



**SPECIAL NOTICE REGARDING  
CORONAVIRUS DISEASE 2019 (COVID-19)  
AND PARTICIPATION IN PUBLIC MEETINGS**

On March 4, 2020, Governor Newsom declared a State of Emergency resulting from the threat of COVID-19. Governor Newsom issued Executive Order N-25-20 (3-12-20) and Executive Order N-29-20 (3-17-20) which temporarily suspend portions of the Brown Act relative to conducting public meetings. Subsequent thereto, Governor Newsom issued Executive Order N-33-20 (3-19-20) ordering all individuals to stay at home or at their place of residence. Accordingly, it has been determined that all Board and Workshop meetings of the San Bernardino Valley Municipal Water District will be held pursuant to the Brown Act and will be conducted via teleconference. There will be no public access to the meeting venue.

**BOARD OF DIRECTORS WORKSHOP - ENGINEERING  
TUESDAY, SEPTEMBER 8, 2020 – 2:00 P.M.**

**PUBLIC PARTICIPATION**

Public participation is welcome and encouraged. You may participate in the September 8, 2020, meeting of the San Bernardino Valley Municipal Water District online and by telephone as follows:

**Dial-in Info: 877 853 5247 US Toll-free  
Meeting ID: 753 841 573**

**<https://sbvmwd.zoom.us/j/753841573>**

If you are unable to participate online or by telephone, you may also submit your comments and questions in writing for the District's consideration by sending them to [comments@sbvmwd.com](mailto:comments@sbvmwd.com) with the subject line "Public Comment Item #" (insert the agenda item number relevant to your comment) or "Public Comment Non-Agenda Item". Submit your written comments by 6:00 p.m. on Monday, September 7, 2020. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record.

**IMPORTANT PRIVACY NOTE: Participation in the meeting via the Zoom app is strongly encouraged. Please keep in mind: (1) This is a public meeting; as such, the virtual meeting information is published on the World Wide Web and available to everyone. (2) Should you participate remotely via telephone, your telephone number will be your "identifier" during the meeting and available to all meeting participants. Participation in the meeting via the Zoom app is strongly encouraged; there is no way to protect your privacy if you elect to call in to the meeting. The Zoom app is a free download.**



**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT**  
380 E. Vanderbilt Way, San Bernardino, CA 92408

**BOARD OF DIRECTORS WORKSHOP - ENGINEERING**

**AGENDA**

**2:00 PM Tuesday, September 8, 2020**

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**CALL TO ORDER** -

*Chairperson: Director Kielhold*

*Vice-Chair: Director Hayes*

**1. INTRODUCTIONS**

**2. PUBLIC COMMENT** - *Any person may address the Board on matters within its jurisdiction.*

**3. SUMMARY OF PREVIOUS MEETING**

3.1. August 11, 2020 Meeting (Page 3)

[Summary Notes BOD Workshop - Engineering 081120](#)

**4. DISCUSSION ITEMS**

4.1. Consider Sponsoring the Center for Western Weather and Water Extremes (CW3E) Water Affiliates Group to Study Atmospheric Rivers (Page 8)

[Staff Memo - CW3E - Water Affiliates Group](#)

[Water Affiliates Group Overview](#)

[CW3E Strategic Plan](#)

[Prado FIRO Fact Sheet](#)

4.2. Discuss Bid Results for Construction of Waterman Hydroelectric Project (Page 22)

[Staff Memo - Discuss Bid Results for Waterman Hydroelectric Project](#)

[Bid Opening Report and Bid Summary](#)

[Borden Excavating Bid Package](#)

[Borden Excavating Bid Irregularity Table](#)

4.3. Consider Amendment 6 to the Yuba Accord Agreement for a Dry Year Water Supply (Page 59)

[Staff Memo - Yuba Accord Amendment 6](#)

Presentation of Amendment 6 to Yuba Accord Agreement  
DRAFT Yuba Accord Amendment 6

- 4.4. Consider Participation in the Update of the 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan and the 2015 San Bernardino Valley Regional Urban Water Management Plan (Page 78)  
Staff Memo - Consider Participation in the Update of the 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan and the 2015 San Bernardino Valley Regional Urban Water Management Plan  
Proposed cost sharing for the 2020 for IRUWMP - WSC/Woodard & Curran  
Excerpt from WSC/Woodard & Curran Proposal for the Upper Santa Ana River Watershed IRUWMP

5. **FUTURE BUSINESS**

6. **ADJOURNMENT**

PLEASE NOTE:

Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the District's office located at 380 E. Vanderbilt Way, San Bernardino, during normal business hours. Also, such documents are available on the District's website at [www.sbvmd.com](http://www.sbvmd.com) subject to staff's ability to post the documents before the meeting. The District recognizes its obligation to provide equal access to those individuals with disabilities. Please contact Melissa Zoba at (909) 387-9228 two working days prior to the meeting with any special requests for reasonable accommodation.



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**DATE:** September 8, 2020  
**TO:** Board of Directors' Workshop – Engineering  
**FROM:** Staff  
**SUBJECT:** Summary of August 11, 2020 Board of Directors' Workshop - Engineering

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The Board of Directors held a Workshop on August 11, 2020. Director Kielhold chaired the meeting via video-conference and Directors Navarro, Longville, and Hayes participated in the Workshop supported by Heather Dyer, Wen Huang, Cindy Saks, Bob Tincher, Melissa Zoba, Kai Palenscar, Brent Adair, and Chris Jones of staff. The following agenda items were discussed:

**3.1 Summary of Previous Meeting on July 14, 2020.** The summary notes of the July 14, 2020, meeting were accepted.

**4.1 Presentation: Presentation by Dr. Daniel Swain: Extreme Atmospheric Rivers as Influenced by California's Warming Climate.** Dr. Daniel Swain gave a presentation on his newly published research titled, "Extreme Atmospheric Rivers as Influenced by California's Warming Climate." Dr. Swain is a Climate Scientist with the Institute of the Environment & Sustainability at the University of California Los Angeles. He is also a Research Fellow at the Capacity Center for Weather and Climate Extremes at the National Center for Atmospheric Research and a California Climate Fellow at the Nature Conservancy. Dr. Swain presented on newly published research on the topic of widely varying hydrologic cycles of predicted for California due to changing climate and touched briefly on the potential implications for water managers, fire suppression, and flood control in coming decades.

**Action Items:** Receive and File

#### **4.2 Presentation by William Ota (PhD Student, UC Riverside): Current and Future**

**Research Associated with the Santa Ana River.** William Ota, a Ph.D. doctoral student at the University of California, Riverside within the lab of Associate Professor Kurt Anderson, gave a presentation on present and future research he is working on related to the Santa Ana sucker ecology. The Anderson Lab conducts research related to Quantitative Population, Community, and Applied Ecology, where in the last several years several researchers have begun assessing the Santa Ana River. The Santa Ana River is a human managed system containing threatened and endangered species that interact with other native and invasive species. The Upper Santa Ana River Habitat Conservation Plan (HCP) has benefitted from the work conducted by the Anderson Lab in the River related to ecological interactions between wastewater discharge and species abundance, distribution, and diversity. Mr. Ota's research will inform ongoing monitoring and management decisions for the HCP.

**Action Items:** Receive and File

#### **5.1 Discuss Water Use Efficiency End of Year Report.**

Staff provided a summary of the water use efficiency program for fiscal year 2019-2020. Funds for the program are included in the *Water Conservation and Education Program* budget account number 6640. A total of \$750,000 was budgeted for the program in 2019-2020 and \$658,452 was spent.

**Action Items:** Receive and file

#### **5.2 Completion Report - Citrus Reservoir and Pump Station Floating Cover System**

**Project.** Staff provided a final update on the Citrus Reservoir and Pump Station Project (Project), which was completed in June 2019. The reservoir has been in continuous service since June 2017. On November 6, 2018, the Board of Directors authorized procurement of the Rhombo Hexoshield floating cover system to comply with mitigation requirements for the Citrus Reservoir provided in the Wildlife Hazard Management Plan (WHMP) prepared and adopted by the California Department of Water Resources (DWR) as part of the East Branch Extension (EBX) Phase 2 Project. Since then, over 3.7 million balls out of a total of 7.5 million balls have been deployed in the reservoir. Based on the recent biological

monitoring events, the floating cover, even at less than half completed, has been very effective deterring migratory birds from using the reservoir.

In November 2019, there was evidence that some of the rhomboidal shaped balls have developed holes, sunk and subsequently been pulled into the reservoir pumps. The Citrus Pump Station was then shut down for investigations. Through the collaboration with DWR staff, corrective measures have since been identified and implemented. Due to a relatively-low State Water Project allocation so far for this year, deliveries to our customers on the east end of the District's service area and to San Geronio Pass Water Agency (SGPWA) have been successfully met through the Greenspot Pump Station without being impacted by the shutdown of the Citrus Pump Station.

On December 17, 2019, the Board approved a budget of \$280,000 related to the Project. Following the Board approval of the budget in December 2019, Valley District staff, in cooperation with DWR staff, completed the dewatering of the reservoir using the Citrus Pump Station and rental dewatering pumps in March 2020. DWR staff completed the deployment of a floating debris boom and net system designed to keep the rhomboidal balls from entering the Citrus Pump Station intake gallery. District staff also worked with DWR staff to complete the design of pump screens at each pump intake column to protect against any future intake of debris or balls that may plug up the pumps. DWR staff completed installation of the pump screens in May 2020 and began filling the reservoir after pump columns were inspected and maintenance performed. No significant issues were found during the inspection. The Citrus Pump Station was returned to normal operation in June 2020 and has been in continuous operation since.

The total cost for the Project by the District is approximately \$150,000, which will be shared with SGPWA (22.6%).

**Action Item(s):** Receive and File.

**5.3 Consider a Cooperative Agreement with Huerta Del Valle and a Consulting Agreement with WSC to Conduct Water Supply Studies at the Louis Robidoux Parkland and Jensen Alvarado Historic Ranch.**

Staff provided a presentation asking the Board to consider a consulting agreement with WSC to conduct water supply studies at both the Louis Robidoux Parkland (Parkland) and Jensen Alvarado Historic Ranch (Historic Ranch). These studies are intended to evaluate water demand for pond restoration at the Parkland and seasonal augmentation of flows into Sunnyslope Creek along with farming by Huerta Del Valle at the Parkland and Historic Ranch. Once water demand is determined, WSC will evaluate the existing condition of existing infrastructure like the Jurupa Ditch and potential well capacity in the area. Water quality will also be evaluated for farming and habitat restoration purposes. The studies will result in a report that provides recommendations for reliable and cost-effective options to provide adequate water supply for the determined demand.

The total cost for these studies and reporting is \$115,350. Staff also asked the Board to consider a cooperative agreement with Huerta Del Valle that would result in Huerta Del Valle providing \$50,000 towards these studies. The results of the studies provide benefit to the HCP Conservation Strategy so the HCP Partners will reimburse Valley District 60% of the remaining cost. The final cost to Valley District for these studies is approximately \$26,140.

**Action Item(s):** Forward this item to the full Board for consideration.

#### **5.4 Consider a Consulting and Cooperative Agreement to Obtain and Process Aerial Imagery and LiDAR in the San Bernardino National Forest.**

Staff provided a presentation asking the Board to consider two agreements. The first is a consulting agreement with Digital Mapping Inc (DMI) to obtain and process aerial imagery and LiDAR in the San Bernardino National Forest. This data will ultimately support many different types of analysis related to the Upper Santa Ana River Habitat Conservation Plan and others being scoped with staff from the San Bernardino National Forest to restore and protect the headwaters of streams that provide great value to the Valley District mission, its customers, and the public.

The second agreement is a cooperative agreement with the Inland Empire Resource Conservation District (IERCD) that will solidify our two agencies commitment to co-fund this effort. IERCD would reimburse Valley District \$96,000 of the \$179,208.41 total cost.

After reimbursement by the HCP Partners the final cost to Valley District is expected to total \$33,283.36.

**Action Item(s):** Forward this item to the full Board for consideration.

**6. Future Business:**

None discussed.

**Staff Recommendation**

Receive and File





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**DATE:** September 8, 2020

**TO:** Board of Directors' Workshop – Engineering

**FROM:** Heather Dyer, Chief Executive Officer/General Manager  
Bob Tincher, Chief Water Resources Officer/Deputy General Manager

**SUBJECT:** Consider Sponsoring the Center for Western Weather and Water Extremes (CW3E) Water Affiliates Group to Study Atmospheric Rivers

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Staff is asking the Board to consider sponsoring the Center for Western Weather and Water Extremes (CW3E) Water Affiliates Group (WAG) that invests in research "...to shape strategies to advance understanding of atmospheric rivers and droughts and improve water management, mitigate flood risk, and increase water supply reliability." There are currently six water agencies sponsoring WAG, including Orange County Water District at the Platinum Level. Staff believes this research group could help inform the design of our Active Recharge Project, Enhanced Recharge Project, and the long-term management of mitigation associated with the Upper Santa Ana River Habitat Conservation Plan. In addition to sponsoring the Water Affiliates Group, Orange County Water District is also providing funds to CW3E to develop Forecast Informed Reservoir Operations (FIRO) at Prado Dam (Prado) which may justify more water storage at Prado without sacrificing flood protection. Staff believes that developing a FIRO at Seven Oaks Dam could provide the same benefit and plans to further discussions with CW3E about this possibility. Marty Ralph, Director of CW3E will attend this workshop to provide an overview of CW3E's research and answer questions.

As a first step, staff is recommending that the Board consider a sponsorship at the \$5,000 or \$10,000 level in fiscal year 2020/21. In the future, the District could consider the opportunity to work with Dr. Ralph and his team to develop a scope of work intended to apply his FIRO work for Seven Oaks Dam to maximize water conservation opportunities.

**Fiscal Impact**

This item was not included in the FY 2020/21 General Fund Budget but can be covered by unspent funds in category 6640 Water Conservation and Education (Miscellaneous Sponsorships).

**Staff Recommendation**

This item is within the signing authority of the Chief Executive Officer/General Manager so it does not require approval at a Board meeting, unless desired.

**Attachments**

Center for Western Weather and Water Extremes (CW3E) – Water Affiliates Group

Center for Western Weather and Water Extremes (CW3E) – Five-Year Strategic Plan 2019-2024

Developing Forecast Informed Reservoir Operations (FIRO) at Prado Dam, CA

## Center for Western Weather and Water Extremes (CW3E)—Water Affiliates Group

*Join other water leaders to shape strategies to advance understanding of atmospheric rivers and droughts and improve water management, mitigate flood risk, and increase water supply reliability.*

Along the West Coast, 40-60% of annual precipitation and nearly 85% of flooding events are caused by atmospheric river (AR) storms. Federal policy now allows water managers to incorporate forecasted conditions into their water operations through updates to the Water Control Manuals. CW3E at Scripps Institution of Oceanography leads a variety of contemporary, science-based Atmospheric River and Forecast-Informed Reservoir Operations (FIRO) programs and projects to optimize weather, climate and water forecasts—providing water managers with practical tools to improve their operations, increase water supplies, and promote public safety. Membership represents an opportunity to guide research strategies on improved operational tools to support core water management services.

### CW3E Provides Actionable Information, Tools, and Technologies

Water supply reliability	Observations
Flood management	Forecasting
GHG mitigation	Decision Support
Groundwater recharge	Climate Outlooks: Months to Decades
Public safety	Hazard Assessment

### Why Join the Water Affiliates Group?

Get a seat at the table to share your perspective with CW3E to tailor specific weather information for water managers for improved operations, increasing water supply while maintaining critical flood risk management

Connect with like-minded water leaders to share best practices in Forecast-Informed water operations

Affiliate your organization with the WAG community and CW3E at the forefront of innovations in water supply management for public safety and savings for ratepayers

### 2020-21 Water Affiliates Group Member and Community Events

WAG Annual Roundtable Meeting (Platinum/Founding)	Sept 2020 & Spring 2021	September- Virtual Spring – TBD
Forecast Informed Reservoir Operations Workshop	Aug 4-6, 2020	Virtual
Bi-annual Atmospheric Rivers Colloquium Summer School	Summer 2021	Scripps Oceanography
Bi-annual International Atmosphere Rivers Conference	Oct 5-9, 2020	Virtual
Winter Precipitation Outlook Workshop	Oct 26-28, 2020	Scripps or Virtual

## Founding Members

**Orange County Water District's (OCWD)** ability to reduce reliance on imported water depends on increasing capture of storm water released from Prado Dam. Current flood control manuals allow temporary capture of up to 20,000 acre-feet of water. With CW3E, advancing research observations for unique region-specific forecasts may permit Prado Dam to capture up to 30,000 acre-feet of water behind the dam and direct it to groundwater recharge.

**Yuba Water Agency** is dedicated to continuing to improve water supply management, especially reducing the risk of flood events and increasing public safety. CW3E tools are being used to complement Yuba Water's plans to build a \$160 million secondary spillway at New Bullards Bar Dam.

**Turlock Irrigation District's (TID)** ability to protect against flood events depends on being able to more accurately forecast large rain events. In both 2017 and 2019, CW3E models gave TID time to create space in the reservoir through pre-flood releases to minimize the effects of storms forecasted to hit the area. In 2018, a dry year, the accuracy of CW3E models to forecast extreme weather events gave TID confidence to hold on to 150,000 acre-feet of water that would have been released otherwise.

**San Diego County Water Authority** is working with CW3E to assess how better precipitation forecasts at a range of timescales can improve reservoir management in the San Diego region- maximizing local water supply and the reliability of water resources and improving the ability of water managers to make real-time decisions for managing limited water supplies.

**Irvine Ranch Water District (IRWD)** is dedicated to providing, conserving, and maximizing the efficient use and reuse of water and renewable resources to benefit their customers and to enhance the environment. IRWD manages its supply and demand with careful research and analysis regarding flow, diversions, climate, and customer demand and population estimates to ensure there will be adequate supply of clean, reliable water.

**Potential Founding Member: Sonoma Water (SW)** is responsible for wholesale water supply, flood risk management, and wastewater management. Because these operations are significantly impacted by ARs, SW has partnered with CW3E to assist in various applied research programs and other programs to help mitigating such impacts. Specifically, SW is partnering with CW3E on leading the implementation of FIRO at Lake Mendocino resulting in several major deviations being approved by the US Army Corps of Engineers to save up to 11,650 acre feet of water annually.

## Annual Membership

Members receive tiered levels of access and visibility at CW3E Member and Community events with invitations to attend and present, quarterly newsletters, and talent recruitment support. Membership supports workshops and conferences for members as well as education, outreach, and innovation at CW3E. Membership is tax-deductible.

### Platinum Level – Contribution of \$50,000+

- 2 invitations to participate in the WAG Annual Roundtable Meeting at Scripps with up to \$2000 travel credit (\$2,000 value)
- 2 invitations, exhibit space & 10 min presentation at Bi-annual International Atmospheric Rivers Conference
- 2 invitations to Annual FIRO Workshop
- 2 invitations to Winter Outlook Workshop
- 1 invitation & 10 min presentation at Bi-annual Atmospheric Rivers Colloquium Summer School
- 3 copies of *Atmospheric Rivers* by Ralph, Dettinger, Rutz, and Waliser (\$300 value)

### Gold Level – Contribution of \$25,000 up to \$50,000

- 2 invitations and exhibit space at Bi-annual International Atmospheric Rivers Conference
- 2 invitations to Annual FIRO Workshop

- 2 invitations to Winter Outlook Workshop
- 1 invitation & 10 min presentation at Bi-annual Atmospheric Rivers Colloquium Summer School
- 2 copies of *Atmospheric Rivers* by Ralph, Dettinger, Rutz, and Waliser (\$200 value)

**Silver Level – Contribution of \$10,000 up to \$25,000**

- 1 invitation and exhibit space at Bi-annual International Atmospheric Rivers Conference
- 1 invitation to Annual FIRO Workshop
- 1 invitation to Winter Outlook Workshop
- 1 copy of *Atmospheric Rivers* by Ralph, Dettinger, Rutz, and Waliser (\$100 value)

**Associates Level – Contribution of \$5,000**

- Option to additionally sponsor WAG Member and Community Events a la carte
- 1 copy of *Atmospheric Rivers* by Ralph, Dettinger, Rutz, and Waliser (\$100 value)

<p><b>F. Martin Ralph, Ph.D.</b>          Director, Center for Western Weather &amp; Water          Extremes, mralph@ucsd.edu</p>	<p><b>Gwen E. Nero, Ph.D.</b>          Corporate Relations &amp; Innovation          gnero@ucsd.edu</p>	<p><b>Vanessa Scott</b>          Corporate Relations &amp; Innovation          vscott@ucsd.edu</p>
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Five-Year  
Strategic Plan

2019–2024



Center for Western Weather  
and Water Extremes

UC San Diego



SCRIPPS INSTITUTION OF  
OCEANOGRAPHY

## MESSAGE FROM THE DIRECTOR

Greetings:

It is with great pride that I share the first five years of CW3E's accomplishments and introduce you to our strategic plan for the next five years. This plan represents a new chapter in the Center's development.

I arrived at Scripps Institution of Oceanography in 2013 with high hopes and anticipation of what the Center could become. I knew there was a critical void in addressing the unique needs for science-based information on extreme weather and water events in the western United States. Scripps provided the freedom and support needed to build capacity in this area. The overwhelming response from funders and collaborators has allowed the Center's first five years to surpass my wildest expectations.

The emerging study of atmospheric rivers (ARs) represents a promising direction to build upon, with the goal of connecting science and engineering to solving practical water management and flood control problems for which current meteorological tools are not well suited. Over the last five years, CW3E has played key roles in putting ARs "on the map." ARs are now part of the weather vernacular, our research resulted in the AR scale and AR book, and our AR tools are being applied to improve reservoir operations.

These accomplishments would not have been possible without many talented graduate students, postdocs, staff, and partners, as well as the culture we have created that fosters collaboration and bridges science as a creative enterprise with direction driven by solving practical problems. Our success also reflects the incredible support we have received: from the Scripps Director's Office, which took a chance on this endeavor and continues to support it; from the Scripps business offices that have facilitated our growth; and of course from our sponsors. In particular, I thank the California Department of Water Resources, Sonoma Water, and the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center for their early and continuing support.

Over the next five years, CW3E will create an even greater impact on science, organizations, policies, and society, as we develop more core capability to support decision-makers who must deal with weather and water extremes. My dream is for CW3E to serve as a hub that fosters the growth of a community of scientists, engineers, policy-makers, and others who



come together to solve major challenges in the West, and broaden our scope nationally and globally, as many of our stakeholders have encouraged us to do.

In advancing our work, we will strive to create new opportunities for people at all career stages and foster a culture of inclusiveness and mutual respect. I hope that people who join our Center, including those who move on to positions elsewhere, develop an awareness that we each can make a difference. Through their energy; scientific, engineering, and administrative contributions; clarity of vision; courage of commitment to their goals; and ability to communicate with others, they can find their passion and voice in the world and help us all deal with the many challenges ahead.

To our colleagues, sponsors, friends and family, and on behalf of our staff and students, please accept my heartfelt gratitude for your contributions and your encouragement in this endeavor.

*Marty Ralph*

# INTRODUCTION

In 2014, the Center for Western Weather and Water Extremes (CW3E) was launched at Scripps Institution of Oceanography at the University of California San Diego to better understand, predict, and apply extreme weather forecasting capabilities tailored to the unique meteorological conditions of the western United States. In just five years, CW3E has become a global leader in cutting-edge research on the science of extreme weather caused by atmospheric rivers (ARs) and is demonstrating applications of this research to improve water resources management in a region where drought and flood cycles are becoming increasingly common and severe.

CW3E includes a diverse interdisciplinary team of more than 40 staff, graduate students, and postdocs. This team works with an “extended family” of 13 CW3E-funded collaborators to accelerate the pace of AR discovery and to apply AR science to inform water resources decision-making. CW3E’s accomplishments to date include:

- Showing the viability of Forecast Informed Reservoir Operations (FIRO) at Lake Mendocino in the Russian River Basin and expanding FIRO to Prado Dam and the Yuba-Feather watersheds.
- Launching an airborne AR reconnaissance program in cooperation with the California Department of Water Resources, U.S. Air Force, and NOAA.
- Developing the West-WRF model to improve the forecast and analysis accuracy of extreme precipitation events.
- Publishing nearly 100 articles and a book on ARs.
- Implementing an observations network to better understand the relationship between soil

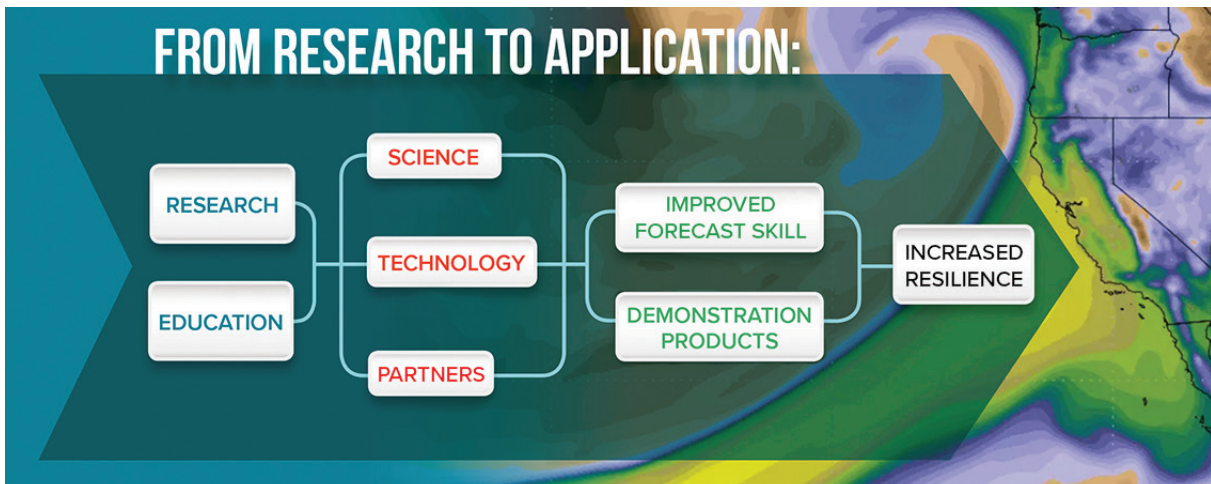
ARs have a larger impact than any other type of storm in California and along the U.S. West Coast. They deliver 25–50 percent of the water supply in key areas of the West, with tens of billions of dollars in annual benefits. They also play a key role in extreme precipitation and drought. ARs contribute to more than 90 percent of major flood events in the region, at an average cost of \$1 billion per year.

moisture measurements and hydrologic model performance.

- Developing a definition of ARs and a scale for measuring AR intensity, both of which are being incorporated into the weather enterprise lexicon.

This strategic plan aims to build on CW3E’s record of success and help the Center:

- Set priorities and clear goals for the next five years.
- Focus energy and resources on the highest priorities.
- Work with its partners toward common goals.
- Strengthen and optimize its organization, management, partnerships, communication, resources, and integration into the Scripps educational community.
- Track progress toward shared goals.
- Respond to a changing environment.



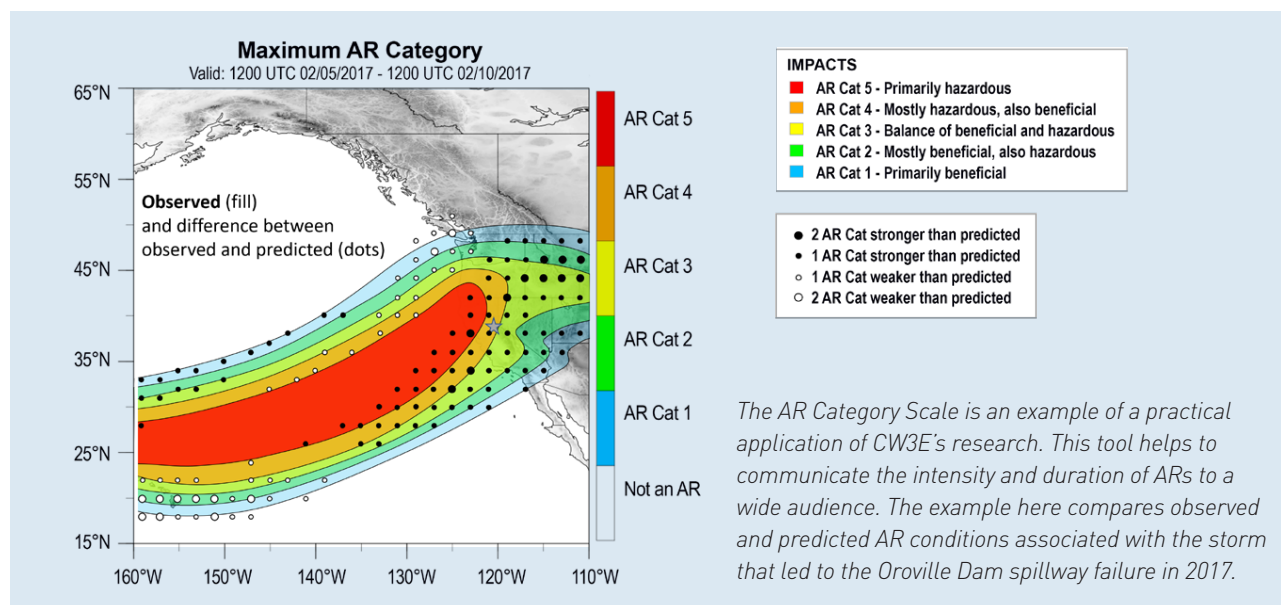




## CW3E VISION, MISSION, AND GOAL

In its first year of operation, CW3E established a vision, mission, and goal. These fundamental underpinnings of the organization will remain relevant for the next five years.

- **VISION:** Both the natural and socioeconomic system that we depend upon are resilient to extreme weather events and their effects on water supply and flooding.
- **MISSION:** Provide 21<sup>st</sup> century water cycle science, education, technology, and outreach to support effective policies and practices that address the impacts of extreme weather and water events on the environment, people, and economy of western North America.
- **GOAL:** Revolutionize the physical understanding, observations, weather predictions, seasonal outlooks, and climate projections of extreme events in western North America, including atmospheric rivers, the North American monsoon, and their impacts on floods, droughts, hydropower, ecosystems, and the economy.



## CORE VALUES

CW3E’s core values are central to its success. The Center keeps them at the forefront of strategic planning and reinforces them in day-to-day operations.

- **STUDENT AND STAFF GROWTH:** Create a work environment that promotes the goals of CW3E while enabling professional development, fulfillment, and well-being of team members.
- **DISCOVERY AND PRACTICAL APPLICATIONS:** Create a pathway for worldwide application of CW3E atmospheric modeling advances and deliver research applications through enhanced products and services in partnership with stakeholders.
- **COLLABORATION:** Share knowledge and ideas with universities, river and weather forecasting centers, federal and state agencies, water managers, and emergency managers to support improved prediction capabilities and resilience.
- **EDUCATION:** Integrate CW3E’s areas of expertise into graduate-level courses within Scripps to help equip the next generation of researchers and water management professionals with foundational knowledge about Western weather and water extremes.
- **DIVERSITY:** Achieve success by adopting a culture of respect and embracing diversity of gender, academic discipline, race, culture, socioeconomic background, career stage, and other dimensions of diversity to broaden our perspectives and learn from each other.
- **INCREMENTAL AND TRANSFORMATIONAL CHANGE:** Intentionally engage, support, and pursue both incremental (small continuous advancements) and transformational (breakthrough) approaches to research and application.

“Sonoma Water has established a vital partnership with CW3E based on a shared commitment to innovation and the principle that science should inform the decision-making process. Our relationship...has grown to include our funding graduate students to work jointly on some of our most important applied research projects as well as Sonoma Water staff working under contract for CW3E. Our relationship is truly unique and [has] become one of the better examples of an applied public and academic partnership.”

— Grant Davis, Sonoma Water



CW3E graduate student Will Chapman releases a radiosonde from the Ukiah Water Treatment Plant during an AR event.



## FIVE-YEAR PRIORITIES

Over the next five years, CW3E will focus on six priority areas:

- Forecast Informed Reservoir Operations
- Subseasonal to Seasonal Prediction of Extreme Weather
- Atmospheric Rivers Research and Applications
- Modeling Capabilities for the Western United States
- Monitoring and Projections of Climate Variability and Change
- Emerging Technologies

The pages that follow identify goals and objectives in each of these priority areas, then describe strategic steps that CW3E will take to achieve them.

# FIVE-YEAR PRIORITIES

## FORECAST INFORMED RESERVOIR OPERATIONS

**GOAL:** Enable more effective reservoir management through improved weather and water forecasts.

By developing, demonstrating, and implementing objective tools and science, CW3E can create a link between research, applications, and codified operational procedures to enable multipurpose reservoir operators to use the best available science to inform their actions.

### Key objectives:

1. Update Water Control Manuals for Lake Mendocino, Prado Dam, Lake Oroville, and New Bullards Bar Reservoir.
2. Create a well-defined pathway for broader application by designing tools and resources that ensure transferability to other reservoirs.

“Over the course of our partnership, CW3E has consistently demonstrated innovation, leadership and scientific rigor in all phases... It is no exaggeration to say that senior policy makers in the USACE are looking to the FIRO effort to set the standard for a new era in water management within the Corps.”

—Cary Talbot, U.S. Army Corps of Engineers

## SUBSEASONAL TO SEASONAL PREDICTION OF EXTREME WEATHER

**GOAL:** Improve atmospheric river prediction on a subseasonal to seasonal (S2S) scale.

CW3E will improve understanding of the S2S predictability of ARs and become a regional leader in producing experimental S2S outlooks of ARs over the western United States.

### Key objectives:

1. Apply artificial intelligence and post-processing techniques to improve S2S AR and precipitation prediction skill.
2. Increase understanding and improve skill in forecasting synoptic weather precursor patterns over the western United States that modulate S2S AR and precipitation occurrence and magnitude.
3. Develop and maintain experimental S2S AR outlooks in close coordination with stakeholders.

## ATMOSPHERIC RIVERS RESEARCH AND APPLICATIONS

**GOAL:** Establish global leadership in AR science.

CW3E will increase AR forecasting accuracy by enhancing monitoring and by integrating observations, theory, and modeling into decision support.

### Key objectives:

1. Produce scientific publications that further understanding of AR dynamics.
2. Enhance global AR monitoring through a transformative modernization of atmospheric measurements over the Pacific and in the western United States.
3. Produce forecasting and decision support tools that meet the needs of western U.S. forecasters, resource managers, and emergency managers.



A C-130 “Hurricane Hunter” on an AR Recon mission.

## MODELING CAPABILITIES FOR THE WESTERN UNITED STATES

**GOAL:** Improve weather, hydrology, and coupled modeling capabilities for the western United States.

CW3E will develop and contribute to state-of-the-art weather, hydrology, and coupled modeling systems at spatiotemporal scales relevant to water resource and emergency management decisions.

### Key objectives:

1. Further develop West-WRF as a cutting-edge numerical weather prediction system with a focus on extreme precipitation events.
2. Develop in-house hydrological modeling capabilities to better support the mission of CW3E’s main sponsors.
3. Develop and test coupled weather, ocean, and hydrologic modeling systems to improve prediction of precipitation and streamflow.

“Localized AR forecasting utilizing CW3E weather models (West-WRF) will improve forecast accuracy, timing, and intensity of AR storms. This improvement, combined with our future secondary spillway, will allow Yuba Water to further optimize water releases ahead of and during storm events, thus reducing downstream flood risk, a primary mission of the Agency.”

— Curt Aikens, Yuba Water Agency

## MONITORING AND PROJECTIONS OF CLIMATE VARIABILITY AND CHANGE

**GOAL:** Advance understanding and projections of extreme precipitation events.

CW3E will develop a comprehensive understanding of the physics and the probabilistic and statistical characteristics of extreme precipitation events in the West to inform current and future resource and risk management.

### Key objectives:

1. Provide new insights from strategic weather and climate observations and from relevant research on historical and projected extreme events.
2. Enhance decision-makers’ conceptual understanding and instrumental knowledge of historical, current, and future extreme events.
3. Develop and apply new approaches for monitoring, characterizing, and predicting the changing physical processes, statistical characteristics, and associated risk profiles of extreme events.

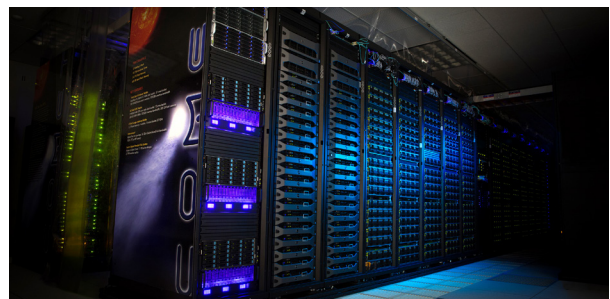
## EMERGING TECHNOLOGIES

**GOAL:** Build skills in data assimilation, artificial intelligence (AI), machine learning (ML), and post-processing algorithms to improve weather prediction.

CW3E will develop and test data assimilation for individual and coupled systems, with a focus on extreme precipitation associated with West Coast ARs. We will build expertise in AI, ML, and post-processing algorithms to add value to weather prediction.

### Key objectives:

1. Establish CW3E as a leading center for data assimilation tailored to predicting precipitation, ARs, and extreme events in the West.
2. Develop revolutionary and transformative AI, ML, and post-processing methods to improve the performance of dynamic models.



Current and future collaborations with the San Diego Supercomputer Center will enable new research avenues. Comet, the supercomputer pictured, is at the center of this collaboration. Photo credit: Jon Chi Lou, SDSC/UC San Diego.

# ACKNOWLEDGMENTS

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The Center developed this 2019–2024 Strategic Plan with input from CW3E staff, students, and a wide range of collaborators and partners. We wish to thank the following individuals for their contributions:

Grant Davis, Jay Jasperse, and Brad Sherwood  
*Sonoma Water*

Mike Marcus, Greg Woodside, Adam Hutchinson, and Alicia Dunkin  
*Orange County Water District*

Charles Ester and Bohumil Svoma  
*Salt River Project*

Mike Anderson and Jeanine Jones  
*California Department of Water Resources*

Jeff Zimmerman, Alan Haynes, Joe Intermil, Michelle Stokes, and Katherine Rowden  
*NOAA National Weather Service, Western Region Headquarters and River Forecast Centers*

Ed Clark  
*NOAA National Weather Service, National Water Center*

Bill Kuo and Chris Davis  
*National Center for Atmospheric Research*

Sean Smith, Cary Talbot, and Cuong Ly  
*U.S. Army Corps of Engineers*

Margaret Leinen, Kathleen Ritzman, and Guy Masters  
*Scripps Institution of Oceanography*

The CW3E strategic planning team included Julie Kalansky, Luca Delle Monache, and Anna Wilson (CW3E); Rob Hartman (*Robert K. Hartman Consulting Services*); and Arleen O'Donnell and Chris Lamie (*Eastern Research Group, Inc.*).

# PARTNERS AND COLLABORATORS

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California Department of Water Resources  
Desert Research Institute  
Eastern Research Group  
European Centre for Medium-Range Weather Forecasts  
NASA Jet Propulsion Laboratory  
National Center for Atmospheric Research / University Corporation for Atmospheric Research  
Naval Research Laboratory  
NOAA National Centers for Environmental Prediction, Environmental Modeling Center  
NOAA National Weather Service  
Orange County Water District  
Plymouth State University  
Portland State University  
Robert K. Hartman Consulting Services

Salt River Project  
Santa Clara University  
Seattle Public Utilities  
Sonoma Water  
UC Davis  
UC Irvine  
UC Los Angeles  
University at Albany  
University of Arizona  
University of Chile  
University of Colorado Boulder  
U.S. Army Corps of Engineers  
U.S. Bureau of Reclamation  
U.S. Geological Survey  
Yuba Water Agency

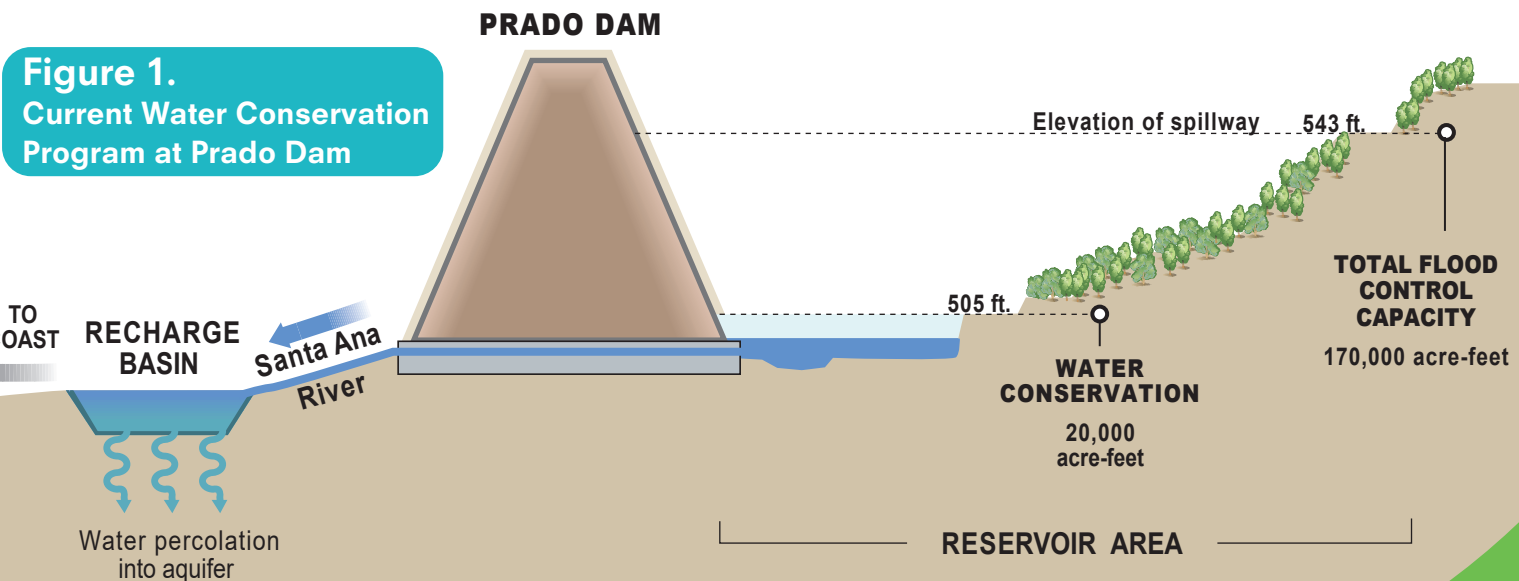
# Developing Forecast Informed Reservoir Operations (FIRO) at Prado Dam, CA



## A History of Capturing Stormwater

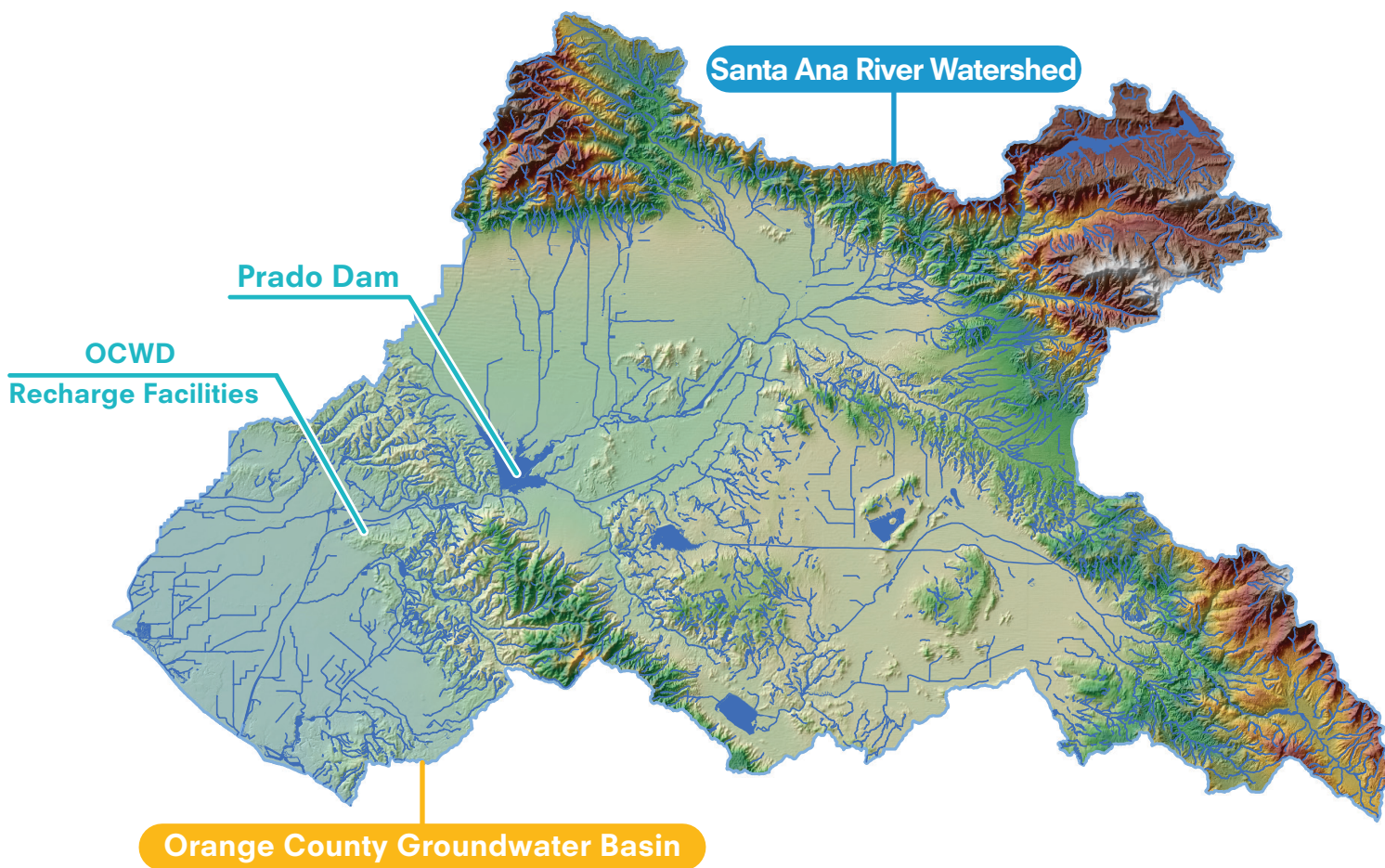
Stormwater is an important source of water supply for Orange County. The Orange County Water District (OCWD) has been capturing and recharging stormwater in the Santa Ana River channel since 1936. Since Prado Dam was constructed by the US Army Corps of Engineers (USACE) in 1941, OCWD and the USACE have worked together to maximize the capture of stormwater behind the dam. Currently, OCWD is allowed to temporarily conserve up to 20,000 acre-feet (AF) of water. Figure 1 shows the elevation and volume of the current conservation pool. USACE releases water temporarily captured at Prado Dam at a rate that OCWD can recharge the water into the groundwater basin ten miles downstream of Prado Dam.

Over the past 25 years, OCWD has captured and recharged an average of 55,000 AF per year of stormwater with an annual maximum of 117,000 AF in 1995. For planning purposes, OCWD assumes that 40,000 AF of stormwater will be captured and recharged in an average year, which is enough water for 320,000 people annually. Local stormwater capture is important because it lessens demands on imported water supplies, which are increasingly unreliable due to the fragile Sacramento Delta, oversubscribed Colorado River and changes in weather patterns.



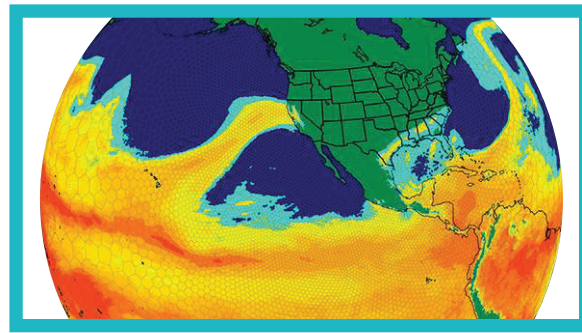
Winter 2019

**Prado Dam's primary purpose is flood risk management. Stormwater capture for downstream groundwater recharge in Orange County is an authorized secondary purpose. Once approved, full utilization of FIRO at Prado Dam could potentially provide as much as 20,000 AF of additional water for groundwater recharge in a wet year over current operations.**



## Atmospheric Rivers

Atmospheric rivers (ARs) have a profound impact on water supply in California. Long narrow bands of concentrated moisture, atmospheric rivers stretch thousands of miles across the Pacific Ocean carrying up to 20 times as much water as the Mississippi River. When atmospheric rivers make landfall, they can release a staggering amount of rain and snow. The absence of atmospheric rivers can lead to drought.



## Forecast Informed Reservoir Operations (FIRO)

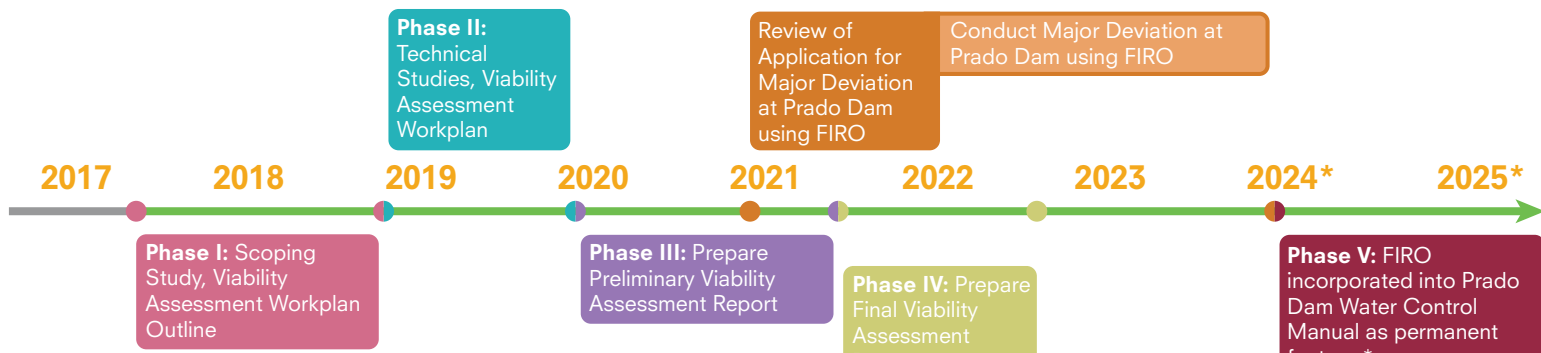
To increase the efficiency of stormwater capture at Prado Dam, OCWD is collaborating with the USACE, United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) and the Center for Western Weather and Water Extremes (CW3E) at the Scripps Institution of Oceanography to assess the viability of Forecast Informed Reservoir Operations (FIRO) in the Santa Ana River Watershed. FIRO is currently being tested in a similar collaborative effort on Lake Mendocino in northern California.

FIRO's utilization of modern science and technology can optimize the use of limited water resources and represents a viable option to adapt to extreme weather events and precipitation variability unique to the U.S. west coast. The ultimate goal of FIRO is to update water conservation and flood control guidelines in order to improve water supply and environmental outcomes without diminishing (and possibly improving) flood risk management or dam safety.

Prado Dam's primary purpose is flood risk management. Stormwater capture for downstream groundwater recharge in Orange County is a secondary purpose. It is estimated that applying FIRO at Prado Dam could provide up to 20,000 AF of additional water for groundwater recharge in a wet year.

To explore the viability of implementing FIRO at Prado Dam, OCWD and CW3E are co-chairing a steering committee with regional and national partners on a multi-phase study. Recently, the steering committee completed the FIRO Viability Assessment (VA) workplan, which synthesizes existing information and identifies additional work needed. The next step is executing the VA, which is slated for completion in early 2021. If FIRO is found to be a viable approach, the VA will support application for a deviation to the water control manual to test FIRO at Prado Dam.

## Timeline



\*Timeline dependent on hydrology and completion of the Santa Ana River Mainstem Project

## Steering Committee:

Greg Woodside: OCWD (Co-chair); F. Martin Ralph, Center for Western Weather and Water Extremes, Scripps Institution of Oceanography, University of California, San Diego (Co-chair); Jay Jasperse: Sonoma Water; Michael Anderson: DWR; Cary Talbot: USACE Engineer Research and Development Center; Alan Haynes: NOAA National Weather Service (NWS); Rene Vermeeren: USACE, Los Angeles District ; Jon Sweeten: USACE, Los Angeles District ; James Tyler: Orange County Public Works (OCPW); Karin Cleary-Rose: U.S. Fish and Wildlife Service (USFWS), Palm Springs.

## Contact

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Phone: (714) 378-3214  
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Orange County Water District  
18700 Ward Street • Fountain Valley • CA • 92708  
www.OCWD.com



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**DATE:** September 8, 2020

**TO:** Board of Directors' Workshop - Engineering

**FROM:** Wen Huang, Chief Engineer/ Deputy General Manager  
Mike Esquer, Senior Project Manager  
Brent Adair, Project Manager

**SUBJECT:** Discuss Bid Results for Waterman Hydroelectric Project

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The purpose of this memorandum is to summarize the bid results and detail the next steps to award the contract for construction of the Waterman Hydroelectric Generation Project (Project). At the Joint Board Meeting with the City of San Bernardino Municipal Water Department (SBMWD) on January 30, 2019, the Board agreed to partner with SBMWD for the development of the Project. In accordance with the Partnership Agreement, Valley District and SBMWD each will pay 50% of the design and capital costs and ongoing O&M and improvements for the Project.

**Discussion:**

The Board of Directors approved a design and engineering service contract with NLine Energy at its meeting on May 6, 2014. The intent of the Project is to design and construct a 1 MW electric generation facility and provide modifications and upgrades at the Waterman Turnout (WTO) site. Subsequently, the Board of Directors approved the procurement of the turbine, generator, switchgear, programmable logic control systems, meters and valves for the Project. NLine Energy estimated construction costs of the Project at \$2.5M.

Following the completion of the design for the Project, Staff advertised the Project for bids in June 2020 and received bids on August 13, 2020. Nine (9) bids were opened at the bid opening, ranging from approximately \$2.253M to \$3.789M. The three lowest bidders (lowest to highest) are Borden Excavating, Inc. (\$2,252,000), Environmental Construction, Inc. (\$2,657,153), and Kiewit Infrastructure West Co. (\$2,941,000). A bid opening report and a comparison summary are attached to this memorandum for review.

Subsequent to the Bid Opening, Environmental Construction, Inc. sent correspondence with a request to withdraw their bid due to a clerical error causing their bid proposal to be materially different from their original intent. The error was made in completing the proposal and not due to error in judgement, carelessness in inspecting the work site or in reading the plans and specifications. The reason cited in the Environmental Construction, Inc. Request to Withdraw Bid correspondence is consistent with the General Construction Public Contract Code Sections 5103 (a) through (d) and made within the specified five (5) working days.

The remaining two lowest bid proposals were found to be complete. At the conclusion of our review, Staff concluded that Borden Excavating, Inc. is a responsible and responsive bidder that submitted the lowest bid at \$2,252,000 pending review of minor irregularities (attached) by District Special Construction Counsel, Mary Salamone. Subject to satisfactory review by Special Counsel, the Board will need to take action to waive these minor irregularities before awarding a construction contract to Borden Excavating, Inc. at a future Board Meeting. Borden Excavating, Inc. recently completed a small project for the District as part of the Citrus Pump Station construction and was found to be reasonable on construction change orders and willing to work through issues. Staff contacted several references and all responses indicated Borden Excavating, Inc. had performed satisfactory work.

Additionally, it is recommended that the Board of Directors consider authorizing contingent costs of up to ten (10) percent above the contract amount, or \$225,200. The contingency costs will be used to cover unknown and unforeseen circumstances or improvements (betterments) to the Project during construction. Any approved contingency over the contract amount will be presented and discussed at future Board of Directors' workshops.

In order to ensure the facilities are constructed in accordance with the design specifications and will function correctly after completion, proper materials testing and inspection during construction is essential. It is anticipated that the construction management and day-to-day inspection for the project will be handled by Valley District staff. However, due to the specialty nature of certain testing and inspections, such as soils testing, concrete sampling, electrical, controls programming, and welding inspection will be contracted with professional firms specialized in certain areas. Among specialty services firms, which most will be identified later, Staff is proposing to contract NLine Energy for engineering services in support of staff in review of submittals, change orders and necessary design revision during construction, start-up and



commissioning of the Project. Staff anticipates that the overall cost for special inspection, engineering support services and material testing is approximately 5.5% of the construction cost or approximately \$123,900.

In accordance with the Agreement for Financing, Construction, Operation, and Maintenance of Project, SBMWD will be responsible for an estimated amount of \$1.27M of \$2.60M for the construction, contingency and inspection costs related to the hydroelectric facilities. The remaining \$1.33M will be paid for by Valley District, including 50% of the costs for constructing the hydroelectric generation facilities in the amount of \$1.27M and for the facilities that provide regional benefits, including improvements to the Line Valve 1 and 2 valve and meter vaults.

**Fiscal Impact:**

The associated Project costs of approximately \$2.6M are included in the approved FY 2020-2021 General Fund Budget. Additionally, in accordance with the Agreement with SBMWD, SBMWD will be responsible for approximately \$1.27M, which is part of the installment payments made by SBMWD for the construction of the hydroelectric generation facility over a 3-year term, beginning in 2019.

**Recommendations:**

1. Forward to the next Board Meeting the consideration of waiving minor irregularities and award of the construction of the Waterman Hydroelectric Project to Borden Excavating, Inc. based on the bid amount of \$2,252,000 and authorization to execute the agreement with Borden Excavating, Inc. pending review of minor irregularities by District Special Counsel;
2. Forward to the next Board Meeting the consideration to authorize the General Manager to approve contingent costs of up to ten (10) percent above the contract amount, or \$225,200 and;
3. Forward to the next Board Meeting the consideration to authorize the General Manager to contract with professional inspection and material testing firms for the Project up to a budgetary amount of \$123,900 using established selection procedures.

**Attachments:**

1. Bid Opening Report and Bid Summary
2. Borden Excavating Bid Package

3. Borden Excavating Bid Irregularity Table

## SPECIFICATION 18-02

### WATERMAN HYDROELECTRIC PROJECT

### BID OPENING

Date: August 13, 2020

Bid Due By: 10:30AM Bid Opening Time: 1:00 PM (via ZOOM MEETING)

ENGINEER'S ESTIMATE: \$4,361,200

<u>Name of Bidder</u>	<u>Bid Bond</u>	<u>Addenda 1-4 Acknowledged</u>	<u>Bid Amount</u>	
MMC, Inc.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,744,000. <sup>00</sup>	
Trinity Construction, Inc.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,659,832. <sup>68</sup>	
Borden Excavating, Inc.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	2,252,500. <sup>00</sup>	1
Kiewit Infrastructure West Co.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	2,941,000. <sup>00</sup>	3
SCW Contracting	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,308,000. <sup>00</sup>	
Pacific Hydrotech Corp.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,240,000. <sup>00</sup>	
Environmental Construction, Inc.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	2,657,153. <sup>00</sup>	2
Metro Builders & Engineers Group, Ltd	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,788,980. <sup>00</sup>	
Caliagua, Inc.	<input checked="" type="checkbox"/> Yes or No	<input checked="" type="checkbox"/> Yes or No	3,581,715. <sup>00</sup>	
	Yes or No	Yes or No		
	Yes or No	Yes or No		

**Board of Directors and Officers**

JUNE HAYES  
Division 1

GIL NAVARRO  
Division 2

SUSAN LONGVILLE  
Division 3

T. MILFORD HARRISON  
Division 4

PAUL R. KIELHOLD  
Division 5

HEATHER P. DYER  
General Manager

San Bernardino Valley MWD  
 SPECIFICATION 18-02 WATERMAN HYDROELECTRIC PROJECT  
 BID OPENING DATE: AUGUST 13, 2020 1:00PM  
 BIDDERS' Bid Schedule - REVIEW - AUG, 20,2020

Bid Item	Description	Estimated Quantity	Units	ENGINEER'S ESTIMATE	BORDEN EXCAVATING, INC.	ENVIRONMENTAL CONSTRUCTION, INC.	KIEWIT INFRASTRUCTURE WEST CO.	PACIFIC HYDROTECH CORP.	SCW CONTRACTING CORP.	CALIAGUA, INC.	TRINITY CONSTRUCTION CORP.	MMC, INC.	METRO BUILDINGS & ENGINEERS GROUP, LTD.
				Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
1	Bond and Insurance	1	LS	\$ 58,000.00	\$ 50,000.00	\$ 40,000.00	\$ 25,000.00	\$ 20,000.00	\$ 43,000.00	\$ 81,708.00	\$ 127,606.83	\$ 80,000.00	\$ 75,000.00
2	Mobilization	1	LS	\$ 152,000.00	\$ 50,000.00	\$ 100,000.00	\$ 140,000.00	\$ 160,000.00	\$ 116,000.00	\$ 169,658.00	\$ 151,095.75	\$ 150,000.00	\$ 375,375.00
3	Demolition	1	LS	\$ 33,400.00	\$ 50,000.00	\$ 86,950.00	\$ 75,000.00	\$ 116,100.00	\$ 40,000.00	\$ 72,807.00	\$ 172,907.76	\$ 150,000.00	\$ 85,175.00
4	Site Work	1	LS	\$ 58,348.00	\$ 200,000.00	\$ 57,490.00	\$ 60,000.00	\$ 254,000.00	\$ 232,000.00	\$ 280,656.00	\$ 317,423.48	\$ 125,000.00	\$ 379,100.00
5	Transmission Main Tie-In	1	LS	\$ 39,000.00	\$ 170,000.00	\$ 71,862.00	\$ 30,000.00	\$ 205,900.00	\$ 28,000.00	\$ 61,999.00	\$ 208,654.85	\$ 185,000.00	\$ 155,275.00
6	Cast-In-Place Concrete	1	LS	\$ 366,800.00	\$ 270,000.00	\$ 372,835.00	\$ 900,000.00	\$ 615,100.00	\$ 845,000.00	\$ 824,806.00	\$ 548,332.19	\$ 500,000.00	\$ 728,600.00
7	Precast Concrete Building	1	LS	\$ 700,800.00	\$ 525,000.00	\$ 731,266.00	\$ 631,000.00	\$ 874,200.00	\$ 650,000.00	\$ 610,134.00	\$ 739,023.11	\$ 750,000.00	\$ 746,400.00
8	Piping, Valves & Appurtenances	1	LS	\$ 144,600.00	\$ 200,000.00	\$ 144,502.00	\$ 175,000.00	\$ 41,400.00	\$ 375,000.00	\$ 458,679.00	\$ 264,260.51	\$ 514,000.00	\$ 158,700.00
9	Waterman Turnout Facilities	1	LS	\$ 148,300.00	\$ 30,000.00	\$ 113,619.00	\$ 75,000.00	\$ 78,900.00	\$ 92,000.00	\$ 160,422.00	\$ 134,110.95	\$ 100,000.00	\$ 61,930.00
10	Line Valve & Meter Vaults	1	LS	\$ 66,000.00	\$ 70,000.00	\$ 161,980.00	\$ 40,000.00	\$ 246,500.00	\$ 165,000.00	\$ 95,696.00	\$ 91,454.50	\$ 200,000.00	\$ 230,675.00
11	Security Fencing	1	LS	\$ 200,650.00	\$ 75,000.00	\$ 159,319.00	\$ 150,000.00	\$ 130,000.00	\$ 190,000.00	\$ 192,279.00	\$ 181,188.24	\$ 200,000.00	\$ 155,250.00
12	SCE Added Facilities	1	LS	\$ 102,000.00	\$ 500,000.00	\$ 515,030.00	\$ 40,000.00	\$ 35,400.00	\$ 64,000.00	\$ 63,617.00	\$ 141,299.56	\$ 120,000.00	\$ 237,500.00
13	Electrical Systems & Instrumentation	1	LS	\$ 330,000.00	\$ 60,000.00	\$ 82,300.00	\$ 550,000.00	\$ 450,800.00	\$ 422,000.00	\$ 445,661.00	\$ 543,183.65	\$ 620,000.00	\$ 375,000.00
14	Testing, Startup & Commissioning	1	LS	\$ 100,000.00	\$ 2,500.00	\$ 20,000.00	\$ 50,000.00	\$ 11,700.00	\$ 46,000.00	\$ 42,721.00	\$ 39,291.30	\$ 50,000.00	\$ 25,000.00
<b>TOTAL BID PRICE</b>				\$ 2,499,898.00	\$ 2,252,500.00	\$ 2,657,153.00	\$ 2,941,000.00	\$ 3,240,000.00	\$ 3,308,000.00	\$ 3,560,843.00	\$ 3,659,832.68	\$ 3,744,000.00	\$ 3,788,980.00
										\$ 3,581,715.00			
										\$ (20,872.00)			

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA**

**BID PROPOSAL FORM**

**WATERMAN HYDROELECTRIC PROJECT**

The undersigned submits this Proposal in response to the Notice Inviting Bids issued by the District to construct the Work of the following project in accordance with the Contract Documents:

**WATERMAN HYDROELECTRIC PROJECT - SPECIFICATION 18-02**

A. Enclosed herewith and by this reference incorporated herein and made a part of this Bidder's Proposal are the following completed forms:

1. Bid Schedule
2. Affidavit of Non-collusion
3. Bid Security in the following form (*check one*):
 

Cashier's Check     Certified Check     Bid Bond
4. Designation of Subcontractors
5. Bidder's Statement of Qualifications
6. Workers' Compensation Insurance Certification

B. Acknowledgment of Addenda. The Bidder acknowledges receipt of following Addenda:

<u>Addendum No.</u>	<u>Description</u>	<u>Date Received</u>
1	DWG + spec revisions	7-17-20
2	Bid Rate Change	7-21-20
3	Responses to bidder questions	8-05-20
4	Responses to bidder Questions	8-08-20

If an Addendum has been issued by the District and not noted above as being received by the Bidder, the Proposal may be rejected.

C. Inspection of the Work and Contract Documents. Bidder certifies that it has carefully examined and is fully familiar with all of the provisions of the bidding documents and said bidding documents contain sufficient detail regarding the Work to be performed; that it has notified District of any errors or omissions in the bidding documents and/or any unusual site conditions; and that it has carefully checked all words, prices, and statements in this Proposal. Bidder hereby certifies that he/she and his/her subcontractors have inspected the site and related drawings and specifications of Work and fully acquainted themselves with all conditions and matters which may in any way affect the Work, time of completion or the costs thereof. Bidder also certifies he/she has observed the designated contractor Work areas and access routes, if disclosed or shown, as part of the Work in this Contract. Bidder agrees that all costs of Work shown in the bidding documents, including work reasonably inferable therefrom and necessary thereto are included in his/her Total Base Bid Price. All Work shown in the bidding documents for which a specific line item is not provided in the Bid Schedule is included in the Total Base Bid Price. Bidder agrees that the District will not be responsible for any errors or omissions on the part of the undersigned in making this Proposal. Bidder agrees and understands that any geotechnical report attached to the Contract Documents is provided for informational purposes only and that Bidder shall not rely upon any such report in preparing his/her Bid.

D. Forfeiture of Bid Security. Bidder further agrees that, in case of his/her default in executing the required Contract and the required bonds, or furnishing the required insurance, the money payable under the Bid Security accompanying this Proposal shall be applied by the District towards payment of the damage to the District on account of such default.

E. Period of Irrevocability. Bidder agrees that this Proposal shall remain open and shall not be withdrawn for a period of not less than ninety (90) calendar days from the date of bid opening, or until rejected by the District, whichever period is shorter.

F. Bid Dispute Indemnification. In the event of a bid dispute based upon the Bidder's submission of this Proposal and the District acceptance of same, the Bidder shall indemnify, defend, and hold harmless at its expense, including the provision of legal counsel, the District, its agents, employees, and officers from liability, claims, demands, damages, and costs if such dispute or action arises solely upon the award of a Contract in compliance with federal, state, and local laws.

I hereby certify under penalty of perjury under the laws of the State of California that the representations made herein are true and correct.

Executed this 22 day of July, 2020 at Calimesa, California  
City State

Name of Bidder

Company: Borden Excavating, Inc.

Signed: 

Print Name: Shaun Borden Title: President

Address: 1014 2nd Street, Calimesa CA 92320

Contact Person: Nathan Mcgrand  
 Telephone Number: ( 951 ) 334-9320  
 Fax Number: ( 909 ) 795-5354  
 E-mail: nathan@bordenpipe.com  
 Contractor's License No.: 741879  
 License Class: Class A  
 Expiration Date: 6/30/2021  
 Tax Identification No.: 80-0546383  
 Surety: U.S. Specialty Insurance Company

FORM OF ENTITY OF BIDDER

Corporation:  
 State of Incorporation S Corp., California  
 President: Shaun Borden  
 Secretary: Shaun Borden

Partnership:  
 Name of all Partners: N/A  
 \_\_\_\_\_  
 \_\_\_\_\_

Joint Venture:  
 Name of all Joint Venturers: N/A  
 \_\_\_\_\_  
 \_\_\_\_\_

Sole Proprietorship:  
 All d/b/a's: N/A  
 \_\_\_\_\_

[If the bidder is a corporation, then enter state or county of incorporation in addition to the business address and include an Incumbency Certificate (see next page) executed by a Secretary thereof in the form set forth on the following page listing each officer with signing authority and his/her corresponding office. If the bidder is a partnership or joint venturer stating that the respective partner or joint venturer agrees to be held jointly and severally liable for any and all of the duties and obligations of the bidder under the Bid and under any contract arising therefrom. Attach evidence to the Bid Proposal Form that the individual signing has authority to do so.]

[END OF DOCUMENT]

### INCUMBENCY CERTIFICATE

The undersigned hereby certifies to the San Bernardino Valley Municipal Water District that he/she is the duly elected and acting Secretary of Borden Excavating, Inc. (the "Company"), and that, as such, he/she is authorized to execute this Incumbency Certificate on behalf of the Company, and further certifies that the persons named below are the duly elected, qualified and acting officers of the Company, holding on the date hereof the offices set forth opposite their names and are authorized to sign this Bid Proposal Form and Bid Schedule.

<u>NAME</u>	<u>OFFICE</u>
Shaun Borden	1014 2nd Street, Calimesa CA 92320
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

IN WITNESS WHEREOF, the undersigned has executed this Incumbency Certificate this 22nd day of July, 2020.

  
 \_\_\_\_\_  
 Shaun Borden  
 Secretary



**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA**

**BID SCHEDULE**

**WATERMAN HYDROELECTRIC PROJECT**

NAME OF BIDDER: Borden Excavating, Inc.

The undersigned hereby declare that we have carefully examined the location of the proposed Work, and have read and examined the Contract Documents, including all plans, specifications, and all Addenda, if any, for the following Project:

WATERMAN HYDROELECTRIC PROJECT - SPECIFICATION 18-02

We hereby propose to furnish all labor, materials, equipment, tools, transportation, and services and to discharge all duties and obligations necessary and required to perform and complete the Project for the following TOTAL BID PRICE:

BID ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QTY	UNIT PRICE	ITEM COST
1	Bonds & Insurance	LS	1	50,000 <sup>00</sup>	50,000 <sup>00</sup>
2	Mobilization	LS	1	50,000 <sup>00</sup>	50,000 <sup>00</sup>
3	Demolition	LS	1	50,000 <sup>00</sup>	50,000 <sup>00</sup>
4	Site Work	LS	1	200,000	200,000 <sup>00</sup>
5	Transmission Main Tie-In	LS	1	170,000	170,000 <sup>00</sup>
6	Cast-In-Place Concrete	LS	1	270,000	270,000 <sup>00</sup>
7	Precast Concrete Building	LS	1	525,000 <sup>00</sup>	525,000 <sup>00</sup>
8	Piping, Valves & Appurtenances	LS	1	200,000 <sup>00</sup>	200,000 <sup>00</sup>
9	Waterman Turnout Facilities	LS	1	30,000 <sup>00</sup>	30,000 <sup>00</sup>
10	Line Valve & Meter Vaults	LS	1	70,000 <sup>00</sup>	70,000 <sup>00</sup>

BID ITEM NO.	DESCRIPTION	UNIT OF MEASURE	EST. QTY	UNIT PRICE	ITEM COST
11	Security Fencing	LS	1	75,000 <sup>00</sup>	75,000 <sup>00</sup>
12	SCE Added Facilities	LS	1	500,000 <sup>00</sup>	500,000 <sup>00</sup>
13	Electrical Systems & Instrumentation	LS	1	60,000 <sup>00</sup>	60,000 <sup>00</sup>
14	Testing, Startup & Commissioning	LS	1	2500 <sup>00</sup>	2500 <sup>00</sup>

In case of discrepancy between the unit price and the item cost set forth for a unit basis item, the unit price shall prevail and shall be utilized as the basis for determining the lowest responsive, responsible bidder. However, if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Item Cost" column, then the amount set forth in the "Item Cost" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price. Said unit price shall be utilized as the basis for determining whether the bidder is responsive and responsible. Final payment shall be determined by the Engineer from measured quantities of Work performed based on the unit price.

TOTAL BID PRICE:

\$ 2,252,500.00

Total Bid Price in Numbers

Two million two hundred fifty two thousand five

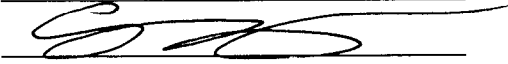
Total Bid Price in Written Form

hundred  
dollars

In case of discrepancy between the written price and the numerical price, the written price shall prevail.

I hereby certify under penalty of perjury under the laws of the State of California that all of the information submitted in connection with this Bid and all of the representations made herein are true and correct.

Name of Bidder: Borden Excavating, Inc.

Signature: 

Name and Title: Shaun Borden, President

Dated: 07/22/2020

[END OF DOCUMENT]

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA**

**BIDDER'S STATEMENT OF QUALIFICATIONS**

**WATERMAN HYDROELECTRIC PROJECT**

(Bidder should attach and properly designate additional pages as necessary)

**BIDDER CERTIFIES THAT THE FOLLOWING INFORMATION IS TRUE AND CORRECT:**

Bidder's Name: Borden Excavating, Inc.

Business Address: 1014 2nd Street, Calimesa CA 92320

Telephone Number: 951-334-9320 Fax Number: 909-795-5354

State Contractors License No. and Class: 741879 Class A

Original Date Issued: 10/28/1997

Expiration Date: 06/30/2020

**A. ORGANIZATION**

1. How many years has your organization been in business as a contractor?

12 Years

2. How many years has your organization been in business under its present name?

12 Years

- 2.1 Under what other names has your organization operated?

Borden Excavating, Inc.

3. If your organization is a corporation or a limited liability company, answer the following:

3.1 Date of incorporation/organization: 01/30/2009

3.2 State of incorporation/organization: California

3.3 Corporate ID number: 30891204

3.4 Name of President or Manager(s): Shaun Borden, President

4. If your organization is a partnership, answer the following:

4.1 Date of organization/formation: N/A

4.2 Type of partnership (if applicable): N/A

4.3 Name(s) of general partner(s): N/A

4.4 List all states in which you are registered and state ID numbers for each:

N/A

5. If your organization is individually owned, answer the following:

5.1 Date of organization: N/A

5.2 Name of owner: N/A

6. If the form of your organization is other than those listed above, describe it and name the principals:

N/A

B. FINANCIAL INFORMATION

1. List trade references:

Core & Main

Western Water Works

S&J Supply

Western Rentals

2. List bank references including bank name and address:

Chase Bank, 1195 Calimesa Blvd., Calimesa, CA 92320

909-446-0208

3. Has any principal having an interest in this proposal ever been the subject of any voluntary or involuntary bankruptcy filing? If your answer is "Yes", please explain and provide case number, date of filing, and current status of bankruptcy action.

NO

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4. Are there any judgments, arbitration proceedings or lawsuits pending or outstanding against your organization or its officers? If your answer is "Yes", please explain and include the date of filing, the amount of any judgment/award, the name of any adverse party, and the current status.

NO

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C. LICENSING

1. List jurisdictions in which your organization is legally qualified to do business, indicate registration or license numbers, and category of license, if applicable.

State of California, 741879 Class A

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2. List any licensing suspensions and/or violations assessed against your organization within the past five years.

N/A

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D. EXPERIENCE AND TECHNICAL QUALIFICATIONS

1. List major construction projects your organization currently has in progress, giving the name of the project, owner, contract amount, percent complete and scheduled completion.

Project	Owner	Contract Amount	Percent Complete	Complete Date
2018 USDA Pipeline Replacement	City of Big Bear Department of Water & Power	4,736,077.00	50%	10/15/2020

Project	Owner	Contract Amount	Percent Complete	Complete Date

2. List the ten most recent projects your organization has completed within the past five years, giving the name of project, owner, contract amount, period of performance and cost of the work. Please include those projects which are similar enough to demonstrate bidder's capability to perform required Work.

Project Client	Description of Bidder's Work	Period of Performance	Cost of Bidder's Work
City of Redlands	60,000 LF of 8-inch water	2019-2020	9,404,909.00
JCSD	7,918 LF of 8 & 12 inch Water	2019	1,919,224.00
DWA	16,870 LF of 8-inch and 12-Inch DIP and Appurtenances.	2020	3,090,079.00
IWA	14,686 LF of 8 & 12 inch Water	2018-2019	2,915,267.00
DWA	13,120 LF of 8-inch and 3,820 LF of 12-Inch DIP and Appurtenances.	2018	3,465,563.00
City of Colton	16,740 LF of 24-inch DIP, 110 LF of 42-inch steel casing 1,000,000 SF of grind & overlay	2018	4,886,844.00
San Bernardino Valley Municipal Water District	Pump Station project with complex connections, submersible pump and motor, tanks, UV disinfection units, shade structure and associated electrical equipment.	2016-2017	444,222.000
YVWD	*Installation of 30-inch Ductile Iron Pipe and 30-inch Welded Steel Pipe, including various laterals, valves, and appurtenances. 12-inch Ductile Iron Pipe including various laterals, valves, and appurtenances. Removal and replacement of AC base and curb pavement, as detailed in the Contract Documents.	2015	528,380.00
IWA	Chromium -6 Treatment Plants, with very fast schedule and complex scheduling	2015-2016	2,456,075.00
EVMWD	4,780 LF of 12-inch PVC waterline & replacing existing Fire Hydrants, Valves & water services.	2016	1,827,555.00

3. List a client reference for each of the projects listed in response to Item No. 2 above.

Project Client	Name of Reference	Email Address	Telephone No.
City of Redlands	Goutam K. Dobey	gdobey@cityofredlands.org	909-798-7584
JCSD	Kieth Backus	kbackus@jcsd.us	951-332-6464
DWA	Sarah Rapolla	Sarah@dwa.org	760-323-4971

Project Client	Name of Reference	Email Address	Telephone No.
IWA	Miguel Pena	mpena@indio.org	760-625-1852
City of Colton	Jess Soto	JSotto@coltonca.gov	909-370-5551
San Bernardino Valley Municipal Water District	Aaron Jones	aaronj@sbumwd.com	909-387-9254
YVWD	Pat Watson	pwatson@kriegerandstewart.com	951-684-6900
EVMWD	Daria Yegorova	dyegorova@iecorporation.com	760-586-5146

4. State average annual amount of construction work performed during the past five years:

12,000,000.00

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5. Personnel:

The Bidder shall identify the key personnel to be assigned to this Project in a management, construction supervision or engineering capacity. (Attach additional sheets, if necessary.)

- 5.1 List each person's job title, name and percent of time to be allocated to this Project:

James Borden 100%

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Shaun Borden, President 100%

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Nathan McGrand, PM

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- 5.2 Summarize each person's specialized education:

James Borden, has over 30 years experience in water & sewer construction with the vast majority in pump & lift stations, water & sewer treatment plants & large diameter pipelines.

---

Shaun started pipeline construction in 1988 in a family owned business. He then moved to Kenko in 1990 where he worked on some of the largest projects in California. Shaun supervised work on contracts for Los Angeles Department of Water and Power (DWP), Metropolitan Water District (MWD), California Department of Water Resources (DWR) and Los Angeles County Sanitation District (LACSD).

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- 5.3 List each person's years of construction experience relevant to the Project:

Project Client	Name of Reference	Email Address	Telephone No.
IWA	Miguel Pena	mpena@indio.org	760-625-1852
City of Colton	Jess Soto	JSotto@coltonca.gov	909-370-5551
San Bernardino Valley Municipal Water District	Aaron Jones	aaronj@sbumwd.com	909-387-9254
YVWD	Pat Watson	pwatson@kriegerandstewart.com	951-684-6900
EVMWD	Daria Yegorova	dyegorova@iecorporation.com	760-586-5146

4. State average annual amount of construction work performed during the past five years:

12,000,000.00

---

5. Personnel:

The Bidder shall identify the key personnel to be assigned to this Project in a management, construction supervision or engineering capacity. (Attach additional sheets, if necessary.)

- 5.1 List each person's job title, name and percent of time to be allocated to this Project:

James Borden 100%

---

Shaun Borden, President 100%

---

Nathan McGrand, PM

---

- 5.2 Summarize each person's specialized education:

James Borden, has over 30 years experience in water & sewer construction with the vast majority in pump & lift stations, water & sewer treatment plants & large diameter pipelines.

---

Shaun started pipeline construction in 1988 in a family owned business, he then moved to Kenko in 1990 where he worked on some of the largest projects in California. Shaun supervised work on contracts for Los Angeles Department of Water and Power (DWP) Metropolitan Water District (MWD) California Department of Water Resources (DWR) and Los Angeles County Sanitation District (LACSD).

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Nathan McGrand has been in the underground business since 1994, primarily installing large diameter waterlines throughout the United States.

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- 5.3 List each person's years of construction experience relevant to the Project:



- 3. In the last five years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder? If your answer is "Yes", please explain and identify the year of the event, the owner, the project, and the basis for the finding by the public agency.

NO

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- 4. Has your organization ever been assessed liquidated damages on any public work of improvement? If your answer is "Yes", please explain.

NO

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- 5. Has your organization filed any lawsuits or requested arbitration against a public owner with regard to construction within the last five (5) years? If your answer is "Yes", please explain.

NO

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- 6. Have you or, if bidder is a corporation, any principal of the corporation ever been convicted of a felony? If your answer is "Yes", please explain the details of that conviction and, if so, whether you or said officer have served his/her sentence.

NO

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- 7. Have you or your company ever been charged by any governmental agency for failure to follow safety procedures? If your answer is "Yes", please explain.

NO

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8. Has any governmental agency ever submitted a complaint against you to the California State Labor Commission for failure to submit certified payrolls? If your answer is "Yes", please provide the details of such complaint.

NO

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9. Within the last five years, has any officer or principal of your organization ever been an officer of another organization when it failed to complete a construction contract? If your answer is "Yes", please explain.

NO

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10. At any time during the past five years, has any surety company made any payments on your firm's behalf, as a result of a default, to satisfy any claims made against a performance or payment bond issued on your firm's behalf, in connection with a construction project, either public or private? If "yes," please explain each such claim, the name and telephone number of the claimant, the date of the claim, the grounds for the claim, the present status of the claim, the nature of any resolution and the amount, if any, at which the claim was resolved.

NO

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11. In the last five years has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm? If your answer is "Yes", please explain and name the insurance carrier, the form of insurance, and the year of refusal.

NO

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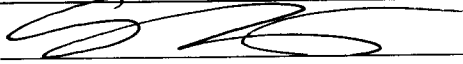
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**Additional Bidder's Statement:**

If the Bidder believes that there is additional information which has not been included in the questionnaire above, and which would contribute to the qualification review, it may add that information in a statement here or on an attached sheet, appropriately marked.

I declare under penalty of perjury under the laws of the State of California that the foregoing information is true and correct:

Name of Bidder: Borden Excavating, Inc.  
Signature:   
Name and Title: Shaun Borden, President  
Dated: 07/22/2020

**BID BOND**

*(Not necessary when cash, certified or cashier's check accompanies Bid)*

**KNOW ALL MEN BY THESE PRESENT,**

That we, Borden Excavating, Inc., the undersigned Bidder, as Principal and U.S. Specialty Insurance Company, as Surety, our respective heirs, executors, administrators, successors and assigns, are jointly and severally and firmly bound, unto the **SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT** (hereinafter "Obligee") for payment of the penal sum hereof in lawful money of the United States, as more particularly set forth herein.

**THE CONDITION OF THIS OBLIGATION IS SUCH THAT:**

WHEREAS, the Principal has submitted the accompanying Bid for the WATERMAN HYDROELECTRIC Project and the Bid must be accompanied by bid security.

WHEREAS, subject to the terms of this Bond, the Surety is firmly bound unto the Obligee in the penal sum of \$ Ten Percent of Total Bid Amount representing ten percent (10%) of the total amount of the Bid on the base contract work submitted by the Principal to the Obligee, as set forth above.

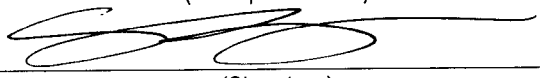
NOW THEREFORE, if the Principal does not withdraw its Bid within the period specified in the Contract Documents, and if the Principal is awarded the Contract and provides all documents to the District as required by the Contract Documents, then this obligation shall be null and void and of no effect. Otherwise, this bond will remain in full force and effect.

In the event that suit or other proceeding is brought upon this Bond by the Obligee, the Surety shall pay to the Obligee all costs, expenses and fees incurred by the Obligee in connection therewith, including without limitation, attorneys' fees and costs.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this 15th day of July, 20 20 by their duly authorized agents or representatives

**BIDDER:**  
(Corporate Seal)

Borden Excavating, Inc.  
(Principal's Name)

By:   
(Signature)

Shaun Borden - President  
(Typed or Printed Name and Title)

1014 2nd Street, Calimesa, CA 92320  
(Address)

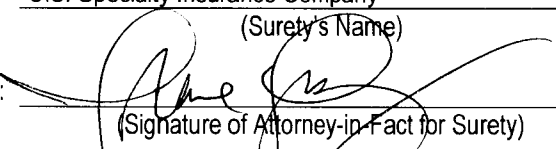
[CONTINUED ON NEXT PAGE]

**SURETY:**  
(Corporate Seal)



(Attach Attorney-in-Fact Certificate)

U.S. Specialty Insurance Company  
\_\_\_\_\_  
(Surety's Name)

By:   
\_\_\_\_\_  
(Signature of Attorney-in-Fact for Surety)

Irene Luong, Attorney-in-Fact  
\_\_\_\_\_  
(Typed or Printed Name)

24800 Chrisanta Drive, Suite 160, Mission Viejo, CA 92691  
\_\_\_\_\_  
(Address of Surety's Office where Bond is issued)

(713) 462-1000  
\_\_\_\_\_  
(Area Code and Telephone Number of Surety)

**NOTARIAL CERTIFICATION OF ATTORNEY IN FACT, CORPORATION SEAL  
AND SURETY SEAL MUST BE ATTACHED**

# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

County of Orange

On JUL 15 2020 before me, Daisy Reyes, Notary Public,  
Date Insert Name of Notary exactly as it appears on the official seal

personally appeared Irene Luong

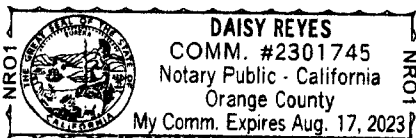
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature Daisy Reyes  
Signature of Notary Public Daisy Reyes



Place Notary Seal Above

## OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

### Description of Attached Document

Title or Type of Document: \_\_\_\_\_

Document Date: \_\_\_\_\_ Number of Pages: \_\_\_\_\_

Signer(s) Other Than Named Above: \_\_\_\_\_

### Capacity(ies) Claimed by Signer(s)

Signer's Name: \_\_\_\_\_

- Individual
- Corporate Officer — Title(s): \_\_\_\_\_
- Partner  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_

RIGHT THUMBPRINT OF SIGNER  
Top of thumb here

Signer is Representing:  
\_\_\_\_\_  
\_\_\_\_\_

Signer's Name: \_\_\_\_\_

- Individual
- Corporate Officer — Title(s): \_\_\_\_\_
- Partner  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_

RIGHT THUMBPRINT OF SIGNER  
Top of thumb here

Signer is Representing:  
\_\_\_\_\_  
\_\_\_\_\_

# CALIFORNIA ALL- PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }

County of Riverside }

On August 12, 2020 before me, Peyton Underwood, notary  
(Here insert name and title of the officer)

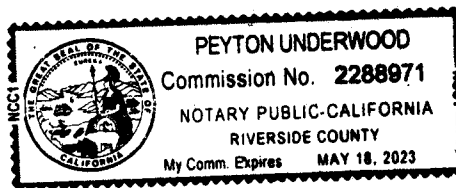
personally appeared Shavn Borden,  
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public Signature

(Notary Public Seal)



### ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

\_\_\_\_\_  
(Title or description of attached document)

\_\_\_\_\_  
(Title or description of attached document continued)

Number of Pages \_\_\_\_\_ Document Date \_\_\_\_\_

### CAPACITY CLAIMED BY THE SIGNER

- Individual (s)
- Corporate Officer

\_\_\_\_\_  
(Title)

- Partner(s)
- Attorney-in-Fact
- Trustee(s)
- Other \_\_\_\_\_

### INSTRUCTIONS FOR COMPLETING THIS FORM

*This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.*

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~ - is /are ) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - ❖ Indicate title or type of attached document, number of pages and date.
  - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.



**TOKIOMARINE  
HCC**

**POWER OF ATTORNEY  
AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY  
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY**

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

Yung T. Mullick, James W. Moilanen, Irene Luong, Emilie George or P. Austin Neff of Mission Viejo, California

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed \*\*\*\*\*Fifteen Million\*\*\*\*\* Dollars (\*\*\$15,000,000.00\*\*). This Power of Attorney shall expire without further action on April 23<sup>rd</sup>, 2022. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 1<sup>st</sup> day of June, 2018.

**AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY  
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY**

State of California  
County of Los Angeles



By: [Signature]  
Daniel P. Aguilar, Vice President

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

On this 1<sup>st</sup> day of June, 2018, before me, Sonia O. Carrejo, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature [Signature] (seal)



I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this \_\_\_\_\_ day of JUL 15 2020

Corporate Seals  
Bond No. N/A  
Agency No. 7715



[Signature]  
Kio Lo, Assistant Secretary



STATE OF CALIFORNIA  
DEPARTMENT OF INSURANCE No 07984  
SAN FRANCISCO

Amended  
Certificate of Authority

THIS IS TO CERTIFY THAT, Pursuant to the Insurance Code of the State of California,

U.S. Specialty Insurance Company

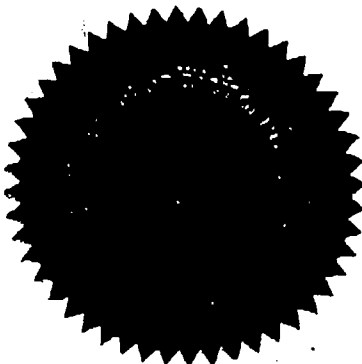
of Houston, Texas, organized under the  
laws of Texas, subject to its Articles of Incorporation or  
other fundamental organizational documents, is hereby authorized to transact within the State, subject to  
all provisions of this Certificate, the following classes of insurance:

Fire, Marine, Surety, Disability, Liability,  
Workers' Compensation, Aircraft, and Miscellaneous

as such classes are now or may hereafter be defined in the Insurance Laws of the State of California.

THIS CERTIFICATE is expressly conditioned upon the holder hereof now and hereafter being in  
full compliance with all, and not in violation of any, of the applicable laws and lawful requirements made  
under authority of the laws of the State of California as long as such laws or requirements are in effect  
and applicable, and as such laws and requirements now are, or may hereafter be changed or amended.

IN WITNESS WHEREOF, effective as of the 29th  
day of December, 2004, I have hereunto  
set my hand and caused my official seal to be affixed this  
29th day of December, 2004.



By

John Garamendi  
Insurance Commissioner

Victoria S. Sirota  
for Ida Zodrow Deputy  
Asst. Chief Deputy

NOTICE:

Qualification with the Secretary of State must be accomplished as required by the California Corporations Code promptly  
after issuance of this Certificate of Authority. Failure to do so will be a violation of Insurance Code Section 701 and will be  
grounds for revoking this Certificate of Authority pursuant to the covenants made in the application therefor and the  
conditions contained herein.

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA**

**DESIGNATION OF SUBCONTRACTORS**

**WATERMAN HYDROELECTRIC PROJECT**

NAME OF BIDDER Borden Excavating, Inc.

Each bidder shall set forth below:

1. The name and location of the place of business of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work of improvement, or a subcontractor licensed in the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work of improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent (0.5%) of the Contractor's total bid.
2. The portion and estimated dollar amount of the work which will be done by each subcontractor. The Contractor shall list only one subcontractor for each portion as is defined by the Contractor in his/her bid.
3. If the Contractor fails to specify a subcontractor, or if the Contractor specifies more than one subcontractor for the same portion for work to be performed under the Contract in excess of one-half of one percent of the Contractor's total bid, then he/she agrees that he/she is fully qualified to perform that portion himself/herself, and that he/she shall perform that portion himself/herself. If after award of Contract, the Contractor subcontracts any such portion of the Work, the Contractor shall be subject to the statutory penalties.

Please type or legibly print (attach additional sheets as necessary).

Bid Item No.	Subcontractor	License Number	City	Trade	Estimated \$ Amount
6	CMB Construction	613977	Rancho Cucamonga	Cast-in-Place	231,750 <sup>00</sup>
7	Desert Quality Heating & Air	702855	Redlands	HVAC	79,225 <sup>00</sup>
12, 13, 14	CSI Electrical	1055811	Santa Fe Springs	Electrical	499,200 <sup>00</sup>
7	Structure Cast	774870	Bakersfield	Pre-Cast	399,500



## DESIGNATION OF SUBCONTRACTORS

The Contractor shall not:

- A. Substitute any person as subcontractor in place of the subcontractor listed in the original bid, except that the District may consent to the substitution of another person as subcontractor:
  - 1. When the subcontractor listed in the bid, after having had a reasonable opportunity to do so, fails or refuses to execute a written Contract, based upon the general terms, conditions, plans and specifications for the project involved or the terms of such Contractor's written bid, is presented to him/her by the Contractor, or
  - 2. When the listed subcontractor becomes bankrupt or insolvent, or
  - 3. When the listed subcontractor fails or refuses to perform his/her subcontract, or
  - 4. When the listed subcontractor fails or refuses to meet the bond requirements of the Contractor, or
  - 5. When the Contractor demonstrates to the District that the name of the subcontractor was listed as the result of an inadvertent clerical error, or
  - 6. When the listed subcontractor is not licensed pursuant to the Contractors License Law, or
  - 7. When the District determines that the Work performed by the listed subcontractor is substantially unsatisfactory and not in substantial accordance with the Plans and Specifications, or that the subcontractor is substantially delaying or disrupting the progress of the Work.
- B. Permit any subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid, without the consent of the District.
- C. Other than in the performance of "change orders", cause changes or deviations from the original Contract, sublet or subcontract any portion of the Work in excess of one-half of one percent of the Contractor's total bid as to which his/her original bid did not designate a subcontractor.

Prior to approval of a Contractor's request for a subcontractor substitution, the District will give notice in writing to the listed subcontractor of the Contractor's request to substitute and of the reason for the request. The notice will be served by certified or registered mail to the last known address of the subcontractor. The listed subcontractor who has been so notified shall have five (5) working days within which to transmit to the District written objections to the substitution. Failure to file these written objections shall constitute the listed subcontractor's consent to the substitution.

If written objections are filed, the District will give notice in writing of at least five (5) working days to the listed subcontractor of a hearing by the District on the Contractor's request for substitution.

The Contractor, as a condition to asserting a claim of inadvertent clerical error in the listing of a subcontractor, shall within two (2) working days after the time of the bid opening by the District, give written notice to the District and copies of such notice to both the subcontractor he/she claims to have listed in error and the intended subcontractor who had bid to the Contractor prior to the bid opening.

Subletting or subcontracting of any portion of the Work in excess of one-half of one percent of the Contractor's total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the District setting forth the facts constituting the emergency or necessity.

If the Contractor violates any of the above provisions the Contractor may be in breach of this Contract and the District may exercise the option, in its own discretion, of (1) canceling the Contract, or (2) assessing the Contractor a penalty in an amount not more than ten percent (10%) of the amount of the subcontract involved, and this penalty shall be deposited in the fund out of which the Contract is awarded.

[END OF DOCUMENT]

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA**

**CONTRACTOR'S AFFIDAVIT OF NON-COLLUSION**

**WATERMAN HYDROELECTRIC PROJECT**

STATE OF CALIFORNIA )  
 )  
COUNTY OF \_\_\_\_\_ )

Shawn Borden being first duly sworn deposes and says:

- 1. That he/she is the President (Title of officer if a corporation, sole owner, Partner, or other proper title) of Borden Excavating, Inc., (hereinafter called "Contractor") who has submitted to the San Bernardino Valley Municipal Water District a Bid Proposal for the construction of WATERMAN HYDROELECTRIC PROJECT.
- 2. That said Bid Proposal is genuine; that the same is not sham; that all statements of fact therein are true.
- 3. That said Proposal is not made in the interest or behalf of any person, partnership, company, association, organization, or corporation not named or disclosed.
- 4. That Contractor did not, directly or indirectly induce, solicit, agree, collude, conspire or contrive with anyone else to submit a false or sham bid, to refrain from bidding, or withdraw his/her bid, to raise or fix the bid price of Contractor or of anyone else, or to raise or fix any overhead profit, or cost element of Contractor's price or the price of anyone else; and did not attempt to induce action prejudicial to the interests of the San Bernardino Valley Municipal Water District, or of any other bidder, or anyone else interested in the proposed Contract.
- 5. That the Contractor has not in any manner sought by collusion to secure for himself an advantage over any other bidders or induce action prejudicial to the interests of the San Bernardino Valley Municipal Water District or of any other bidder, or anyone else interested in the proposed Contract.
- 6. That the Contractor has not accepted any bid from any subcontractor or material supplier through any bid depository, the bylaws, rules or regulations of which prohibit or prevent the Contractor from considering any bid from any subcontractor or material supplier, which is not processed through said bid depository, or which prevent any subcontractor or material supplier from bidding to any Contractor who does not use the facilities of or accept bids from or through such bid depository.

- 7. That the Contractor did not, directly or indirectly, submit the Contractor's bid price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any individual or group of individuals, except to the San Bernardino Valley Municipal Water District, or to any person or persons who have partnership or other financial interest with said Contractor in his/her business.

Dated this 22 day of July 2020 at Calimesa, California  
Month/Year City State

Borden Excavating, Inc.   
 Contractor

President  
 Title

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
 County of Riverside

Subscribed and sworn to (or affirmed) before me on this 12 day of August, 20 20, by Shawn Borden, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Peyton Underwood, Riverside CA  
 Notary Public in and for said County and State

*see attachment*  
 (SEAL)

[END OF DOCUMENT]

# CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }

County of Riverside }

On August 12, 2020 before me, Peyton Underwood, notary,  
(Here insert name and title of the officer)

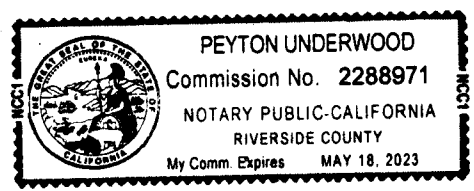
personally appeared Sham Borden,  
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Handwritten Signature]  
Notary Public Signature

(Notary Public Seal)



### ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages \_\_\_\_\_ Document Date \_\_\_\_\_

CAPACITY CLAIMED BY THE SIGNER

Individual (s)

Corporate Officer

\_\_\_\_\_ (Title)

Partner(s)

Attorney-in-Fact

Trustee(s)

Other \_\_\_\_\_

### INSTRUCTIONS FOR COMPLETING THIS FORM

*This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.*

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. ~~he/she/they~~, is /are ) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - ❖ Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - ❖ Indicate title or type of attached document, number of pages and date.
  - ❖ Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

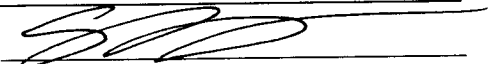


SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA

WORKERS' COMPENSATION INSURANCE CERTIFICATION

WATERMAN HYDROELECTRIC PROJECT

I am aware of the provisions of Section 3700 of the Labor Code of the State of California which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Name of Bidder: Borden Excavating, Inc.  
Signature:   
Name and Title: Shaun Borden, President  
Dated: 07/22/2020

[END OF DOCUMENT]

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT  
SAN BERNARDINO, CALIFORNIA

CERTIFICATION OF CONTRACTOR AND SUBCONTRACTOR  
DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION

WATERMAN HYDROELECTRIC PROJECT

Pursuant to Labor Code section 1725.5, a contractor or subcontractor must be registered with the Department of Industrial Relations in order to bid on, be listed in a bid proposal, or engage in the performance of any defined public work contract.

I, Shaun Borden, President certify that  
(Name) (Title)  
Borden Excavating, Inc. is currently registered with the Department of  
(Contractor Name)

Industrial Relations (DIR):

Contractor's DIR Registration Number: 1000001975

Expiration date: 06/30/2021

Contractor further acknowledges that:

Contractor shall maintain DIR registered status for the duration of the project without a lapse in registration.

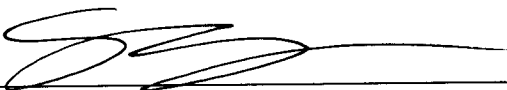
Contractor shall note in its invitation to bid the DIR's registration requirement for all subcontractors and their subcontractors.

Contractor shall ensure that all subcontractors are registered at time of bid opening and maintain registered status for the duration of the project.

Contractor is to furnish DIR Registration Number for all subcontractors on the project either at the time of bid or within 24 hours of the bid opening.

Contractor shall substitute any subcontractor with a DIR registered subcontractor if listed subcontractor is unable to perform the work.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

  
\_\_\_\_\_  
Signature

07/22/2020  
\_\_\_\_\_  
Date

**WATERMAN HYDROELECTRIC GENERATION PROJECT  
BID REVIEW**

**Borden Excavating, Inc.**

Irregularities	Category of irregularity	Notes
1. Page BS-2; Bid Items 12 and 13 appear to be transposed.	Minor irregularity;	Does not affect cost or give bidder material advantage.
2. Page SQ-6 not included; SQ-5 included twice	Minor irregularity; responsive and responsible	Does not affect cost or give bidder material advantage; bidder provided SQ-6 via email on 8/18/20.
3. Page BB-3 not included	Minor; responsive	Does not affect cost or give bidder material advantage; bidder provided substitute pages, which meets Bid Bond Acknowledgement.
4. Page BB-4 not included	Minor irregularity; responsive	Does not affect cost or give bidder material advantage; bidder provided substitute pages, which meets Attorney-in-Fact Acknowledgement.
5. Page SQ-1 states State Contractors License expires on 6/30/20.	Minor irregularity; responsive and responsible	Does not affect cost or give bidder material advantage; appears an error was made on date; verified license is current; Page BP-1 has 6/30/21 as expiration date.



---

**DATE:** September 8, 2020

**TO:** Board of Directors Workshop - Engineering

**FROM:** Bob Tincher, Chief Water Resources Officer/Deputy General Manager

**SUBJECT:** Consider Amendment 6 to the Yuba Accord Agreement for a Dry Year Water Supply

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The *Yuba Accord Dry Year Water Purchase Program* (Yuba Accord) provides additional water through the State Water Project (SWP) system, above Valley District's Table A allocation of SWP water, at a reasonable price. Valley District first participated in this program in 2008 and considers participation each year. This year, Valley District will receive almost 5,000 acre-feet through this program.

The current water pricing, under this agreement, expires September 30, 2020. Agencies that participate in this program are being asked to approve Amendment 6 before September 30, 2020. In order to achieve this schedule, staff has included a draft version of Amendment 6 on this workshop agenda in order for the Board to review the content of the Amendment at this time. However, non-substantive changes may occur in the final version, which will be available for the September 15, 2020 Board meeting. House counsel has reviewed the draft amendment and approved it as to form.

Staff is recommending the Board consider approval of Amendment 6 in order to preserve the option for Valley District to participate in this program, as desired.

### **Background**

In December 2007, twenty-one (21) of the twenty-nine (29) State Water Contractors, one non-State Water Contractor agency and the Department of Water Resources entered into an agreement with parties in the Yuba River Basin to purchase additional, non-SWP water supplies

in dry times. The Board saw the additional non-SWP supplies as a relatively low cost, low risk investment for additional dry year supplies.

Each participating agency is required to pay a minimum amount to participate in the program and then to pay for any water ordered and delivered through the program. The maximum amount of water available under the contract for the combined use of the participants varies, based on the flow schedule for fish deliveries, conditions in the Delta, groundwater availability, anticipated delivery allocations through the SWP and CVP and the Sacramento Valley 40-30-30 Index (Water Year Index). The below table summarizes the maximum total deliveries under this program.

Maximum Total Deliveries Under Yuba Accord (acre-feet):

<u>Year Type</u>	<u>Water Year Index</u>	<u>Component 1</u>	<u>Component 2</u>	<u>Component 3</u>	<u>Component 4</u>	<u>TOTAL</u>
Wet	>=9.2	60,000		40,000	varies	200,000  (60,000 + 140,000)
Above Normal	7.8 – 9.2	60,000				
Below Normal	6.5 – 7.8	60,000				
Dry	5.4 - 6.5	60,000	15,000			
Critical	<=5.4	60,000	30,000			

The deliveries made to the State Water Project (SWP) and the Central Valley Project (CVP) can be as much as 140,000 acre-feet per year. This year, the amount of water available to SWP participating contractors is almost 70,000 acre-feet. The Participating agencies purchase water at varying costs based upon the negotiated pricing structure which is re-negotiated from time to time. The price paid for water under this program is in addition to the costs Valley District pays for SWP water. Water through this program is not SWP water but it is transported through the SWP system with the same priority as SWP.

Water delivered through this program is first released into the Yuba River which then flows through the Feather River and the Delta to the Central Valley Project (Federal) and/or Banks (SWP) pumping plants. Twenty other State Water Contractors have signed the agreement. CVP contractors and SWP Contractors share equally in the water available through this program.

The Yuba Accord Agreement may only be amended by agreement of all 22 parties. On April 1, 2009, the Board approved Amendments 1 and 2 to the original Agreement. Amendment

1 corrected a deficiency in the accounting for how the reservoir refills on the Yuba River. Amendment 2 was specific to 2009 and allowed a substitution of groundwater for Component 4 water (Component 4 groundwater substitution water) at a higher price (\$250/acre-ft) than the original Agreement (\$125/acre-ft). The higher cost only applied to participants that actually purchased this water.

On March 17, 2010, the Board approved Amendment 3 which set the price per acre foot of Component 4 groundwater substitution water for 2010 to \$200/acre-ft based on current water market conditions. Participating Contractors were not obligated to request any of this water.

On September 20, 2011, the Board approved Amendment 4 which streamlined the process of pricing Component 4 groundwater substitution water based on water market conditions. More specifically, Amendment 4 allowed:

1. The Management Committee, consisting of representatives of the Participating Contractors (including Valley District), Yuba, and DWR, to annually negotiate the price for Component 4 groundwater substitution water
2. Component 4 groundwater substitution water priority over certain other cross-Delta transfers made under Article 55, if applicable
3. Certain technical accounting changes, invoice timing changes, and other relevant provisions with respect to Yuba groundwater substitution water.

In 2014, the Board approved Amendment 5 which included a variety of changes to the original agreement based largely on market conditions heavily influenced by the then current drought. Under Amendment 5, water prices increased and were established for the period 2016 - 2020.

The water pricing under Amendment 5 expires September 30, 2020. Those agencies that would like to continue participating in this program are being asked to execute Amendment 6 which primarily includes the pricing structure for 2021 through 2025. This amendment was approved by the Yuba Board on August 18, 2020. The Department of Water Resources is hoping to have all of the participating agencies approve Amendment 6 by September 30, 2020.

### **Fiscal Impact**

There is no cost to Valley District to approve this amendment.

**Staff Recommendation**

Direct staff to place this item on the September 15, 2020 Board of Directors meeting for consideration.

**Attachments**

*Draft Amendment 6 to the Agreement for the Supply and Conveyance of Water by the Department of Water Resources of the State of California to the Participating State Water Project Contractors under the Dry Year Water Purchase Program SWPAO No. 20-819*

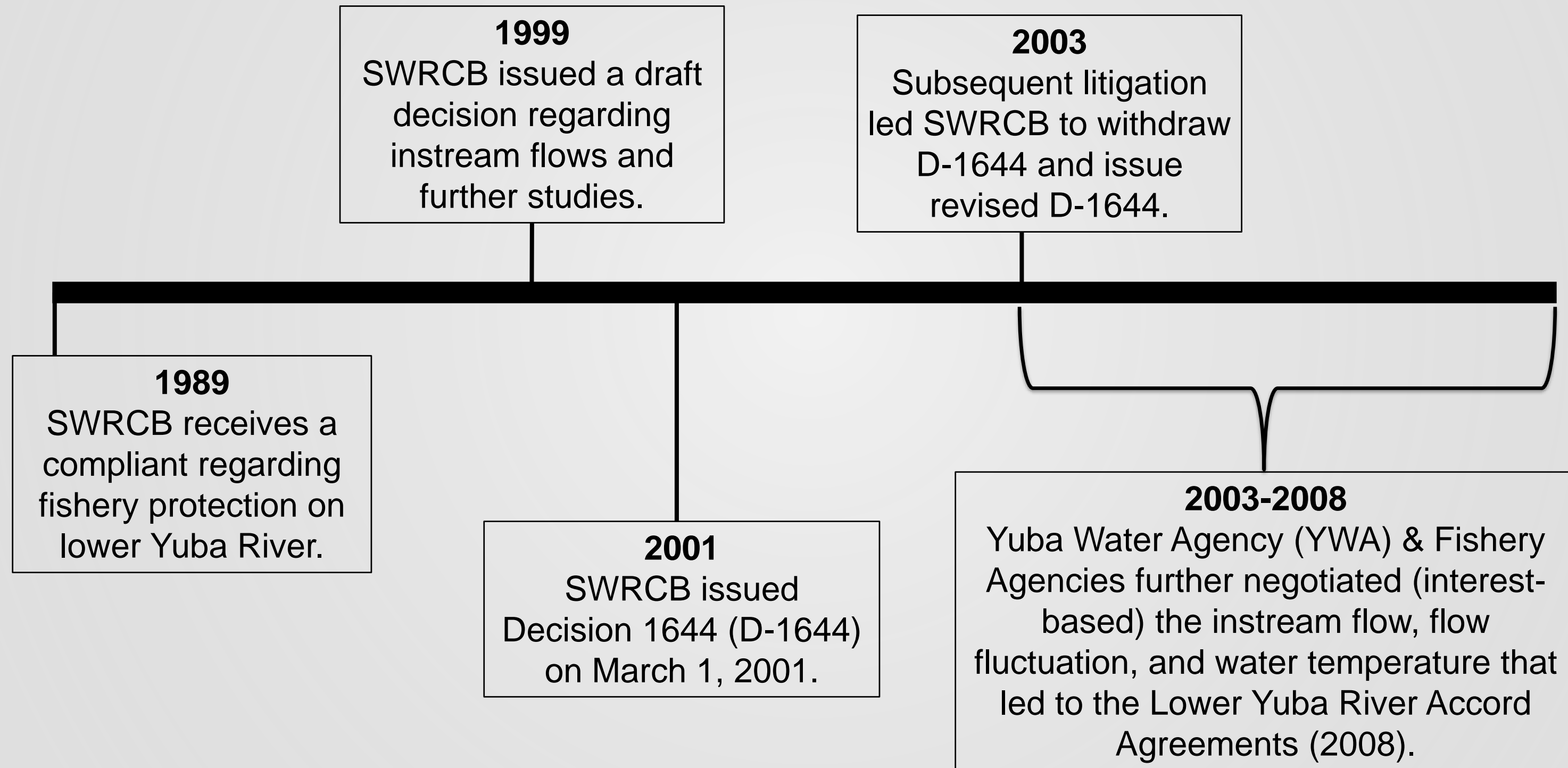
# Meet and Confer Lower Yuba River Accord Water Purchase Agreement Amendment 7



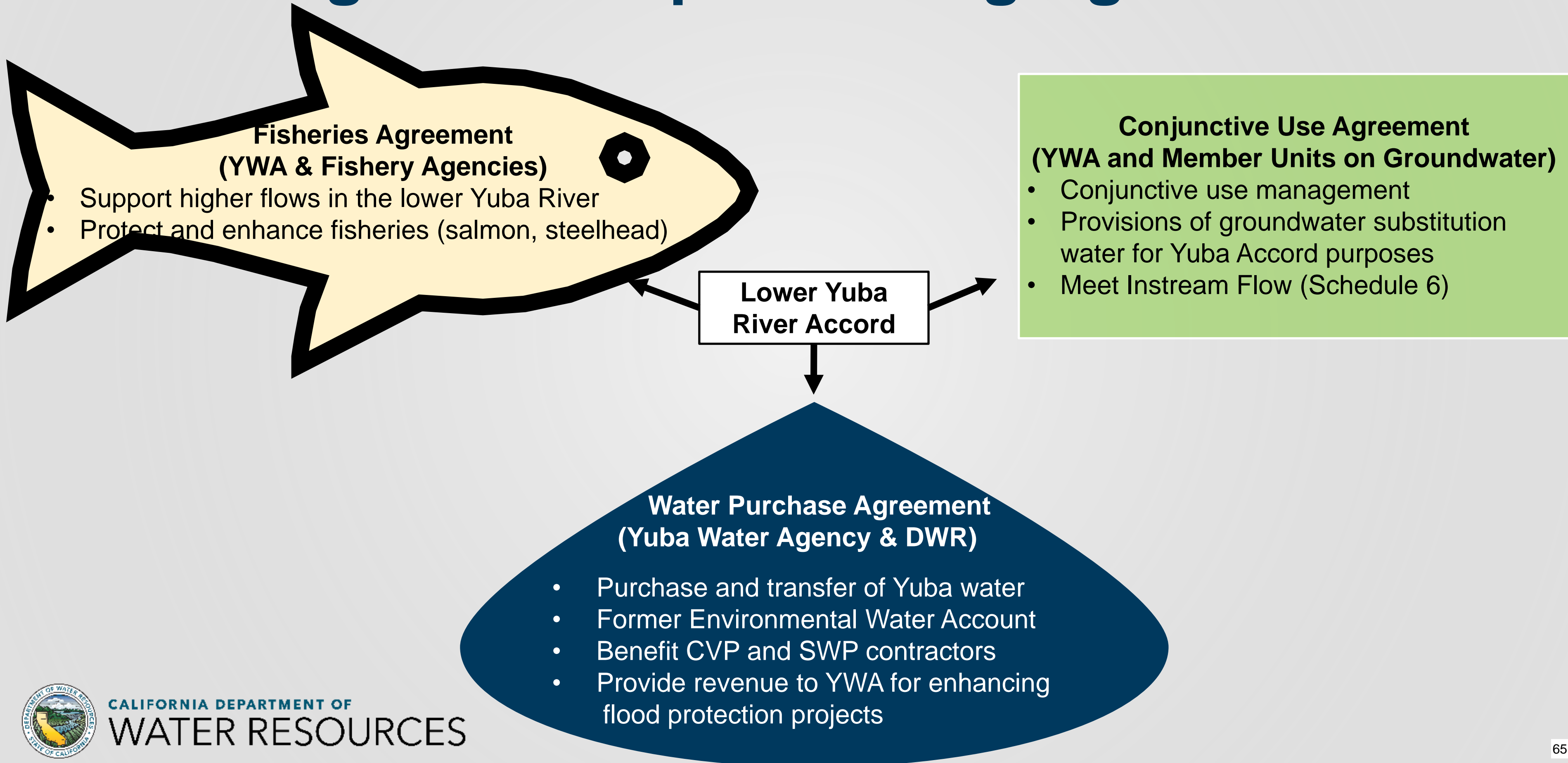
Source:  
<https://www.yubawater.org/DocumentCenter/View/84/Lower-Yuba-River-Accord-PDF>



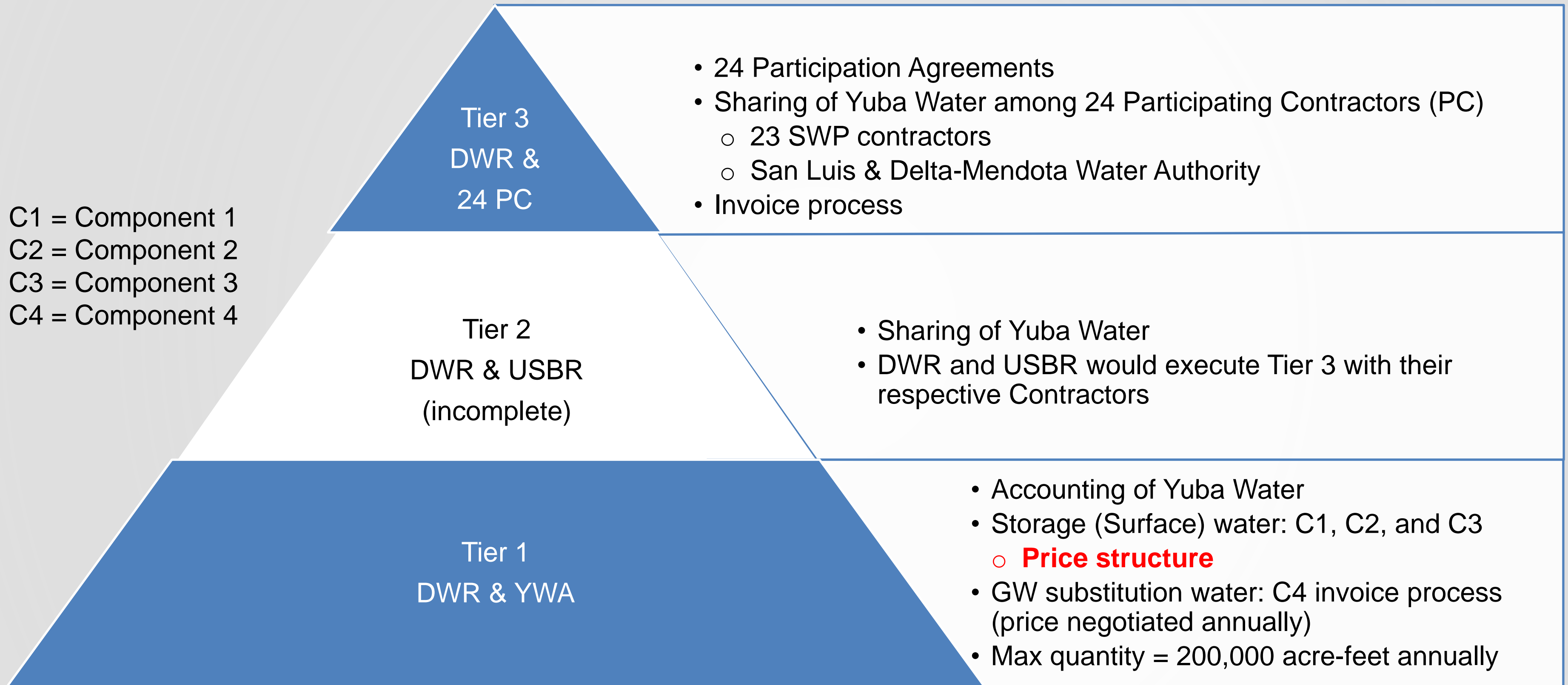
# Lower Yuba River Accord History



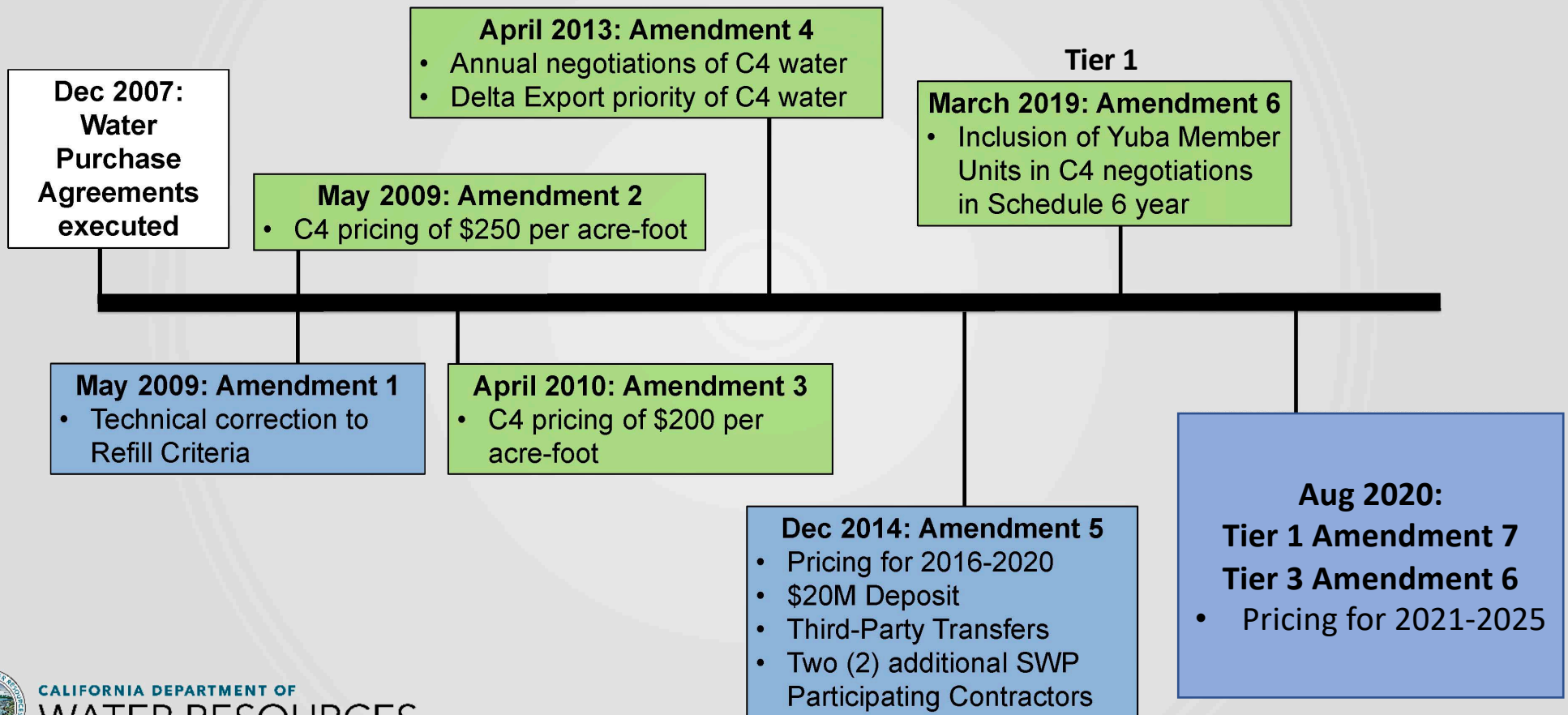
# Background: Implementing Agreements



# Background: Tiered Water Purchase Agreements



# Background: Water Purchase Agreement Amendments



# Amendment 7 Negotiation Overview

- Current pricing for Storage Component water expires on Sep 30, 2020.
- First negotiation started in June 2018 with broader scope but paused due to Voluntary Agreement negotiation.
- DWR and major Participating Contractors met on March 20, 2020.
- YWA submitted proposed Amendment 7 on April 8, 2020.
- All parties met on June 23, 2020.
- YWA submitted revised Amendment 7 on July 7, 2020.
- YWA submitted revised Amendment 7 on Aug 4, 2020.



# Final Amendment 7 Highlight

- C1/C2/C3 water exported in Oct and Nov in a given year will be priced the same as in Sep (due to expansion of transfer window).
- C1/C2/C3 water exported on and after Oct 1, 2020 will be paid for according to Amendment 5 pricing structure until the remaining balance of the \$20 million advance payment has been exhausted (about \$2.5 million).
- One single year-type based pricing structure for water year 2021 through 2025 (no inflator)



# Yuba Surface Water Price Structure

Water Year	Wet	Above Normal	Below Normal	Dry	Critical	Consecutive Dry/Critical
<b>Existing Amendment 5</b>						
2016 ~ 2020	50	100	150	200	300	350
<b>Yuba Proposal</b>						
2021	64	128	191	255	383	447
2022	67	134	201	268	402	469
2023	70	141	211	281	422	492
2024	74	148	222	295	443	517
2025	78	155	233	310	465	543
<b>Final Amendment 7</b>						
2021 ~ 2025	64	128	191	255	383	447



# Steps to Execute Yuba Tier 3 Amendment 6

- ~~1. DWR meets and confers with all Participating Contractors on the Tier 1 Amendment 7.~~
- ~~2. DWR confirms with YWA the approved Tier 1 Amendment 7.~~
- ~~3. YWA board approves Tier 1 Amendment 7 on **Aug 18, 2020**.~~
4. DWR sends draft Tier 3 Amendment 6 to each PC for review and edit.
5. DWR collects comments of draft Tier 3 Amendment 6 from each PC.
6. DWR finalizes Tier 3 Amendment 6. (1<sup>st</sup> week of Sep)
7. DWR Executive approves the final Tier 3 Amendment 6.
8. DWR sends out the final Tier 3 Amendment 6 for PC signature.
9. PC's board approves, signs, and return Tier 3 Amendment 6 by **Sep 30, 2020**.
10. DWR executive signs and executes Tier 1 Amendment 7 and Tier 3 Amendment 6 by **Sep 30, 2020**.
11. DWR files Notice of Exemption for Tier 1 Amendment 7 and Tier 3 Amendment 6.





**Draft**

**STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES**

**AND**

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT**

**AMENDMENT 6 TO THE  
AGREEMENT FOR THE SUPPLY AND CONVEYANCE OF WATER  
BY THE DEPARTMENT OF WATER RESOURCES  
OF THE STATE OF CALIFORNIA  
TO THE PARTICIPATING STATE WATER PROJECT CONTRACTORS  
UNDER  
THE DRY YEAR WATER PURCHASE PROGRAM  
SWPAO NO. 20-819**

THIS AMENDMENT 6 (Amendment) to the December 21, 2007 “Agreement for the Supply and Conveyance of Water by the Department of Water Resources of the State of California Under the Dry Year Water Purchase Program” (Participation Agreement, or Agreement) is entered into as of [DATE entered by DocuSign] pursuant to the provisions of the California Water Resources Development Bond Act, the State Central Valley Project Act, and other applicable laws of the State of California, between the Department of Water Resources of the State of California, herein referred to as “DWR,” and the San Bernardino Valley Municipal Water District, a public agency in the State of California, herein referred to as the “AGENCY.” DWR and the AGENCY are herein referred to separately as the “Party” and collectively as the “Parties.” Unless otherwise provided in this Amendment, the definitions in the Agreement, the Yuba Water Purchase Agreement, and the exhibits to that agreement shall apply to this Amendment.

## RECITALS

- A. Under the December 4, 2007 “Agreement for the Long-Term Purchase of Water from Yuba County Water Agency by the Department of Water Resources” (Yuba Water Purchase Agreement), Yuba County Water Agency (Yuba) makes surface water available for delivery and purchase by DWR, some of which is made available through substitution of groundwater for surface flows that would otherwise be used by a number of water districts within Yuba County (Member Units).
- B. In 2007 and 2008, 21 State Water Project (SWP) Contractors and the San Luis & Delta-Mendota Water Authority (“AUTHORITY”) entered into agreements with DWR for the purchase and delivery of the water made available under the Yuba Water Purchase Agreement (cumulatively referred to as the Participation Agreements). In 2014, two additional Participating Contractors entered into Participation Agreements. The Participating SWP Contractors and the AUTHORITY are jointly referred to as “Participating Contractors”.
- C. The Parties amended the Agreement in 2009 (Amendment No. 1 and Amendment No. 2), 2010 (Amendment No. 3), 2012 (Amendment No. 4), and December 2014 (Amendment No. 5).
- D. The term of the Yuba Water Purchase Agreement is through December 31, 2025, or when all obligations thereunder have been satisfied, whichever is later, unless it is terminated earlier.
- E. Under Section 26 of the Yuba Water Purchase Agreement, the current pricing structure for water made available expires on September 30, 2020.
- F. In accordance with Section 15 of the Yuba Water Purchase Agreement, DWR and Yuba, in coordination with representatives of the Participating Contractors, negotiated a new pricing structure that establishes new pricing for the period from October 1, 2020 through September 30, 2025 that was incorporated into the Yuba Water Purchase Agreement by the seventh amendment to that agreement.
- G. In light of the new pricing agreement reflected in the seventh amendment to the Yuba Water Purchase Agreement, the parties to the Participation Agreements desire to amend their respective Participation Agreements to conform with changes made by that amendment. This sixth amendment to the Participation Agreement shall be referred to in this Amendment as “Amendment 6”.

### **AMENDMENT 6 to the Participation Agreement**

**Now Therefore**, the Parties hereby amend the Participation Agreement as follows:

**1. EFFECTIVE DATE OF AMENDMENT**

Amendment 6 to the Participation Agreement shall take effect when all of the following have occurred: (i) execution by the Parties; (ii) execution of the same or substantively similar amendments by DWR and all other Participating Contractors that elect to participate beyond December 31, 2020; and (iii) execution of the seventh amendment to the Yuba Water Purchase Agreement by DWR and Yuba.

**2. SECTION 2.B, “TERM OF THE AGREEMENT”, is amended to read as follows:**

“B. Notwithstanding Subparagraph A, the Parties may terminate the Participation Agreement on December 31, 2025, if they fail to amend the Participation Agreement pursuant to Section 3.B.5 and as necessary to address amendments made to the Yuba Water Purchase Agreement regarding the quantity and pricing of Water to be made available by Yuba after September 30, 2025 pursuant to Section 15 of the Yuba Water Purchase Agreement.

**3. CHANGES TO SECTION 3, “PURCHASED WATER”**

**a. Section 3.B, “TYPES AND PRICES OF PURCHASED WATER”, is amended to read as follows:**

The AGENCY shall pay for Delivered Transfer Water made available to and accepted by the Agency under section 3.A above in accordance with the following sections, provided that, the first increment of Delivered Transfer Water provided on or after October 1, 2020, will be paid for according to the pricing schedule listed in Amendment 5 of this Agreement (which is \$50 in a Wet Water Year, \$100 in an Above-Normal Water Year, \$150 in a Below-Normal Water Year, \$200 in a Dry Water Year, \$300 in a Critical Water Year and \$350 in a Consecutive Dry Water Year), which payment will be applied as a credit against the remaining balance of the advance deposit of \$20 million (provided for in Amendment 5), until full crediting of the \$20 million advance deposit, at which time the pricing under this Amendment will be used.

**b. Section 3.B.1.a, “COMPONENT 1 WATER”, is amended to read as follows:**

- “a. For Component 1 Water that is accounted for as Purchased Water and made available to the AGENCY, the AGENCY will pay:
- i. \$64 per acre-foot in a Wet Year;
  - ii. \$128 per acre-foot in an Above Normal Year;
  - iii. \$191 per acre-foot in a Below Normal Year;
  - iv. \$255 per acre-foot in a Dry Year, except as provided in subsection vi;
  - v. \$383 per acre-foot in a Critical Year, except as provided in subsection vi;
  - vi. \$447 per acre-foot in two or more consecutive Final Classification Dry Years (or a Dry Year following a Critical Year) or in two or more consecutive Final Classification Critical Years (or a Critical Year following a Dry Year).
  - vii. Notwithstanding subsections i-vi, in any year in which Yuba’s Third-Party Transfer of up to 10,000 acre-feet of Storage Component water under Section 11 of the Yuba Water Purchase Agreement reduces the quantity of Component 2 Water available to the AGENCY, the price for Component 1 Water will reflect the reductions specified in Section 11.F.2 of such agreement.”

**c. Section 3.B.2, “COMPONENT 2 WATER”, is amended to read as follows:**

“For Component 2 Water that is accounted for as Purchased Water and made available to the AGENCY, the AGENCY will pay 80 percent of the amounts in Section 3.B.1, as amended.”

**d. Section 3.B.3, “COMPONENT 3 WATER”, is amended to read as follows:**

- “For Component 3 Water that is accounted for as Purchased Water and made available to the AGENCY, the AGENCY will pay:
- a. \$64 per acre-foot in a Wet Year;
  - b. \$128 per acre-foot in an Above Normal Year;
  - c. \$191 per acre-foot in a Below Normal Year;
  - d. \$255 per acre-foot in a Dry Year, except as provided in subsection f;
  - e. \$383 per acre-foot in a Critical Year, except as provided in subsection f;
  - f. \$447 per acre-foot in two or more consecutive Final Classification Dry Years (or a Dry Year following a Critical Year) or in two or more consecutive Final Classification Critical Years (or a Critical Year following a Dry Year).”

**e. Section 3 is amended to add Section 3.B.5, “Price for Fall Delivered Water:**

“Component 1, 2, 3, and 4 Water that is accounted as delivered in the months of October and November will be priced using the determination of Water Year that was in effect prior to September 30<sup>th</sup> of that year.”

**4. NO OTHER CHANGES**

All remaining provisions of the Agreement that are not changed by this Amendment will remain in full force and effect. Nothing in this Amendment affects the payment provisions of the Agreement through September 30, 2020.

**5. COUNTERPARTS OF THE AGREEMENT**

This Amendment may be signed in any number of counterparts by the Parties, each of which will be deemed to be an original, and all of which together will be deemed to one and the same instrument. This Amendment, if executed in counterparts, will be valid and binding on a Party as if fully executed all in one copy.

**IN WITNESS WHEREOF**, the Parties hereto, by their authorized representatives,  
have executed this Amendment on the last date set forth below.

Approved as to legal form  
and sufficiency:

STATE OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

\_\_\_\_\_  
Spencer Kenner  
Chief Counsel

\_\_\_\_\_  
Ted Craddock  
Deputy Director

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

Approved as to legal form  
and sufficiency:

SAN BERNARDINO VALLEY  
MUNICIPAL WATER DISTRICT

\_\_\_\_\_  
Name  
Counsel

\_\_\_\_\_  
Heather Dyer  
General Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



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**DATE:** September 8, 2020

**TO:** Board of Directors' Workshop – Engineering

**FROM:** Bob Tincher, Chief Water Resources Officer/Deputy General Manager  
Matthew Howard, Water Resources Senior Project Manager

**SUBJECT:** Consider Participation in the Update of the 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan and the 2015 San Bernardino Valley Regional Urban Water Management Plan

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Valley District, in cooperation with the retail water agencies that participated in the 2015 update of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (Integrated Plan) and the 2015 update of the San Bernardino Valley Regional Urban Water Management Plan (Regional Plan), solicited proposals to simultaneously update and combine the Integrated Plan and Regional Plan into a single new document, the *2020 Upper Santa Ana River Integrated Regional Urban Water Management Plan (IRUWMP)*. Three proposals were received and the water agencies are recommending the Water Systems Consulting, Inc. and Woodard Curran (WSC/WC) team at a total cost of \$393,100.

Staff is asking the Board to consider the same cost sharing methodology used for the 2015 updates with Valley District paying 50% of the “regional” sections of the planning document and the retail agencies paying the remainder of the regional sections as well as the cost for their individual chapter of the document. Using this methodology, Valley District’s portion of the cost would be \$120,460. Staff is also recommending the Board consider Valley District serve as the contracting agency for this project for a total contract value of \$393,100, however the total cost to Valley District would be \$120,460 as mentioned above.

## **BACKGROUND**

In January 2007, Valley District and 15 other agencies prepared the original Integrated Plan. The Integrated Plan provides a comprehensive look at the area's water resources and includes management strategies to help meet the long-term water needs of the area. The Integrated Plan also created the Basin Technical Advisory Committee (BTAC) to facilitate implementation and update of the Integrated Plan. The Integrated Plan was last updated in 2015.

In 2010, nearly all of the retail water agencies in the Valley District service area chose to create the first Regional Plan rather than develop their own individual Urban Water Management Plans (UWMP). The Regional Plan requires water agencies to prove that their water supply will be able to withstand a short-term or long-term drought and to show how they are meeting statewide water conservation requirements, among other things. The Regional Plan was last updated in 2015.

The Integrated Plan is updated every 5 years and is due for update in 2020 and the Regional Plan is to be updated every five years, due in years ending in 1 or 6, with the next regular update being due in 2021. Rather than continue updating these overlapping documents independently, Valley District and its partners would like to combine them into a single new document, the *2020 Upper Santa Ana River Integrated Regional Urban Water Management Plan* (IRUWMP).

The vision is that the overlapping sections of the two documents can be combined to create one cohesive document that meets all of the requirements of both the Urban Water Management Planning Act (Division 6 Part 2.6 of the California Water Code §§10608 – 10656) and the Integrated Regional Water Management Planning Act (Division 6 Part 2.2 of the California Water Code §§10530 – 10546).

Since both documents were updated 5 years ago, this project is essentially an update of both documents while combining them into one cohesive document. Since the Regional Plan was updated most recently, the "overlapping" text from the Regional Plan will govern. The water budget chapter will provide both the regional overview of water sources used to meet demands, as in the Integrated Plan, and also provide the UWMP demand/supply scenarios. In addition to the prescribed UWMP demand/supply scenarios, the wet year scenario from the Regional Plan will be updated and a new 30-year drought scenario will be added. The RAND evaluation of supplies and demands will also be incorporated into this new document.



In 2015, the Board agreed to be the contracting agency for both the RUWMP and Integrated Plan which covers the Valley District service area and portions of the Upper Santa Ana River Watershed. The following agencies that have confirmed their participation in the 2020 IRUWMP:

2020 IRUWMP	
IRWMP Agencies	UWMP Agencies
1. Big Bear Lake Department of Water and Power	1. City of Colton
2. Big Bear City Community Services District	2. Big Bear City Community Services District
3. East Valley Water District	3. East Valley Water District
4. Fontana Union Water Company	
5. City of Loma Linda	4. City of Loma Linda
6. City of Redlands	5. City of Redlands
7. City of Rialto	6. City of Rialto
8. City of Riverside Public Utilities Department	7. Riverside Highland Water Company
9. San Bernardino County Flood Control District	
10. San Bernardino Municipal Water Department	8. San Bernardino Municipal Water Department
11. San Bernardino Valley Municipal Water District	9. San Bernardino Valley Municipal Water District
12. San Bernardino Valley Water Conservation District	
13. San Gorgonio Pass Water Agency	
14. West Valley Water District	10. West Valley Water District
15. City of Yucaipa	
16. Yucaipa Valley Water District	11. Yucaipa Valley Water District

In 2015, The Yucaipa Valley Water District wrote their own chapter of the Regional Plan and submitted it to the consultant for peer review and inclusion into the 2015 Regional Plan. Yucaipa Valley Water District will use the same approach for the 2020 IRUWMP. The below table generally describes the effort required for their individual agency chapter:

<b>Agency Chapter for UWMP Compliance</b>	<b>Service</b>
City of Colton	Update
East Valley Water District	Update
City of Loma Linda	Update
City of Redlands	Update
City of Rialto	Update
Riverside-Highland Water Company	Update
San Bernardino Municipal Water Department	Update
San Bernardino Valley Municipal Water District	Update
West Valley Water District	Update
Yucaipa Valley Water District	Peer Review

The Department of Water Resources is completing the 2020 Guidebook for the preparation of the 2020 UWMPs which is expected to be released in September. Based upon the information that has been released, to date, the notable changes for the 2020 Integrated Plans and Regional Plans are expected to be:

1. Updated Water Shortage Contingency Plans
  - a. Action plan for drought/catastrophic water supply shortage
  - b. Water supply reliability analysis
  - c. Six standard water shortage stages
  - d. Communication protocols
2. Seismic Risk Assessment
  - a. Seismic risk assessment and Mitigation Plan
  - b. Description of water system vulnerabilities
3. Demand Management Measures
  - a. Water loss information to be provided by each agency
  - b. SB X7-7 look back comparison reporting
4. Drought Risk Assessment
  - a. Five-consecutive-year drought
  - b. 30-year extended drought risk scenario
5. Integrated Plan Updates
  - a. Protect and restore important ecosystems
  - b. Expand surface/groundwater storage capacity

Three proposals were received, reviewed and ranked by a review team comprised of staff from the San Bernardino Municipal Water Department, San Bernardino Valley Water Conservation District, Yucaipa Valley Water District, and Valley District. The review team also conducted Zoom interviews with each firm. The review team recommended the selection of Water Systems Consulting, Inc. and Woodard Curran (WSC/WC) which was supported by the rest of the participating agencies. The WSC/WC team was selected based upon their high level of experience preparing Integrated and Regional Plans all over the state and their regional experience preparing the 2015 updates of the Integrated and Regional Plans as well as other studies in our region. A summary of the proposals and their costs are included below:

<b>Firm</b>	<b>Proposal Cost</b>
Water Systems Consulting (WSC)	\$393,100
Firm 2	\$206,400
Firm 3	\$591,510

Firm 2 and Firm 3 were not as experienced developing these type of planning documents which seems to be reflected in their fees which are significantly higher and lower than the WSC/WC fee.

**Fiscal Impact**

The total cost for this project is \$393,100 and is included in line item 6360 Consultants in the Valley District General Fund Budget for fiscal year 2020-21. After taking into consideration the contribution and reimbursement from our retailers and partners, Valley District’s net cost will be \$120,460.

**Staff Recommendation**

Direct staff to place this item on an upcoming Board Meeting agenda that recommends Valley District act as the contracting agency for the development of the 2020 Upper Santa Ana River Integrated Regional Urban Water Management Plan (IRUWMP) project for a total contract value of \$393,100 with Valley District’s portion being \$120,460.

**Attachments**

1. Proposed cost sharing for the 2020 IRUWMP - WSC/Woodard & Curran
2. Excerpt from WSC/Woodard & Curran Proposal for the Upper Santa Ana River Watershed IRUWMP

## 2020 Integrated Regional Urban Water Management Plan Update

### Water Systems Consulting Proposal

<u>Total Proposal Cost - WSC</u>	<u>\$393,100</u>
Total Agency Chapters (3)	\$194,580
Total common sections/tasks (0, 1, 2, 4)	\$198,520
<b>San Bernardino Valley Municipal Water District</b>	<b>\$99,260 50% of Regional Section</b>
Balance common sections	\$99,260

### COST SHARING BY AGENCY

Agency	Regional Sections	Agency Urban Chapter	TOTAL PROPOSAL	Total (%)
Big Bear Lake Department of Water and Power	\$ 6,203.75		\$ 6,204	2%
Big Bear City Community Services District	\$ 6,203.75		\$ 6,204	2%
City of Colton	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
City of Loma Linda	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
City of Redlands	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
City of Rialto	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
City of Riverside Public Utilities Department	\$ 6,203.75		\$ 6,204	2%
East Valley Water District	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
Fontana Union Water Company	\$ 6,203.75		\$ 6,204	2%
Riverside-Highland Water Company	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
San Bernardino County Flood Control District	\$ 6,203.75		\$ 6,204	2%
San Bernardino Municipal Water Department	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
San Bernardino Valley Municipal Water District	<b>\$ 99,260.00</b>	\$ 21,200	\$ 120,460	31%
San Bernardino Valley Water Conservation District	\$ 6,203.75		\$ 6,204	2%
San Geronio Pass Water Agency	\$ 6,203.75		\$ 6,204	2%
West Valley Water District	\$ 6,203.75	\$ 21,200	\$ 27,404	7%
Yucaipa Valley Water District	\$ 6,203.75	\$ 3,780	\$ 9,984	3%
<b>TOTAL</b>	<b>\$ 198,520</b>	<b>\$ 194,580</b>	<b>\$ 393,100</b>	<b>100%</b>



**PREPARE THE 2020**  
UPPER SANTA ANA RIVER  
WATERSHED INTEGRATED  
**REGIONAL URBAN WATER MANAGEMENT PLAN**



**Mr. Matthew Howard**

Water Resources  
Senior Project Manager

San Bernardino Valley  
Municipal Water District  
380 East Vanderbilt Way  
San Bernardino, CA 92408  
(909) 387-9230  
MattH@sbgmwd.com

**REGARDING:**

2020 Upper Santa Ana  
River Watershed Integrated  
Regional Urban Water  
Management Plan

**Local WSC Office**

9375 Archibald Ave.  
Suite 200  
Rancho Cucamonga,  
CA 91730  
Phone: (909) 483-3200  
Fax: (909) 354-3482

**WSC's Principal in Charge**

Jeff Szytel <sup>PE, MS, MBA</sup>  
(805) 457-8833, ext. 101  
jszytel@wsc-inc.com

**Dear Mr. Howard,**

Imagine a comprehensive document for guiding water resource management for the Upper Santa Ana River Watershed—a resource the San Bernardino Valley Municipal Water District (Valley District) and your partner agencies turn to again-and-again to support effective decision making, impactful communications and funding for integrated regional water resource solutions. This cohesive planning framework consolidates, updates, and merges the common elements of the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) and the San Bernardino Valley Regional Urban Water Management Plan (RUWMP) into a new document: the 2020 Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan (IRUWMP). Water Systems Consulting (WSC) shares your regional vision for the 2020 IRUWMP, and we will deliver an accessible, clear, comprehensive and compliant plan that creates value greater than sum of its parts. To do this, the WSC team will:

- Create a well organized document structure that is elegant, intuitive, and cohesive.
- Deliver tools and data sets that bring the core of this document to life, empowering effective communication and decision-making for years to come.
- Align related ongoing efforts, such as the Upper Santa Ana Habitat Conservation Plan (HCP) and Santa Ana River Conservation and Conjunctive Use Program (SARCCUP), and others, to build regional momentum and broad-based support for projects and programs.
- Meet existing and new compliance requirements under an ambitious schedule by leveraging our team's work on the 2015 RUWMP and the 2015 IRWMP update, while working proactively with DWR and building compliance back-checks into our process and document.
- Position regional initiatives within the state's evolving water framework, and position Valley District and participating agencies for funding opportunities.

WSC is committed to delivering a successful and valuable 2020 IRUWMP for Valley District and your regional partners. We are proud of all that we have accomplished together over the years, and we see ourselves as your strategic partner in the region. We only succeed if you do, and we are committed to bringing the experience, focus, resources, continuity, and energy needed to make this ambitious project a successful reality.

Sincerely,  
Water Systems Consulting, Inc.



**Jeff Szytel** <sup>PE, MS, MBA</sup>  
Principal In Charge | President



**Jeroen Olthof** <sup>PE, MS, MBA</sup>  
Data Architect | COO

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Appendix A. Qualifications and Resumes

Appendix B. Similar Experience

# A New Vision for Integrated Regional Water Planning

## Project Understanding

The San Bernardino Valley Municipal Water District (Valley District) has several planning documents that guide decision-making, and these documents require periodic updates. Two of Valley District's foundational documents, the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) and the San Bernardino Valley Regional Urban Water Management Plan (RUWMP), are both due to be updated. Valley District has envisioned a consolidated update that merges the common elements of these two plans and creates a cohesive planning framework for the future. This document is the Integrated Regional Urban Water Management Plan (IRUWMP), and will be the first of its kind in California.

**The IRWMP was last updated in January of 2015 and is scheduled to be updated every five years.** It describes the region's water supplies and demands, and identifies strategies and projects that can benefit the region's water supply. The IRWMP is a critical document for prioritizing regional investments in water management and facilitating the use of state grant funds for those projects. This update is an opportunity to review the objectives and targets laid out in the 2015 IRWMP and determine if they should be revised to reflect the current water resources management setting. This includes the opportunities to add new projects, determine how implemented projects provide benefits to the region, and to develop new, regional projects. In the 2015 update, these components included significant input from participating agencies. The 2020 update will be equally dependent on the input, information and data that can be provided by participating agencies.

**The RUWMP was last updated in June of 2016 and was subsequently amended with minor revisions in 2017.** The RUWMP is focused on meeting reporting requirements established by the California Department of Water Resources (DWR) to implement the California Water Code. The RUWMP references and duplicates much of the information about regional supplies and water use that was included in the IRWMP. The RUWMP is due to be submitted to DWR by July 1, 2021.

Developing a cohesive IRUWMP will allow Valley District to have a single guiding "road map" for its water supply planning. Having a single document will be more efficient and will allow Valley District to focus on enhancing the document instead of copying and pasting materials back and forth. However, there are several challenges that will need to be overcome for this project to be successful. Primary project challenges are:

- **This document will be the first of its kind:** No California agency has successfully prepared a single document to meet both IRWM and UWMP requirements, and DWR has not yet published final guidance to describe how a plan will be considered compliant.
- **The schedule is very tight:** The team will have approximately seven months to develop a document that presents a shared vision for future projects and strategies with the greatest benefit for the region, while allowing for meaningful engagement and feedback from 16 participating water suppliers and multiple outside stakeholders.
- **The effort will be complex:** The consolidated document will contain a tremendous amount of information, and it may seem cumbersome or unapproachable for users to find the information they are looking for if it is not done right.

**The WSC team has structured its proposed approach to overcome these challenges and deliver a cohesive, high-value, IRUWMP the entire region will benefit from.**

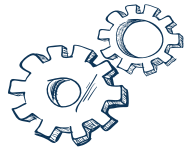


# Approach

The WSC Team will prepare an IRUWMP that creates value for every participating agency, builds trust by reinforcing regional collaboration, delivers regulatory compliance by meeting DWR's requirements, aligns the region around shared data and vision, and envisions the future for integrated water resources management in the upper Santa Ana River (SAR) watershed. These five pillars of our team's approach are summarized below and described in more detail within this section of our proposal.

## WSC's Approach for Valley District's IRUWMP

 <h3>Create &amp; Deliver Value</h3> <p>Focus on value and benefit to Valley District and all participating agencies.</p>	 <h3>Build Trust</h3> <p>Envision and lead an efficient and facilitated process that builds trust, provides transparency, and supports regional engagement.</p>	 <h3>Deliver Compliance</h3> <p>Produce a high-quality document that meets DWR's requirements while setting a new standard for integrated regional planning.</p>	 <h3>Align the Region</h3> <p>Integrate past and ongoing work and align with regional priorities to create a trusted, useful document.</p>	 <h3>Envision the Future</h3> <p>Define projects and programs that create multiple regional benefits, true to the spirit of integrated regional planning.</p>
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## Create and Deliver Value

WSC's primary objective with this project will be to lead a process and deliver a document that is focused on creating value and providing lasting benefits to Valley District and every participating agency. Some of the ways we will create value include:

- **Clear organization supports compliance and communication.** The WSC Team will create a well-organized document structure that provides an elegant and cohesive combination of the related content of both the RUWMP and the IRWMP. See our proposed document structure on the following page.
- **Reader friendly document makes this work accessible.** We will only be satisfied if this document is used and useful for Valley District, your partners, and stakeholders. Writing style will reflect the intended audience, and will be clear, concise, and well documented. Explanatory graphics and tables will be used extensively to reinforce understanding and provide useful reference for subsequent use. The electronic deliverable will be indexed and hyperlinked so that a reader can easily navigate to the sections and content that they need.
- **Useful, integrated tools and data sets support effective decision-making.** We understand this document will not just sit on the shelf, and the document itself is not the only deliverable. Valley District and your partners routinely share data and analysis to support science-based decisions. The WSC Team will deliver tools and data sets that bring the core of this document to life, empowering effective communication and decision-making for years to come.
- **Alignment with related regional efforts builds momentum.** The upper SAR watershed stakeholders are active collaborators and are continually looking for ways to support local and regional needs. By highlighting alignment between related ongoing efforts, such as the Upper Santa Ana Habitat Conservation Plan (HCP), Santa Ana River Conservation and Conjunctive Use Program (SARCCUP), the Sterling Water Resources Center, and others, the IRUWMP builds regional momentum and provides broad-based support for projects and programs that create tremendous regional value.
- **Support of existing needs and efforts makes the most of your time and resources.** The WSC Team will produce an integrated set of tools and data files that Valley District and its partners can use to fulfill reporting requirements, share information with public and private stakeholders, and support related efforts such as the Basin Technical Advisory Committees' (BTAC's) Annual Water Management Report.

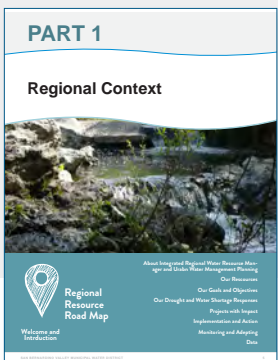


# Delivering

## A Valuable, Comprehensive Guiding Document for Regional Resource Management



The Executive Summary tells the story of the region, its demographics, partnerships, resources, programs, and management strategies. It aligns related efforts to build regional momentum and broad-based support for funding and implementation of regional and local solutions.



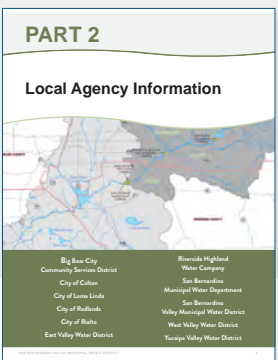
Regional Context

### contents

1. Introduction
2. Regional Water Sources
3. Regional Water Use, Comparison of Regional Supplies and Demands, Water Budget
4. Goals and Objectives
5. Water Management Strategies Including Regional Water Shortage Contingency Planning
6. Changes in Participating Agency Supply or Demand Projections
7. Projects
8. Implementation
9. Data Management, Plan Performance and Adaptive Management

### benefits

This section provides an update of the ever-changing regional water resource picture. It aligns the objectives, targets and project list from the 2015 IRWMP to current conditions and aligns the IRWMP update with the Prop. 1 IRWMP requirements. A critical part of this plan, the Regional Context must be clear, compelling, and compliant to engage stakeholders and partners in future projects and to support future funding and grant opportunities.



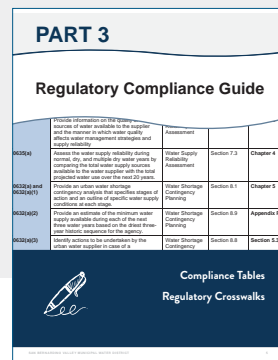
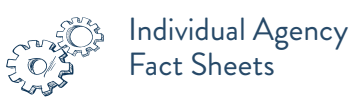
Local Agency Information

### contents

- City of Colton
- City of Loma Linda
- City of Redlands
- City of Rialto
- East Valley Water District
- Riverside Highland Water Company
- San Bernardino Municipal Water Department
- San Bernardino Valley Municipal Water District
- West Valley Water District
- Yucaipa Valley Water District
- Big Bear City Community Services District

### benefits

This section will contain a chapter for each water supplier that is using the IRUWMP to meet their UWMP reporting requirements. The chapters will incorporate information from the 2015 UWMP and reflect changes in water consumption patterns and water conservation activities. They will be tailored to meet the requirements in DWR's 2020 Guidebook for Urban Water Suppliers, a draft of which is expected to be released in September.



Regulatory Compliance Guide

### contents

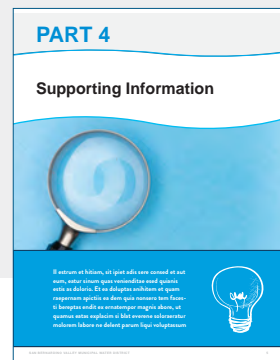
- California Water Code sections addressed by plan
- UWMP Compliance Guide**
1. Compliance Table
  2. Regulatory Crosswalk
- IRWM Compliance Guide**
1. Compliance Table
  2. Regulatory crosswalk

### benefits

This section will provide all information needed for DWR and other stakeholders to verify that the document meets relevant requirements. Because the IRUWMP will be a new type of document for some reviewers, this section is intended to provide easy access to where required information can be found.



User-friendly Agency Data Sheets can convey critical agency data to a diverse audience. These fact sheets can be customized to provide a snapshot of water and water resources management for the agency. This could include information on an agency's water supply portfolio, customer base, infrastructure, key programs and initiative, and/or success stories.



Supporting Information

### contents

- Groundwater management agreements and judgements (Orange County Judgement, Western San Bernardino Judgement, Lytle Creek Judgement, and Rialto Basin Decree)
- Contracts and agreements documenting water supplies
- Water loss audits
- Notifications of public hearing and document available for public review
- Resolutions of adoption
- Output from DWR analytical tools (e.g., population estimating tool)
- Ordinances for Water Shortage Contingency Plans

### benefits

This section will store all the supporting documentation referenced in the main document. Providing these documents allows users to obtain information as needed, without cluttering the main document with excessive detail.



Electronic Deliverables

### contents

- Water Budget Spreadsheet
- Project Database
- Documents in Word and PDF

### benefits

These files will be used extensively throughout plan preparation and will be reviewed with Valley District and agency staff on a regular basis. The WSC team envisions collaborating with Valley District on potential enhancements to the Water Budget Spreadsheet to expand reporting options and facilitate future updates.



## Create and Deliver Value

The WSC Team has envisioned several Optional Tasks to elevate the value of this plan for multiple purposes and audiences. These enhanced deliverables are discussed in detail on the following page.

## Optional Tasks for Enhanced Value

In addition to the strategies described previously, the WSC Team has also envisioned several Optional Tasks to take this plan to the next level, further expanding the value it provides. These Optional Tasks include:

- **Interactive Executive Summary**—The WSC Team includes communication experts who can work with your team to envision and deliver an interactive platform to allow users to explore the rich and varied regional data contained within the IRUWMP, such as maps, graphs, data tables, environmental resources, and prioritized projects. We envision a platform that functions like an intuitive website, allowing the user to run custom reports, visualize key metrics, and overlay data sets to visualize the complex interactions of the region's water resource features, demographics, partnerships, and management strategies.
- **Video Overview**—Perhaps the most compelling way to tell the story of the IRUWMP and the information it contains is by creating an explanatory video. WSC's video production experts can develop a compelling script, shoot video that includes interviews, aerial views, site specific visuals, and statewide infrastructure to show the interconnection of the social, environmental, and economic benefits of the regions water management strategies.
- **Agency Data Sheets**—Provide user-friendly fact sheets to convey critical agency data to a diverse audience. As discussed on the previous page, these fact sheets can be customized to provide a snapshot each agencies individual water picture.
- **ESRI Storymap**—Storymaps are a powerful way to bring data to life, allowing customization that includes interactive GIS maps in an intuitive, scrolling interface. One of the key benefits of the ESRI Storymap platform is its direct connection with the underlying GIS database. This allows for simplified maintenance and updating, so the interactive platform can remain relevant over time, even as conditions change.



WSC's video for the Ventura Water Pure project connected this ambitious potable reuse program with the regions past, present, and future—clearly showing the need for the project and aligning it with other regional priorities. View the video [here](#) or at <https://www.cityofventura.ca.gov/1646/Ventura-Water-Pure>



## Build Trust

The WSC Team thrives in a multi-stakeholder environment, and we have strong relationships throughout the region based on our past and ongoing work together. We are well positioned to lead an efficient and facilitated process that builds trust, provides transparency, and supports engagement among the participating agencies. Some of the key features and benefits of the stakeholder process we envision are summarized below.

### Benefits of building a trust-based stakeholder process

#### WSC FACILITATION APPROACH

✔ **Align the stakeholder meetings with other regional meetings, such as the BTAC and Basin Management Committee. Builds Trust:** Leverages existing meetings to minimize impacts to the participants' time while reinforcing your existing collaboration venues.

✔ **Lead purposeful, facilitated sessions. Builds Trust:** These meetings are about more than just data collection, they are a chance to reinforce important relationships and priorities. We focus on experience design, thoughtful facilitation, and creative exercises to keep everyone engaged.

✔ **Prepare thorough and timely pre- and post-workshop materials. Builds Trust:** Participants come prepared to engage on key topics and have access to the information they need during the session to stay engaged throughout. Post-session summaries reinforce consensus, summarize action items, highlight areas of opportunity, and describe any needed follow-up.

✔ **Utilize online collaboration platforms such as Microsoft Teams and Zoom. Builds Trust:** Participants have access to project data and can track progress in real time. Microsoft Teams also provides a simple video collaboration platform to empower the teams to meet virtually.

✔ **Thoughtful combination of individual and group meetings. Builds Trust:** The right combination of individual and group meetings makes the most of everyone's time and allows each agency to be heard in whatever venue is most comfortable for them.



## Deliver Compliance

At their core, the UWMP and IRWMP are compliance documents. Even though Valley District has the vision to recognize the much broader benefit of a combined document, the effort still needs to reliably fulfill the compliance requirement. Our approach is to produce a high-quality document and related deliverables that are delivered on-time, meet DWR requirements, and support watershed-wide regional planning. We will use our proprietary StreamlineUWMP® platform, described on the following page, to facilitate efficient document compilation and review. Our approach includes the following strategies:

- Prepare the necessary updates to reflect changes since 2015.** For the IRWM related sections that includes addressing the changing water resources picture, updating the Objectives and Targets, updating the prioritized project list, and fulfilling the Prop 1 requirements. For the UWMP related sections, we must update population and demand projections, update supply portfolios to reflect new and proposed supplies, support the updating of the Water Shortage Contingency Plans, and meet the new UWMP requirements.

- Align with the evolution of water management legislation and strategies from the State of California.** The IRWM Strategic Plan, which DWR initiated to guide the IRWM Program in its next generation, calls for greater emphasis on regional needs. Prop. 1 brings new requirements that must be incorporated into IRWMPs to qualify for Prop 1 IRWM funding. The California Water Resilience Portfolio, prepared by the State in response to Executive Order N-10-19, identifies regional and Delta vulnerabilities. The State’s 2018 update to the California Water Plan reflects a changing water resources context in California, including natural sustained changes, significant water code modifications since the 2013 update, and the presence of SGMA as a planning framework for basins state-wide, and actions resulting from Executive Orders related to water.
- Request early input and acceptance from DWR.** Upon notice to proceed, WSC will prioritize development of a complete document outline, including listing all the tables, figures and graphics that will be included with the final document. We will share this document with DWR to get their conceptual approval of the approach before continuing with document production. That will help us avoid a circumstance where we discover DWR will not accept the document as-structured.

### New Requirements Increase the Level of Effort to Develop the 2020 UWMP elements, but Provide Tools to Help Water Agencies Manage Water Resources Locally

NEW REQUIREMENTS FOR THE 2020 UWMP		TYPE OF EFFORT	ESTIMATED LEVEL OF EFFORT
1	Water Shortage Contingency Plan with prescriptive elements	Analysis, Description, Policy Decisions & Codification	Significant
2	5-Year Drought Risk Assessment	Analysis, Description, Policy Decisions & Codification	Significant
3	Lay person’s description of reliability	Description	Limited
4	Long-term forecast for each water supply source, including climate change and supporting information	Analysis, Description	Potentially Significant
5	Incorporation of projected land use changes in demand forecasting	Analysis, Description	Potentially Significant
6	Seismic risk assessment and mitigation plan	Description	Limited to Potentially Significant
7	Energy analysis now required	Analysis, Description	Limited to Potentially Significant
8	Water savings from codes/standards/etc. now required	Analysis, Description	Limited to Potentially Significant
9	Include 5 previous years of system water losses	Analysis, Description	Limited to Potentially Significant
10	Include GSPs or other SGMA efforts	Description	Limited

#### The new requirements provide the opportunity to:

**Define** and plan out short/long-term water shortage scenarios specific to your system. **Opportunity** to define what a water shortage means for your agency, not the State or other agencies.

**Customize** Shortage response actions, demand management measures, and supply projects to address potential supply gaps. **Opportunity** to justify short/long-term demand reduction programs/projects or supply projects.

**Prepare** for required annual reporting or other communication channels. **Opportunity** to connect UWMP data to annual reporting and management actions for customer education.

# THE NEXT-GENERATION UWMP TOOL DRIVING QUALITY & EFFICIENCY

## streamline UWMP

Developing UWMPs with multiple contributing authors can be difficult to manage, especially as authors move between data management and word processing platforms. WSC's proprietary web-based application, StreamlineUWMP®, provides an integrated data management and document production solution to allow authors to transparently develop, review, revise, track, and communicate how report sections and data points are developed in real time, without the need for cumbersome version control and strict sequential work flows. StreamlineUWMP® provides end-to-end data integrity, process transparency, and collaborative document preparation to drive quality and efficiency. Every text section and data point for tables and figures is tracked and logged within StreamlineUWMP's web-based platform and database.




We will empower efficient collaboration, high quality products, and data transparency using our proprietary, cloud-based software, StreamlineUWMP®.

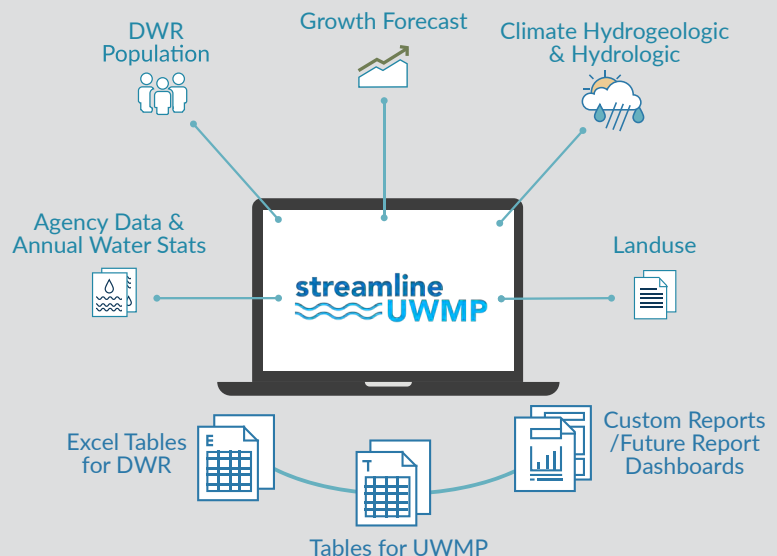
- ✓ Simplify Process
- ✓ Improve Quality
- ✓ Empower Collaboration
- ✓ Ease Reporting
- ✓ Achieve Compliance

The StreamlineUWMP® platform was built based on client feedback and industry leading experience developing 50+ UWMPs with clients over the last 10 years. StreamlineUWMP® simplifies the process of preparing a UWMP. The secure, web based platform improves quality and data integration, empowers effective collaboration, makes reporting easy, and provides confident compliance.

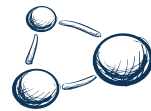
### About Streamline

WSC's StreamlineUWMP® tool is a web-based application that efficiently consolidates input from various sources, enables effective quality control of data, and provides a cohesive set of output reports. WSC's tool positions Valley District and participating agencies for post-2020 UWMP reporting and can be modified to meet DWR requirements as guidance is released.

 Your data is stored securely in the cloud, and is always accessible when you need it, in the format that is most useful to you (e.g. Excel, Access, CSV, etc.)



- **Using WSC’s web-based collaboration and document production platform, StreamlineUWMP®, will facilitate compliance.** StreamlineUWMP® will manage data and simplify collaboration and document production and facilitates compliance with all DWR requirements.
- **Prepare detailed compliance crosswalks for UWMP and IRWMP compliance.** We propose including these detailed road maps to facilitate DWR’s review of the document for compliance without cluttering the document with Water Code language or citations.



## Align the Region

Reinforcing regional alignment and building momentum around shared data, knowledge, objectives, and priorities is an important goal of this integrated effort. Updated information from documents such as the HCP, water supply planning efforts, and groundwater management planning documents can be incorporated into the IRUWMP update to provide a comprehensive picture of the needs facing the region today and assure that regional activities are reflected in the region’s integrated planning efforts. To achieve this goal, the WSC Team will apply its knowledge of the region and directly relevant recent experience, building on these past efforts and successes, to make rapid progress in the directions that matter most to the region’s stakeholders. Our efforts will:

- **Build on work from 2015 RUWMP and 2015 IRWMP update.** WSC prepared the 2015 RUWMP and our partner, Woodard and Curran prepared the 2015 IRWMP update. The same staff that worked on those plans will be dedicated to this plan. We bring continuity of relationships, knowledge, and experience to pick up where we left off and extend the progress that was made with those two plans.
- **Align with Valley District strategic plan.** WSC is currently preparing Valley District’s first ever Strategic Plan, and through that process, we are helping Valley District articulate its Vision, Mission, Values, and Goals and showing how they align with Valley District’s Vital Factors. This work is pivotal, and we have gained an in-depth understanding not just of *what* you do, but *why* you do it, and *how* you see

The RWMG and individual project proponents who adopted the Plan*	37	y/n	y	Appendix A 1.5	All members of the RWMG have adopted the IRWMP Plan (Resolutions of adoption are provided in Appendix A). As noted in Section 1.5 of the IRWMP Plan, stakeholders may participate in IRWMP Planning without	y
A description of the IRWMP governance structure including a discussion of whether or how Native American tribes will participate in the RWMG.	37	y/n	y	1.4.2	Native American tribes participate in regional planning efforts via the Stakeholder Advisory Committee, as shown in Table 1-2.	y
A description of how the chosen form of governance addresses and insures:						
Public outreach and involvement processes	37	y/n/q	y	1.5	The main opportunity for public involvement is through the periodic Stakeholder Advisory Committee meetings and workshops. Outreach includes e-newsletters, notification of and agendas for upcoming SAC meetings, requests for information or input, notification of	y
Effective decision making	37	y/n/q	y	1.4.3	Items requiring decisions are discussed and agreed upon by consensus of all members of the RWMG.	y
Balanced access and opportunity for participation in the IRWMP process	37	y/n/q	y	1.5	This section discusses balanced opportunity for all stakeholders to participate in the IRWMP process (periodic SAC meetings and workshops). All stakeholders and project sponsors were invited to adopt the IRWMP Plan.	y
Effective communication – both internal and external to the IRWMP region	37	y/n/q	y	1.5, 1.6	Section 1.5 discusses effective communication with stakeholders including DACs and tribes while Section 1.6 describes the Region’s efforts to communicate with other local, regional, and statewide planning entities.	y

**Example of a IRWMP Plan compliance “crosswalk” document that conveniently links together guideline requirements (with page numbers) to the location of that information in the plan, and provides a brief qualitative explanation.**

**The IRUWMP can serve to reinforce Valley District’s Strategic Plan, bringing Valley District’s goals to life in a supported process and robust demonstration of Valley District’s mission, vision, values, and goals.**

### GOAL 1:

Proactively develop and cooperatively manage diverse water solutions that meet the evolving needs of the region and adapt as conditions change.

### GOAL 5:

Maintain and attract top talent and promote a rewarding culture of growth and opportunity leading to achievement of District’s mission.

### GOAL 4:

Define and consistently deliver equitable water solutions that maximize the value and benefit of the region’s water assets.



### GOAL 2:

Build trust by being a collaborative and resourceful partner, living our values, and delivering meaningful results that help secure the region’s water future.

### GOAL 3:

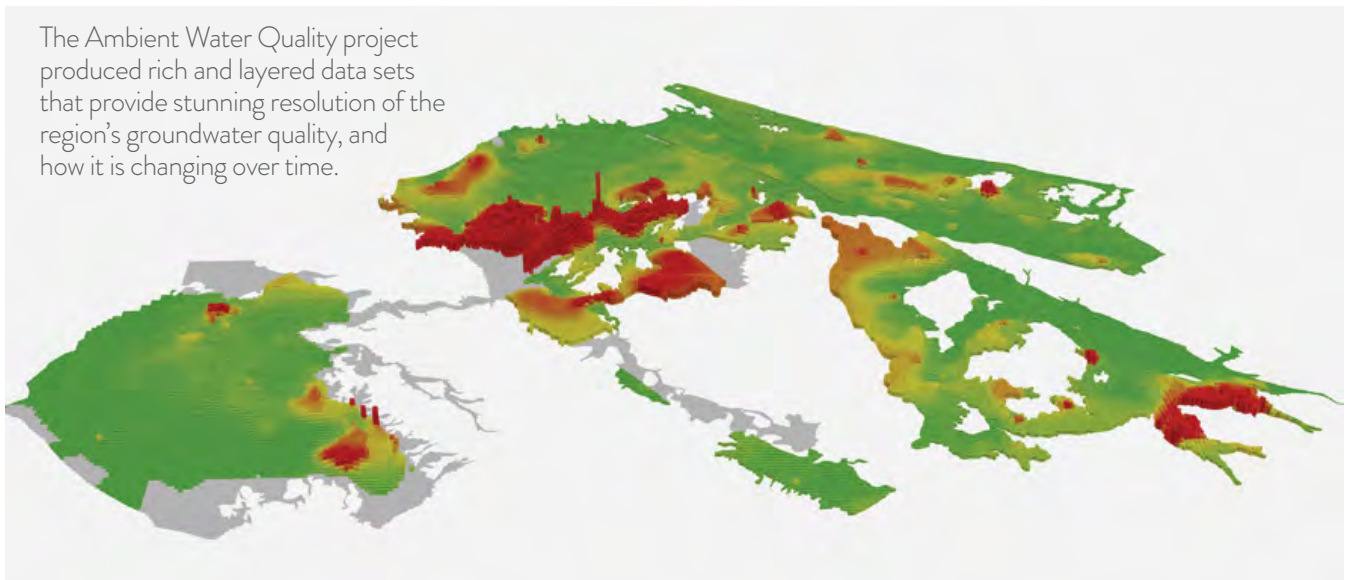
Drive science-based decision making, proactive risk management, innovation and effective planning to provide resilient, reliable water supply for the region’s future.

your agency's role now and into the future. Additionally, we have collaborated with Valley District's key stakeholders throughout the process, so we understand how the region envisions future collaboration as well. This unique insight allows us to prioritize our efforts and reinforce the region's key strategic priorities in the IRUWMP.

- **Align with funding opportunities, statewide/national priorities.** One of the key functions of the IRUWMP will be to position the region to receive state funding for critical initiatives. WSC recently worked with Valley District and regional stakeholders to identify regional projects for submission to the Santa Ana Watershed Project Authority (SAWPA) for consideration of One Water One Watershed (OWOW) Round 1 Prop 1 IRWM funding. That effort was a huge success, and the projects that our team identified and promoted were ultimately awarded more than \$6.56 million in grant funds through the Prop 1 IRWM process. One of the projects was awarded \$4.56 million in grant funds and will serve a disadvantaged community.
- **Integrate data sets, visualization tools and findings from the Santa Ana River Watershed Ambient Water Quality project.** WSC recently completed the Ambient Water Quality (AWQ) report for the Basin Monitoring Program Task Force which computes the AWQ of total dissolved solids TDS and Nitrate from the groundwater management zones (GMZ's) that the agencies produce groundwater from and provides information on trends in water quality that will support development of the IRUWMP.

- **Incorporate data, resources, and requirements from the ongoing HCP effort.** WSC understands the region's ongoing efforts to obtain a Habitat Conservation Plan (HCP) on the Santa Ana River to develop important water resources projects. Much has been accomplished since 2015, and the important information and priorities from that effort must be accurately reflected in the IRUWMP.
- **Leverage ongoing Exchange Plan collaboration.** WSC is currently leading facilitation of a renegotiation of the Exchange Plan which facilitates water transfers in the eastern portion of Valley District's service area. The Exchange Plan is envisioned to become a powerful tool to help agencies meet changing needs and can be incorporated into envisioned projects as part of the IRUWMP.

The Ambient Water Quality project produced rich and layered data sets that provide stunning resolution of the region's groundwater quality, and how it is changing over time.





## Envision the Future

Ultimately, the IRUWMP must clearly describe regional objectives and prioritized projects and programs that align with the objectives of the State to best position those projects for statewide funding. Our approach to using the IRUWMP to envision the future for the region includes:

**Define regional projects that provide multiple benefits and align with DWR and SAWPA criteria.** The spirit and intent of this regional planning document is to envision bold programs that provide regional benefit, not just collect a compilation of small-scale projects from participating agencies. By envisioning projects that provide regional benefits across social, environmental, and economic criteria, the region is best positioned to obtain funding from the state.

**Optimize local resources and provide clear prioritization.** Local resource development and optimization is a key objective for this regional plan, and prioritized projects will include projects like Valley District's Enhanced Recharge Project that maximize use of local resources while creating huge regional benefit.

**Support the Upper Santa Ana HCP.** The HCP is perhaps one of the most ambitious inter-agency projects ever attempted in the region. When completed, the HCP will empower the regional agencies to implement valuable water resource projects on the Santa Ana River, while supporting the long-term health and viability of its habitat and species. The IRUWMP must reflect those priorities and develop projects that align with the HCP's intent and objectives.

**Show the value of State Water Project.** Valley District's most valuable resource is its investment in the SWP, and ongoing investments will serve to solidify the availability, reliability, and resilience of that resource long into the future. The IRUWMP must demonstrate the importance of the SWP to the region's future, show the role of projects like Sites Reservoir and Delta Conveyance, and reinforce programs that allow the region to maximize the long-term value of this critical asset.

## Why Select WSC?

Why should Valley District and your partners select the WSC Team to prepare your IRUWMP? In a word, Trust. You know that WSC brings the integrity, intent, and capabilities to make this project a success, and we have delivered valuable results for Valley District and your partners time and again over the last 10 years. We are proud of all that we have accomplished together, and we see ourselves as a strategic partner in the region. WSC brings the mindset that we only succeed if you do, and we will bring the experience, focus, resources, continuity, and energy to make this ambitious project a successful reality. We appreciate this opportunity to propose, and hope you select WSC to deliver this critical regional project.



# Organizational Chart



## Principal In Charge

Jeff Szytel <sup>(1)</sup> PE, MS, MBA

## PROJECT MANAGER

Laine Carlson <sup>(2)</sup> PE, T2 & D2 Water Op



Laine is a proven partner to Valley District on innovative, complex, and collaborative water resource projects and programs.

## QA/QC

Spencer Waterman <sup>(1)</sup>

Sally Johnson <sup>(6)</sup> ■

## Data Architect

Jeroen Olthof <sup>(3)</sup> PE, MS, MBA

## UWMP

Lead: Kirsten Plonka <sup>(3)</sup> PE

Patricia Olivas <sup>(1)</sup> EIT

Aaron Morland <sup>(1)</sup> EIT

## IRWMP

Lead: Dawn Flores <sup>(5)</sup> ■

Vanessa De Anda <sup>(5)</sup> ■

■ Woodard & Curran

## SUBJECT MATTER EXPERTS

### Imported Water

Dan Heibel <sup>(1)</sup> PE, MS

### Recycled Water

Rob Morrow <sup>(1)</sup> PE, MS

### Groundwater

Michael Cruikshank <sup>(4)</sup> PG, CHG, MS

James Gonzales <sup>(4)</sup> PG, CHG, MS

### Water Shortage Contingency Planning & Demand Projections

Spencer Waterman <sup>(1)</sup>

### Climate Change/Energy

Heather Freed <sup>(1)</sup> PE, MS

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6 Sally Johnson	sjohnson@woodardcurran.com

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9665 Chesapeake Drive, Suite 320,  
San Diego, CA 92123

Qualifications and resumes for all team members are included in Appendix A.

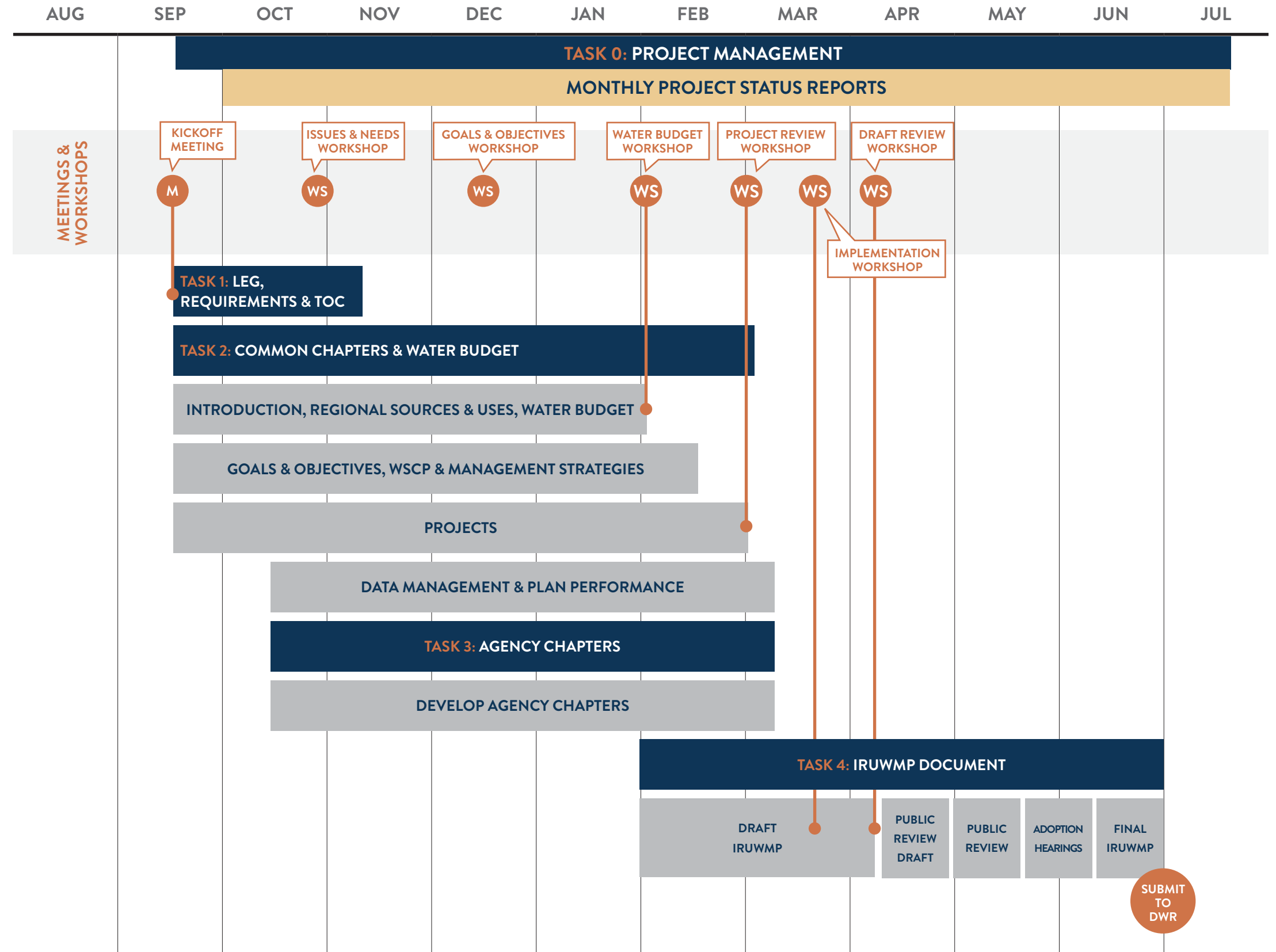


## E. Project Schedule

Given the extremely tight time line for project completion and comprehensive and unprecedented scope that Valley District envisions, we must develop innovative approaches to keep the project on-schedule while meeting the complex technical, coordination, and outreach requirements of the project. Some of the innovative approaches we propose to achieve the ambitious schedule include:

- Initiate parallel efforts immediately upon contract award.** For the RUWMP portion, early data collection is needed to begin updating the water budget, apportion the safe yield in the Riverside and Rialto-Colton basins, and identify necessary changes to the Water Shortage Contingency Plans. For the IRWMP portion, the team must immediately begin gathering input on projects and scoring and ranking criteria. In some cases meetings can serve multiple purposes if the right people have been assembled (or previously scheduled meetings, such as BTAC sessions, might be extended or re-purposed). WSC will initiate these efforts by providing detailed data requests at the kickoff meeting that include information about previously scheduled meetings and on-going efforts requiring collaboration.
- Maintain an on-line data portal.** Each agency will need to submit various documents and data sets, and tracking the status of these requests needs to be efficient. WSC will use Microsoft Teams or another online platform to give all project participants access to an electronic library. Each agency will be able to submit their documents and update the status in real time.
- Leverage virtual meetings.** Although in-person meetings typically offer a richer experience, they may not be an option during this project. The WSC team will seek to connect individually with each agency's lead to establish communication channels that will avoid pitfalls due to requests falling through the cracks.

WSC'S detailed work plan aligns the effort of multiple stakeholders to minimize schedule impacts related to coordination and scheduling



# Scope of Work & Fee Schedule

## Task 0: Project Management

### 0.1 Project Administration

- Provide coordination and prepare monthly progress reports and invoices.

### 0.2 Kickoff Meeting

- Prepare and facilitate one kickoff meeting with all participating agencies.

### 0.3 Meetings with Individual Agencies

- Hold individual meetings with each agency participating in RUWMP to facilitate data collection and review individual agency chapters.

### 0.4 Workshops

- Prepare materials for and facilitate workshops with all agencies. Assumed workshops are identified in Tasks 2 and 4.

### 0.5 Public Presentations

- Attend public hearing for each agency to answer questions from board prior to adoption

### 0.6 Quality Assurance / Quality Control

- Provide independent review of all deliverables before submittal to agencies." Then the current text "Valley District will assist with meeting scheduling or facilitate using scheduled BTAC meetings for workshop times" can be an assumption for Task 0.

## Task 0. Assumptions

- Assume two individual meetings with each agency participating in RUWMP
- Assume six workshops open to all agencies (identified in Tasks 2 and 4)
- Assume attendance at one public meeting for each agency participating in RUWMP.
- Meetings will be conducted virtually using Microsoft Teams or another on-line collaboration platform.

## Task 0. Deliverables

- Progress Reports and Monthly Invoice
- Meeting agendas, supporting materials, and minutes
- PowerPoint presentation for use at public presentations

## Task 1: Legislative Requirements and Table of Contents

### 1.1 Summary of Legislative Requirements

- Identify any new legislative requirements and provide the overall structure for the document.
- The document must comply with the "Guidebook to Assist Water Suppliers in the Preparation of a 2020 Urban Water Management Plan".
- The document must comply with guidelines for the update of Integrated Regional Water Management Plans.
- Identify sections of the Upper Santa Ana River Watershed IRWM Plan that require update based on 1) Updates required to meet Proposition 1 requirements, and 2) Updates to reflect changes in the region since January 2015.
- Develop a cross reference table that shows how the document addresses the requirements described in DWR's 2019 Integrated Regional Water Management Grant Program Guidelines, or the latest version available at the time the documents are being prepared.

### 1.2 IRWUMP Table of Contents

- Seamlessly combine the 2015 RUWMP and the 2015 IRWMP into one comprehensive document.
- Include relevant information from agencies not participating in the IRWMP, but within the IRWMP region, and include the chapters from agencies that write their own chapter.

## Task 1. Deliverables

- Required checklists for both the Urban Water Management Planning Act and the Integrated Regional Water Management Planning Act that clearly lead the Department of Water Resources to the place in the document where specific requirements have been met.
- Technical Memorandum describing legislative requirements and a draft table of contents – Draft and Final

## Task 2: Common Chapters and Water Budget

### 2.1 Introduction, Regional Planning, Governance, Outreach and Coordination

- Since both documents were updated 5 years ago, this project is essentially an update of both documents while combining them into one cohesive document. Since the RUWMP was updated most recently, the “overlapping” text from the RUWMP will govern.
- Update sections that describe regional planning, governance, and outreach and coordination, as they pertain to IRWM planning.
- Prepare an appendix that includes meeting materials from the IRUWMP development

### 2.2 Region Description, Regional Water Sources

- Update the regional water sources sections of Chapter 2.
- Update the region description, including appendices related to DAC identification and coordination, climate change and GHG emissions, and climate change vulnerability checklist.

### 2.3 Water Budget, Regional Water Use, Comparison of Regional Supplies and Demands

- The water budget chapter will provide both the regional overview of water sources used to meet demands, as in the IRWMP, and also provide the UWMP demand/supply scenarios. In addition to the prescribed UWMP demand/supply scenarios, the wet year scenario from the RUWMP will be updated and a new 30-year drought scenario will be added. Excel spreadsheets were prepared for both plans that can provide the basis for the update.
- Consultant will work with all of the participating water agencies to determine if there have been changes to their supply and demand projections.
- Valley District contracted with the RAND Corporation to perform a thorough analysis of the supplies and demands in the RUWMP. The demand portion of the work is complete and has been updated to the ShareFile site. The supply portion of the analysis will be complete this summer. The results of this analysis will impact the “reliability factor” used to overcome uncertainty and is to be integrated into the update process for the IRUWMP going forward.

### 2.4 Goals and Objectives

- Update the goals and objectives currently found in the IRWMP.

### 2.5 Water Management Strategies, Regional Water Shortage Contingency Planning

- Update sections on regional water shortage contingency planning.
- Update the Water Management Strategies section to determine whether strategies included in the 2015 IRWMP are still relevant, and add new strategies described in the California Water Plan or other documents.

### 2.6 Coordination with Agency Chapters

- Coordinate updated demands and supplies with individual agency chapters

### 2.7 Projects

- Update the projects included in the 2015 IRWMP, including:
  - Review the current list of projects to determine if any projects have been completed or are no longer feasible by contacting project sponsors.
  - Support a Call for Projects to obtain any new projects to include in the plan.
  - Review projects using the screening and ranking process described in the 2015 IRWM Plan, as modified.
- Prepare an appendix that provides the detailed list of projects.

### 2.8 Implementation

- Update text from the implementation chapter included in the 2015 IRWMP, including:
  - Continued governance
  - Project implementation
  - Periodic review and update of the plan
  - Continued outreach and coordination
  - Support Statewide priorities
  - IRWMP funding and financing
  - Obstacles to implementation
  - Impacts and benefits of the plan

## 2.9 Data Management, Plan Performance and Adaptive Management

Update sections related to data management, plan performance and adaptive management. The section related to data management will be updated to reflect any new Statewide or regional data collection and monitoring databases, and current data management efforts. The section related to plan performance will be updated to reflect any updates to the goals and objectives, including updated performance measures, and reflect progress made since the 2015 IRWMP was completed. The adaptive management section will be updated to reflect the new, combined planning document.

### Task 2. Assumptions

Assumed workshops include

- Workshop: Issues and Needs. The purpose of this workshop is to gather information from the various agencies on what they view are the primary issues and needs facing water resources management in their watershed. This information will then be used to craft revisions to the goals, objectives and targets.
- Workshop: Regional Water Budget. The purpose of this workshop is to review supplies and demands provided by individual agencies and review the region-wide totals to verify that sources are not being missed or double-counted.
- Workshop: Goals, Objectives, Targets. The purpose of this workshop is to provide strawman revisions to goals, objectives and targets, and get feedback on how they should be revised.
- Workshop: Project Review Process. The purpose of this workshop is to discuss how the region would like to update their project review process, including project scoring and ranking. Part of this discussion will be related to the focus of projects to be included in the plan moving forward and release of a call for projects.
- Workshop: Implementation. It is assumed that one (1) workshop with agencies located in the IRWM planning region will be needed to obtain feedback on certain pieces of the implementation plan

It is assumed that geospatial data needed to develop maps and exhibits will be provided by Valley District and the other agencies.

### Task 2. Deliverables

- Chapter 1 – Draft and Final
- Chapter 2 – Draft and Final
- Chapter 3 – Draft and Final
- Regional Water Budget – Draft and Final
- UWMP Scenarios – Draft and Final
- Wet Year Scenario – Draft and Final
- Extended Drought (30-year) Scenario – Draft and Final
- Chapter 4 – Draft and Final
- Chapter 5 – Draft and Final
- Chapter 7 – Draft and Final
- Chapter 8 – Draft and Final
- Chapter 9 – Draft and Final

## Task 3: Individual Water Agency Chapters

In the previous version of the RUWMP, the groundwater supply in the water agency chapters was not constrained by the safe yield of the groundwater basin. In this update, the water agencies will constrain their groundwater supply to their portion of the safe yield to avoid double-counting and ensure the safe yield of each basin is not exceeded. This proportioning has been done in the San Bernardino Basin but will need to be estimated in the Rialto-Colton and Yucaipa Basins

Demand projections for the agencies will be developed using the same, consistent methodology unless another methodology is approved by the participating agencies.

For each agency identified below, a draft chapter will be prepared that meets the requirements of the 2020 Guidebook for Urban Water Suppliers (with the exception of Yucaipa Valley Water District, which will prepare its own draft chapter). Draft chapters will be presented to the agency for review and will be updated to reflect comments.

### 3.1 San Bernardino Valley Municipal Water District—Update 2015 chapter

### 3.2 City of Colton —Update 2015 chapter

### 3.3 East Valley Water District —Update 2015 chapter

### 3.4 City of Loma Linda —Update 2015 chapter

### 3.5 City of Redlands —Update 2015 chapter

### 3.6 City of Rialto —Update 2015 chapter

### 3.7 Riverside Highland Water Company— Update 2015 chapter

### 3.8 San Bernardino Municipal Water Department — Update 2015 chapter

### 3.9 West Valley Water District—Update 2015 chapter

### 3.10 Yucaipa Valley Water District—Peer Review of Chapter

### 3.11 Big Bear City Community Services District — Incorporate and update the Big Bear City Community Services District 2015 UWMP as a chapter in the final IRUWMP document

## Task 3. Assumptions

- Each water agency participating in the IRUWMP will continue to have their own chapter of the document where they can demonstrate how they plan to meet their water conservation requirements and how their supply portfolio performs under the following scenarios: Normal/average, Single Dry Year, Multiple Dry Year (5-Year Drought), wet year, Extended Drought (30-Year).
- Each agency will be able to reference a completed Hazard Mitigation Plan to fulfill the seismic assessment required by DWR.
- For each agency, WSC will review the Water Shortage Contingency Plan to determine whether it meets the more comprehensive content requirements as outlined by Section 10632 of the Water Code, update as necessary, and incorporate the WSCP into the 2020 IRUWMP chapter. It is assumed that the Agency will provide updates to the Water Supply and Demand Assessment Procedures. If these procedures have not been developed, WSC could provide assistance as an optional task to prepare the procedures.

## Task 3. Deliverables

- Apportioned natural supply (safe yield) for the Rialto-Colton and Yucaipa groundwater basins amongst the retail water agencies
- Methodology for estimating future demand to be used by each participating agency
- Individual Agency Chapters – Draft and Final

## Task 4: Prepare the Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan

### 4.1 Draft and Final Document

- Consultant will assemble all of the information into one comprehensive document based upon the approved table of contents.
- The document is to be “user friendly” incorporating figures and tables to help tell the story.
- The draft plan will be distributed for review and comment.
- Any comments received will be reviewed and incorporated into the final version of the plan.

### 4.2 Electronic Deliverables

- Once finalized, all electronic files must be submitted to Valley District in the latest editions of the following: AutoCAD, ESRI, Microsoft Office Suite, and, Adobe Acrobat.

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### Task 4. Assumptions

Assumed workshops include

- Review of Draft IRUWMP. The purpose of this workshop is to review comments on the draft IRUWMP before the public review draft is prepared.

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### Task 4. Deliverables

- Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan (Draft and Final)
- List of comments on the Draft Update and proposed responses
- Five (5) hardcopies to each participating agency
- Electronic files (native file formats and a PDF version of the entire report)

# Fee Schedule

San Bernardino Valley Municipal Water District  
2020 Integrated Regional UWMP  
Cost Proposal



Task No.	Task Description	WSC Labor												WSC Labor Hours	WSC Labor Fee	WSC Expenses	WSC Fee	Woodard & Curran Labor				W&C Labor Hours	W&C Labor Fee	W&C Expenses	W&C Fee	Subconsultant Markup	Total Fee					
		Jeffery Szytel	Jeroen Olthof	Laine Carlson	Kirsten Plonka	Robert Morrow	Michael Cruikshank	Daniel Heimel	Spencer Waterman	Tiffany Meyer	Aaron Morland	Patricia Olivias	Kay Merrill					Dawn Flores	Vanessa de Anda	Sally Johnson	Admin.											
	Billing rates, \$/hr	\$ 305	\$ 280	\$ 250	\$ 250	\$ 250	\$ 240	\$ 230	\$ 190	\$ 175	\$ 145	\$ 135	\$ 145					\$ 257	\$ 192	\$ 242	\$ 113											
0	Project Management																															
0.1	Project Administration			12									16									8	24	\$ 5,016	\$ 5,016	\$ 502	\$ 10,938					
0.2	Kickoff Meeting	2	2	2	2						4							8	12			20	\$ 4,360	\$ 275	\$ 4,635	\$ 464	\$ 7,949					
0.3	Meetings with Individual Agencies			20																												
0.4	Workshops	8	8	24	16																	32	\$ 7,184	\$ 825	\$ 8,009	\$ 801	\$ 25,530					
0.5	Public Presentations			10																												
0.6	QA/QC	8							24													24	\$ 5,808		\$ 5,808	\$ 581	\$ 13,489					
	<b>SUBTOTAL</b>	<b>18</b>	<b>10</b>	<b>68</b>	<b>18</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24</b>	<b>-</b>	<b>46</b>	<b>-</b>	<b>16</b>	<b>200</b>	<b>\$ 43,340</b>	<b>\$ 900</b>	<b>\$ 44,240</b>	<b>40</b>	<b>28</b>	<b>24</b>	<b>8</b>	<b>100</b>	<b>\$ 22,368</b>	<b>\$ 1,100</b>	<b>\$ 23,468</b>	<b>\$ 2,347</b>	<b>\$ 70,055</b>					
1	Legislative Requirements and TOC																															
1.1	Legislative Requirements			2	8																		4	\$ 1,028		\$ 1,028	\$ 103	\$ 6,051				
1.2	Table of Contents			1	2																		8	\$ 1,666		\$ 1,666	\$ 167	\$ 4,323				
	<b>SUBTOTAL</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>10</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>28</b>	<b>-</b>	<b>-</b>	<b>41</b>	<b>\$ 7,310</b>	<b>\$ 100</b>	<b>\$ 7,410</b>	<b>6</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>12</b>	<b>\$ 2,694</b>	<b>\$ -</b>	<b>\$ 2,694</b>	<b>\$ 269</b>	<b>\$ 10,373</b>					
2	Common Chapters and Water Budget																															
2.1	Introduction			2																			10	\$ 2,050		\$ 2,050	\$ 205	\$ 5,175				
2.2	Region Description and Regional Water Sources		8	2		8	8	8															56	\$ 11,272		\$ 11,272	\$ 1,127	\$ 23,419				
2.3	Regional Water Use and Water Budget		16	2																												
2.4	Goals and Objectives			2																			18	\$ 3,846		\$ 3,846	\$ 385	\$ 5,891				
2.5	WSCP and Management Strategies			4					16		24												8	\$ 1,666		\$ 1,666	\$ 167	\$ 9,553				
2.6	Coordination with Agency Chapters																															
2.7	Projects			2							8												52	\$ 10,504		\$ 10,504	\$ 1,050	\$ 13,214				
2.8	Implementation			2							8												32	\$ 7,704		\$ 7,704	\$ 770	\$ 10,134				
2.9	Data Management and Plan Performance		4	2							8												24	\$ 5,128		\$ 5,128	\$ 513	\$ 8,521				
	<b>SUBTOTAL</b>	<b>-</b>	<b>28</b>	<b>18</b>	<b>-</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>-</b>	<b>120</b>	<b>-</b>	<b>-</b>	<b>206</b>	<b>\$ 38,540</b>	<b>\$ 800</b>	<b>\$ 39,340</b>	<b>58</b>	<b>142</b>	<b>-</b>	<b>-</b>	<b>200</b>	<b>\$ 42,170</b>	<b>\$ -</b>	<b>\$ 42,170</b>	<b>\$ 4,217</b>	<b>\$ 85,727</b>					
3	Individual Water Agency Chapters																															
3.1	San Bernardino Valley MWD		4	16							56	56																				
3.2	City of Colton		4	16							56	56																				
3.3	East Valley Water District		4	16							56	56																				
3.4	City of Loma Linda		4	16							56	56																				
3.5	City of Redlands		4	16							56	56																				
3.6	City of Rialto		4	16							56	56																				
3.7	Riverside Highlands Water Company		4	16							56	56																				
3.8	San Bernardino Municipal WD		4	16							56	56																				
3.9	West Valley Water District		4	16							56	56																				
3.1	Yucaipa Valley Water District		2	8							4	4																				
3.11	Big Bear City CSD																															
	<b>SUBTOTAL</b>	<b>-</b>	<b>38</b>	<b>152</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>508</b>	<b>508</b>	<b>-</b>	<b>1,206</b>	<b>\$ 190,880</b>	<b>\$ 3,700</b>	<b>\$ 194,580</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 194,580</b>				
4	Integrated Regional UWMP																															
4.1	Prepare Draft and Final Document		8	8	24						40	32											22	\$ 4,614		\$ 4,614	\$ 461	\$ 25,835				
4.2	Final Electronic Deliverables			2	8						8	8											8	\$ 1,536		\$ 1,536	\$ 154	\$ 6,530				
	<b>SUBTOTAL</b>	<b>-</b>	<b>8</b>	<b>10</b>	<b>32</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>48</b>	<b>40</b>	<b>-</b>	<b>138</b>	<b>\$ 25,100</b>	<b>\$ 500</b>	<b>\$ 25,600</b>	<b>6</b>	<b>24</b>	<b>-</b>	<b>-</b>	<b>30</b>	<b>\$ 6,150</b>	<b>\$ -</b>	<b>\$ 6,150</b>	<b>\$ 615</b>	<b>\$ 32,365</b>					
	<b>COLUMN TOTALS</b>	<b>18</b>	<b>84</b>	<b>251</b>	<b>60</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>40</b>	<b>-</b>	<b>750</b>	<b>548</b>	<b>16</b>	<b>1,791</b>	<b>\$ 305,170</b>	<b>\$ 6,000</b>	<b>\$ 311,170</b>	<b>110</b>	<b>200</b>	<b>24</b>	<b>8</b>	<b>342</b>	<b>\$ 73,382</b>	<b>\$ 1,100</b>	<b>\$ 74,482</b>	<b>\$ 7,448</b>	<b>\$ 393,100</b>					

10% mark-up on direct expenses; 10% mark-up for sub-contracted services  
Standard mileage rate \$0.57 per mile (or current Federal Mileage Reimbursement Rate)  
Airplane mileage rate \$1.27 per mile (or current Federal Airplane Mileage Reimbursement Rate)  
Rates are subject to revision as of January 1 each year.

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