	**$179,373**

Scope of Services

The following tasks represent the work that will be undertaken to complete the Coachella Valley 2020 Regional Urban Water Management Plan (RUWMP). Work includes the performance of the Scope of Services listed in the RFP and augmented tasks proposed in red text:

TASK 0.0 PROJECT MANAGEMENT & MEETINGS

0.1 Project Administration

Provide overall project administration services including:

- Develop and maintain a project schedule
- Prepare monthly progress reports for submittal with invoices
- Conduct monthly telephone conference calls to discuss project progress
- Provide Quality Control review of deliverables

Deliverable:

1. WSC will provide monthly progress reports with project invoices.

0.2 Project Meetings

Possible meetings may include:

1. Kickoff meeting. One two-hour meeting.
2. Meetings with staff. Quarterly one-hour in-person meetings as-needed (5).
3. Working sessions as required by the consultant. Two hours of conference calls with each agency as-needed.
4. Monthly progress conference calls. Monthly 1/2 -hour conference calls (15) coupled with quarterly in-person meetings.

~~5. Meetings with agencies participating in the RUWMP.~~

6. ~~1~~ 2 public meetings facilitated by the consultant. Two-hour meetings.

Deliverables:

1. WSC will provide agendas and action item summaries for each meeting.

2. WSC will provide presentations to facilitate the kickoff meeting, working sessions, and public meetings.

TASK 1.0 LEGISLATIVE REQUIREMENTS AND REPORT FORMAT

1.1 Legislative Requirements Documentation

Identify new legislative requirements (if any) and/or new requirements from the DWR guidebook for 2020 UWMPs subsequent to issuance of the RFP.

1.2 Report Table of Contents

Prepare a Table of Contents for the RUWMP. The overall format and organization of the document should:

- ✓ Facilitate easy exchange of information with agencies not participating in the RUWMP.
- ✓ Make it easy for DWR to evaluate each individual agency.

Deliverables:
1. Technical Memorandum, draft for review & final
2. Table of Contents, draft for review & final

TASK 2.0 REGIONAL ANALYSIS

2.1 Data Collection and Analysis (Common)

Some portions of the RUWMP are applicable to all agencies within the planning area (regional setting, climate, etc.). The Consultant can obtain much of this information from the Integrated Plan. Data will be summarized from each agency's data collected as part of Task 3.0. ~~During this task, Consultant will collect and compile the annual water statistics submitted to DWR from each water provider in the region. These annual filings include a summary of the quantity of water produced, number/type of service connections, etc. and will allow a variety of comparisons including, but not limited to, the number of residential connections by agency and calculation of the average quantity of water consumed per capita for each water provider.~~ ***This scope was moved to Task 3.1.*** The regional components of the RUWMP are anticipated to include the following:

- Overview
- Purpose
- Organization of the Plan
- Implementation of the Plan
- Water Agencies of the Coachella Valley
- Climate
- Regional Water Sources
  - (1) SGMA Compliance Summary ** New for 2020 UWMP**
- Regional Water Use
  - (1) Water Loss Standards Compliance**New for 2020 UWMP**
- Comparison of Regional Supplies and Demands
  - (1) Water Supply Reliability **New for 2020 UWMP**
  - (2) Drought Risk Assessment**New for 2020 UWMP**
- Regional Water Shortage Contingency Planning

Contact all of the water agencies within region to determine if there have been subsequent changes to their planning numbers. Hours for this effort are included in Task 0.2.

2.2 Common Chapters

Regional information analyzed during this task should be included in one, or more, "common" chapter(s) of the document.

Deliverables:
1. "Common" Chapter(s), draft for review & final

TASK 3.0 INDIVIDUAL WATER AGENCY REQUIREMENTS

3.1 Data Collection and Analysis (Individual)

During this task, Consultant will collect and compile the annual water statistics submitted to DWR from each water provider in the region. These annual filings include a summary of the quantity of water produced, number/type of service connections, etc. and will allow a variety of comparisons including, but not limited to, the number of residential connections by agency and calculation of the average quantity of water consumed per capita for each water provider.

3.2 Individual Agency Chapters

Each water agency participating in the RUWMP will have their own chapter of the document that will clearly address all of their individual urban water management planning requirements and Water Shortage Contingency Plans. The individual agencies components of the RUWMP are anticipated to include the following:

- Description of Agency
- Climate
- Historical Water Use
    (1) Water Loss Standards Compliance**New for 2020 UWMP**
- Existing and Targeted Per Capita Water Use
- Projected Water Use
- Demand Management Measures
- Water Resources
    (1) SGMA Compliance Summary ** New for 2020 UWMP**
- Supply and Demand Comparisons
    (1) Water Supply Reliability **New for 2020 UWMP**
    (2) Drought Risk Assessment**New for 2020 UWMP**

3.3 Water Shortage Contingency Plans

Development or amending individual Water Shortage Contingency Plans in accordance with each agency's process and efforts is beyond the scope of this proposal. However, WSC proposes to compare each agency's existing WSCP with the forthcoming WSCP requirements and guidance from DWR to identify areas for revision. In addition, WSC will include discussions with the RUWMP agencies to attempt to align WSCP content where possible (such as watering day restrictions). After each agency updates their WSCP, WSC will incorporate the appropriate content into the RUWMP.

Deliverables:
1. Individual chapters for each water agency
2. Data for each water agency (appendix~~2~~)
3. Water Shortage Contingency Plans

TASK 4.0 PREPARE REGIONAL URBAN WATER MANAGEMENT PLAN

4.1 Draft RUWMP

Consultant will assemble all of the approved documents into one cohesive Regional Urban Water Management Plan. The consultant will distribute the draft plan to the agencies for review and comment.

4.2 Final RUWMP

The consultant will review and incorporate changes and comments into the final version of the plan. Once finalized, all electronic files must be submitted to all of the agencies.

Deliverables:
1. Draft RUWMP
2. List of comments on the Draft RUWMP and proposed responses.
3. Final RUWMP
- **a. Two (2) hardcopies to each participating agency**
- **b. Electronic files (native file formats and a PDF version of the entire report)**

Appendix A: Qualifications and Resumes

Jeroen Olthof, MS, MBA, PE

Education
MBA, USC

MS, Civil Engineering, University of Washington

BS, Civil Engineering, University of Colorado Boulder

Professional Registrations
Professional Engineer - Civil, California, No. C58597

Professional Engineer – Civil, Oregon, No. C94671

Articles
San Diego's Recipe for Overflow Reduction, Public Works, June, 2004.

Capacity Assurance Sets Stage for CMOM Success, Waterscapes, Vol. 13, No. 2, May, 2002

Presentations
Management of Sewers in Environmentally Sensitive Areas, ASCE Pipelines Conference, San Diego, CA 2004

Lessons Learned in San Diego's Collection System Assessment Program, Water Environment Federation (WEF) Collection Systems Conference, Austin, TX, June, 2003

Automated Decision Tools for Sewer Collection System Assessment, California Water Environment Association Conference (CWEA), Ontario, CA, 2003

Improved Collection System Management Using GIS, Water Environment Federation Technology and Exposition Conference (WEFTEC), Chicago, IL, October, 2002

An Incremental Approach to GIS and Floodplain Mapping, Floodplain Management Association Conference, Sacramento, CA, September, 2000

A Hydrogen Sulfide Screening Tool Within GIS, WEFTEC,

Professional Experience

Mr. Olthof has more than 25 years of experience developing water resources planning studies, databases, and the integration of GIS with hydraulic models. He led the development of SBVMWD's 2015 RUWMP and has experience developing UWMPs for regionally-linked client groups. He has worked with the other members of WSC's team on previous UWMP cycles and will incorporate the efficiency and lessons learned from those efforts. He is currently on DWR's Data Streamlining Workgroup. He has developed and maintained custom databases to track recycled water customers and generate reports for regulatory agencies and other stakeholders. He has also developed condition assessment programs and decision algorithms to support capital improvement planning and maintenance optimization. He has published several technical papers on hydraulic modeling and infrastructure condition assessment.

Representative Projects

San Bernardino Valley Municipal Water Distrct, 2015 Regional Urban Water Management Plan, San Bernardino, CA . Project Manager. Being developed with the participation of the following agencies: SBVMWD, East Valley Water District, Riverside-Highland Water Company, West Valley Water District, Yucaipa Valley Water District, the City of San Bernardino Municipal Water District, and the Cities of Colton, Loma Linda, Redlands, and Rialto. Collaborating and collecting data from the agencies listed above to update water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal through DWR's new templates and online submittal database. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed during the update.

California American Water Company, Los Angeles County, San Diego, Ventura, Monterey, and Sacramento District 2005, 2010, and 2015 Urban Water Management Plans, Monterey, CA . QA/QC. Prepared the UWMPs for all five of CAW's Districts during the past three UWMP cycles to fulfill the requirements of the Urban Water Management Planning Act. Tasks included developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7; evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures; and the water shortage contingency plan components of the UWMP.

City of Victorville, 2015 Urban Water Management Plan, Victorville, CA . Technical Advisor. Preparing the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Riverside Public Utilities, 2015 Urban Water Management Plan, Riverside, CA. Project Manager. Updating water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements will be addressed, including: distribution losses reporting as part of the demand and digital submittal through DWR's templates and online submittal database.

Hi-Desert Water District, Urban Water Management Plan Update, Yucca Valley, CA. Technical Lead. Technical lead for update of the District's 2005 Urban Water Management Plan to address comments provided by the California Department of Water Resources. Updated the chapters related to water demands, water supply, water shortage contingency plan, recycled water, supply and demand comparisons, and demand management measures.

Soquel Creek Water District, 2015 Urban Water Management Plan, Soquel, CA . Technical Advisor. Updating water supply and demand projections through 2045 based on changes since the 2010 UWMP including shifting demand patterns and new supplemental supply opportunities. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed.

Ricon del Diablo Municipal Water District, 2015, Urban Water Management Plan, Escondido, CA. Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Otay Water District, 2005 UWMP, Spring Valley, CA. Project Manager. Prepared the 2005 UWMP to conform with the Urban Water Management Planning Act. Developed 25-year population and demand projections by customer sector, evaluated supply reliability, and prepared a recycled water plan. Otay Water District serves portions of the cities of Spring Valley, La Presa, Rancho San Diego, Jamul, eastern Chula Vista and eastern Otay Mesa including a population of more than 217,000 with local groundwater and imported water that is purchased from the San Diego County Water Authority, the Metropolitan Water District of Southern California, and the Helix Water District.

Nipomo Community Services District, 2010 Urban Water Management Plan, Nipomo, CA. Task Manager. Prepared a 2010 Urban Water Management Plan for the Nipomo Community Services District. The project includes the development of a parcel-level demand database. Five years of billing data for each account were compiled in a database, and each account was assigned to a geographic location. Estimates of future demand were based on allowable density, environmental constraints, and anticipated rates of population growth provided by San Luis Obispo County. In later phases of the project the team will evaluate potential water supplies including increased groundwater production, inter-ties with neighboring agencies, desalination, and the use of recycled water.

San Bernardino Valley Municipal Water District, Regional Recycled Water Concept Study & Grant Application, San Bernardino, CA. Senior Engineer. Collaborated with nine water and wastewater agencies to identify potential regional recycled water projects to improve local water supply reliability and sustainability. Applied a triple bottom line scoring process to evaluate alternatives on the basis of economic, social and environmental criteria. The process was integrated with the ongoing Upper Santa Ana River HCP, which is critical to achieving local habitat sustainability and permitting regional recycled water projects.

Walnut Valley Water District, Walnut Valley and Rowland Water Districts' Regional Water Supply Plan, Walnut, CA. Project Engineer. Worked with the Walnut Valley Water District and three related agencies on a water supply evaluation. The four agencies operate a jointly-owned pipeline that runs parallel to the Orange County Feeder. The study evaluated the use of local groundwater wells and water quality blending in the pipeline to provide a new source of supply that would reduce dependency on imported water.

Jeffery Mitchell Szytel, MS, MBA, PE

Education
MBA, UCLA Anderson School of Management

MS, Civil Engineering, University of California Los Angeles

BS, Civil and Environmental Engineering, University of California Davis

Professional Registrations
Professional Engineer - Civil, California, No. C63004

Professional Affiliations
American Water Works Association, Member

American Public Works Association, Member

American Society of Civil Engineers, Member

Association of California Water Agencies, Committee Member

Association of Clean Water Administrators

California Water Environment Association

Water Environment Federation

WateReuse

Dale Carnegie Training

Toastmasters International

Publications
Supply from the Sea: Exploring Ocean Desalination. Journal AWWA, February 2005, 97:2

The Business of Water. Contributing Author for *Supply from the Sea: Exploring Ocean Desalination*. AWWA. March, 2008.

Professional Experience

Mr. Szytel has more than 20 years of experience that includes leading or supporting the development of dozens of UWMPs. He will serve as WSC's Principal in Charge and is available to provide insight into the development of a collaborative document that all participating agencies gain benefit from. His extensive experience providing regional stakeholder facilitation support and detailed knowledge of regional water resources planning efforts helps to build consensus and buy-in.

Representative Projects

San Bernardino Valley Municipal Water District, 2015 Regional Urban Water Management Plan, San Bernardino, CA . Principal in Charge. Developed with the participation of the following agencies: SBVMWD, East Valley Water District, Riverside-Highland Water Company, West Valley Water District, Yucaipa Valley Water District, the City of San Bernardino Municipal Water District, and the Cities of Colton, Loma Linda, Redlands, and Rialto. Collaborated and collected data from the agencies listed above to update water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements were addressed, such as distribution system losses reporting as part of demand and digital submittal through DWR's new templates and online submittal database. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed during the update.

Big Bear City Community Services District, 2015 Urban Water Management Plan, Big Bear, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Pismo Beach, 2015 Urban Water Management Plan, Pismo Beach, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the UWMP Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Arroyo Grande, 2015 Urban Water Management Plan, Arroyo Grande, CA. Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the UWMP Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Victorville, 2015 Urban Water Management Plan, Vicotville, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Monterey County District 2015 Urban Water Management Plan, Monterey, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Sacramento County District 2015 Urban Water Management Plan, Sacramento, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Ventura County District 2015 Urban Water Management Plan, Ventura, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Los Angeles County District 2015 Urban Water Management Plan, Los Angeles, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, San Diego District 2015 Urban Water Management Plan, Coronado, CA . Principal in Charge. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Soquel Creek Water District, 2015 Urban Water Management Plan, Soquel, CA . Principal in Charge. Updated water supply and demand projections through 2045 based on changes since the 2010 UWMP including unprecedented shifting demand patterns and new supplemental supply opportunities. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed.

Riverside Public Utilities, 2015 Urban Water Management Plan, Riverside, CA . Principal in Charge. Updatedwater supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements were addressed, including: distribution losses reporting as part of the demand and digital submittal through DWR's templates and online submittal database.

Nipomo Community Services District, 2010 Urban Water Management Plan Update, Nipomo, CA. Project Manager. Prepared the 2010 UWMP which inlcudes an analysis of the District's historical and projected water demands, current and projected ground and surface water supplies, recycled water supply and demand, water conservation programs, water shortage contingency planning and per capita demand reductions to comply with SB7.

Spencer J. Waterman

Education
BS, City & Regional Planning, California Polytechnic State University, San Luis Obispo

Certifications
American Water Works Association, California-Nevada Section, Water Use Efficiency Practitioner Grade 1, Certificate # 1714

Professional Affiliations
American Water Works Association, Member

Professional Experience

Mr. Waterman has more than 10 years of water resources planning experience which includes 38 UWMPs, including the SBVMWD 2015 RUWMP. He is a member of DWR's UWMP Guidebook Workgroup for the second consecutive cycle. He has developed tools to standardize data and efficiently produce UWMP chapters that are compliant with regulations and easy to update in future cycles. This efficient data collection and analysis bridges the information gap between agencies during regional planning efforts.

Professional Project Experience

San Bernardino Valley Municipal Water Distrct, 2015 Regional Urban Water Management Plan, San Bernardino, CA . Staff Planner. Being developed with the participation of the following agencies: SBVMWD, East Valley Water District, Riverside-Highland Water Company, West Valley Water District, Yucaipa Valley Water District, the City of San Bernardino Municipal Water District, and the Cities of Colton, Loma Linda, Redlands, and Rialto. Collaborating and collecting data from the agencies listed above to update water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal through DWR's new templates and online submittal database. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed during the update.

City of Pismo Beach, 2015 Urban Water Management Plan, Pismo Beach, CA . Project Manager. Preparing the 2015 UWMP to fulfill the requirements of the UWMP Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Arroyo Grande, 2015 Urban Water Management Plan, Arroyo Grande, CA. Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the UWMP Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Los Angeles County District 2015 Urban Water Management Plan, Los Angeles, CA . Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, San Diego County District 2015 Urban Water Management Plan, Coronado, CA . Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Monterey County District 2015 Urban Water Management Plan, Monterey, CA . Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Sacramento County District 2015 Urban Water Management Plan, Sacramento, CA . Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

California American Water Company, Ventura County District 2015 Urban Water Management Plan, Ventura, CA . Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Big Bear City Community Services District, 2015 Urban Water Management Plan, Big Bear, CA . Project Manager. Preparing the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Victorville, 2015 Urban Water Management Plan, Victorville, CA . Project Manager. Preparing the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developing 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluating and updating supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Soquel Creek Water District, 2015 Urban Water Management Plan, Soquel, CA . Project Manager. Updating water supply and demand projections through 2045 based on changes since the 2010 UWMP including unprecedented shifting demand patterns and new supplemental supply opportunities. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed.

Nipomo Community Services District, 2010 Urban Water Management Plan, Nipomo, CA. Staff Planner. Primary author of the UWMP. Prepared the 2010 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20 year per capita water use projections by census block within the NCSD boundary in accordance with California Senate Bill x 7-7. Evaluated supply, supply reliability, demand, supply and demand comparisons, demand management measures, developed a water shortage contingency plan, and a recycled water plan. NCSD serves the communities of Nipomo and Blacklake, as well as distributing water to Golden State Water Company.

California American Water Company, 2010 and 2005 Urban Water Management Plans, Multiple Districts, CA . Staff Planner. Prepared UWMPs for all five of CAW's Districts during the 2010 and 2005 UWMP cycles.

Amy Martin

Education
BS Civil Engineering, California State Polytechnic University, Pomona, 2007

Professional Affiliations
WateReuse Association

Water Environment Federation

Professional Experience

Ms. Martin has more than 13 years of experience which includes engineering project management at a leading public agency in Southern California. She specializes in water resources planning and has led Integrated Water Resource Management Plans and UWMPs for public utilities throughout the region. Her experience incudes work for Indio Water Authority. She is currently on DWR's Annual Water Supply and Demand Assessment Workgroup.

Representative Projects

Urban Water Management Plan, City of Big Bear Lake Water Department of Water and Power, Big Bear, CA. Project Manager. This project included the development of the 2015 UWMP. Some of the key challenges included coordination of the planning activities of the various municipal and unincorporated entities within CBBL DWP's service area, implementation of water conservation measures, a highly variable seasonal population, and an exclusive reliance on groundwater to meet all potable water demands.

2015 Recycled Water Feasibility Study, Indio Water Authority, Indio, CA. Project Engineer. This project involved the preparation of a feasibility study that conformed to the Bureau of Reclamation's Title XVI requirements, which would be utilized to obtain project authorization for future grant funding opportunities. As part of this study, project alternatives from the 2009 recycled water mater plan were refined, cost estimates were prepared, and a proposed project schedule was developed.

2018 Integrated Master Plan, City of Banning, Banning, CA. Project Engineer. The project includes an integrated approach to potable water, wastewater, and recycled water demand/flow forecasting, hydraulic model up-dates and model calibration for the potable water and wastewater systems, hydraulic model creation for the recycled water systems, and supply analysis. Infrastructure up-grades for the existing and future systems were evaluated. The documentation and demand projections prepared as part of the Plan will be used for the 2020 UWMP cycle.

One Water LA 2040 Plan, City of Los Angeles, Los Angeles, CA. Water Demand and Flow Forecasting Task Lead. The Plan is a collaborative effort of the LA Sanitation (LA-SAN) and LA Department of Water and Power (LADWP) that takes a holistic approach to consider all types of water as "One Water." The Plan is developed through a stakeholder driven process and will guide the City with strategic and multi-billion dollar decisions for water infrastructure projects to make LA a more water resilient and sustainable City. This task included the review and use of the 2015 UWMP data with LADWP staff.

2017 Water Master Plan Water, Cucamonga Valley Water District, Rancho Cucamonga, CA. Master Planning Lead. This project included potable water demand forecasting, InfoWater hydraulic modeling updates, hydraulic model calibration using SCADA and pressure logger data, and the development of customer specific diurnal curves. As part of the model calibration process and condition assessment activities, coordination with operations and engineering staff has been conducted. In addition, the infrastructure upgrades for the existing and future systems will be evaluated and the findings will be combined in a capital improvement program (CIP) and water master plan report. The documentation and demand projections prepared as part of the Master Plan were used for the 2015 UWMP cycle.

East Orange County Water District, Wholesale Zone and Retail Zone Master Plan. Technical Reviewer. This project included hydraulic modeling, supply analysis, system analysis, and the development of two master planning reports for EOCWD's Wholesale Zone and Retail Zone. As part of the CIP planning for this project, condition assessments were performed on the EOCWD's facilities. The results were included in a prioritized CIP, which has been effectively utilized by staff for project implementation.

Water Master Plan, City of Colton, Colton, CA. Technical Reviewer. This project included water demand forecasting, hydraulic model development and EPS calibration using field fire flow testing. Existing and future system analysis was conducted to develop a capital improvement program (CIP) including a rehabilitation and replacement program. The findings were presented in a comprehensive water master plan report. The documentation and demand projections prepared as part of the Master Plan will used for the 2020 UWMP cycle.

2015 Comprehensive Facilities Master Plan, Padre Dam Municipal Water District, Santee, CA. Master Planning Lead. This integrated master plan involves the District's water, wastewater, and recycled water infrastructure. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic modeling updates for the water and recycled water systems, development and calibration of a new sewer model, and field condition assessment of key facilities with operations staff. In addition, the feasibility of the wastewater plant expansion for an indirect potable reuse project was evaluated. The documentation and demand projections prepared as part of the Master Plan were used for the 2015 UWMP cycle.

2015 Integrated Water, Wastewater, and Recycled Water Master Plans, City of Oceanside, Oceanside, CA. Master Plan Lead. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and wastewater systems, and development of a new recycled water system model. As part of the model calibration process, coordination with operations staff was conducted. In addition, the infrastructure needs of the development of the agricultural Morro Hills area, including soil percolation testing for feasibility analysis of septic tanks, were evaluated. Closed-circuit television of 60 sewer and 30 water pipeline segments were conducted. The documentation and demand projections prepared as part of the Master Plan were used for the 2015 UWMP cycle.

2016 Water Master Plan, City of Glendale, Glendale, CA. **Master Planning Lead.** This project includes potable and recycled water demand forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems using H_2OMap. In addition, the infrastructure upgrades for the existing and future systems, including fire flow capacity upgrades, were evaluated. The findings were combined in a capital improvement program (CIP) and water master plan report. The documentation and demand projections prepared as part of the Master Plan were used for the 2015 UWMP cycle.

Recycled Water Master Plan, Moulton Niguel Water District, Laguna Niguel, CA. Project Engineer. This project includes recycled water de-mand forecasting, modeling, and alignment alternatives analysis to evaluate the most cost-effective system expansions. In addition, a turf replacement analysis tool was developed and a field condition assessment of existing recycled water system facilities was conducted.

Recycled Water System Model Update and Calibration, City of Santa Barbara, Santa Barbara, CA. Project Engineer. The project involved updating and recalibrating the existing recycled water hydraulic model with 2013 SCADA data, billing records, and facility controls. Various operational scenarios were evaluated and control strategies were developed to improve operational conditions to decrease pressure fluctuations throughout the system.

Phase 1 (2016) and Phase 2 (2018) Recycled Water Feasibility Study, Inland Empire Utilities Agency (IEUA), Pomona, CA. Project Planning Lead and Project Manager. The project's goal was to increase the region's water supply with the sustainable and reliable use of recycled water. Interconnection between the City of Pomona, Monte Vista Water District, and Inland Empire Utilities Agency were evaluated to develop water supply alternatives that would provide IEUA with regional water supply benefits.

Laine E. Carlson, PE

Education
BS, Civil Engineering, California State Polytechnic University, Pomona, CA

Professional Registrations
Professional Engineer - Civil, California, No. C72424

Certifications
SWRCB Registered T2 Water Operator #34907

SWRCB Registered D2 Water Operator #41981

Professional Affiliations
American Water Works Association, Member

California Water Environment Association, Member

Professional Experience

Mrs. Carlson is an engineer with more than 15 years of experience specializing in water resources planning. She served in a similar QA/QC role on the SBVMWD 2015 RUWMP which included stakeholder coordination and detailed review of data, calculations, and the report. She is based in Rancho Cucamonga and has an extensive knowledge of the regional and statewide issues and regulations relating to water resources, water conservation, and urban water management planning.

Representative Projects

San Bernardino Valley Municipal Water Distrct, 2015 Regional Urban Water Management Plan, San Bernardino, CA . Technical Advisor. Being developed with the participation of the following agencies: SBVMWD, East Valley Water District, Riverside-Highland Water Company, West Valley Water District, Yucaipa Valley Water District, the City of San Bernardino Municipal Water District, and the Cities of Colton, Loma Linda, Redlands, and Rialto. Collaborating and collecting data from the agencies listed above to update water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements will be addressed, such as distribution system losses reporting as part of demand and digital submittal through DWR's new templates and online submittal database. Voluntary analysis of energy intensity in water deliveries and climate change impacts will also be completed during the update.

City of Riverside Public Utilities, 2015 Urban Water Management Plan, Riverside, CA. Technical Advisor. Updated water supply and demand projections through 2035 based on changes since the 2010 UWMP and compliance with SB-7. New requirements were addressed, including: distribution losses reporting as part of the demand and digital submittal through DWR's templates and online submittal database.

City of Victorville, 2015 Urban Water Management Plan, Victorville, CA. Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the Urban Water Management Planning Act. Developed 20-year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

City of Pismo Beach, 2015 Urban Water Management Plan Update, Pismo Beach, CA. Deputy Project Manager. Prepared the 2015 UWMP to fulfill the requirements of the UWMP Act. Developed 20 year per capita water use projections in accordance with California Senate Bill x 7-7. Evaluated and updated supply, supply reliability, demand, supply and demand comparison, demand management measures and the water shortage contingency plan components of the UWMP.

Flair Spectrum Water Supply Assessment, El Monte, CA. Project Manager. Project Manager of the Water Supply Assessment (WSA) for the proposed Flair Spectrum project located in the City of El Monte within California American Water's (CAW) water service area. The proposed project includes a 220-room hotel, 500,000 sq. ft. of retail outlet, 50,000 sq. ft. of restaurant and 600 condominium units with a total estimated water demand of 202 acre-feet per year. In accordance with California Water Code Section 10910-10915 (SB 610), the size of the development requires a WSA to determine whether the projected water supplies are sufficient to satisfy the demands of the project, in addition to existing and planned future uses. The WSA requires evaluating and documenting potential supplemental water supplies since CAW's 2010 Urban Water Management Plan did not account for the increased water demand associated with this project.

City of Hope Water Supply Assessment, Duarte, CA. Project Manager. Managed the Water Supply Assessment (WSA) for the proposed City of Hope Specific Plan project located in the City of Duarte within California American Water's (CAW) water service area. The proposed project includes more than 1,428,000 square feet of additions to the existing outpatient, inpatient, research, office, industrial, warehouse and hospitality uses. In accordance with California Water Code Section 10910-10915 (SB 610), the size of the development requires a WSA to determine whether the projected water supplies are sufficient to satisfy the demands of the project, in addition to existing and planned future uses. The WSA requires evaluating and documenting potential supplemental water supplies since CAW's 2010 Urban Water Management Plan did not account for the increased water demand associated with this project.

San Bernardino Valley Municipal Water District, Regional Recycled Water Concept Study & Grant Application, San Bernardino, CA. Project Manager. The RRWCS was a collaboration with nine local agencies to identify potential regional recycled water projects to improve local water supply reliability and sustainability. A total of 11 conceptual projects were analyzed. This project was completed in collaboration with a large stakeholder group with complex relationships.

Big Bear Area Regional Wastewater Agency, Replenish Big Bear, Big Bear, CA. Project Manager. Evaluated conceptual recycled water use alternatives to retain treated water within Bear Valley and create a sustainable water resource to augment the region's potable water supply. Conceptual alternatives were analyzed based on treatment and regulatory requirements of use types, water supply yield, social and environmental benefits, and life cycle cost of the alternatives. WSC coordinated with several agencies in the region. WSC provided grant writing support and secured a $75,000 State Water Resources Control Board Water Recycling Facilities Planning Grant.

West Valley Water District, Cost Analysis for New Bunker Hill Groundwater Supply Alternatives, Rialto, CA. Project Manager. Provided project management and coordination to help the District assess the cost of leasing two unequipped wells from Inland Valley Development Agency on the site of the former Norton Air Force Base. The wells, known as IVDA Well 2A and IVDA Well 3, will require a capital investment by the District to develop as a new water supply. Tasked with developing a comparative cost analysis to lease the IVDA wells, or drill and equip a new well in the Bunker Hill Basin.

Santa Ana River Conservation and Conjunctive Use Project, Santa Ana Watershed Project Authority, Riverside, CA. Project Manager. Coordinated between five member agencies and individual stakeholders to maximize development and use of local water supplies. Project involved habitat improvement, improving efficient water use, groundwater banking, assessing groundwater supplies and quality, and provided additional decision-support modeling.

Park Water Company, Compton East Reservoir Study, Compton, CA. Project Manager. Prepared a report evaluating whether the addition of a storage reservoir and booster station in the Compton East system will help Park meet their level of service goals. Utilized Park's existing hydraulic model as well as SCADA, utility billing and production data to support the analysis of 4 alternatives, including: maintaining the existing operation; construct a reservoir and booster station; construct an additional well; and construct an interconnection with another water system. Developed life cycle costs for each alternative and evaluated the alternatives on the basis of cost and level of service goals and recommended a preferred alternative for the Compton East system. Performed a site screening to identify potential reservoir sites using GIS. Evaluated sites on the basis of: amenability of local planning and permitting jurisdictions, minimum site size, distance from existing infrastructure and underlying water quality since a well is to be co-located on the site.

Christopher Deiter, PE

Education
BS, Civil Engineering, California State Polytechnic University, Pomona, CA

Professional Registrations
Professional Engineer - Civil, California, No. 80618

Professional Affiliations
American Society of Civil Engineers, Member

Inland Counties Water Association, Member

American Water Works Association, Member

WateReuse, Member

Professional Experience

Mr. Deiter is an engineer with more than 10 years of experience which includes developing supplemental supply and master plans for agencies in the Coachella Valley. His strong working relationships and local knowledge enables WSC's RUWMP team to efficiently gather and evaluate data to align efforts with the existing regional water resources efforts in the area. He is a versatile engineer based in WSC's Rancho Cucamonga office who is available to respond quickly to project needs. Mr. Deiter's experience allows him to proficiently identify and analyze initial project concepts, analyze solutions, prepare construction documents, and provide construction support activities to clients.

Representative Projects

Coachella Water Authority, Water Master Plan, City of Coachella, CA. Mr. Deiter was in responsible charge of the project preparing all master planning calculations, growth projections, water system analysis, H20Net water modeling, and CIP preparation. The water modeling included development of existing water system model from scratch to identify possible system deficiencies along with projected growth of the City's water system which aids in future CIP planning.

Coachella Water Authority, Supplemental Water Supply Program and Fee Study, City of Coachella, CA. Mr. Deiter was in responsible charge of the study. The Study investigated population projections and historical annual consumption factors, reviewed CWA's water resources and CVWD agreements, calculated future annual consumption factors, and established the Supplemental Water Supply Charged based on land used for the City.

Mission Springs Water District, Hexavalent Chromium Compliance Investigation, City of Desert Hot Springs, CA. Mr. Deiter was responsible the District's compliance efforts with existing and pending MCL's for hexavalent chromium. These efforts involved research and analysis of various treatment technologies such as traditional reduction coagulation flocculation, weak base anion exchange, strong base anion exchange, pressurized RCF, and ART in situ remediation, and stannous chloride injection. These efforts also included the analysis of various compliance methods including wellhead treatment, centralized treatment, blending, and source substitution.

Mission Springs Water District, Willow Hole Groundwater Monitoring Well Project, City of Desert Hot Springs, CA. This project installed two monitoring wells in the Willow Hole area as part of MSWD's obligations and responsibilities in order to be accepted as a Permittee under the Coachella Valley Multiple Species Habitat Conservation Plan. Through this project Mr. Deiter was responsible for obtaining grant funding through the Coachella Valley Conservation Commission, maintaining grant compliance, design of the monitoring wells, preparation of the bidding documents, and management of the bidding process.

Mission Springs Water District, West Valley Water Reclamation Program Conveyance Technical Memorandum, City of Desert Hot Springs, CA. Mr. Deiter was in responsible charge of preparing a technical memorandum that determined appropriate sewer alignments, diameters, and depths along with the possible use of force mains and existing lift stations, if necessary, to deliver wastewater to the proposed WVWRF. This TM evaluated potential service areas, wastewater flow rates, trunk sewer alignments, analyzed existing lift station capacity, recommended existing lift station modifications of piping and pumping units, and considered other preliminary design criteria needed to identify the preferred solution for the proposed sewer conveyance system.

Agua Caliente Band of Cahuilla Indians, Andreas Pipeline Review and Analysis, Palm Springs, CA. This project was an investigation of the Andreas Pipeline System, which is diverts runoff flows from Andreas Creek to nearby agricultural users. The system was experiencing overflow and capacity restrictions below design criteria. Mr. Deiter was responsible for the investigation and analysis work which ultimately determined the cause of the system deficiencies. Mr. Deiter also was responsible for formulating the recommended solutions and co-authored the technical memorandum summarizing the investigation, analysis, and recommendation efforts.

Eastern Municipal Water District, Longview Water Storage Reservoir, Menifee, CA. Assisted in the plan preparation and CAD drafting for this project. Included appurtenance layout and design, site grading, site piping, and mechanical drawings.

Maywood Mutual Water Co. No. 1, Manganese Treatment Facility and New 0.5 MG Welded Steel Reservoir with well pump redesign, City of Huntington Park, CA. This project was a grant funded project through the California Department of Public Health (CDPH). Mr. Deiter coordinated the final design, including preparation of plans, specifications, and estimates, and coordinated the design review to facilitate State approval of the project. He created and maintained the Project Budget and Expenditure Summaries. Responsible for managing and obtaining all permitting with the City of Huntington Park and Southern California Edison. Mr. Deiter was in responsible charge of all construction management services during the construction phase of the project. Duties included all contract management, progress payments, scheduling, submittal review and approval, and coordination with inspectors. The project included the redesign of the on-site well pump assembly and motor to account for the additional head requirements of the proposed treatment equipment, Installation of two horizontal 1,500 gpm filtration vessels, backwash tank, full SCADA system control, sand separator, backup generator and transformer upgrade. Additionally, there was 70-foot tall welded steel reservoir replacement which included the removal of a structurally deficient steel reservoir and construction of the proposed welded steel reservoir. The proposed reservoirs included a ring wall footing with 45-foot deep 3-foot diameter caissons to combat liquefaction issues. The reservoir removal and replacement is located within fifteen feet of an existing 70-foot tall 2 million gallon steel reservoir that was to be protected during construction.

Big Bear Lake Department of Water and Power, Sawmill Well Pumping Plant, Big Bear, CA. Project includes well equipment and all related appurtenances for a 350 gpm well, including construction of a CMU building with a metal roof, all related site improvements, and installation of a 635 LF 6-inch water pipeline and electrical service connection. Mr. Deiter is in responsible charge of all construction management services including contract management, progress payments, scheduling, submittal review and approval, and coordination with BBLDWP Inspectors.

Crestline-Lake Arrowhead Water Agency, Mid-Agency Tank and Booster Analysis, Crestline, CA. Prepared concept plans, and preliminary calculations for the feasibility of a new reservoir and booster station to add additional fire flow and storage within CLAWA's system

Crestline Village Water District, Beacon Tank Site Improvements, Crestline, CA. Project involved the seismic retrofit and related site improvements to the existing Beacon Tank Site including the design and construction management for the project. The work included seismic and structural calculations, all civil design and CAD drawings, and specification preparation. Mr. Deiter was also responsible for the construction management of the project. Duties included all contract management, progress payments, scheduling, submittal review and approval, and coordination with inspectors.

Robert Morrow, MS, PE

Education
MS, Civil / Environmental Engineering, U.C. Berkeley

BS, Civil / Environmental Engineering, Vanderbilt University

Professional Registrations
Professional Engineer - Civil, California, No. C689916

Professional Associations

WateReuse Association, Central Coast Chapter Trustee

Water Environment Foundation, Member

American Society of Civil Engineers, Member

Professional Experience

Mr. Morrow has 19 years of water resources engineering experience focused on the implementation of recycled water projects, from concept to operation, for applications ranging from agricultural irrigation to potable reuse. He has served as the Project Manager for multiple UWMPs and has a thorough understanding of the regulations and legislation relating to recycled water, water conservation, and urban water management planning.

Representative Projects

Goleta Water District, CA - 2015 Urban Water Management Plan Update. Project Manager for an Urban Water Management Plan Update (UWMP) to meet the requirements set forth by the California Department of Water Resources 2015 UWMP Guidebook. Rob prepared baseline demand and gallons per capita per day targets (GPCD) in compliance with SBx7-7, supply projections, supply reliability, and coordinated with DWR.

Eastern Municipal Water District, CA - Recycled Water Strategic and Facilities Master Plan. Project Manager for preparation of the facilities master plan that evaluated options to achieve zero year-round discharge as WWTP flows from their four plants increase from 45,000 AFY to 80,000 AFY over 30 years. The plan focused on options to implement over 20,000 AFY of groundwater recharge via surface spreading, 10,000 AFY of large landscape irrigation, and 10,000 AFY of agricultural irrigation. The plan considered facility, policy, and phasing options to achieve the different end uses. The plan evaluated system delivery capacity in the nine service zones and recommended limiting new connections in two zones to avoid costly improvements while recommending new connections in three zones with surplus delivery capacity. The plan was successful in avoiding the need for new seasonal storage, limiting new distribution storage, and removing $70 million of projects from the previous CIP.

Yucaipa Valley Water District, CA - Wilson Creek Basins Indirect Potable Reuse Title 22 Engineering Report. Technical Review and oversight of the Title 22 Engineering Report for approval of the project by SWRCB DDW. The Wilson Creek Spreading Basins Groundwater Replenishment Reuse Project involves modified and new facilities to support up to 5,000 AFY of recharge with recycled water, which will serve to replenish a historically over-drafted groundwater basin and will offset water imports with a renewable local source.

San Gorgonio IRWM Region, CA - San Gorgonio Regional Recycled Water Study. Technical Review for the study, which evaluated non-potable and potable reuse options from existing wastewater treatment plants and new water reclamation plants from septic conversions. Identified potential customers and uses; treatment options to meet recycled water quality needs; distribution system needs; potential projects; and potential constraints to the implementation of projects and next steps to address constraints and advance projects.

Montecito Water District, CA - Montecito Recycled Water Facilities Plan. Project Manager for preparation of a study evaluating development of local and/or regional recycled water supplies to supplement the District's existing water supply portfolio. Recycled water alternatives include: Non-potable reuse system options from Montecito WWTP and Summerland WWTP; Potable reuse options from Montecito WWTP and Summerland WWTP; and Regional project options with City of Santa Barbara and Carpinteria Valley Water District. The District is also considering co-locating a new water reclamation plant with a desalination plant. The plan will ultimately include a recommend project or program with an implementation plan that includes a schedule, permitting, environmental documentation, design, institutional coordination, and funding / financing requirements.

Los Angeles County, CA - IRWM Implementation Grant Proposal. As Deputy Project Manager, led fast-track submission of a grant proposal that was one of seven $25-million grant recipients of 16 applicants. The project includes coordination among 10 agencies, 11 Woodard & Curran staff, and 2 subconsultants. As lead author, held workshops with agency staff to create draft text and relevant documentation and manage revisions of all submissions to emphasize key points and provide consistent writing style. Proposal required organization of extensive specific project details and management of this information from the agencies.

San Luis Obispo County Department of Public Works, CA - Regional Recycled Water Strategic Plan. Project Manager, while working at another firm, for the development of a recycled water strategic plan for San Luis Obispo County. The plan included evaluating potential projects for five areas across of the County. Projects considered included landscape irrigation, commercial irrigation, agricultural irrigation, industrial cooling towers, groundwater recharge via surface spreading and injection wells, streamflow augmentation, and reservoir augmentation. Project development required consideration of local opportunities and constraints that resulted in recommendation for next steps for the highest potential projects in each area. Recommendations included technical, regulatory, institutional, and policy elements. In particular, agricultural reuse has high potential so a long-term plan to implement large-scale reuse by the agricultural community was defined. The project was prepared in coordination with the IRWM Plan Update.

East Valley Water District, CA - Sterling Recycled Water Center / Groundwater Recharge Project. Project Manager leading the program, permitting/approvals, and funding aspects of the project, which includes construction of a new 10 mgd MBR plant with conveyance to recharge ponds. Rob is developing the Groundwater Recharge with Recycled Water Engineering Report to obtain SWRCB approval and RWQCB permit. Efforts include coordination with SWRCB DDW, RWQCB, USFWS, CDFW, and multiple local public agencies responsible for groundwater management, basin recharge, stormwater management, and habitat conservation. Funding efforts are focused on positioning for local, state, and federal grant funds and preparation of a SRF application for a low interest loan. In addition, Rob is supporting the legal team on the CWC 1211 Petition process, the consultant preparing a CEQA+ document, and the design-build entity.

City of Victorville, CA - Victorville Water Recycling Study. Technical Lead for recycled water alternatives development and evaluation for the study that evaluated wastewater treatment processes to reduce the TDS content of Victorville Industrial Wastewater Treatment Plant effluent to under 450 mg/L for use as cooling tower make-up water at a local power plant. The study evaluated alternative projects meet this TDS limit by treating MBR effluent for TDS removal via RO or similar technologies. A secondary RO process was considered to concentrate the RO reject to reduce the of brine sent off-site for disposal.

Los Angeles Department of Water and Power, CA - Valley Recycled Water System Analysis. Project Manager for an evaluation of LADWP's Valley non-potable system to address existing deficiencies, such as matching diurnal supply and demands to avoid the need for potable water supplement. Also, Rob evaluated potential system improvements to accommodate large recycled water flows to groundwater recharge basins to ensure continued service to the system's non-potable customers. The evaluation includes investigation of diurnal wastewater flows, wastewater treatment process capacities, recycled water pump station and wet well capacity, diurnal customer demands, system and customer storage, recharge delivery scenarios, and operational control schemes. The analysis includes a detailed evaluation of customer demand patterns, hydraulic modeling of existing and future scenarios, and evaluation of alternatives to address deficiencies. Ultimately, a phased approach was recommended to address immediate deficiencies while reserving space for future modifications as GWR flows increased.

Joseph Kingsbury, PG, CHG

Education
BA, Geology, The Ohio State University, Columbus, OH

Professional Registrations
Professional Geologist, California, No. 8680

Certified Hydrogeologist, California, No. 1019

Presentations/Publications
Well Rehabilitation Prioritization. AWWA CA-NV Section, Rancho Mirage, California, 2018.

Operators Role in Maximizing Sustainable Groundwater Production. AWWA CA-NV Section, San Diego, California, 2016

Estimating Groundwater Underflow as a Source of Diluent Water for Indirect Potable Reuse. AWWA CA-NV Section, San Diego, California, 2016

Professional Affiliations
American Water Works Association

American Ground Water Trust

Groundwater Resource Association

Professional Experience

Mr. Kingsbury is a professional geologist and certified hydrogeologist with more than 20 years of diversified experience with groundwater, geotechnical, and environmental projects. He has extensive experience in the Coachella Valley performing well siting and rehabilitation projects. His knowledge of groundwater basin and existing working relationships with clients means he can translate the institutional framework for water management in Coachella Valley to the UWMP process. Mr. Kingsbury has a keen ability to recognize how and when to initiate leadership and effective communication needed to maintain successful collaboration among groups consisting of technical and non-technical participants alike on water supply projects.

Representative Projects

Coachella Valley Water District, Well Rehabilitation Prioritization Plan, Coachella, CA. Led technical team to complete a large-scale condition and performance assessment of the District's 101 active municipal supply wells. A prioritized plan to rehabilitate and/or replace these wells was developed and implemented by the District to regain performance levels and production goals, and to update CPI program. Served as project manager during second phase which included technical support and inspection services during the rehabilitation of Wells 5624-1, 7803-1 and 7991-1 and servicing of Well 5673-1.

City of Coachella, Water Division, Well No. 20 Siting Study, Coachella, CA. Served as lead hydrogeologist to conduct a city-wide evaluation to locate potential sites suitable for a new municipal water supply well. Primary tasks included: (1) compiling and evaluating hydrogeologic data, well operational data, and background literature for the project area; (2) evaluating and ranking potential well sites using key criteria, and; (3) preparing draft and final technical letter reports.

Michael Baker/New West Communities, Well Siting Study, Coachella, CA. Served as project hydrogeologist and prepared a characterization study to identify sites within a specific area of a groundwater basin where new wells can be constructed and provide groundwater supplies for the proposed La Entrada master-planned community. The final report included a conceptual design for the proposed new wells and planning level costs.

Extension of Staff Support Services, Eastern Municipal Water District, Perris, CA. Hydrogeologist. WSC is providing extension of staff services to the District's Groundwater Development department on a variety of water resource projects. Tasks include overseeing inspection services during municipal supply production well installations, technical review of project deliverables and technical specifications, preparing RFPs, evaluating downhole surveys and pumping tests for new and existing production wells, and providing technical review support for groundwater modeling projects. Also, providing technical support for the development of a water quality pilot study which includes all aspects of planning, coordinating and conducting field demonstrations at two existing well sites.

San Bernardino Valley Municipal Water District – Cooperative Agreement to Protect Water Quality in the Santa Ana River Basin, San Bernardino, CA. Project hydrogeologist and supported lead modeler with collection and analysis of geohydrologic and water quality data. Participated in project meetings and prepared initial and secondary documents to report to Regional Water Quality Control Board compliance with salinity objectives for the Bunker Hill, Lytle Creek, Rialto, Colton, Yucaipa and San Timoteo Management Zones.

Rancho California Water District, Well Siting Evaluation and Preliminary Design Report, Temecula, CA. Mr. Kingsbury was assigned to assist the District with locating a site that was suitable for a new municipal production well. The purpose of the new well was to replace an existing production well which had been rendered inactive due to chronic bacteriological activity, dating back several years. Duties included collecting and reviewing historical hydrogeological, well construction, and operational data, field reconnaissance and evaluation of four potential well sites, and preparing a preliminary well design report for the selected site. The report included potential sources and pathways of coliform contamination in the existing well, and recommendations for well structure modifications.

Rancho California Water District, Municipal Well Replacement Program, Temecula, CA. Served as the project manager responsible for preparation of preliminary design reports, demolition/construction plans, technical specifications, technical letters, and engineer's estimates for the installation of five (5) new replacement production wells. Assisted District Engineer and Water Operations Manager by providing technical recommendations and solutions for addressing concerns.

Rancho California Water District, Lower VDC Pilot Recharge Testing Program, Temecula, CA. Lead hydrogeologist tasked with the development of a work plan to perform pilot artificial groundwater recharge testing. The conceptual design of the project was to recharge 3,000 AFY of recycled water at the District's existing (but unused) Lower Valle de los Caballos (VDC) recharge facility. Work plan included design and procedures for installing one nested monitoring well, four lysimeters (to monitor soil-aquifer treatment levels), design and construction of pilot recharge facilities, performing ground water tracer tests, a 6-month pilot recharge test, a 6-month soil-aquifer treatment pilot test, developing and refinement of an existing groundwater flow model, QA/QC program, data management, engineer's estimate, and reporting.

RMC/SBVMWD/EVWD, Sterling Natural Resource Center, San Bernardino, CA. Served as project manager and senior hydrogeologist for all groundwater aspects of a feasibility study conducted for a regional wastewater reclamation plant and groundwater recharge program (Sterling Natural Resource Center). Duties included use of an existing regional groundwater flow and solute transport model to evaluate various recycled water recharge scenarios. Performed analysis to determine groundwater characteristics (including amount of groundwater available as a source of diluent water) which was used by engineering team to identify needed level of source water treatment. Participated in meetings with the Regional Water Quality Control Board and Division of Drinking Water.

City of Pomona, Water Resources Department, Groundwater Well Evaluation and Rehabilitation Project, Pomona, CA. Provided geohydrologic services to evaluate the City's aging potable water supply wells and develop a long-term strategy to rehabilitate and replace wells. Duties included reviewing historical hydrogeologic and well data, supporting well rehabilitation contractor with by reviewing and commenting on recommended procedures, and evaluating post-rehabilitation results.

Chino Basin Program Preliminary Design Report, Inland Empire Utilities Agency, Chino, CA. Staff Hydrogeologist. During development of the preliminary design report for the Chino Basin Program, assisted with preliminary design and costs for proposed injection wells. Will continue to contribute to the development of the injection well portion of the PDR.

North Pleasant Valley Desalter Project, City of Camarillo, Camarillo, CA. Hydrogeologist. Provided technical support during the review of post-construction conditions of three nested monitoring wells installed for a new Desalter Facility in the Fox Groundwater Basin that will treat brackish groundwater water using RO technology.

Daniel Eric Heimel, MS, PE

Education
MS, Civil and Environmental Engineering, Cal Poly San Luis Obispo

BS, Environmental Science, California State University Chico

Professional Registrations
Professional Engineer – Civil, California, No. C80762

Operator Certifications
SWRCB Registered D4 Operator #28472

SWRCB Registered T2 Operator #26014

Professional Affiliations
American Water Works Association, Member

Air & Waste Management Association, Member

Professional Experience

Mr. Heimel is a professional engineer with 17 years of experience focused on water resources, including State Water Project feasibility studies, water quality, and recycled water. He has performed capacity evaluations of State Water Project infrastructure to assist clients in diversifying their water supplies, transferring water, and more. He also has worked on UWMPs during previous cycles and is familiar with the guidance documents and plan preparation.

Representative Projects

California American Water Company, Various Districts 2015 Urban Water Management Plan. Technical Advisor. Advisor of the UWMP for all five of CAW's District —Los Angeles, San Diego, Ventura, Monterey, and Sacramento. Developed 20 year per capita water use projections by census block within the CAW boundary in accordance with California Senate Bill x 7-7. Evaluated supply, supply reliabilty, demand, supply and demand comparisons, demand management measures, developed a water shortage contingency plan, and a recycled water plan.

Santa Barbara County Water Agency, Long Term Supplemental Water Supply Alternatives Report. Project Engineer. Identified and evaluated potential supplemental surface water supply alternatives for the Santa Barbara County Water Agency (SBCWA). Analyzed historical State Water Project (SWP) deliveries through the Coastal Branch pipeline to identify estimates of available capacity and underutilized SWP supplies. Investigated potential opportunities to increase surface water storage through expansion of existing dams or construction of new reservoirs. Evaluated sediment removal alternatives for existing reservoirs to increase capacity and yield. Developed planning level cost estimates for proposed supplemental water supply alternatives. Participated in inter-regional, regional, and intra-regional stakeholder meetings to identify, discuss, review, and receive feedback on potential supplemental water supply alternatives.

San Luis Obispo County Flood Control and Water Conservation District, Paso Basin Supply Options Study, Project Engineer. Identified potential supply options for the Paso Robles Groundwater Basin that could be delivered using existing SWP infrastructure. Developed updated buy-in cost estimates for purchasing additional capacity within the Coastal Branch pipeline. Identified capacity limitations for each section of the Coastal Branch pipeline and quantified unutilized capacity, based on analysis of historical delivery data. Completed a fatal flaw analysis to identify SWP supply options for further evaluation (i.e. rough screening). Further developed the identified SWP supply options and compared them against potential recycled water and Nacimiento supply options to identify preferred supplemental water supply options for the Paso Basin.

Central Coast Water Authority, Coastal Branch Pressure Class Evaluation. Project Engineer. Evaluated capacity of the Coastal Branch Pipeline through the development of a maximum operating HGL for Reaches 5A2, 5B, and 6. Developed maximum operating HGL by incorporating GIS shapefiles with pipeline elevation data from record drawings and pressure class information obtained from a structural evaluation of the pipepline. Compared pipeline HGL, under various scenarios, against the maximum operating HGL to determine maximum capacity of the pipeline to deliver SWP water to the Central Coast. Developed pipeline reinforcement recommendations for increasing the capacity of the pipeline.

Northern Cities Management Area, Water Supply, Production and Delivery Plan, Central Coast, CA. Project Manager. Prepared a water supply, production and delivery plan for Northern Cities Management Area agencies, which is comprised of the cities of Arroyo Grande, Grover Beach, Pismo Beach, and Oceano Community Services District. Developed spreadsheet model to identify the most reliable scenario for potable water supply and delivery while considering implications of contractual surface water allocations and declining groundwater basin yields. Evaluated intertie pipeline capacity between potable water distribution systems using a merged hydraulic model of the systems. Developed shared cost structure for implementation, operation and maintenance of the intertie pipeline.

Northern Cities, Lopez Pipeline Capacity Assessment. Project Engineer. Created and calibrated a GIS based hydraulic model of the Lopez pipeline to analyze the available capacity of the pipeline to deliver additional SWP deliveries to the Northern Cities. Evaluated delivery scenarios to determine the maximum delivery potential under exising conditions and potential deliveries with infrastructure improvements. Developed delivery schedules for future SWP deliveries based on historical demand data and pipeline capacity results.

County of San Luis Obispo, Coastal Branch Capacity Assessment. Project Engineer. Performed a capacity analysis on the Coastal Branch pipeline to determine the potential for additional State Water Project deliveries to the Central Coast. Coordinated a Scenario Development Workshop for SWP contractors to determine the specific modeling scenarios to be used in the capacity assessment. Oversaw monthly progress report meetings with the County of San Luis Obispo and the Central Coast Water Authority. Analyzed numerous demand/deliver scenarios to determine the pipeline's maximum capacity.

City of Arroyo Grande, Utilities Master Plan Update. Project Engineer. Updated water system GIS mapping using record drawings and information provided by City staff. Created a WaterGEMS hydraulic model for the water distribution system from updated GIS mapping. Utilized customer record data to spatially allocate water demands and develop updated land use water demand factors. Utilized the GIS tools and the hydraulic model to perform a condition based assessment of the City's water mains. Developed a comprehensive 20 year CIP plan to guide the City's infrastructure projects.

City of Santa Maria, 2012 Utilities Master Plan Update-Water. Project Engineer. Developed spatially allocated demands for current and future demands through buildout using GIS for incorporation into a hydraulic model. Calculated land use demand factors based on current development and projected future demands based on zoning. Created and calibrated the water system hydraulic model in InfoWater. Utilized the water model to perform a capacity assessment and develop an updated prioritized CIP.

City of Pismo Beach, Central Coast Blue, Pismo Beach, CA. Program Manager. Providing Program Management, Preliminary Design, Funding, and Environmental Document Support services for the Indirect Potable Reuse project that will recover secondary effluent from two wastewater treatment plants, a resource currently discharged to the Pacific Ocean. The advanced treatment facility will use microfiltration or ultrafiltration, reverse osmosis, and ultraviolet radiation and advanced oxidation process before being injected into the Santa Maria Groundwater Basin to supplement groundwater supplies and protect the basin from seawater intrusion.

Alameda County Water District, Groundwater Recharge Facilities Operations and Maintenance Management. Project Engineer. Developed groundwater recharge monitoring database to track all operations of the Alameda Creek diversion facilities and groundwater recharge ponds. Directed maintenance of meters and valves at the groundwater recharge facilities. Compiled data and created regulatory reports related to the groundwater recharge operations. Oversaw watershed water quality monitoring and used GIS to spatially analyze water quality data.

Antonia Estevez-Olea, MS, EIT

Education
MS, Environmental Management, University of San Francisco, San Francisco

BS, Environmental Engineering, California Polytechnic State University, San Luis Obispo

Professional Registrations
Engineer in Training, No 150536

PACP, MACP, & LACP, No. U-0818-0703001316

Professional Affiliations
WateReuse

Water Environment Research Federation (WERF)

Publications

Estevez-Olea, A. (2015). Life Cycle Assessment of Reclaimed Water for Potable and Nonpotable Reuse in California. (Master's Project). University of San Francisco, San Francisco.

Professional Experience

Ms. Estevez-Olea is an Engineering-in-Training with over three years of experience in water resources management, stormwater, wastewater, and recycled water. Her experience in water and wastewater asset management includes the master planning, local limits studies, and compliance documents. She has analyzed water quality data to evaluate NPDES permit compliance in accordance with the discharge prohibitions. Ms. Estevez-Olea has also prepared engineering reports and Notice of Intents (NOIs) for several recycled water programs in California. She also assessed the effectiveness of structural and nonstructural best management practices (BMPs) for stormwater and water reliability projects. Her experience in engineering, resource management, and water policy allows her to provide solutions that are socially, environmentally and economically just.

Professional Project Experience

California American Water Monterey County District, Comprehensive Planning Study (CPS) and Condition Based Assessment (CBA). Monterey, CA. Project Engineer. Assisting with the development of the CPS and CBA reports by managing/compiling assets inventories and assessing site conditions and analyzing large datasets to evaluate customer and water demands and water supplies reliability. Developed the 2018 buried assets Pipeline Prioritization Model to identify and prioritize water mains in need of replacement.

City and County of Los Angeles, Enhanced Watershed Management Plans (EWMP) Annual Reporting. Los Angeles CA. Project Engineer. Managed stormwater, receiving water, and TMDL water quality data for four watershed programs. Maintained, updated, and distributed data used in the annual reports.

Recycled Water Programs Throughout California. CA. Project Engineer. Prepared and reviewed engineering reports and notice of intents (NOIs) for the Cities of Calistoga, Davis, Healdsburg, Lompoc, Occidental, and Ukiah. Developed guidelines for recycled water application at hydraulic and agronomic rates for various agricultural uses (e.g., vineyard irrigation, frost protection), and for municipal (e.g., sewer cleaning, street sweeping) and constructions (e.g., soil compaction, dust control, concrete mixing) uses.

City of Benicia, Source Identification Study. Benicia, CA, Project Engineer. Evaluated the City's pretreatment program, water supplies, and wastewater water quality data to identify sources of TDS.

City of Los Angeles, TMDL Compliance Analysis. Los Angeles CA. Project Engineering. Analyzed water quality data to determine compliance with TDML milestones in the Ballona Creek Watershed and Los Angeles River.

City of Oceanside, Local Limits and Total Dissolved Solids (TDS) Study. Oceanside, CA. Project Engineer. Supporting the City with the development of a Technically-Based Local Limits (TBLL) report for their two wastewater treatment plants. Preparing a TDS Management Study to assist the City in evaluating potential impacts of future modifications to its water, wastewater and recycled water systems.

Monterey Regional Water Pollution Control Agency (MRWPCA), Local Limits Evaluation and Monitoring Plan. Monterey, CA. Project Engineer. Supported the Project Manager with data management for the 2016 Local Limits Evaluation by compiling and formatting local limits data (i.e., regulated and non-regulated dischargers, influent, treatment processes, effluent, and biosolids data). Reviewed the final local limits evaluation report and used the results to develop a monitoring plan for the new sources of influents that will enter the Regional Treatment Plant.

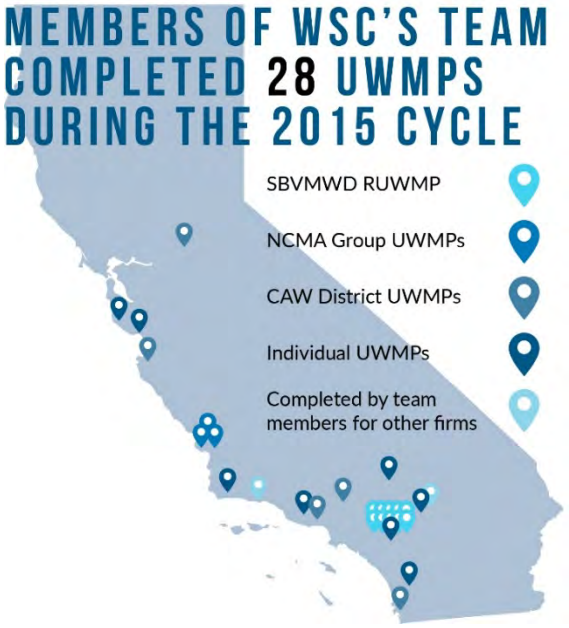
Appendix B: Similar Experience

WSC is an UWMP leader

WSC has developed UWMPs during each of the last three UWMP cycles and brings a wealth of knowledge and experience to the Coachella Valley area agencies. The tools and lessons learned during previous cycles enable WSC to prepare efficient, cost-effective, and useful UWMPs that integrate and build off other regional planning documents. We have successfully developed high-quality RUMWPs, and our team members are active participants in DWR's workgroup process for UWMPs. Our experience with regional urban water management planning and in the Coachella Valley area are described in this section.

WSC's UWMP experience includes:

- Members of our team completed 28 UWMPs during the 2015 cycle and have completed more than 40 UWMPs since the 2005 cycle.
- During the 2015 UWMP cycle, WSC led three regional efforts — one full RUWMP with 10 agencies and two other similar efforts.
- WSC has developed data gathering, data management, and data analysis tools to standardize and streamline UWMP development.
- Standard language for common sections and scenarios leads to efficient production of a compliant final UWMP.
- WSC's understands how to integrate UWMPs with other related planning efforts. During previous cycles, WSC has developed UWMPs alongside water master plans to take advantage of the efficiencies created by shared data, analysis, and policies.



WSC's participation in DWR's UWMP and water conservation Workgroups provides insight into potential requirement changes for the 2020 cycle.

Three members of WSC's team are participating in DWR's Workgroups which gives them insight into the new requirements and the regulatory structure that drives the documents this cycle. By participating in the DWR Workgroups, our team is able to effectively anticipate changes early so that we can work to mitigate increases in fee associated with the new requirements. WSC's proposed Primary Author, Spencer Waterman, participated in the Guidebook Advisory Committee during the 2015 cycle and contributed to key areas. His experience on the previous guidebook committee and current involvement in the UWMP Guidebook Workgroup mean he is an expert that the Coachella Valley area agencies can rely on for the most up to date information.

WSC brings local knowledge and responsiveness to the Coachella Valley

Members of WSC's team have worked on multiple projects in the Coachella Valley area and are familiar with the existing regional water resources planning efforts in the region. WSC understands the participating agencies are interested in the benefits of the regional urban water management planning process, such as cost-savings and data consistency between agencies. Our team members' local knowledge will drive efficiency, support data standardization, and promote collaboration between agencies. We will work with the participating agencies to identify ways to leverage other regional planning efforts, such as Integrated Regional Water Management Planning and implementation of the Sustainable Groundwater Management Act, to improve efficiency and maximize the benefit of the UWMP process.

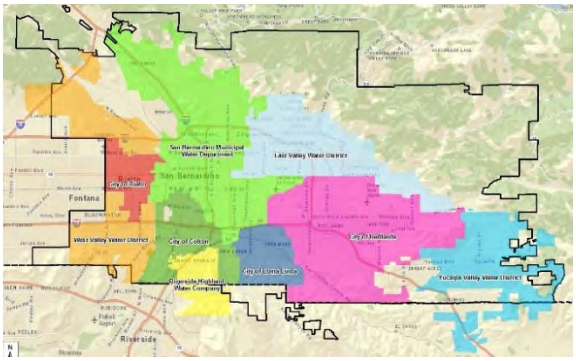
WSC's team members have worked on the following projects:

- Agua Caliente Band of Cahuilla Indians — Andreas Pipeline Review and Analysis
- Coachella Valley Water District — District-wide Well Rehabilitation Prioritization Plan
- Coachella Valley Water District — Rehabilitation or Servicing of Wells 5624-1, 7803-1, 7991-1, and 5673-1
- Coachella Water Authority — Supplemental Water Supply Program and Fee Study
- Coachella Water Authority — Water Master Plan
- City of Coachella Water Division — Well 20 Siting Study
- Indio Water Authority — Recycled Water Feasibility Study
- Michael Baker/New West Communities — Well Siting Study
- Mission Springs Water District — Hexavalent Chromium Compliance Investigation
- Mission Springs Water District — Willow Hole Groundwater Monitoring Well Project

WSC is committed to providing responsive service to the Coachella Valley agencies.

We know the importance of responsiveness to the participating agencies, and our team is available and committed to exceeding your expectations. WSC's team includes staff members from our Southern California offices in Rancho Cucamonga, Laguna Hills, and San Diego, and WSC has a company airplane that staff from our San Luis Obispo office can use to attend meetings, workshops, and site visits on short notice. WSC also has invested in state-of-the-art technology to seamlessly collaborate remotely on tasks that do not require in-person visits.

2015 Regional Urban Water Management Plan – *San Bernardino Valley Municipal Water District, San Bernardino, CA*



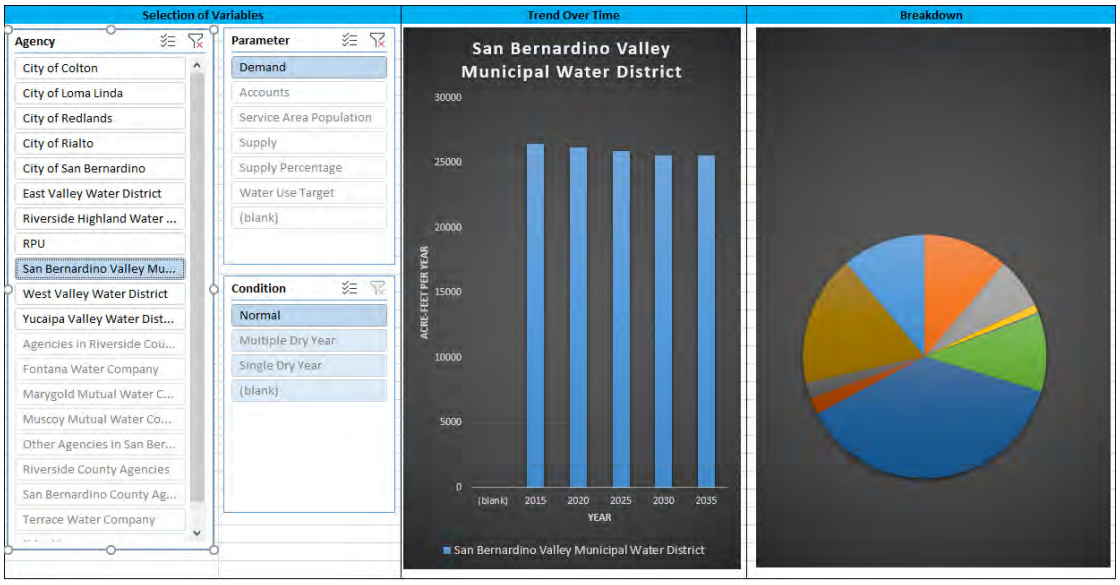
WSC led a collaborative group that included the San Bernardino Valley Municipal Water District and nine retail suppliers to develop a RUWMP during the 2015 cycle. These agencies use imported groundwater, State Water Project water, local surface water, and recycled water to meet the needs of approximately 700,000 people.

A coordinated database was used to consolidate and standardize water supply and demand data for each agency, ensuring that all usage was accounted for and supplies were not double-counted. This database enabled the simulation of future changes in each agency's water supply portfolio to visualize the impacts to the regional water balance.

The project included a series of stakeholder workshops to gather data, discuss alternative approaches to enhancing supply reliability, review the database and preliminary results, and discuss the project deliverables. Each agency tailored its Water Shortage Contingency Plan to the needs of its local service area, and as the wholesale supplier, Valley District outlined its plan for regional drought response.

Relevance to the Coachella Valley RUWMP

- By developing a RUWMP instead of an individual UWMP for each agency, the participating agencies realized cost savings.
- Data for each agency was standardized which will support other regional water resources planning projects and improve efficiency in subsequent UWMP cycles.
- WSC's shared database tool and customized dashboards made it easy to share information and coordinate efforts between agencies.



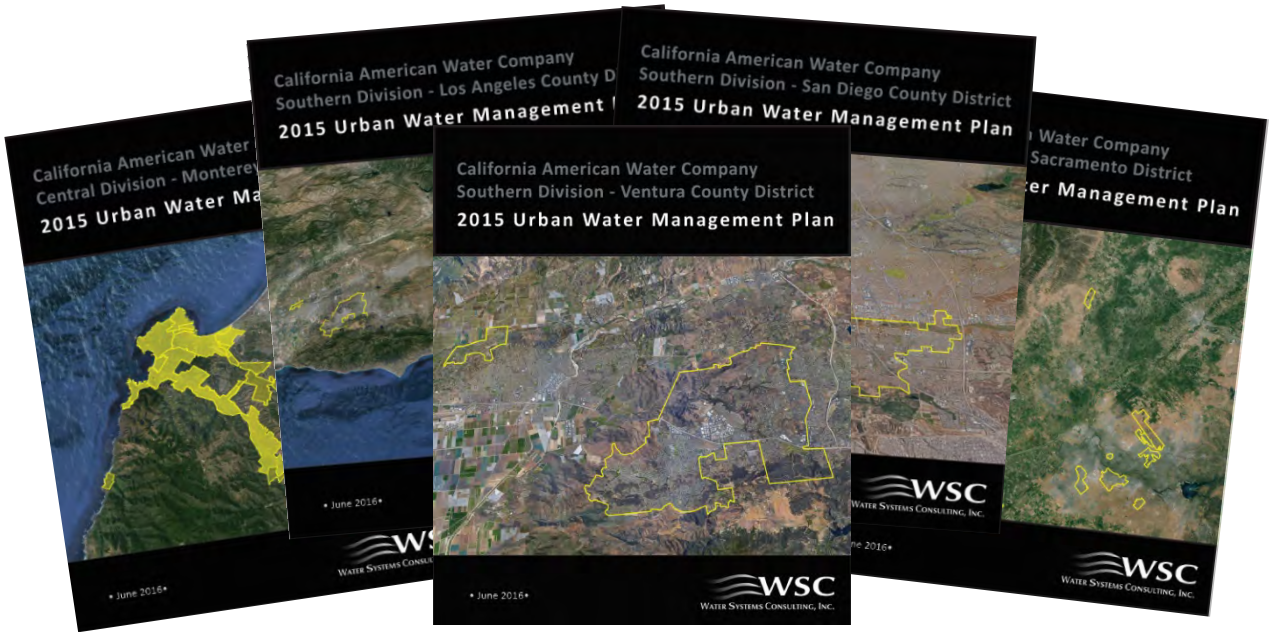
Urban Water Management Plans – *California American Water, Multiple Districts, CA*

WSC prepared California American Water's (CAW) 2005, 2010, and 2015 UWMPs for the Los Angeles County, Ventura, San Diego, Monterey, and Sacramento Districts. WSC worked across Districts to standardize data and coordinate report development. With each subsequent UWMP, WSC refined its tools and improved data consistency.

For each District, WSC developed 20-year per capita water use projections. WSC developed customized service area population data in GIS by intersecting block-level Census population data within the CAW service areas. Using the service area population, WSC calculated per capita water usage for each service area and used it to determine the baseline per capita water usage. WSC examined local water supplies to evaluate water availability for the next 20 years. WSC evaluated water supply reliability by reviewing historical water supply and demand data during multiple dry year periods. Voluntary analysis of energy intensity in water deliveries and climate change impacts were also completed for each District.

Relevance to the Coachella Valley RUWMP

- Even though CAW is one company, each of the Districts historically operated as separate entities which created issues with data quality and standardization.
- WSC built a framework for collecting and analyzing data in a uniform way to take advantage of an economy of scale for the five District UWMPs.
- After the 2005 UMWP cycle, CAW kept all its systems in a single data log, so the information was consistent across Districts which streamlined the process for future UWMPs.



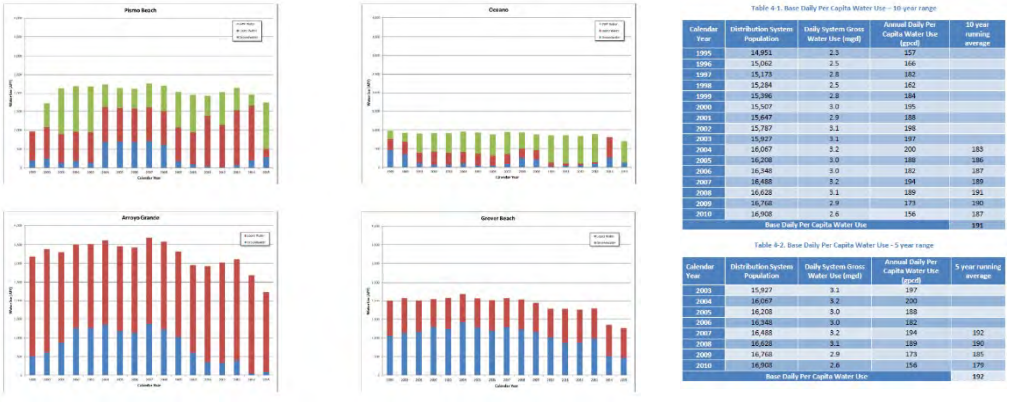
Urban Water Management Plans – *Northern Cities Management Area Stakeholders, South San Luis Obispo County, CA*

WSC prepared the 2015 UWMPs for three agencies that are part of the Northern Cities Management Area Technical Group. Although WSC wrote individual UWMPs for the three cities, Arroyo Grande, Pismo Beach, and Grover Beach, the documents were coordinated due to shared planning for water supplies, infrastructure, and issues. By coordinating regionally, the agencies were able to reduce costs, standardize data, and integrate the effort with other water resources planning efforts.

WSC prepared the 2015, 2010, and 2005 UWMP updates for the City of Arroyo Grande in parallel with its Water and Sewer Master Plan Updates, and the 2015 update for the City of Pismo Beach was developed in conjunction with the City's Water Master Plan. By developing the UWMPs at the same time as the master plans, the agencies were able to reduce the effort on shared components, such as water usage and demand projections. Other benefits of preparing the plans at the same time included cost savings and standardized data. WSC also developed the City of Grover Beach's 2015 UWMP which benefitted from tools and data developed for the Arroyo Grande and Pismo Beach UWMPs that were completed first. WSC worked with Arroyo Grande and Grover Beach to amend their Water Shortage Contingency Plans to be in compliance with DWR requirements.

Relevance to the Coachella Valley RUWMP

- WSC coordinated with local stakeholders to integrate with ongoing regional efforts, including with the nearby cities, the county, the Northern Cities Management Area, and the Nipomo Mesa Management Area Technical Group.
- The direct coordination with DWR staff as a member of the Guidebook Advisory Committee enabled WSC to anticipate changes and deliver 2015 UWMPs that DWR deemed complete.
- For two of the agencies, WSC developed their Water Master Plans in conjunction with the UWMPs to maximize the value of both documents through shared and consistent data.
- For two of the agencies, WSC provided WSCP amendment guidance to comply with DWR requirements.



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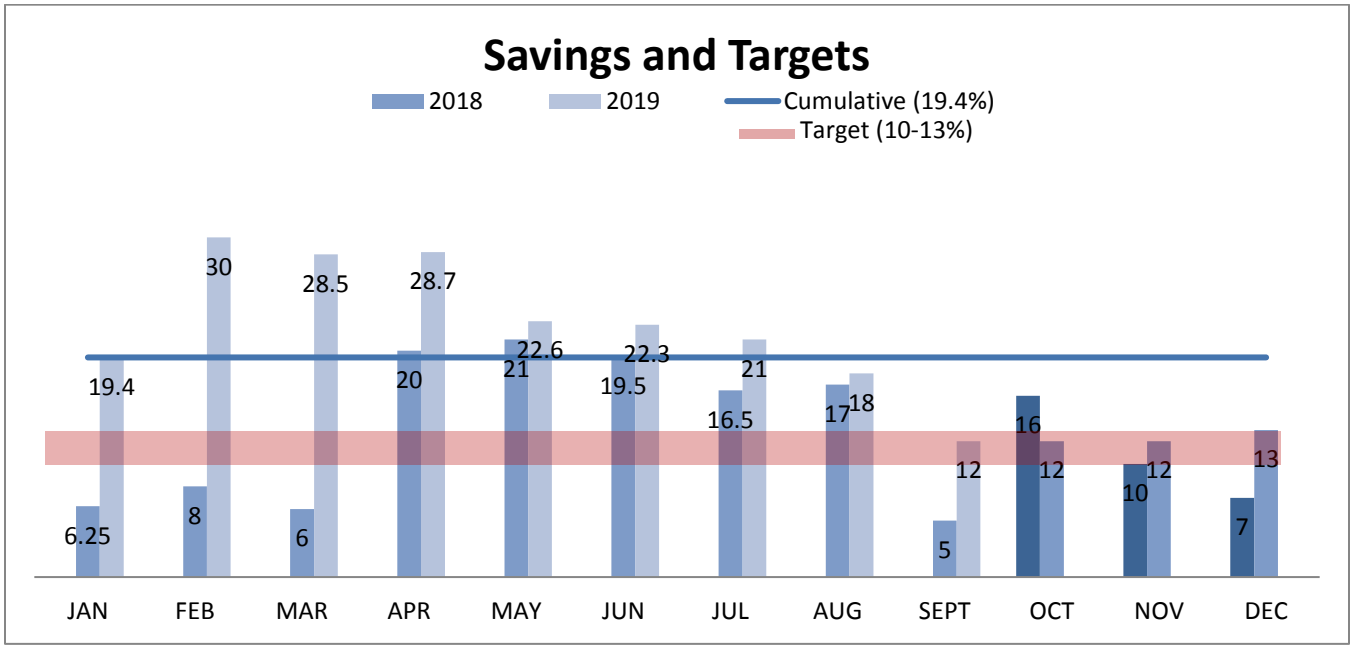
STAFF REPORT
TO
DESERT WATER AGENCY
BOARD OF DIRECTORS

OCTOBER 15, 2019

RE: SEPTEMBER 2019 WATER USE REDUCTION FIGURES

Desert Water Agency and its customers achieved an 11.5% reduction in potable water production during September 2019 compared to the same month in 2013 – the baseline year used by the State Water Resources Control Board (State Water Board) to measure statewide conservation achievements. DWA continues to report its production to the state on a monthly basis, despite mandatory conservation ending in 2017.



DWA is asking its customers to save 10-13% compared to 2013 to help achieve long-term sustainability.

The cumulative savings over the last twelve-month period is 19.4%. The cumulative savings beginning in June of 2016 when we put our 10-13% target in place is 17.6%.

On the following page is additional information for this month.

September 2019 water production	3,151.87 AF
September 2013 water production	3,561.22 AF
Percent changed in this month per drought surcharge baseline (September 2015)	-17.89%
Quantity of potable water delivered for all commercial, industrial, and institutional users for the reporting month	948.34 AF
The percentage of the Total Monthly Potable Water Production going to residential use only for the reporting month	69.91%
Population (inclusive of seasonal residents)	107,699
Estimated R-GPCD	222.23
How many public complaints of water waste or violation of conservation rules were received during the reporting month?	36
How many contacts (written/ verbal) were made with customers for actual/ alleged water waste or for a violation of conservation rules?	18
How many formal warning actions (e.g.: written notifications, warning letters, door hangers) were issued for water waste or for a violation of conservation rules?	12
How many penalties were issued for water waste or for a violation of conservation rules?	2

Comments: The Agency's service area is highly seasonal making population analysis a complex task. The State Water Board analyzes data on a per capita basis.

Historically, DWA has submitted data based on the permanent population of the service area; however, that data does not accurately reflect water use in DWA's service area which has a highly seasonal population. We are currently submitting a calculation reviewed by the State Water Board. We plan to update our population figures once the Department of Water Resources accepts our technical memo on seasonal population.

Since Desert Water Agency began recycling water, the agency has reclaimed 102,409 acre feet. If our recycled water production for this month was taken into consideration against our potable production, the conservation achieved would have been several percentage points higher.