



Post Office Box 3544  
Ventura, CA 93006-3544  
(805) 525-4431  
<https://moundbasingsa.org>

**NOTICE IS HEREBY GIVEN that the  
Mound Basin Groundwater Sustainability Agency (“Agency”)  
Board of Directors (“Directors”) will hold a  
REGULAR BOARD MEETING at 1:00 P.M. on  
Thursday, March 21, 2019  
at Ventura City Hall, Santa Cruz Conference Room #223  
501 Poli Street, Ventura, California 93001**

**MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY  
BOARD OF DIRECTORS MEETING AGENDA**

**CALL TO ORDER 1:00 p.m.**

**1. PLEDGE OF ALLEGIANCE**

**2. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA**

The Board will receive public comments on items not appearing on the agenda and within the subject matter jurisdiction of the Agency. The Board will not enter into a detailed discussion or take any action on any items presented during public comments. Such items may only be referred to the Executive Director or other staff for administrative action or scheduled on a subsequent agenda for discussion. Persons wishing to speak on specific agenda items should do so at the time specified for those items. In accordance with Government Code § 54954.3(b)(1), public comment will be limited to three (3) minutes per speaker per issue.

**3. ROLL CALL**

**4. APPROVAL OF AGENDA  
Motion**

**5. CONSENT CALENDAR**

All matters listed under the Consent Calendar are considered routine by the Board and will be enacted by one motion. There will be no separate discussion of these items unless a Board member pulls an item from the Calendar. Pulled items will be discussed and acted on separately by the Board. Members of the public who want to comment on a Consent Calendar item should do so under Public Comments. (ROLL CALL VOTE REQUIRED)

**5a Approval of Minutes  
Motion**

The Board will consider approving the Minutes from the February 21, 2019 Mound Basin GSA Board of Directors meeting.

**5b Approval of Warrants  
Motion**

The Board will consider approving payment of outstanding vendor invoices.

**5c Monthly Financial Reports  
Information Item**

The Board will receive a monthly profit and loss statement and balance sheet for the Mound Basin GSA from UWCD's accounting staff.

**6. BOARD MEMBER ANNOUNCEMENTS**

**7. EXECUTIVE DIRECTOR UPDATE**

The Executive Director will provide an informational update on Agency activities since the previous Board meeting.

**8. ACTION ITEMS**

**8a. GSP As-Needed Support Services (Grant Category (c): Planning Activities;  
Task 2: Organizational Activities)**

**Motion**

Board will consider authorizing the Chair to execute a professional services agreement with Intera, Inc., subject to negotiation of agreement terms to the satisfaction of the Chair, Agency Counsel, and Executive Director.

**8b. Request for Proposal for Joint Audit Services**

**Motion**

Board will consider partnering with Fillmore and Piru Basins GSA on issuing a Requests for Proposals from Auditors in an attempt to present a more attractive work offer.

**9. INFORMATION ITEMS**

None

**10. FUTURE AGENDA ITEMS**

**ADJOURNMENT**

The Board will adjourn to the next **Regular Board Meeting** on Thursday, **April 18, 2019** or call of the Chair.

*Materials, which are non-exempt public records and are provided to the Board of Directors to be used in consideration of the above agenda items, including any documents provided subsequent to the publishing of this agenda, are available for inspection at UWCD's offices at 106 North 8<sup>th</sup> Street in Santa Paula during normal business hours.*

*The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied the benefits of, the District's services, programs or activities because of any disability. If you need special assistance to participate in this meeting, or if you require agenda materials in an alternative format, please contact the Mound Basin Clerk of the Board at (805) 525-4431 or the City of Ventura at (805) 654-7800. Notification of at least 48 hours prior to the meeting will enable the Agency to make appropriate arrangements.*

Approved: \_\_\_\_\_

  
Executive Director Bryan Bondy

Posted: (date) March 14, 2019  
At: <https://moundbasingsa.org>

(time) 3p.m.

(attest) Kris Sofley

Mound Basin GSA Board of Directors Meeting Agenda

March 21, 2019

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**Posted: (date) March 14, 2019 (time) 3:10p.m. (attest) Kris Sofley**  
**At: <https://www.facebook.com/moundbasingsa/>**

**Posted: (date) March 14, 2019 (time) 3:05p.m. (attest) Kris Sofley**  
**At: United Water Conservation District, 106 N 8<sup>th</sup> Street, Santa Paula CA 93060**

**Posted: (date) March 14, 2019 (time) 3p.m. (attest) Debra Martinez**  
**At: Ventura City Hall, 501 Poli Street, Ventura, California 93001**



**MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY**  
**REGULAR BOARD OF DIRECTORS MEETING**  
Thursday, February 21, 2019, at 1p.m.  
Ventura City Hall, Santa Cruz Conference Room (Room No. 223)  
501 Poli Street, Ventura, California 93001

**MINUTES**

**DIRECTORS IN ATTENDANCE:**

Jim Chambers  
Conner Everts  
Mike Mobley, Chair  
Susan Rungren, Secretary  
Glenn Shephard, Treasurer

**STAFF IN ATTENDANCE:**

Bryan Bondy, Executive Director  
Kris Sofley, Clerk of the Board

**PUBLIC IN ATTENDANCE:**

Burt Handy  
John Lindquist, UWCD  
Jennifer Tribo, Ventura Water

**CALL TO ORDER 1:04 p.m.**

Chair Mobley called the meeting to order at 1:04p.m. and asked everyone to join him in reciting the Pledge of the Allegiance.

**1. PLEDGE OF ALLEGIANCE**

**2. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA**

No public comments were offered.

**3. ROLL CALL**

Director Chambers, Director Everts, Director Mobley, Director Rungren and Director Shephard will all in attendance.

**4. APPROVAL OF AGENDA**

**Motion**

Chair Mobley asked if there was any comments or questions regarding the agenda. None were offered.

Motion to approve the agenda, Director Everts; Second, Director Shephard. Voice vote: five ayes (Chambers, Everts, Mobley, Rungren, Shephard), none opposed, none abstaining. Motion carries 5/0/0.

**5. CONSENT CALENDAR**

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**5a Approval of Minutes**

**Motion**

The Board will consider approving the Minutes from the January 17, 2019 Mound Basin GSA Board of Directors meeting.

**5b Approval of Warrants**

**Motion**

The Board will consider approving payment of outstanding vendor invoices.

**5c Monthly Financial Reports**

**Information Item**

The Board will receive a monthly profit and loss statement and balance sheet for the Mound Basin GSA from UWCD's accounting staff.

**5d Application for Debit Card**

**Motion**

The Board will consider approving the application for a Debit card attached to the Agency's Bank of Sierra checking account.

Chair Mobley asked if there were any discussions required of the Consent Calendar items. None were requested.

Motion to approve the Consent Calendar, Director Everts; Second, Director Shephard. Voice vote: five ayes (Chambers, Everts, Mobley, Rungren, Shephard); none opposed; none abstaining. Motion carries 5/0/0.

**6. BOARD MEMBER ANNOUNCEMENTS**

None offered.

**7. EXECUTIVE DIRECTOR UPDATE**

Mr. Bondy said that the Basin Boundary Modification was finalized and approved by the Department of Water Resources (DWR). Basin prioritization is currently listed as medium and Mr. Bondy does not anticipate any change to that listing.

Mr. Bondy continues to work with DWR on the language for the final grant agreement. Mr. Bondy stated that the grant includes the "Mound Basin Study" being prepared by the City, which will account for a significant portion of the grant cost share and he needs to confirm that the City intends to finish and publish this study. Director Rungren said the City is

planning to finish the study and will follow-up via email, but she believes the study will be completed this year. Mr. Bondy said that he'd keep the study in the grant agreement.

Mr. Bondy also provided an update on DWR's Technical Support Services, which could potentially provide funding to drill the monitoring well near the Santa Clara River and estuary. He said that DWR has a contractor in southern California but there are concerns about whether the contractor can drill deep enough. Mr. Bondy had provided sample specifications and DWR is currently evaluating. Once he hears back from DWR, if the contractor is capable of drilling, then he will apply for that support. If the contractor is not capable, then the process ends. But the need for the well will be included as part of the GSP implementation pursuant to the grant agreement.

A Request for Qualifications (RFQ) for as needed GSP support services was issued and submissions are due on February 25. Mr. Bondy expects to have several qualified candidates to select from at the next Board meeting in March. Director Shephard asked if there any been any submissions to date and Mr. Bondy responded that he had not received any submission but had been contracted by two different entities that intend to submit. The RFQ was sent to seven different firms.

Mr. Bondy reported that a \$5,000 Treasurer Bond was secured at a cost of \$103.

Mr. Bondy described 5-hour GSA Forum being held in March at DWR Sacramento. The event will include different panels from various GSAs. He said he was inclined to skip this event as it conflicts with the March Board meeting and the Groundwater Resources Associations' (GRA) GSA Summit, scheduled for June 5 and 6 may be a better conference to attend. The GRA's event is well attended by GSAs, consultants, stakeholders, et cetera and he is considering attending that event. If there are any directors interested in attending, they can get details at the GRA website. Mr. Bondy said he will come back to the Board with the share of costs for his attendance based on the other agencies he represents.

Mr. Bondy then addressed administrative issues, including setting up a Dropbox account for the Mound Basin to store digital files and provide access to those files. Most of the agency's files are online on the website, but this would provide for efficient file sharing of non-public or not posted documents. He was instructing Ms. Sofley to pursue this direction. Dropbox will also provide for physical back-up locally at UWCD. He also said he would work with legal counsel regarding document retention going forward.

Director Shephard asked Mr. Bondy if he had resolved the Isotope contract issue regarding whether or not the firm had a professional license in California. Mr. Bondy said the issue had been resolved and updated the Board on the fact that Chair Mobley had signed the contract.

Director Chambers asked about the data gap Mr. Bondy had mentioned. He asked about Curtis Hopkins report for the City and if there was an interface for GSA review. Director Rungren said the study is not completed and Mr. Bondy added that Mr. Hopkins had

analyzed well logs and UWCD had done the same. There were multiple studies to compare and contrast and the City's report, once available, will earn cost share credit for the GSA from DWR. The City has done the work and the GSA will get credit for it. Similarly, UWCD's groundwater model and model reports will count toward cost share as well, as long as the GSA submits the required documentation to DWR.

## 8. ACTION ITEMS

### 8a. Agreement with United Water Conservation District for GSP Technical Services

#### Motion

Mr. Bondy reported that, following the Board's direction, he pursued an agreement with UWCD for technical support for the groundwater sustainability plan. He reviewed the agreement with the GSA's legal counsel, Mr. Hughes. Suggested minor changes to UWCDs agreement template are under review by UWCD's legal counsel. Mr. Bondy said he hoped the Board's comfort level would allow it to delegate authority to execute the agreement once the UWCD Board approves the agreement at its March Board meeting. If not, it just pushes the agreement start date a little further out.

Among the minor changes requested, the rates included in Exhibit C of the agreement were noted as incorrect and will be fixed before the final agreement is signed. Mr. Lindquist stated that issue will not change the bottom line contract amount.

Director Rungren said the City questioned the GSA's chair approving the agreement as a director for UWCD. She added that while the City's counsel did not identify it as a legal issue, it was purely a perception issue and suggested that the Chair delegate the authority to execute the contract to the Executive Director. She added that it was the City's perception and was purely up to the GSA Board.

Jennifer Tribo added that Chair Mobley signed the administrative services contract between the GSA and UWCD on behalf of the Mound Basin GSA.

Chair Mobley asked if the billing rate in Exhibit B had been changed. Mr. Bondy said there was a different rate scheduled used to develop the agreement as referenced in Exhibit C and it may change by a few dollars when corrected.

Mr. Lindquist clarified by stating that the billing rate for technical services was exactly the same and the schedule for the Administrative Services contract include a more complete range of staff.

Chair Mobley asked if there was a motion.

Director Chambers said he supported Chair Mobley to sign the agreement and Director Shephard seconded that statement. Chair Mobley asked if there was any further discussion required. None was requested.

Motion to authorize Chair Mobley to execute an agreement with UWCD for groundwater modeling and other technical services related to GSP development, subject to Executive Director and Agency Counsel concurrence; Director Chambers; Second, Director Shephard. Voice vote: five ayes (Chambers, Everts, Mobley, Rungren, Shephard); none opposed; none abstained. Motion carries 5/0/0.

**9. INFORMATION ITEMS**

**None**

**10. FUTURE AGENDA ITEMS**

Mr. Bondy said next month, the Board will address the selection of a consultant for as needed services relating to the development of the GSP.

Director Chambers stated that he had a conflict in April (the Board meeting is scheduled for April 18 and Easter Sunday falls on the 21<sup>st</sup>). Director Everts said he had a conflict on April 25 (the following Thursday). Mr. Bondy said there may not be a lot of business in April. He said there may be an agreement to sign in April but authority for executing the contract could be delegated. Mr. Bondy said that he was developing a professional consulting services agreement with GSA's legal counsel. The agreement is more of a template with no dollar amounts authorized, but provides the ability to issue work orders after the initial agreement is executed.

Director Shephard said the AWA Symposium is also scheduled for Thursday, April 18 and the Board may want to consider move the Board meeting to April 25 or possibly canceling the April meeting two weeks out.

**ADJOURNED 1:29p.m.**

The Board adjourned at 1:29p.m.to the next **Regular Board Meeting** on Thursday, **April 18, 2019** or call of the Chair.

I certify that the above is a true and correct copy of the minutes of the Mound Basin Groundwater Sustainability Agency's Board of Directors meeting of February 21, 2019.

ATTEST: \_\_\_\_\_  
Susan Rungren, Board Secretary

ATTEST: \_\_\_\_\_  
Kris Sofley, Clerk of the Board





## MOUND BASIN GSA BOARD OF DIRECTORS MEETING

February 21, 2019

Name: John Lindquist

Name: \_\_\_\_\_

Organization: United WCO

Organization: \_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

E-mail: \_\_\_\_\_

Name: BURT ANDY

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Organization: \_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

E-mail: \_\_\_\_\_

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E-mail: \_\_\_\_\_

E-mail: \_\_\_\_\_

Mound Basin Groundwater Sustainability Agency

Check Detail

March 14, 2019

| <u>Num</u>          | <u>Date</u> | <u>Name</u>                             | <u>Account</u>             | <u>Amount</u>   |
|---------------------|-------------|---|----------------------------|-----------------|
| 11267               | 03/14/2019  | A.J. Klein, Inc T. Denatale, B. Goldner | 10000 · Bank of the Sierra | 486.00          |
| 11268               | 03/14/2019  | Bondy Groundwater Consulting, Inc       | 10000 · Bank of the Sierra | 2,387.18        |
| <b>TOTAL CHECKS</b> |             |   |                            | <b>2,873.18</b> |

**MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY**

**Item No. 5(c)**

**DATE:** March 14, 2019  
**TO:** Board of Directors and Executive Director  
**FROM:** Erin Gorospe, UWCD  
**SUBJECT:** Monthly Financial Reports

**SUMMARY**

The Board will receive the monthly financial reports for the Mound Basin GSA.

**INFORMATIONAL ITEM**

UWCD accounting staff has prepared financial reports based on the Mound Basin GSA revenue and expenses for the month of February 2019.

**BACKGROUND**

**FISCAL SUMMARY**

Not applicable.

**ATTACHMENTS**

- A. February 2019 Profit/Loss Statement
- B. February 2019 Balance Sheet

**Mound Basin Groundwater Sustainability Agency**  
**Profit & Loss Budget Performance**  
February 2019

|  | <u>Jul 2018 - Feb 2019</u> | <u>Annual Budget</u> | <u>% of Budget</u> |
|--|----------------------------|----------------------|--------------------|
| <b>Income</b>  |                            |                      |                    |
| 40001 · Groundwater Extraction Fees                  | 0.00                       | 204,000.00           | 0.0%               |
| 41000 · Grant revenue                                |                            |                      |                    |
| 41001 · State Grants                                 | 0.00                       | 9,540.00             | 0.0%               |
| <b>Total 41000 · Grant revenue</b>                   | <b>0.00</b>                | <b>9,540.00</b>      | <b>0.0%</b>        |
| 47000 · Other Revenue                                |                            |                      |                    |
| 47001 · Late Fees                                    | 412.85                     |                      |                    |
| <b>Total 47000 · Other Revenue</b>                   | <b>412.85</b>              |                      |                    |
| <b>Total Income</b>                                  | <b>412.85</b>              | <b>213,540.00</b>    | <b>0.19%</b>       |
| <b>Gross Profit</b>                                  | <b>412.85</b>              | <b>213,540.00</b>    | <b>0.19%</b>       |
| <b>Expense</b>                                       |                            |                      |                    |
| 52200 · Professional Services                        |                            |                      |                    |
| 52240 · Prof Svcs - IT Consulting                    | 1,774.68                   | 2,400.00             | 73.95%             |
| 52250 · Prof Svcs - Groundwater/GSP Pre              |                            |                      |                    |
| 52252 · Prof Svcs - GSP Consultant                   | 20,282.50                  |                      |                    |
| 52250 · Prof Svcs - Groundwater/GSP Pre - Other      | 0.00                       | 114,430.00           |                    |
| <b>Total 52250 · Prof Svcs - Groundwater/GSP Pre</b> | <b>20,282.50</b>           | <b>114,430.00</b>    | <b>17.72%</b>      |
| 52270 · Prof Svcs - Accounting                       | 1,672.82                   | 17,000.00            | 9.84%              |
| 52275 · Prof Svcs - Admin/Clerk of Bd                | 3,651.10                   | 20,000.00            | 18.26%             |
| 52280 · Prof Svcs - Executive Director               | 10,939.40                  | 50,000.00            | 21.88%             |
| <b>Total 52200 · Professional Services</b>           | <b>38,320.50</b>           | <b>203,830.00</b>    | <b>18.8%</b>       |
| 52500 · Legal Fees                                   |                            |                      |                    |
| 52501 · Legal Counsel                                | 7,472.33                   | 42,400.00            | 17.62%             |
| <b>Total 52500 · Legal Fees</b>                      | <b>7,472.33</b>            | <b>42,400.00</b>     | <b>17.62%</b>      |
| 53000 · Office Expenses                              |                            |                      |                    |
| 53010 · Public Information                           | 463.84                     | 1,500.00             | 30.92%             |
| 53020 · Office Supplies                              | 2.59                       | 1,000.00             | 0.26%              |
| 53026 · Postage & Mailing                            | 27.26                      |                      |                    |
| 53070 · Licenses, Permits & Fees                     | 0.00                       | 500.00               | 0.0%               |
| 53110 · Travel & Training                            | 185.27                     |                      |                    |
| <b>Total 53000 · Office Expenses</b>                 | <b>678.96</b>              | <b>3,000.00</b>      | <b>22.63%</b>      |
| 53500 · Insurance                                    |                            |                      |                    |
| 53510 · Liability Insurance                          | 2,064.44                   | 1,955.00             | 105.6%             |
| <b>Total 53500 · Insurance</b>                       | <b>2,064.44</b>            | <b>1,955.00</b>      | <b>105.6%</b>      |
| <b>Total Expense</b>                                 | <b>48,536.23</b>           | <b>251,185.00</b>    | <b>19.32%</b>      |
| <b>Net Income</b>                                    | <b>-48,123.38</b>          | <b>-37,645.00</b>    | <b>127.83%</b>     |

Mound Basin Groundwater Sustainability Agency

**Balance Sheet**

As of February 28, 2019

Feb 28, 2019

ASSETS

Current Assets

Checking/Savings

10000 · Bank of the Sierra 63,434.61

Total Checking/Savings 63,434.61

Accounts Receivable

11000 · Accounts Receivable 54,166.09

Total Accounts Receivable 54,166.09

Total Current Assets 117,600.70

**TOTAL ASSETS 117,600.70**

LIABILITIES & EQUITY

Liabilities

Current Liabilities

Accounts Payable

20000 · Accounts Payable 2,873.18

Total Accounts Payable 2,873.18

Other Current Liabilities

20001 · Advance from City of Ventura 55,000.00

20002 · Advance from County of Ventura 50,000.00

Total Other Current Liabilities 105,000.00

Total Current Liabilities 107,873.18

Total Liabilities 107,873.18

Equity

32000 · Retained Earnings 57,850.90

Net Income -48,123.38

Total Equity 9,727.52

**TOTAL LIABILITIES & EQUITY 117,600.70**

# MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY

## Item No. 8(a)

**DATE:** March 21, 2019  
**TO:** Board of Directors  
**FROM:** Executive Director  
**SUBJECT:** GSP As-Needed Support Services (Grant Category (c): Planning Activities;  
Task 2: Organizational Activities)

### **SUMMARY**

Pursuant to Board direction on January 17, 2019, a Request for Qualifications (RFQ) for GSP Development Support Services (RFQ) was issued on January 25, 2019 (Attachment A). The RFQ was sent to six firms with SGMA experience whose offices are located in Southern California. The RFQ was also posted on the Mound Basin GSA and UVRGA websites. Qualifications were received from one firm, Intera, Inc. (Attachment B). Two other firms indicated that they made last minute decisions not to submit. One firm indicated that they would have liked to submit, but were too busy to prepare the qualifications package. The Executive Director will be available to discuss Intera's qualifications and answer questions during the Board meeting.

MBGSA's standard Professional Services Agreement (PSA) template is attached for reference (Attachment C).

### **RECOMMENDED ACTION**

It is recommended that the Board authorize the Chair to execute a professional services agreement with Intera, Inc., subject to negotiation of agreement terms to the satisfaction of the Chair, Agency Counsel, and Executive Director.

### **BACKGROUND**

On October 18, 2018, the Executive Director briefed the Board on discussions with UWCD concerning technical staff support for the GSP and presented a three-pronged approach to completing the GSP consisting of services by UWCD and the Executive Director, with support from a to-be-determined consultant(s). On January 17, 2019, the Executive Director presented a summary of proposed roles for GSP preparation and a draft scope of work and fee estimate for UWCD to perform its identified role. The Board directed staff to develop an agreement with UWCD and to issue a RFQ for a consultant to provide support to the Executive Director and UWCD during GSP development.

### **FISCAL SUMMARY**

Entering into a professional service agreement does not have a fiscal impact other than the minor administrative and legal costs associated with preparing and negotiating the agreement. Individual work orders will be subject to Board approval. The Agency's budget includes costs for tasks that may be completed by the consulting firm.

**ATTACHMENTS**

- A. GSP Development Support Services Request for Qualifications
- B. Intera, Inc. Qualifications Submittal
- C. MBGSA Standard Professional Services Agreement Template

Proposed Motion: Motion to authorize the Chair to execute a professional services agreement with Intera, Inc., subject to negotiation of agreement terms to the satisfaction of the Chair, Agency Counsel, and Executive Director

Motion: \_\_\_\_\_ 2<sup>nd</sup>: \_\_\_\_\_

S. Rungren \_\_\_ M. Mobley \_\_\_ G. Shephard \_\_\_ J. Chambers \_\_\_ C. Everts \_\_\_

# **REQUEST FOR QUALIFICATIONS (RFQ)**

**GROUNDWATER SUSTAINABILITY PLAN  
DEVELOPMENT SUPPORT SERVICES FOR:**

**UPPER VENTURA RIVER GROUNDWATER AGENCY**

**&**

**MOUND BASIN GROUNDWATER SUSTAINABILITY  
AGENCY**

**VENTURA COUNTY, CALIFORNIA**

**Jointly Requested By:**

**Upper Ventura River  
Groundwater Agency**

**P.O. Box 1779  
Ojai, CA 93024**

**Mound Basin Groundwater  
Sustainability Agency**

**P.O. Box 3544  
Ventura, CA 93006**



**RFQ Issued: January 25, 2019**

**RFQ Submission Deadline: February 25, 2019**



## 1 OVERVIEW

This request for qualifications (RFQ) is jointly issued by Upper Ventura River Groundwater Agency (UVRGA) and Mound Basin Groundwater Sustainability Agency (MBGSA). These agencies serve as Groundwater Sustainability Agency (GSA) for the Upper Ventura River Subbasin (DWR Basin No. 4-003.01) and Mound Subbasin (DWR Basin No. 4-004.03), respectively. Both basins must have GSPs approved by the respective GSAs by January 31, 2022. Both basins have Prop 1 grant funding to complete the GSPs.

The purpose of the RFQ is to identify and select qualified firm(s) to provide Groundwater Sustainability Plan (GSP) development support services for the agencies. Both GSA's are seeking a consulting firm to provide as-needed GSP development support services under the direction of the GSP Plan Manager (GSP PM). Bondy Groundwater Consulting, Inc. (BGC) serves as the GSP PM for both agencies. Given that the agencies have the same GSP PM and similar support service needs, an economy of scale may be realized by both agencies if a single consulting firm is selected. **However, the agencies retain the right to hire different consulting firms based on their specific needs and independent evaluation of the RFQ responses.**

## 2 BACKGROUND

### 2.1 Upper Ventura River Groundwater Agency (<http://www.uvrgroundwater.org/>)

The Upper Ventura River Groundwater Sub-Basin of the Ventura River Valley Basin (UVRB) (DWR Sub-Basin No. 4-003.01) is a medium-priority basin located in the Ventura River watershed in Ventura County. UVRGA officially became a GSA on July 20, 2017. UVRGA's governing body is comprised of one representative from each of the following five local public agencies: Casitas Municipal Water District, the City of San Buenaventura, the County of Ventura, the Meiners Oaks Water District, and the Ventura River Water District. Additionally, two Board seats are held by non-agency representatives, one representing agricultural stakeholders and another representing environmental interests.

Unlike most areas of southern California, water users in the Ventura River watershed rely solely on local sources of water, with groundwater making up roughly half of those supplies. Three public agencies pump groundwater from the basin and there are dozens of private wells that supply water for domestic and agricultural uses. Lake Casitas is the back-up supply for groundwater users, but the current drought has reduced its storage, with uncertainty as to future

volumes. Thus, sustainable groundwater management is critical for ensuring reliability of local supplies for agriculture, domestic, public, and environmental users in the basin.

The basin is a relatively shallow, unconfined alluvial basin that underlies the Ventura River. The section of the river located downstream of the Robles Diversion to just upstream of the San Antonio Creek confluence is characterized as a “dry reach” where surface water disappears underground, except after storms, in most years. A “wet reach” occurs over the basin’s lower portion, generally downstream of the San Antonio Creek confluence. The wet reach is habitat for anadromous fish. Understanding the surface water and groundwater interrelationship, and the effects of pumping on surface water flows and groundwater levels, will be an important part of addressing sustainability for the basin’s various beneficial uses. In fact, the Ventura River is one of five stream systems called out in the 2014 California Water Action Plan to enhance streamflow for anadromous fish. The State Water Resources Control Board (SWRCB), with assistance from the California Department of Fish and Wildlife, is now studying the river system, including development of a surface water-groundwater model, for which calibration with adequate data will be a crucial aspect. Results are expected in 2021. This state-level effort and development of the basin’s GSP can be mutually supportive, but the model will not likely be available for UVRGA use in time to complete the GSP. Thus, the Agency will need to develop analytical tool(s) to evaluate depletion of interconnected surface water in order to comply with the GSP Emergency Regulations.

To manage the basin sustainably, the UVRGA must balance significant demands from multiple beneficial users on limited local supplies. To be successful, this endeavor must be approached with as much hydrogeological data as possible. Therefore, the Prop 1 grant includes a number of tasks that are underway to fill key gaps in data and analysis, such as measuring groundwater levels, groundwater inflows, surface flows, and the surface water-groundwater interface, and estimating extractions from private wells and the water demands of natural habitat. More info details can be obtained from the UVRGA grant application available on DWR’s SGMA website.

Kear Groundwater (KG) and BGC are currently working for UVRGA. KG is executing the data gap tasks and BGC is serving as the GSP PM. The UVRGA Board recently created a Technical Review Group (TRG) to review the data gap tasks and data interpretation and analysis methods for the GSP. The TRG consists of four members, including KG and BGC. It is anticipated that the

successful RFQ respondent will serve as a third member. A separate RFQ is being issued to recruit the fourth member.

The successful RFQ respondent will be expected to work together with to KG and BGC on GSP development, provide reviews, and provide full service document management for the GSP. It is anticipated that GSP preparation will be split between KG, BGC, and the successful RFQ respondent. For example, the consultant will likely be asked to lead the development and implementation of an analytical modeling tool to evaluate depletion of interconnected surface water.

## **2.2 Mound Basin Groundwater Sustainability Agency** **(<https://www.moundbasingsa.org/>)**

Mound Basin (DWR Subbasin No. 4-004.03) is a medium-priority basin in the Santa Clara River and Buenaventura watersheds in Ventura County. Three public agencies, the City of Ventura, the County of Ventura, and United Water Conservation District (UWCD) formed the Mound Basin Groundwater Sustainability Agency (MBGSA), becoming an official GSA on September 30, 2017. The five-member GSA Board of Directors includes an agricultural and an environmental stakeholder representative.

Mound Basin underlies much of the City of Ventura, a coastal city of 109,000 residents noteworthy for using 100% local water supplies. Mound Basin currently meets up to 20% of the City's water demand, and is also used to irrigate 2,000 acres of agricultural lands, which comprise 14% of the surface area of the basin.

Mound Basin is a subbasin of, and marks the lower end of, the Santa Clara River Basin. It is positioned to the north of the river, largely out of the floodplain and underlying a sloping coastal plain adjacent to the Pacific Ocean. The basin does underlie the last 1.3 miles of the Santa Clara River, including the roughly 100-acre Santa Clara River Estuary, and 28 acres of treatment wetlands. It shares subsurface hydrologic connection to other basins to the east and south, which are sources of recharge. With the basin's position underlying the estuary and river, there are questions about groundwater-surface water interaction and whether groundwater pumping in the basin may affect these surface water bodies. The basin is highly complex and has been studied far less than other basins in the region. The Mound Basin complexity includes multiple confined aquifers that are extensively folded and faulted and have varying water quality characteristics.

Mound Basin's water quality has been an ongoing limiting factor in its use. Water quality is variable by area, but the basin's water is generally high in TDS, sulfate,

hardness, and other naturally occurring dissolved minerals, and typically must be blended with better quality water water from other sources before distribution for potable use. Municipal wells near the center of the basin have experienced degrading water quality over recent years and an agricultural well has been affected by mineralized water with elevated temperatures. As a coastal basin, seawater intrusion is always a risk, and water levels in the recent extended drought reached their lowest levels since the major drought of 1989.

Mound Basin is located within the service area of UWCD. UWCD has a groundwater department who has been studying the basin and has developed a groundwater model that includes the Mound Basin. UWCD staff will be performing modeling for the GSP, among other services.

UWCD technical staff will be the lead for most technical aspects of GSP preparation. UWCD's draft scope of work can be viewed in the Board of Director's meeting agenda packet for January 17, 2019, available on MBGSA's website. BGC serves as the MBGSA Executive Director and will be the GSP PM. BGC will be the lead on policy issues, such as development of sustainable management criteria. The successful RFQ respondent will be expected to provide support and backup to UWCD and BGC, address gaps in the services provided by UWCD and BGC, provide reviews, and provide full service document management for the GSP. Compared to UVRGA, the successful RFQ respondent will likely be less directly involved in the GSP development for MBGSA.

### **3 ANTICIPATED SCOPE OF SERVICES**

The ideal consulting firm(s) will be qualified and willing to provide the following support services:

1. Cost-effective staff to support development of GSP background (non-technical) GSP sections;
2. Cost-effective analytical modeling support to evaluate depletion of interconnected surface water (UVRGA);
3. Cost-effective technical support for other GSP elements, and

4. Full Service GSP document management (editing, formatting, comment management, and version control). The consultant will serve as the document clearinghouse for the GSP development teams. The consultant will compile work products into a consistent document format, edit, and manage the document and comments. Ideally this service will be provided by a technical editor or other administrative professional with considerable document management experience on projects of a similar magnitude. Technical staff may assist with comment management, but the goal is to minimize costs for document management by keeping the bulk of this work in an administrative classification.

The consultant should be comfortable working in a support role with a work order driven contract. Importantly, the consultant should be willing to work very closely with and under the GSP PM's direction.

The agencies retain the right to hire different consulting firms based on their specific needs and independent evaluation of the RFQ responses. If one consultant is selected to serve both agencies, a contract will be issued by each agency. Contracting will consist of a master agreement and work orders will be issued for specific as needed services. The consultant will be expected to track and report expenditures against each work order issued and to prepare invoices with charges broken down grant task. Timely and accurate invoicing will be important to facilitate grant management.

Neither agency will pay for any costs incurred in preparation and submission of the qualifications, or in anticipation of a contract.

#### **4 QUALIFICATION SUBMITTAL REQUIREMENTS**

Each submittal shall be limited to the maximum number of pages listed for each section. Qualifications shall be submitted as a PDF file. A minimum of 11 point font size shall be used.

All firms wishing to be considered for this work shall include the following information in their qualifications:

##### **Cover Letter (Maximum: 1 page)**

Include in the cover letter, the office location where the project will be managed, and the name, title and location of the project manager.

**Statement of Qualifications (Maximum: 3 pages)**

Provide a summary demonstrating the offeror's unique qualifications necessary to provide the anticipated services.

**Project Team (Maximum: 2 pages per resume, No section page limit)**

Include an organization chart illustrating the key project team members, the firms they are affiliated with (if multiple firms are teamed), and the role each will serve on the project; clearly identify the name and title of the proposed project manager and document management professional (or lead document management professional if multiple staff will be working together to provide the document management services); provide a brief resume demonstrating qualifications for successfully completing this work for other key project team members, their office location, and a brief summary for each proposed sub-consultant firm (if any).

**Project Experience (Maximum: 5 pages)**

Include a description for up to five projects that demonstrate the qualifications of the firm to provide the requested services. At a minimum, one project should be included that demonstrates analytical modeling capabilities, on project that demonstrates full service document management capabilities, and one project that demonstrates SGMA and/or other groundwater management knowledge/experience. Responding firms should specifically describe which GSAs they are currently under contract to perform work for, any other SGMA-related work, and/or groundwater management or relevant technical experience that would be pertinent to assist with technical analysis and GSP preparation.

**Project Approach (Maximum: 3 pages)**

Provide a description of your firm's understanding of the requested services and approach for providing the services. Describe your firms' availability to assist with completing the GSPs in accordance with the statutory deadline.

**References (Maximum: 2 pages)**

Provide contact names and phone numbers for at least three (3) references for similar projects that the Proposer has performed related services within the last five years. Please include a brief description of the services provided, the duration of the project, the completion status of the projects, the total contracted fee for the project, and the agency contact name, title, phone number, and email.

### **Conflict of Interest (Maximum: 1 page)**

Provide a discussion of any potential conflicts of interest the firm may have in performing this work for the GSA and any work currently being done or previously performed for any of the stakeholders, water rights holders, or land owners in the Basins.

### **Fee Schedule**

Include a fee schedule listing the billing rates for all classifications of personnel and sub-consultants that may be assigned to the project. Rates should be organized in a single table with a column for each fiscal year of the project (July 1 through June 30) (e.g. Fiscal years 18/19, 19/20, 20/21, and 21/22). It is acceptable to specify rates fiscal year 18/19 and a multiplier for the remaining fiscal years. Please be advised that the fee schedule shall be included as an attachment to any contract(s) that may result from this selection process.

All work associated with the preparation of the GSP and other tasks assigned by either agency shall be performed on a time and materials basis, under individual work orders to be reviewed and approved by UVRGA or MBGSA. All work shall be completed to the satisfaction of the agency issuing the work order within the time periods allocated for each work order and within the budget assigned to each work order.

## **5 QUALIFICATIONS SUBMISSION DEADLINE**

Submittals shall be delivered via email to [bryan@bondygroundwater.com](mailto:bryan@bondygroundwater.com) by 5pm on February 25, 2019.

Submittals shall be clearly marked as follows:

Qualifications for GSP Support Services for Upper Ventura River Groundwater Agency and Mound Basin Groundwater Sustainability Agency

Late submissions will not be accepted.

## **6 QUALIFICATION REVIEW AND SELECTION PROCESS**

UVRGA and MBGSA will review the submittals for completeness and will rank them according to the criteria listed below. The UVRGA and MBGSA Boards of Directors will select the successful firm(s) with input from the GSP PM and UWCD (for MBGSA).

- Labor rates
- Quality and completeness of the qualifications submittal.
- Proposed approach for working with the GSP PM and other members of the GSP preparation teams for each basin;
- Experience collaborating with others professionals on similar projects;
- Technical team qualifications (surface water depletion analytical modeling experience is a key requirement for UVRGA);
- Document management experience; and

In-person interviews may be held, at the discretion of the agencies. If interviews are held, offerors will be notified with the details of the interview process.

The selected firm should expect that the contracts will include terms and conditions necessary to protect the interests of the agencies, its members, and beneficial users of groundwater.

## **7 SCHEDULE**

Fully-executed agreements with the selected firm(s) are anticipated by May 1, 2019.

## **8 CONTACT INFORMATION**

All questions regarding this RFQ shall be made in writing via email to [bryan@bondygroundwater.com](mailto:bryan@bondygroundwater.com).

The deadline for submitting questions is 5pm on February 13.



# Groundwater Sustainability Plan Development Support Services



Prepared for



Prepared by



FEBRUARY 25, 2019

STATEMENT OF QUALIFICATIONS

# Groundwater Sustainability Plan Development Support Services

Prepared for



Prepared by



FEBRUARY 25, 2019

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# STATEMENT OF QUALIFICATIONS

## 1 - COVER LETTER



## 1 – COVER LETTER



INTERA Incorporated  
3868 W. Carson Street, #380  
Torrance, California 90503 USA  
424.275.4055

February 25, 2019

**Via E-Mail: [bryan@bondygroundwater.com](mailto:bryan@bondygroundwater.com)**

Bryan Bondy  
GSP Plan Manager  
Bondy Groundwater Consulting, Inc.

**RE: Statement of Qualifications to Provide Groundwater Sustainability Plan Development Support Services**

Dear Mr. Bondy and Members of the Selection Committee,

INTERA Incorporated (INTERA) is pleased to present this Statement of Qualifications (SOQ) to the Upper Ventura River Groundwater Agency (UVRGA) and the Mound Basin Groundwater Sustainability Agency (MBGSA), also collectively referred to as the Agencies, to provide Groundwater Sustainability Plan (GSP) development support services for both Agencies. We believe that INTERA offers the best value in completing this work—high-quality and defensible technical work products and efficient document management services that are delivered in a cost-effective manner in accordance with the Agencies' schedule and budget requirements and expectations.

To accomplish this, we will work closely with the GSP Plan Manager (GSP PM), Brian Bondy of Bondy Groundwater Consulting, Inc. (Bondy Groundwater) and the Technical Review Group (TRG). INTERA has worked closely with Bondy Groundwater on a Groundwater Model (incorporating complex surface-water/groundwater interactions) for the Calleguas Water Management District (Calleguas) and provide technical support and input on the development of Fox Canyon Groundwater Management Agency's (FCGMA) GSP on behalf of Calleguas, a major Basin Stakeholder. Throughout this process, INTERA also coordinated with the United Water Conservation District (UWCD), providing key inputs for the UWCD groundwater model. These close working relationships will facilitate our ability to provide cost and time efficient GSP development support services for UVRGA and MBGSA. Most of the technical support staff we are proposing have contributed to our work for Calleguas and the FCGMA GSP. INTERA offers expertise and experience in two scope areas that will be critical to the successful development of the GSPs for the Agencies: (1) analytical modeling to evaluate surface/groundwater interactions in the absence of a numerical groundwater flow model and (2) document management and production services to support development and publication of large and complex water plans. Finally, through our work for the FCGMA GSP, we bring a deep understanding of SGMA and associated regulatory requirements for SGMA GSPs.

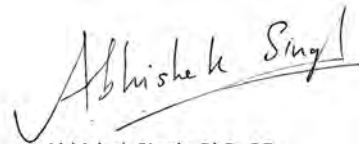
This project will be managed from INTERA's Torrance, CA office by Dr. Abhishek Singh, a Senior Engineer and Manager of the company's California operations. INTERA and all our proposed personnel are firmly committed to making this work a top priority. Like members of the UVRGA and MBGSA, we have chosen to work on water resources development, management, and protection issues not only because they are challenging and require creative technical and management solutions, but because these issues are important to us, personally. We stand ready to deliver the expertise needed to support the Agencies in developing a plan to sustainably manage the groundwater resources in the Upper Ventura River and Mound subbasins.

Sincerely,

INTERA Incorporated



David Jordan, PE  
Vice President and Project Principal



Abhishek Singh, PhD, PE  
Senior Engineer and Project Manager

California | Colorado | Florida | Hawai'i | Indiana | New Mexico | Texas | Washington | France | Switzerland

# STATEMENT OF QUALIFICATIONS

## 2 - QUALIFICATIONS



2 - QUALIFICATIONS

## 2 – STATEMENT OF QUALIFICATIONS

Established in 1974, INTERA is a geosciences and engineering consulting firm focused on meeting challenges associated with the development, management, and protection of water and environmental resources.

INTERA’s primary water resources services include water resource planning, groundwater availability assessments, surface/groundwater interaction analyses, hydrographic data collection and analyses, surface water availability and water rights assessments, three-dimensional geologic and hydrogeologic visualizations, GIS and database applications, and remote sensing. Since our inception, we have earned a reputation for developing best-in-class solutions to the most challenging water resource and environmental issues. These solutions are delivered, through a network of offices across the US shown in **Figure 2-1**, by an outstanding staff of 175 scientists, engineers, and support personnel.

**Figure 2-2** shows the primary disciplines and education levels of our staff.

In the area of water resource planning and modeling, INTERA’s core competencies include:

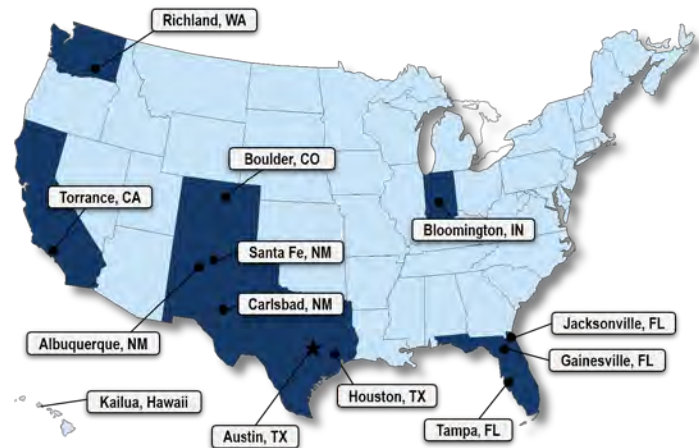


Figure 2-1. INTERA’s US offices

- Providing technical support to state, regional, and local agencies and organizations for developing water management plans that include Groundwater Sustainability Plans (GSP) under the Sustainable Groundwater Management Act (SGMA)
- Modeling surface/groundwater interaction and developing integrated surface water and groundwater modeling tools
- Developing and applying hydrologic, hydraulic, hydrodynamic, and water quality models as decision support tools for identifying optimal solutions to water resource planning and management problems with multiple and occasionally competing objectives
- Managing the development and publication of large, complex, multi-author documents
- Developing custom GIS and database software designed to manage, maintain, and analyze site-specific water resources data under a variety of software
- Analyzing agricultural water use and land-use change using GIS and remote-sensing techniques

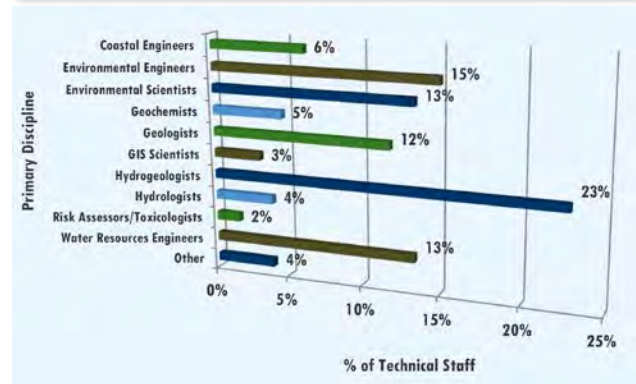
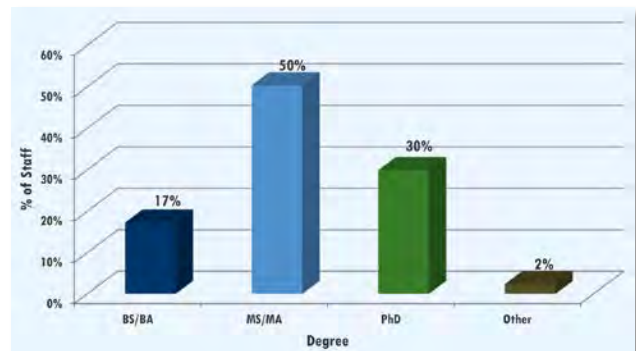
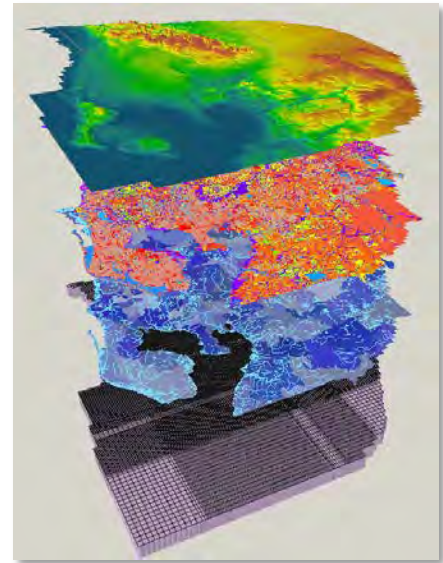


Figure 2-2. Education levels and primary technical disciplines of INTERA’s technical staff.

INTERA opened our branch office in Torrance, California in 2015 to better serve a growing list of California-based clients. We are acutely aware of the challenges and opportunities faced by public water agencies in California and throughout the US, and we offer proven experience in planning and design services for public water utilities. Over the last five years, we have provided planning services on projects involving groundwater and surface water management, conjunctive use, alternative water supply evaluations, and water planning for forward thinking public agencies and utilities that include:

- Calleguas Water Management District, California – serves nearly 500,000 people
- Water Replenishment District of Southern California – provides water to nearly 4 million residents
- Orange County Water District, California – water provider for 2.4 million people
- City of San Diego Public Utilities Division – water provider for 2.2 million people
- California American Water, California – water provider for 630,000 people
- Albuquerque Bernalillo County Water Utility Authority, New Mexico – serves nearly 700,000 people
- Tampa Bay Water, Florida – wholesale water supplier to over 2.4 million people
- Tarrant Regional Water District, Texas – serves water to over 2 million people
- City of Boulder, Colorado – provides water to 116,000 residents
- Citizens Energy, Illinois – serves 800,000 customers
- Suez Water, New York – serves 500,000 customers



INTERA's modeling expertise includes the development and application of integrated surface water and groundwater models capable of simulating the full hydrologic cycle.

INTERA is currently supporting the Calleguas Water Management District's (Calleguas) efforts in Ventura County in working with the Fox Canyon Groundwater Management Authority (FCGMA), the local Groundwater Sustainability Agency (GSA), to provide input to their GSP. On this project, we have worked closely with Mr. Bryan Bondy (of Bondy Groundwater) to cost-effectively evaluate groundwater usage and management in the East and South Las Posas Basins. Our proven and successful track record of working with Mr. Bondy makes us uniquely suited to support developing the GSP for UVRGA and MBGSA.

Another example of INTERA's recent water planning experience is our work for the Albuquerque Bernalillo County Water Utility Authority (ABCWUA). We successfully led the development of a 100-year water plan for the ABCWUA, called Water 2120. This plan was the result of a 6-year effort that began with development of a dynamic-simulation-model-based decision support tool used to conceptualize both demand and supply, as well as the potential impacts of climate change on both. For this project, INTERA worked collaboratively with the Bureau of Reclamation and Sandia National Laboratories to incorporate long-term hydrologic and climatologic trends (driven by climate change) into the demand and supply projections used for the plan. In addition to the technical work, INTERA interacted extensively with the Water Utility Technical Customer Advisory Committee who vetted all the planning work, the Governing Board, and public stakeholders. INTERA also assisted with comment management, document management, and technical editing of the Plan. INTERA was responsible for the management of all drafts and provided technical editing for multiple parts. Quality Assurance support was



provided by checking data presented in the text and tables. In addition, INTERA produced the final pdf and print of the Plan. The final Water 2120 Plan was accepted unanimously by the Governing Board.

One of INTERA's largest document management projects was recently completed for the New Mexico Interstate Stream Commission where we provided technical editing and project coordination support for developing the latest version of the New Mexico State Water Plan. The Plan provides valuable information to water policy decision-makers as well as all water users across the state. Our staff worked collaboratively with the New Mexico Interstate Stream Commission's project manager and team of subcontracted authors to prepare the draft State Water Plan Technical Report and the Town Hall Background Report.

INTERA also has experience providing professional services including technical review and revision of technical documents needed for operations and management. INTERA has provided technical support services to over 30 Groundwater Conservation Districts (GCDs) that are responsible for regulating groundwater use in Texas. GCDs are very similar in form and function to GSAs. For these districts, INTERA has prepared management plans, groundwater rules, and guidance documents; designed monitoring well networks; provided GCD representation during Groundwater Management Area (GMA) meetings; reviewed application permits; developed groundwater databases; organized and conducted public meetings; directed and implemented field studies/well construction; evaluated alternative Desired Future Conditions (DFCs, which are the converse of SGMA undesirable results); responded to DFC petitions; and conducted technical and public workshops. Like GSAs, GCDs are required to develop and implement management plans for their region's groundwater resources, as part of a joint planning process. INTERA has experience providing technical and joint planning support for seven GMAs in order to meet DFCs.



Working with the New Mexico Interstate Stream Commission, INTERA staff recently played a major role in the developing the 2018 New Mexico State Water Plan.

# STATEMENT OF QUALIFICATIONS

## 3 - PROJECT TEAM



### 3 – PROJECT TEAM

INTERA has assembled an outstanding team of management and technical personnel to support UVRGA and MBGSA in the development of a GSP. We are proposing a team that already brings a proven track record of successfully working with Mr. Brian Bondy (of Bondy Groundwater). For nearly three years, key members of our team (proposed Project Manager, Dr. Abhishek Singh, and Technical Lead for Analytical Modeling, Dr. Raghu Suribhatla) have worked with Mr. Bondy to provide input to the FCGMA in support of developing their GSP. The team has also worked with UWCD, providing them with key inputs for the UWCD groundwater model. We are augmenting this proven team with with the addition of a Technical Advisor for Analytical Modeling, Dr. Erik Anderson, given the importance of evaluating the surface/groundwater interaction issues in the Upper Ventura River and Mound subbasins. Dr. Anderson is a pioneer in the analytical modeling of surface-water/groundwater interactions (having published seminal papers on the subject) and also brings experience working in the Ventura River Subbasin. Our team also includes Ms. Joanna Stakutis, an expert in technical editing and the development and production of large, complex documents with multiple authors.

Our proposed organization for providing these support services is shown in **Figure 3-1**. To provide the expertise needed to complete all tasks in accordance with UVRGA’s and MBGSA’s schedule requirements and expectations, we have identified several key and technical personnel (Project Manager, Technical Leads for Analytical Modeling and GSP Document Management), as well as a group of additional resource personnel that are readily available to support the work as, and when, needed. To ensure that we provide services in a cost-effective manner, our personnel cover the complete range of experience levels—from principals and senior-level to mid- and junior-level. While all INTERA’s work for UVRGA and MBGSA will be conducted under the direct supervision of a principal or senior engineer/scientist, establishing the right mix of senior-, mid-, and junior-level for accomplishing each assigned task will enhance the cost-effectiveness of our services. Brief resumes for all our proposed key personnel are provided on the following pages.

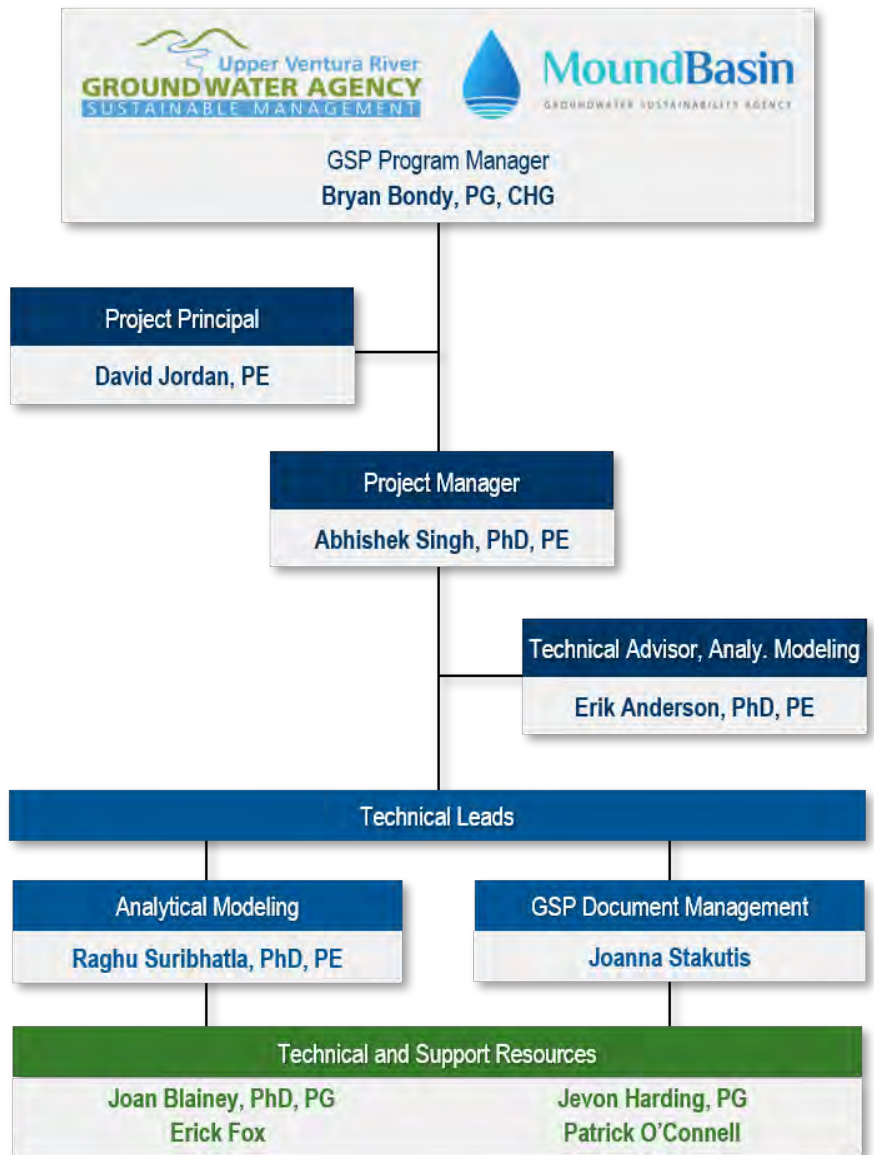


Figure 3-1. INTERA's proposed organizational structure.



**David Jordan, PE**  
Project Principal

David Jordan leads INTERA’s Water Resources Line of Business and has 30 years of experience in the areas of water resources development, water resources planning, quantitative hydrogeology, engineering, numerical modeling, GIS, data management, and program and project management. He provides management and technical guidance to a variety of projects in water resources, water supply, and water planning. He leads technical teams in the development of quantitative tools to evaluate water demand and supply, evaluate potential gaps between demand and supply, and works to communicate these findings to various stakeholder groups in support of water planning for a variety of water agencies. Mr. Jordan was the project manager and overall lead for development of the Water 2120 100-year water plan for a major Western water agency. Mr. Jordan is also a recognized expert in data management, analysis, and visualization through the application of GIS. He develops and applies innovative remote-sensing based techniques to evaluate land use and water-depletions from anthropogenic (irrigated agriculture) and natural (riparian) areas, frequently at the basin scale. In addition, he applies decision support systems and dynamic systems models to ensure that water resources managers make informed decisions based on rigorous analysis of available data. The application of these tools also facilitates stakeholder involvement and understanding.

**Select Project Experience**

**Las Posas Basin Groundwater Model Development, Calleguas Water Management District, Ventura County, CA. 2016 – Present. Project Manager.** Led a team in developing a groundwater flow model of the East and South Las Posas groundwater basins for the Calleguas Municipal Water District. The groundwater flow model is being used to guide operational planning at the District level, specifically for the Calleguas’ Las Posas Basins ASR Project, as well as regional planning efforts under the Sustainable Groundwater Management Act. Ongoing work includes interfacing with stakeholders such as the Fox Canyon Groundwater Management Agency and other local stakeholders to present and discuss our work and our results and evaluate potential basin management alternatives.

**Water 2120 Plan Development, Albuquerque Bernalillo County Water Utility Authority (Water Authority), NM. 2010 – 2016. Project Manager/Technical Lead.** Led the development of the Water Authority’s Water 2120 100-year water plan. Water 2120 articulates all aspects of the Water Authority’s water planning for the next 100 years, including surface- and groundwater management, as well as potential new supplies. Served as the public face of Water 2b120 via public involvement through presentations to the Water Authority Technical Advisory Committee (TCAC) and Board of Directors, and extensive public outreach. Led the development of a dynamic system simulation model for the Water Authority that is being used for the purpose of short-term surface and groundwater accounting, as well as long-term supply and demand planning and evaluation. The model provides a management tool for the Water Authority staff for both short- and long-term planning for water resources and includes functionality to evaluate uncertainty in supply and demand as a result of forcing functions such as climate change and population dynamics. The tool also allows the Water Authority to evaluate its existing water-supply portfolio and determine at what period(s) in the future it may be necessary to expand that portfolio to meet growing demands. The model was used to evaluate and rank various water-supply alternatives, building those alternatives into water

**Years of Experience: 30**

**Office Location:** Albuquerque, NM

**Education:**

- MS, 1989, Geophysics (hydrology emphasis), New Mexico Institute of Mining and Technology
- BS, 1987, Geophysics (computer science minor), Virginia Polytechnic Institute and State University

**Professional Registrations/Affiliations:**

- Registered Professional Engineer, New Mexico, 1997, No. 13662
- Member, American Water Resources Association
- Member, American Ground Water Trust
- Member, American Water Works Association

**Professional History:**

- 2001 – Present Water Resources Line of Business Lead, Vice President, Principal Hydrogeologist, Senior Hydrogeologist – INTERA Inc., Albuquerque, NM
- 1994 – 2001 Program Manager, Group Leader, Senior Hydrogeologist – Daniel B. Stephens & Associates, Albuquerque, NM
- 1992 – 1994 Hydrogeologist – GeoTrans, Inc., Sterling, VA
- 1989 – 1992 Hydrogeologist – Hydrosystems, Inc., Sterling, VA
- 1987 – 1989 Graduate Research Assistant – New Mexico Institute of Mining & Technology, Socorro, NM

supply portfolios, and performing a gap analysis to evaluate potential supply gaps in the future. The team also developed a full groundwater reserve management plan to allow for prudent management of existing groundwater reserves. Water 2120 was unanimously approved by the Water Authority's Governing Board in late 2016.

**Conceptual Model Development and Water Balance of the Swarthout Valley, Golden State Water Company (GSWC), Swarthout Valley, CA. 2014 – 2015. Project Manager/Technical Lead.** Led a team in development of a conceptual model and water budget for the Swarthout Valley, Wrightwood, CA. The Swarthout Valley extends across a semi-arid landscape defined by active fault zones and geologic complexity. These features alter the groundwater flow system by creating barriers that change local gradients and regional groundwater flow patterns. GSWC was interested in an evaluation of the water supply conditions and reliability within the Swarthout Valley groundwater system, a shallow alluvial aquifer system and the sole source of water for GSWC's Wrightwood System. The objective of the Swarthout Valley Water Supply Evaluation Project was to assess whether the water in storage in the groundwater system can be developed and reliably extracted on a sustainable basis to meet GSWC customer demands during dry years. To this end, a secondary objective was to estimate the yield of the Swarthout Valley groundwater system for dry years, following consecutive years of below average precipitation in the area. The water budget will be used for planning and management purposes, as well as to determine if water from other sources needs to be imported into Swarthout Valley. The water balance is being used to make management decisions about pumping in the Swarthout Valley and will be used to determine the potential need for imported water. Project responsibilities included overall project management, leading the technical team, and providing overall technical review and QA/QC.

**Conceptual Reuse Planning, Albuquerque Bernalillo County Water Utility Authority (Water Authority), NM. 2017 - 2018. Project Manager.** Led a team in the development of a conceptual reuse plan to evaluate potential supply and demand for non-potable reuse water for turf irrigation. The team evaluated potential demand by reviewing and identifying existing turf areas and their estimated or known water use. The team also evaluated potential reuse demand for proposed development within the Water Authority's service area, as well as potential new supply that would become available because of new development. In support of infrastructure planning, the team developed conceptual pipeline routes and specifications, as well as proposed new storage for reuse water and conceptual costs for new infrastructure. The project deliverables provided important information to the Water Authority to help them plan for additional reuse capacity and infrastructure, in support of key metrics identified as part of their 100-year water plan, Water 2120.

**Seawater Intrusion Barrier Modeling, West Basin Municipal Water District (WBMWD), West CA. 2014 – Present. Project Manager.** Providing annual regulatory reporting materials to WBMWD based on groundwater flow and transport modeling for the West Coast Basin seawater intrusion barrier using recycled water for injection. The reporting materials are used by WBMWD to meet the annual metrics of the recycled-water injection permit granted by the Los Angeles Regional Water Quality Control Board. These reporting materials include a technical memorandum showing the extent and predicted travel time of recycled water in the subsurface relative to the nearest drinking-water wells. These materials are required by the Los Angeles Regional Water Quality Control Board as part of WBMWD's indirect potable reuse project, which allows it to inject recycled water into the West Coast Basin seawater intrusion barrier. Project responsibilities include overall project management, client interfacing, and senior technical review.

**North Orange County Basin Flow and Transport Modeling, Orange County Water District (OCWD), Orange County, CA. 2014 – Present. Project Manager.** Led a team in developing a numerical flow and transport model to support a human health risk assessment and feasibility study of remedial alternatives being considered to mitigate groundwater contamination in the North Orange County Basin (North Basin). Volatile organic compound (VOC) contamination in the North Basin area has resulted in the destruction of three municipal water supply wells and one private well used for commercial purposes. In support of conceptual model development, the geology, hydrogeology, structure, and stratigraphy of the North Basin area was evaluated. Based on geophysical and hydraulic-head data, we modified the structure of the existing numerical model in the area to suit the needs of the current transport-modeling exercise.



**Abhishek Singh, PhD, PE**  
Project Manager

Abhishek Singh leads INTERA’s California Operations and has over 15 years of research and consulting experience in the areas of water resources planning and management. Dr. Singh currently manages several projects for California water agencies and utilities related to regional planning and SGMA implementation. His projects focus on modeling complex hydrogeologic systems and surface-water/

groundwater interactions, estimating basin-wide water budgets, groundwater project assessments, managing and mitigating seawater intrusion and contaminated groundwater, and planning for drought and climate change. He has applied his expertise on projects across the United States involving hydrogeologic modeling; assessment of the impact of climate change on water planning; modeling to support permitting, licensing, and compliance for radioactive waste disposal facilities; optimization of groundwater remediation and monitoring design; and incorporating uncertainty in regional and project-level planning. Dr. Singh is experienced in developing integrated GIS and geodatabases in support of water resource projects, and is experienced at data-processing and work-flow automation using C, C++, Perl, Python, Matlab, and Fortran. Dr. Singh also provides a variety of permitting and regulatory support to water agencies.

**Select Project Experience**

**Development of A Groundwater Flow Model of the East and South Las Posas Basins, Calleguas Municipal Water District, CA. 2016 – Present. Task**

*Manager/Modeling Lead.* Developed a groundwater flow model of the East and South Las Posas groundwater basins for the Calleguas Municipal Water District. Worked collectively with CMWD, Bondy Groundwater, Fox Canyon Groundwater Management (FCGMA) - the local GSA, the GSA’s Technical Advisory Group (TAG), and their Groundwater Sustainability plan (GSP) consultant to support GSP development process. The basins are characterized by complex hydrostratigraphy (faulting and folding) and dynamic interactions with surface water flows in the Arroyo Las Posas. Led the development of an integrated surface/groundwater boundary package to route Arroyo flows and simulate dynamic interactions between the surface-flows and the alluvial aquifer. Calibrated the model with respect to recent head and streamflow data. The model was used to support the SGMA planning process for the East and South Las Posas Sub-Basins, which included simulating future conditions impacted by climate-change as well as several regional groundwater management actions and projects. The model was documented in a comprehensive report, as well as several technical memoranda that were communicated to various stakeholders. Led regular interactions with and made presentations to the TAG, incorporating TAG comments and suggestions into the model development process. On-going and future work includes modeling to evaluate basin sustainable yields, optimize ASR operations, and perform sensitivity analyses.

**Decision-Support Tool (DST) for Conjunctive Groundwater/Surface Water Planning and Optimization of Operations, Suez Water New York, Rockland County, NY. 2017 – Ongoing. Lead DST Modeler.** Project developed a decision support tool for Suez Water New

**Years of Experience:** 16

**Office Location:** Los Angeles, CA

**Education:**

- PhD, 2007, Civil and Environmental Engineering, University of Illinois
- MS, 2003, Civil and Environmental Engineering, University of Illinois
- BE, 2001, Civil Engineering, Birla Institute of Technology and Science

**Professional Registrations/Affiliations:**

- Professional Engineer, California, 2018, No. 89384
- Professional Engineer, Texas, 2010, No. 130858
- Associate Editor: Journal of Water Resources Planning and Management
- Co-Chair: Groundwater Resources Association (GRA) Technical Committee
- Chair: Groundwater Council, Environmental & Water Resources Institute (EWRI) of the American Society of Civil Engineers (ASCE)
- Review Panel for 5 Journals: Water Resources Research, Groundwater, Journal of Hydrology, Journal of Hydrologic Engineer, and Journal of Hydroinformatics

**Professional History:**

- 2015 – Present California Operations Manager/Senior Water Resources Engineer – INTERA Inc., Torrance, CA
- 2012 – 2015 Sr. Environmental Scientist/Group Manager – INTERA Inc., Austin, TX
- 2007 – 2012 Environmental Scientist – INTERA Inc., Austin, TX
- 2006 – 2007 Teaching Assistant – University of Illinois, Urbana Champaign, IL
- 2001 – 2007 Research Assistant – University of Illinois, Urbana Champaign, IL
- 2003 Research Assistant – Interactive Genetic Algorithm Laboratory, Kyushu University, Fukuoka, Japan

**Specialized Training & Software:**

- SGMA: Full-Day DWR Workshop on GSP Development
- Software: C2VSim, GoldSim, PEST, MODFLOW-USG

York (SWNY). The project goal was to improve production of the wellfield during the summer, by optimization of groundwater pumping and surface-water augmentation. SWNY wanted to evaluate the potential for producing additional groundwater supply, while staying within permitted flow limits for the Ramapo River. Model development was preceded by a review of operational data, extensive aquifer testing focusing on characterizing the groundwater surface water interactions, and hydrologic modeling of the surface-water and groundwater systems in HEC-RAS, VS2DH, and MODFLOW. Led the development of a GoldSim decision support tool (DST) for the Ramapo River, wellfield, and upstream reservoirs. The DST included an analytical model of stream depletions to assess groundwater-streamflow interactions and simulate impacts of reservoir releases on changes to operations on regulatory flows. The model was used to optimize operations under several operational and hydrologic scenarios to improve summer yields, while meeting regulatory requirements for downstream flows. Simulation results indicated that increased summer production from the well field is possible and identified critical operation for optimizing production. The Decision Support Tool is being used to a) develop project recommendations and assess system resiliency for planning purposes, and b) optimize operating rules and assist well-field operators during drought conditions.

**SGMA Evaluation of Groundwater Flow and Transport Model of the San Pasqual Basin for GSP Development, City of San Diego, Southern CA. 2018.** *Project Manager/Technical Lead.* Reviewed an existing groundwater flow and transport model to evaluate its suitability for use in Groundwater Sustainability Planning as required under the Sustainable Groundwater Management Act (SGMA). Evaluated model boundaries, structure, parameters, and water budget with respect to California Department of Water (DWR) Basin Studies. Assessed the representation of flows and groundwater/surface-water interactions along the Guejito Creek, Santa Ysabel Creek, and the San Dieguito River. Compared model flows against USGS gage data. Assessed model calibration in terms of simulated hydraulic head and TDS/Nitrate concentration trends against groundwater data from the San Pasqual Basin. Assessed applicability of the model for identification of SGMA undesirable results – lowering of water levels, reduction of groundwater storage, degraded water quality, and depletion of interconnected surface water. Provided recommendations on model enhancements and revisions to make it suitable for SGMA planning purposes.

**Feasibility Assessment of Conjunctive Use Projects to Support Long Range Planning in the San Diego River Basin, San Diego, CA. 2018.** *Project Manager/Technical Lead.* Led the development of a decision-support framework to support long range planning for conjunctive use and system optimization of the San Vicente Reservoir, El Capitan Reservoir, and groundwater injection/extraction/storage in the El Monte Valley and/or Moreno Valley groundwater sub-basins within the San Diego River Basin. Reviewed existing literature on groundwater recharge and storage capacity of the El Monte and Moreno groundwater sub-basins within the San Diego River Valley. Obtained and analyzed data from the City of San Diego to assess frequency and duration of excess surface water (from spills and potential reservoir releases) for storage in the groundwater basin. Oversaw the update of a dynamic simulation model of the San Diego surface-water, groundwater, and conveyance systems. Incorporated long-term projections for (native and imported) water supplies as well as water demands under baseline and climate-change impacted conditions. The model built in the STELLA modeling platform facilitates the analysis of local and imported water supply storage and transfer between any of these storage facilities to reduce spills, evaporative losses, and maximize overall (including imported) water storage opportunities under multiple demand and supply scenarios.

**Assessment of Lower Carmel Valley Well Fields for Well-Field Management and Operational Guidelines, California American (Cal Am) Water, Pacific Grove, CA, 2015 – 2017.** *Project Manager/Technical Lead.* Led a project to support Cal Am in developing operational guidelines for wells in the Lower Carmel Valley (LCV) – the primary water supply for Cal Am in the Monterey service area. Wells in the LCV draw water from an alluvial aquifer that is recharged by the Carmel River. Low streamflows in the Carmel River led to declining water levels in turn impacting well performance, with recurring pump and motor failures. The loss in well performance were related to wells pumping at water levels below the top of the screen, which in turn led to issues such as cascading water, air entrainment, and pump cavitation, in addition to iron biofouling and encrustation. Performed site visits and well-field system assessment based on historical operational data, well construction logs, and monitoring well records. Planned and facilitated dynamic video surveys of wells to understand source water in wells. Planned and managed a post-rehabilitation pump and aquifer test. The pump and aquifer test consisted of a step-drawdown test followed by 48-hour constant rate pumping and recovery under transient streamflow conditions. Results from the test were used to estimate specific capacity of well and characterize impact of streamflows and regional groundwater flows on static and pumping water levels in production wells. Recommended mitigating measures which included pump and/or other equipment replacement, well rehabilitation, updates to SCADA instrumentation, and development of an overall well-field management and operations guidelines report to account for changes in future Carmel River Hydrology.



**Erik Anderson, PhD, PE**  
Technical Advisor, Analytical Modeling

Erik Anderson is a professional engineer specializing in groundwater and surface-water hydrology and hydraulics. He has worked as a design engineer/consultant in Wisconsin and Minnesota, and as an assistant professor of Civil Engineering at the University of South Carolina. As a consultant, he has worked on water resources projects throughout the Midwest, including dam design and

rehabilitation projects, dam-failure analyses and flood insurance studies, regional groundwater flow modeling for water supply availability and wellhead protection studies, seepage studies, and dewatering design. His research has focused on analytical modeling of groundwater-surface water interaction, and developing tools to incorporate three-dimensional effects in two-dimensional, numerical models of groundwater flow. He has developed analytical methods for addressing groundwater flow problems with leaky boundaries and internal boundaries. The methods have been applied to solve problems of flow to clogged streambeds, pumping wells near partially-penetrating streams, and flow in faulted single- and multi-aquifer systems.

**Select Project Experience**

**Ramapo Valley Well Field Water Supply Modeling, SUEZ Water, West Nyack, NY, 2016 – 2019. Technical Lead.** Responsible for model development and deployment of an integrated groundwater-surface water model of the Ramapo Valley Well Field operated by SUEZ Water New York. The project goal was to improve production of the well field during the summer, by optimization of groundwater pumping and surface-water augmentation.

- Model development was preceded by a review of 30 years of operational data and an extensive aquifer testing program focusing on characterizing the groundwater surface water interactions occurring at the well field.
- Hydrologic simulations included dynamic river simulations with HEC-RAS software, groundwater flow simulations with MODFLOW, riverbed thermal transport modeling with VS2DH software, and reservoir modeling.
- Results from the detailed hydrologic models were abstracted and incorporated in a GoldSim model of the combined hydrologic system. Simulation results indicated that increased summer production from the well field is possible and identified critical operation for optimizing production. The primary deliverable was a Decision Support Tool to test operating rules and assist well-field operators during drought conditions.
- Conducted workshop for SUEZ plant operators. Presentation and training for use of the DST.
- Extension of database of historical river flows, well field operations, and reservoir water budget 1980-present. Inclusion of the full data set in the Decision Support Tool.

**Additional Water Supply Study, Decatur Water Utility, Decatur, Illinois, 2018-present. Water Resources Engineer.** Assessed the resiliency of the City’s surface-water supplies to extreme drought. Examined alternative shallow groundwater resources, including direct pumping of surface water from abandoned gravel pits and development of horizontal wells. Developed a GFLOW model of groundwater-surface water interaction in the alluvial valley downstream of the City. The GFLOW model was

**Years of Experience:** 30

**Office Location:** Green Bay, WI

**Education:**

- PhD, 1999, Civil Engineering, University of Minnesota—Twin Cities
- MS, 1990, Civil and Environmental Engineering, University of Wisconsin—Madison
- BS, 1988, Civil and Environmental Engineering, University of Wisconsin—Madison

**Professional Registrations/Affiliations:**

- Professional Engineer, Wisconsin, 2001, No. 35074-06; Colorado, 2018, No. 0054874; New York, 2018, No.100486
- Member, American Society of Civil Engineers
- Member, the Wisconsin Union, University of Wisconsin-Madison
- Member, Wisconsin Section of the American Water Resources Association

**Professional History:**

- 2016 – Present Principal Groundwater Engineer – INTERA Inc., Green Bay, WI
- 2009 – 2016 Groundwater Engineer/Senior Modeler – Layne Hydro, Bloomington, IN
- 2009 – 2011 Lecturer of Geology – Lawrence University, Appleton, Wisconsin
- 1990 – 2009 Design Engineer – SEH, Inc., Chippewa Falls, WI and St. Paul, MN
- 2001 – 2006 Assistant Professor, Civil Engineering – University of South Carolina, Columbia, SC
- 1985 – 1988 Student Engineer Trainee – Wisconsin DOT, District 7, Rhinelander, WI

**Specialized Training & Software:**

- **Analytical Modeling Tools:** GFLOW, CZAEM (USEPA), TimML and Ttim, MLAEM, STRMDPL (USGS)



integral to the analysis of groundwater availability from stream infiltration during extreme drought conditions. Observed conditions of the stream going dry during pumping from the gravel pit, and re-wetting downstream, were simulated and quantified with the GFLOW model.

**Evaluation of the Alluvial Aquifer at Taylor Ranch, Wood Claessens Foundation, Ventura CA, 2012.** *Design Engineer.* Performed hydrologic evaluation of the shallow alluvial aquifer in the Lower Ventura River Basin to evaluate the sustainable yield of the Taylor Ranch well field, supplying irrigation water for avocado, lemon, and strawberry crops. The analysis included water level monitoring in the well field and the Ventura River, a pumping test conducted in the well field, development of a groundwater flow model to evaluate regional aquifer conditions and assess groundwater-surface water interaction, and water quality testing to identify source waters.

**An Analytical Investigation of Groundwater Surface water Interaction, University of South Carolina Office of Research, Columbia, SC. 2002 – 2003.** *Principal Investigator, University of South Carolina.* Developed a general analytical model of groundwater flow in the vertical plane to a stream, using conformal mapping and boundary integral techniques. The solution allows for the analytical evaluation of the numerous (39) possible flow regimes.

**Infiltration Gallery Feasibility and Design, Cascade Stream Solutions for the Truckee Meadows Water Authority (TMWA), Truckee Meadows, NV. 2016.** *Design Engineer.* Provided a feasibility study and preliminary design for a non-standard infiltration gallery to be constructed beneath Whites and Thomas Creeks. The gallery is to allow TMWA to exercise their water rights by withdrawing stream flow at select times and allow for shut-down during periods of low and high flow. The preliminary design included analytical hydraulic and seepage models for an artificial reservoir, collection pipe, and stream bed filter. Filter options included standard granular filters and porous concrete at the stream bed. Reservoir options included a concrete box backfilled with open graded aggregate with one or more drainage pipes, and prefabricated underdrains.

**High Capacity Well Permitting –Due Diligence, Unimin Corporation, Hixton, WI. 2014.** *Design Engineer.* Performed evaluation of permissible groundwater supply for a potential frac-sand mine in Jackson County, WI, post Richfield Dairy ruling. Aquifer characterization program with deep exploratory borings, two 72-hour pumping tests, and geophysical logging. Surface water characterization with base flow measurements at 35 stream crossings in the watershed, correlation to USGS gage data, and estimates of low flow and base flow statistics for all streams in the watershed. Stream depletion modeling to evaluate individual and cumulative impacts of existing and foreseeable future high-capacity well permits in the watershed. Modeling performed with Ttim open-source analytic element software. Coordination and collaboration with the DNR.

**High Capacity Well Permitting – Unimin Corporation, Tunnel City, WI. 2011.** *Design Engineer.* Permitting of high-capacity wells for a proposed frac-sand mine in Monroe County, WI, post Lake Beulah ruling. Hydrologic study performed, including aquifer characterization with exploratory deep borings and a 72-hour pumping test with nested piezometers. Surface water characterization based on analysis of USGS gage data, field measurements, and monitoring of critical streams. Regional groundwater flow modeling to estimate base flow in ungaged streams and evaluate stream depletion rates for all streams. Modeling performed with TimML and Ttim open-source analytic element software. Coordination and collaboration with the DNR throughout NR820 review. A \$100 million mine was subsequently constructed and is currently operating.

## Analytical Modeling Publications, Presentations, and Reports

Anderson, E.I. and P. Jurcek, 2015. Ttim and stream depletion, International Conference on the Analytic Element Method, Golden, CO, May 31- June1, 2015.

Anderson, E.I., 2015. Analytical models of groundwater-surface water interaction, International Conference on the Analytic Element Method, Golden, CO, May 31-June 1, 2015.

Anderson, E.I., 2005. Modeling groundwater-surface water interaction using the Dupuit approximation, *Advances in Water Resources*, 28/4, pp. 315-327. doi:10.1016/j.advwatres.2004.11.007

Anderson, E. I., 2003. An analytical solution representing groundwater–surface water interaction, *Water Resources Research*, 39(3), 1071. doi:10.1029/2002WR001536.



**Raghavendra Suribhatla, PhD, PE**  
Technical Lead, Analytical Modeling

Dr. Suribhatla is a California-licensed professional engineer with 14 years of research and consulting experience in computational groundwater and surface water hydrology, and analytical modeling. He has led or managed modeling projects for government, private, and legal clients. His project experience includes developing and updating numerical models for several water resources and

remediation projects in California. Dr. Suribhatla specializes in analytical modeling, integrated surface water-groundwater modeling and data integration methods. He is a recognized expert in analytical modeling and is a co-author of one of the first comprehensive analytical modeling software SPLIT. His background includes developing new analytical techniques for modeling flow in anisotropic aquifers, new analytical elements for surface water-groundwater interactions and implementation of heterogeneous conductivity models for anisotropic formations, inverse modeling and quantification of parameter uncertainty, innovative techniques for subsurface characterization including hydraulic tomography, and geophysical data integration. He has authored/co-authored seven peer-reviewed articles in water resources, environmental engineering and applied mathematics journals and has developed design tools based on original analytical solutions.

**Select Project Experience**

**Coastal plain of San Diego Surface Water-Groundwater Model, City of San Diego, San Diego. 2019-present. Reviewer and Modeling Lead.** Lead Modeler for model review of an existing FEMFLOW model of the southwestern San Diego County and northern portion of the state of Baja California. The model covers the entire Coastal Plain of San Diego groundwater Basin and encompasses watersheds of the major rivers including the San Dieguito, San Diego, Sweetwater, Otay and Tijuana Rivers. The model will be used to support the development of a Groundwater Sustainability Plan (GSP) for the Coastal Plain of San Diego groundwater Basin. Currently performing review of conceptual and numerical models and model calibration, and assisting the City of San Diego staff in performing model runs and modifications for potential future project scenarios.

**Modeling of Impacts of Wellfield Shutoff and Reduced Injection at the Dominguez Gap Barrier, Water Replenishment District, Southern CA. 2017. Modeling Lead.** Performed modeling analysis to evaluate the impact of shutting off extraction wells in the Dominguez Gap area, on groundwater levels at the Dominguez Gap Barrier Project (DGBP) injection wells. The main objective of the evaluation was to estimate the potential reduction that can be applied to volume of injected water at the DGBP wells due to reduced extraction in the Dominguez Gap area. Simulations showed groundwater levels increase in response to well shutoff, at the location of the extraction wells and also along DGBP wells. Groundwater level increases at DGBP wells translated to reductions in the volume of water required to maintain groundwater levels protective of seawater intrusion. The increase in groundwater levels at the DGBP wells, and the computed reduction in outflows from the main aquifers were used to develop and simulate scenarios of reduction in volume of injected water.

**Years of Experience: 15**

**Office Location:** Los Angeles, CA

**Education:**

- PhD, 2007, Civil Engineering, State University of New York at Buffalo
- MS, 2004, Civil Engineering, State University of New York at Buffalo
- B. Tech, 2001, Civil Engineering, Indian Institute of Technology-Madras

**Professional Registrations/Affiliations:**

- Professional Engineer, CA, 2017, No. 87025
- Member, Groundwater Resources Association of California
- Member, National Groundwater Association
- Review Panel for 3 Journals: Water Resources Research, Journal of American Water Resources Planning and Management, Groundwater

**Professional History:**

- 2015 – Present Senior Water Resources Engineer – INTERA Incorporated, Los Angeles, CA
- 2008 – 2015 Project Engineer, Geomatrix, Oakland, CA
- 2007 – 2008 Post-Doctoral Research Associate, University of Arizona, Tucson, AZ
- 2001 – 2006 Research Assistant, Groundwater Research Group, University at Buffalo, NY

**Specialized Training/Software**

- Surface water-Groundwater Modeling: MODFLOW, MODHMS, HydroGeoSphere, FEMFLOW, GFLOW, SPLIT, VisualAEM, C2VSim
- Modeling Environments: GMS, Groundwater Vistas, Visual MODFLOW
- Code Development: SPLIT, Hydrolmage

**Impact of Model and Parameter Uncertainty on Predictive Uncertainty of a Regional-scale Integrated Surface Water- Groundwater Flow Model, Idaho Groundwater Appropriators Association, Boise, ID. 2012 – 2014.** *Lead Modeler.* Lead modeler for implementation and calibration of alternative models to a highly parameterized regional-scale MODFLOW groundwater model of the Eastern Snake Plain aquifer in South Idaho. Original model, developed by the Idaho Department of Water Resources (IDWR), encompasses an area of 11,000 square miles of the fractured basalt aquifer. It was parameterized using hundreds of pilot points and calibrated using subspace-regularization methods of PEST, with more than 15,000 head and flow targets. Model is part of a highly litigious water rights case involving surface water irrigation districts, groundwater users, city water utility agencies and a senior spring water rights holder seeking to curtail junior groundwater users across the entire aquifer. Provided a critical review of the IDWR model and identified model super-parameters with highest impact on spring flows towards development of alternate conceptual models. Worked with Project Principal to implement and calibrate alternative models to demonstrate impact of model and parameter uncertainty on the range of flows accrued to the spring following curtailment. Provided deposition testimony to opposing counsel and Water Rights Director on the development of alternative models and calibration process. Developed an efficient workflow for translation of changes to conceptual model into numerical model predictive uncertainty, including setting up scripts for implementation of Parallel PEST on a local Windows network and compilation of inverse model results.

**Upper Santa Clara River Integrated Groundwater-Surface Water Model Updates, Los Angeles County Sanitation Districts (LACSD), CA. 2013 – 2014.** *Project Modeler.* Project Modeler for updating MODHMS model of the Upper Santa Clara River and implementation of future scenarios involving different types of water treatment and varying quality of imported State Water Project water. The Santa Clara River flows through Los Angeles and Ventura Counties and provides beneficial uses that include agricultural and urban water supply, groundwater recharge and biological habitat. Portions of the river basin have undergone significant urbanization over the last two decades, creating salinity management challenges for the groundwater and surface water systems. Portions of the Santa Clara River in the Santa Clarita Valley and downstream agricultural areas are now listed on California's 303(d) list of impaired waters with respect to chloride, resulting in the Los Angeles Regional Water Quality Control Board (LARWQCB) adopting a total maximum daily load (TMDL) for chloride in 2002. To address the TMDL requirements, an integrated groundwater/surface- water interaction model (called GSWIM) capable of simulating flow and chloride transport throughout the TMDL study area was developed and is being used to evaluate impacts of different water use scenarios and point source loadings from water reclamation plants. Worked with Principal Engineer and in close collaboration with LACSD staff to implement future scenarios, developed detailed data preparation and documentation procedures along with customized codes to translate data from client provided EXCEL files to model input and perform numerical simulations to evaluate chloride concentration in the Santa Clara river basin till year 2030. Assisted LACSD staff with presentation of results to the LARWQCB and communication of specifics of modeling process and representation of various components.

## Analytical Modeling Publications, Presentations, and Reports

Suribhatla, R., 2013. General Analytic Element Solution to Flow Through Multiple Anisotropic Circular Inclusions, MODFLOW and More, June 2-5, Golden, CO.

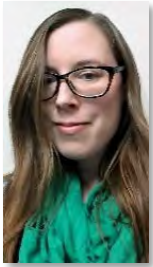
Suribhatla, R., I. Janković, A. Fiori, A. Zarlenga and G. Dagan, 2011. Effective Conductivity of an anisotropic heterogeneous medium of random conductivity distribution, *Multi-Scale Modeling and Simulation*, Society of Industrial and Applied Mathematics (SIAM) Journal, 9, pp. 933-954.

C. M. Mok, R. Suribhatla and M. Zhang, 2010. Supporting Fully-Coupled Surface Water-Groundwater Flow Simulations with ArcHydro, American Water Resources Association (AWRA) 2010 Summer Specialty Conference, March 29-31, Orlando, FL.

Craig, J. R., A. J. Rabideau and R. Suribhatla, 2006. Analytical expressions for the hydraulic design of continuous permeable reactive barriers, *Advances in Water Resources*, 29, 10.1016/j.advwatres.2005.05.006.

Bandilla, K., Suribhatla, R., and Jankovic, I, 2006. SPLIT - Win32 computer program for analytic-based modeling of single-layer groundwater flow in heterogeneous aquifers with particle tracking, capture-zone delineation, and parameter estimation. Department of Civil, Structural and Environmental Engineering, University at Buffalo, Buffalo, NY.

Suribhatla, R., M. Bakker, K. Bandilla and I. Janković, 2004. Steady Two-dimensional Groundwater Flow Through Many Elliptical Inhomogeneities, *Water Resources Research*, 40(4), W04202, 10.1029/2003WR002718.



**Joanna Stakutis**  
Technical Lead, GSP Document Management

Joanna Stakutis has 16 years of experience in writing, editing, teaching, and media development; including technical editing, research, formatting, production, controls, and archiving. She has experience producing reports, proposals, informational materials, promotional materials, and presentations. Ms. Stakutis also has office management and project coordination experience.

As Senior Technical Editor at INTERA, Ms. Stakutis is responsible for the editing, layout, and production of reports and documents for state and municipal and private clients. Her role at INTERA includes supporting and facilitating both internal and external project teams to design, author, develop, edit, and produce technical memoranda, reports, and documents. This role includes coordinating and facilitating multiple authors, sometimes in multiple locations, to develop and produce documents by using web-based collaborative tools such as Basecamp to receive and integrate materials from each author. Often these documents are then provided to stakeholders via a web-based version of the document.

Ms. Stakutis regularly edits Environmental Site Assessments, Groundwater Sampling Reports concerning petroleum hydrocarbons, metals, nitrate, and radionuclides, reports for Department of Energy sites, Work Plans, Scope of Work and Cost Estimates, Site-Specific Health and Safety Plans, and presentations. For New Mexico Environment Department Superfund sites, she has completed document analysis and cataloguing. She has also overseen document archiving, electronic, and hard-copy file maintenance, and assisted with project scheduling. Her duties also include data entry and data quality assurance as needed.

**Representative Project Experience**

**2018 New Mexico State Water Plan, New Mexico Interstate Stream Commission. Santa Fe, New Mexico. 2019. Senior Technical Editor, Graphics Support, and Project Coordination.** Project coordinator for the 2018 update of the New Mexico State Water Plan. Project roles included setting up and maintaining project management software for the duration of project, as well as developing an easily comprehensible document scope, with technical input from multiple authors. Working with lead scientists, developed graphics that were designed to effectively communicate information regarding statutes and governmental resources related to water issues. Selected and catalogued photographs for use on the cover and within the document. Assured all photographs were either open source or owned by the Interstate Stream Commission (ISC) to ensure there were no copyright issues. Edited multiple drafts of the full document and of individual sections as needed. Checked and embedded hundreds of active hyperlinks to agencies and programs related to water issues in the document. Designed the print version of the Plan to be produced in twin-wire binding. Produced printed proofs for the ISC scientists and board members to review. Edited as final and produced final copies of the Plan to be distributed around the state to water policy decision-makers. In addition, worked with the OSE webmaster to produce an interactive online version of the Plan, which was released in 2019.

**Years of Experience: 16**

**Office Location:** Albuquerque, NM

**Education:**

- MA, 2003, Secondary English University of Maine, Orono
- BA, 2002, English Technical Writing and Rhetoric, University of Maine, Orono

**Professional History:**

- 2015 – Present Senior Technical Editor/  
ABQ Office Manager– INTERA  
Incorporated, Albuquerque, NM
- 2014 – 2015 Chair of the English  
Department/Senior English  
Instructor – Valencia High School,  
Los Lunas, NM
- 2013 – 2014 Student Support Specialist–  
Community College of Allegheny  
County, Pittsburgh, PA
- 2011 – 2013 Business Writer/Office Manager –  
Sprint/Seacoast Cellular, North  
Hampton, HM
- 2013 Project Coordinator of Perkins  
Gender Equity in Math Study–  
Maine Community College System
- 2010 – 2013 Assistant to the Director of the  
Learning Center/Instructor of  
English and Business Writing –  
York County Community College,  
York, ME
- 2006 – 2010 Media Development/Business  
Writer/Innkeeper – 2cats  
Restaurant and Inn, Bar Harbor,  
ME
- 2003 - 2010 Instructor of English and  
Communication –  
University of Maine, Bangor  
Campus, Bangor, Maine

**Specialized Training & Software:**

- Microsoft Office: Word, PowerPoint, Project, Excel, Publisher, OneDrive, SharePoint
- Visual Basic for Applications: macro design tools
- Prezi: Dynamic, zooming presentations
- Adobe editing software: Acrobat, Photoshop and Premier
- HTML-based and WYSIWYG web design tools

**Water 2120: Securing Our Water Future, Water Resources Management Strategy Report. Albuquerque Bernalillo County Water Utility Authority. 2015-2016.** *Senior Technical Editor, Project Coordination, and Production.* Provided support for the development of the Water Authority's Water 2120 100-year water plan. Water 2120 articulates all aspects of the Water Authority's water planning for the next 100 years, including surface- and groundwater management, as well as potential new supplies. Project roles included author coordination, draft management, and senior technical editing. Designed and developed several supporting documents for ABCWUA's template. Provided technical editing for multiple drafts of each chapter. In addition, prepared versions for public comment and final print and web distribution.

**Northeast Church Rock Mine Site and United Nuclear Corporation Mill Site (Superfund National Priority List Site) Environmental Data Gap Report and subsequent Environmental Report. General Electric. Church Rock, New Mexico. 2016-2018.** *Senior Technical Editor, Graphics Support, and Project Coordination.* Identified by the US EPA Region 9 and the Navajo Nation EPA as the highest priority cleanup of more than 500 abandoned uranium mines on the Navajo Nation, the selected cleanup remedy. Specific project tasks included preparation of templates to distribute to subcontracted SMEs before writing, along with a guide for using the template. For efficiency, sub-headings were developed in advance based on research and planning. Coordinated with authors to collect drafts under deadlines, compile, and seek any information deemed missing compared to NUREG documents. Prepared and compiled all tables, figures, graphics, and electronic-data deliverables as required by the EPA. Conducted senior technical editing of all drafts and final preparation of drafts to be uploaded to the designated SharePoint space as well as organized SharePoint space as needed to accommodate new drafts or data.

**Lisbon Site Hydrogeologic Supplemental Site Assessment. Rio Algom Mining, LLC. Lisbon, Utah. 2018.** *Senior Technical Editor and Project Coordination.* Supported the development of the HSSA report for the former uranium mill facility. Specific tasks and responsibilities included designing templates for the main document and the multiple appendices and sub-documents, coordinating with all authors working in various file types and file versions to make the final product. Organized and embedded all figures, tables, and other graphics as well as organized and edited large photograph logs from different field events into matrices which could be updated easily. Prepared petrography reports and INTERA's comments on each report for polished presentations. Edited the document between several rounds of senior review and third-party review. Verified all references and abbreviations. Produced the final document for print and electronic distribution.

**US Navy Red Hill Bulk Fuel Storage Facility Tank Upgrade Alternative—Hawaii Board of Water Supply Response Document. Hawaii Board of Water Supply. Oahu, Hawaii. 2019.** *Senior Technical Editor.* Supporting the Board of Water Supply in compiling responses from all SMEs for all AOC SOW sections into a complete deliverable (200+ pages with nearly 100 figures and tables). The process relies on hundreds of historic and recent documents. Provided complete technical document reviews as well as short informational documents for the client. Project responsibilities included combining all text, tables, and other graphics while adding text to connect sections and describe purpose. Managed and embedded all tables and other graphics. In addition, managed consistent presentation of complex quote/response styles and resolution of many ambiguous or redundant references.



**Joan Blainey, PhD, PG**  
Technical Support Resource

Joan Blainey has 21 years of experience in developing and applying groundwater flow and water availability models at both regional and local scales. Her modeling expertise is applied to water resources management, where she uses these tools to evaluate the impacts of future groundwater pumping, locate and design water supply wells, estimate spatially distributed precipitation to assess variations in climate, and quantify recharge and runoff potential in arid and semi-arid basins. For state, regional, and municipal water management agencies and river authorities, Dr. Blainey contributes to projects involving evaluations of brackish groundwater as an alternative water source, the protection of water supplies from seawater intrusion and other types of potential contamination, and the transfer of water rights. In completing this work, she brings expertise with a wide variety of groundwater flow and transport codes, geostatistical and mathematical software, programming languages, optimization codes, and geographic information system (GIS) software. She has specialized expertise in development and application of statistical models including artificial neural networks (ANNs), kriging, Markov chain Monte Carlo (MCMC) methods, and stochastic simulation (e.g., sequential Gaussian simulation).

**Select Project Experience**

**Development of A Groundwater Flow Model of the East and South Las Posas Valley Basins, Calleguas Municipal Water District, Ventura County, CA, 2016 - Present.** *Water Budget Technical Lead and Modeler.* Ongoing work developing a conceptual model, water budget, and a groundwater flow model to support the development of long-term operational planning of the Las Posas Valley Basin Aquifer Storage and Recovery (ASR) project. Preliminary water budget is complete, groundwater flow model is calibrated, and draft report will undergo review by a technical advisory group.

**Water Supply Evaluation for Swarthout Valley, Golden State Water Company, San Bernardino County, CA. 2014 – 2015.** *Senior Hydrogeologist.* Developed a conceptual hydrogeologic model for a small, shallow alluvial groundwater system located along the San Andreas Fault zone. Devised a transient monthly water budget for the past 15 years that included recharge, and calculated basin yield to evaluate water supply conditions and the reliability of meeting water demands. Analyzed the water budget to predict scenarios with consecutive years of below average precipitation that could result in insufficient water supply to meet system demands, historically precedented events. Primary author of report documenting the work.

**Modeling of Seawater Intrusion Barrier for Protecting Groundwater Resources, West Basin Municipal Water District, Southern CA. 2015.** *Senior Hydrogeologist.* Providing annual regulatory reporting materials to the District based on groundwater flow and transport modeling for the West Coast Basin seawater intrusion barrier using recycled water for injection. The reporting materials are used by the District to meet the annual metrics of the recycled-water injection permit granted by the Los Angeles Regional Water Quality Control Board. Responsible for calculating travel times and concentrations of the

**Years of Experience:** 21

**Office Location:** Austin, TX

**Education:**

- PhD, 2008, Hydrology and Water Resources, The University of Arizona
- MS, 2000, Hydrology and Water Resources, The University of Arizona
- BS, 1997, Mathematics, University of Washington

**Professional Registrations/Affiliations:**

- Professional Geologist, California, 2019, No. 9677
- Professional Geoscientist, Texas, 2012, No. 11191
- Member, National Ground Water Association

**Professional History:**

- 2018 – Present Group Manager, Senior Hydrogeologist – INTERA Inc., Austin, TX
- 2012 – 2017 Senior Hydrogeologist – INTERA Inc., Austin, TX
- 2008 – 2012 Hydrogeologist – INTERA Inc., Austin, TX
- 2005 – 2008 Research Assistant – The University of Arizona, Tucson, AZ
- 2002 – 2008 Hydrologist – U.S. Geological Survey and contractors, Tucson, AZ
- 2000 – 2002 Hydrologist – Contractor for U.S. Geological Survey, Sacramento, CA
- 1997 – 2000 Research Assistant – The University of Arizona, Tucson, AZ

**Software & Specialized Training:**

- Surface Water: CE-Qual-W2, HEC-RAS
- Groundwater & Transport: FEHM, HYDRUS, MODFLOW, MODFLOW-SURFACT, MT3DMS, MODPATH, PEST, PHREEQC, PLUMECALC, STOMP, UCODE, Groundwater Vistas, FloPy
- Statistical, Geospatial, & More: S-PLUS, R, MATLAB, ArcMap, Python, Leapfrog Geo
- Estimating Groundwater Recharge, National Ground Water Association, 2015
- Advanced PEST Training, 2012
- FEHM Training, 2010

recycled water injected at the barrier as it moved inland towards water supply wells, documenting the work, and interfacing with the District to convey and interpret the modeling results and assumptions.

**Hydrogeological Assessment for Groundwater Well Options for the City of Wharton Texas, Halff Associates Inc., Wharton County, TX, 2016.** *Groundwater Modeler.* Conducted simulation of groundwater flow to estimate drawdown and land subsidence impacts from increased pumping to meet future water supply demands. Simulations considered two sources of water supply: groundwater from proposed new wells and injection of treated wastewater effluent as part of Aquifer Storage and Recovery. Results of the groundwater modeling study were included as part of a feasibility analysis for the cities of Wharton and East Bernard, Texas that was funded by a Texas Water Development Board Regional Facilities Planning Grant.

**Support for Municipal Well Location and Permitting, City of Ada, Ada, OK. 2014.** *Modeler.* The City of Ada has assessed development of additional groundwater resources in the Arbuckle Simpson Aquifer (ASA). Currently, the City of Ada supplies groundwater from Byrd's Mill Spring, which is fed from the ASA, and from three wells also completed in the ASA. An objective of potential groundwater development is to minimize the impacts of the new wells on flow to Byrd's Mill Spring. Assisted in a hydrogeology assessment and groundwater modeling to aid the city in identifying new locations that met their objectives as well as complied with state rules for groundwater wells in the ASA. Also supplied calculations to update an existing groundwater model of the ASA by extending the model simulation period 8 years and creating spatial refinement in the study region. The updated model will be used to help assess potential impacts of groundwater pumping on existing groundwater discharge features.

**Hydrologic Analyses in Support of a Water Rights Transfer, Confidential Federal Client, NM. 2013 – 2016.** *Hydrologist.* Part of a team that performed hydrologic analyses in support of a water rights transfer on a major river in New Mexico. Analyses included determination of accretion rate to river due to cessation of pumping upstream, estimate of potential losses between the move-from to the move-to locations, and estimates of change in groundwater storage due to diversion through horizontal collector wells or infiltration galleries. Primary role was performing comparisons between the Glover-Balmer estimate of accretion rate due to pumping cessation and an analytic element method of performing the same estimate. Supported estimates of the seepage losses occurring between the move-from and move-to locations by analyzing differential stream gage data. Primary author of report documenting the work.

**Groundwater Modeling of the Death Valley Regional Flow System, U.S. Geological Survey, U.S. Department of Energy, and Various Government Agencies, CA and NV. 2002 – 2004.** *Modeler.* Supported development of a comprehensive three-dimensional hydrogeologic framework and groundwater flow model of the Death Valley region. This flow system is one of the larger flow systems within the southwestern U.S. and includes within its boundaries the U.S. Department of Energy's Nevada National Security Site (NNSS) (formerly the Nevada Test Site) and proposed site for the Yucca Mountain high-level radioactive waste repository, and much of Death Valley. Since 2004, the model has been modified and updated and is currently used to help define boundary conditions and fluxes for groundwater and transport models developed to support environmental restoration activities at the NNSS. In support of the 2004 version of the model, responsible for calibrating the steady-state and transient groundwater model to describe flow-paths and the magnitude of flow in the regional groundwater system. The groundwater model was subsequently used to define boundaries of the subregional and local flow system; characterize regional three-dimensional groundwater flow paths; define locations of regional groundwater discharges; estimate magnitudes and rates of regional subsurface flux; and evaluate potential and existing anthropogenic effects on groundwater flow.

**Technical Review of Brazos River Authority Water Availability Modeling and Water-Management Plan for Pending Permit 5851, Possum Kingdom Lake Association, Graford, TX. 2013.** *Modeler.* Reviewed water availability modeling (WAM) and water-management plan (WMP) documents submitted to the Texas Commission on Environmental Quality in support of the Brazos River Authority's (BRA) pending water right permit 5851. Worked with the lead technical engineer to verify modeling interpretations made by BRA and concluded that the Brazos Basin WAM model does suggest sufficient water is available to meet the current permitted and pending permitted water needs in the Brazos Basin.



**Erick Fox**  
Technical Support Resource

Erick Fox brings experience in ArcGIS and QGIS software packages, geodatabase design, AutoCAD-to-GIS integration, SQL, hard copy and web mapping, remote sensing and spatial analysis, GPS fundamentals and field data collection, Python scripting, ENVI software, and Carto and Mapbox web mapping platforms. He has successfully implemented GIS

principles to design, create, and manage geodatabases for more than a dozen water and sewer authorities.

**Select Project Experience**

**Water Infrastructure Model Development, Inland Empire Utilities Agency, CA. 2018.** *GIS Analyst.* Incorporated water utility infrastructure data from more than a dozen agencies into a coherent ESRI geodatabase structured on the Local Government Model. The database is the input for an EPAnet model of the entire connected system to understand and improve the resilience of the system under a variety of service disruption scenarios.

**Commercial Water Use Reporting, New Mexico Office of the State Engineer, NM. 2017.** *GIS Analyst.* Compiled a database of metered water use for publication in a State report. Imported database tables into an ESRI geodatabase for geographic organization by county and groundwater basin. This project also included logical consistency analysis between component data sources, and the systematic application of water use rates based on assignment of a facility type to each water user. The facility type analysis resulted in a framework for NM OSE to assign reasonable water use estimations as needed based on available values for actual water use and which will be repeatable in subsequent reporting years.

**Integration and Launch of a Geographic Information System, Bankson Engineers, Inc., Pittsburgh, PA. 2015 -- 2016.** *GIS Analyst.* Inaugurated the widespread use of GIS by the firm, increasing revenue by providing additional services to new and existing clients. Designed, created, and managed geodatabases for more than a dozen water and sewer authorities in western Pennsylvania. Created valuable online and hard copy mapping products using CAD, GIS, field survey, and tabular data sources both for internal reference by the firm’s civil engineers as well as for deliverable products to clients.

**Ambrosia Lake Groundwater Model Report, Rio Algom Mining, NM. 2017-2018.** *GIS Analyst.* Visually characterized the groundwater model by creating dozens of figures including geologic cross sections and constituent concentration contours. Integrated data from MODFLOW, groundwater monitoring wells, bore log reports, and geologic maps to clearly communicate the status and parameters of the groundwater model.

**Land Use Analysis, Confidential Client, 2017-2018.** *GIS Analyst.* Filled a crucial gap in the knowledge of land use in the area by categorizing approximately 250,000 acres of land by interpretation of historic black and white aerial orthophotography and cross-referencing with contemporary maps and tables. Created and managed a topologically correct geodatabase of land use polygons.

**San Mateo Creek Alluvial Pathway Model, Rio Algom Mining, NM. 2018.** *GIS Analyst.* Create subsurface elevation rasters from groundwater well data using ArcGIS Spatial Analyst for use in a MODFLOW groundwater model. Automate model grid flow path ordering using a Python script and ArcGIS Model Builder.

**Years of Experience:** 4

**Office Location:** Albuquerque, NM

**Education:**

- MS, 2016, Geographic Information Systems and Remote Sensing, University of Pittsburgh
- BA, 2004, Urban Studies, University of Pittsburgh

**Professional Registrations/ Affiliations:**

- FAA Part 107 Licensed sUAS Pilot, 2018, Certificate Number 4092569
- Member New Mexico Geographic Information Council (NMGIC)

**Professional History:**

|                |   |
|----------------|---|
| 2017 – Present | GIS Analyst – INTERA, Inc, Albuquerque, NM            |
| 2015 – 2016    | GIS Analyst – Bankson Engineers, Pittsburgh, PA       |
| 2015 – 2016    | Instructor – University of Pittsburgh, Pittsburgh, PA |

**Specialized Training & Software:**

- ArcGIS Pro, ArcMap, QGIS
- 3D Analyst
- Spatial Analyst
- FAA Part 107 training and certification
- SQL, Python
- ENVI, Carto, Mapbox





**Jevon Harding, PG**  
Technical Support Resource

Jevon Harding has ten years of research and applied experience in the areas of quantitative hydrogeology, geographic information systems (GIS), data management and numerical modeling. In support of water resource evaluations and management, she has performed analyses to quantify hydrologic and hydrogeologic processes and properties; applied GIS to manage, analyze, and map data;

developed and applied numerical models; and designed and implemented field data collection programs. Ms. Harding has contributed to projects for state, regional, and local water authorities, as well as commercial industry, including the development of groundwater availability models (GAMs) of aquifer systems to support long-term water planning, the use of models to evaluate seawater intrusion and its impacts on water supply systems, the assessment of impacts to watersheds from climate change, and the design of rainwater harvesting systems to reduce water usage. Her experience also includes coordinating and presenting workshops and establishing other community outreach efforts to communicate technical and scientific information on topics such as water use and conservation.

**Select Project Experience**

**Development of a Groundwater Flow Model of the East and South Las Posas Basins, Calleguas Municipal Water District, CA. 2016 – Present. Hydrogeologist.**

Member of a team developing a groundwater flow model of the East and South Las Posas Basins in southern California. The model will be used to predict the impact of Calleguas’ Las Posas Basin Aquifer Storage and Recovery (ASR) Project on water levels and groundwater flow within the basins. The model is also meant to support groundwater management planning by the Fox Canyon Groundwater Management Agency (FCGMA) and its stakeholders, as well as complement groundwater models in adjacent basins. Responsibilities include creating raster surfaces for the geologic formations represented in the model, compiling and analyzing data on water levels, stream flows, and aquifer properties, creating maps of the study area.

**Seawater Intrusion Barrier Modeling, Dominguez Gap and Alamitos Seawater Barrier, Southern California Water Replenishment, CA. 2012 – 2017. Hydrogeologist.**

The Water Replenishment District of Southern California (WRD) runs the Harbor/Dominguez Gap project to provide advanced treatment of municipal wastewater that can be recycled as input water to the Dominguez Gap Barrier. This network of seawater barrier wells owned and operated by the Los Angeles County Department of Public Works (LACDPW) helps stop saltwater encroachment into the inland aquifer. As part of the permitting process for using recycled wastewater, groundwater monitoring is required to observe water quality conditions and to anticipate potential problems before recycled water travels to downgradient drinking water wells. Each year, the Dominguez Gap Barrier Model (DGBM) is updated using the past year’s injection and production data in order to determine recycled water fate and transport for permit compliance. Responsibilities included updating model inputs to include most recent pumping data, recreating boundary conditions based on monitoring wells’ behavior and the past year’s injection rates for the barrier wells using Python and ArcGIS scripts, and creating final model inputs to be used in the DGBM. The annual update of this model allows the WRD to remain in compliance with permit requirements, thus allowing the continuous uninterrupted injection of the recycled wastewater barrier that protects and preserves the fresh groundwater supplies within WRD’s service area.

**Technical Support for Water Planning, Post Oak Savannah Groundwater Conservation District, Milam, TX. 2015 – Present.**

*Hydrogeologist.* Assisting with hydrogeological support for the Post Oak Savannah Groundwater Conservation District (POSGCD). The POSGCD was established in 2002 and provides for the conservation, preservation, protection, recharging, and prevention of waste of groundwater and the protection of groundwater users in Milam and Burleson counties, Texas.

**Years of Experience: 10**

**Office Location:** Austin, TX

**Education:**

- MS, 2012, Hydrology, New Mexico Institute of Mining & Technology
- BA, 2007, Geosciences, Princeton University

**Professional Registrations/Affiliations:**

- Professional Geoscientist, Texas, 2015, No. 12050

**Professional History:**

|                |  |
|----------------|--|
| 2012 – Present | Staff Hydrogeologist – INTERA Inc., Austin, TX   |
| 2009 – 2012    | Research & Teaching Assistant – New Mexico Institute of Mining & Technology, Socorro, NM                   |
| 2007 – 2009    | Research Associate – The Energy and Resources Institute (TERI), Water Resources Division, New Delhi, India |

**Specialized Training & Software:**

- Esri ArcGIS, Python (ArcPy, NumPy, Matplotlib), TTim, LeapFrog, MODFLOW (Groundwater Vistas), PEST
- CTEMPS Distributed Temperature Sensing training, 2009

Responsibilities include providing guidance for district groundwater monitoring efforts by reviewing and compiling water levels, contributing geologic information and model results needed to craft Desired Future Conditions, and presenting to the Board and local stakeholders on various technical topics, as needed. POSGCD participates in joint planning efforts as a member of Groundwater Management Area 12, so responsibilities also include presenting to and coordinating with other districts within GMA 12 on behalf of POSGCD.

**Well Interference Assessment and Modeling Analysis for New Proposed Well for Village of Gilberts, Lintech Engineering, Inc., Gilberts, IL. 2015. Groundwater Modeler.** Served on team that developed a groundwater flow model to evaluate a proposed new well's long-term pumping rate and the impacts to other existing wells. The model provided a basis for comparing the suitability of several potential well sites for a public water supply production well in Gilberts, Illinois. Responsibilities in support of this project included using TTim software to create multiple potential pumping scenarios, modeling the resultant drawdown conditions, and creating maps and figures illustrating the results of the analyses.

**Predictive Simulations to Support the GMA-8 Joint Planning Process, Red River Groundwater Conservation District, North Texas Groundwater Conservation District, Upper Trinity Groundwater Conservation District and Prairielands Groundwater Conservation District, TX. 2015. GIS Analyst/Hydrogeologist.** Four predictive model simulations were developed based on the re-developed Northern Trinity and Woodbine Aquifer GAM on behalf of four GCDs in Northern Texas. Results of the model runs were presented in public meetings as well as provided as physical reports and maps to the GCD clients. Project responsibilities included creating county-level maps in ArcGIS to document the simulated results of each model run, calculating and plotting the predicted drawdown effects for each county, and compiling two final reports with each report documenting the modelling results from two model runs.

**Public Water Supply Well Field Expansion, Valparaiso City Utility, Valparaiso, IN. 2014. Hydrogeologist.** Supported the siting, drilling, and construction of a public water supply production well in Valparaiso, Indiana. Work included developing a groundwater flow model to predict the new well's long-term pumping rate and the impacts to other existing wells. Utilized TTim software to create multiple potential pumping scenarios and modeled the resultant drawdown conditions. Created maps illustrating the results of the analyses.

**Development of a Groundwater Model for the Antlers Aquifer, Choctaw and Chickasaw Tribes, Southeastern OK. 2013. Hydrogeologist.** INTERA prepared a groundwater model of the Antlers Aquifer for the Choctaw and Chickasaw Tribes of Oklahoma that can provide a basis for future groundwater management in the region. In support of developing this aquifer model, responsibilities included collecting available hydrologic data and locating historical reports from state and federal government agencies; creating maps of physiography, climate, geology, surface hydrology, hydraulic properties, water quality, and structure; developing pumping distributions for the region; preparing maps to visualize this data; using parameter estimation software to determine the model's sensitivity to input parameters; and documenting the conceptual model in a detailed report.

**Development of a Groundwater Availability Model (GAM) of the Brazos River Alluvium Aquifer, Texas Water Development Board, TX. 2014 – 2016. Hydrogeologist.** As part of the state-wide TWDB groundwater availability modeling (GAM) program, was a member of the team that developed the groundwater availability model of the Brazos River Alluvium Aquifer (BRAA). Conducted research to help characterize the surface water-groundwater interaction, as well as the interaction between the BRAA and underlying aquifers by analyzing groundwater level and quality data, estimating hydraulic properties based on available field measurements, and performing hydrograph separation analyses. The groundwater model constructed as part of this research provides a tool that will help assess these analyses and evaluate various water management scenarios and their impacts on the BRAA and the Brazos River. Responsibilities included preparing a GIS geodatabase and creating maps of physiography, climate, geology, surface hydrology, hydraulic properties, and water quality; conducting a literature review of historical references to collect all relevant information on water chemistry, hydraulic properties and groundwater-surface water interaction; developing spatial coverages of recharge and hydraulic properties; presenting the research to the Texas Water Development Board as well as local stakeholders; and documenting the conceptual model in a detailed report.



**Patrick O'Connell**  
Hydrogeologist

Patrick O'Connell is a hydrogeologist with experience in groundwater recharge, production, characterization, and remediation. His water resources work has recently focused on assessing spatial and temporal infiltration rate variability at recharge basins. Mr. O'Connell developed a recharge basin monitoring program for the Orange County Water District in MATLAB, which utilized distributed temperature sensing (DTS) to calculate percolation rates throughout the basin floor, and in boreholes, to identify clogging, mounding and preferential flow paths. His experience also includes the siting, design, and construction oversight of groundwater production/ASR, monitoring, and remediation wells. Mr. O'Connell's field experience includes logging boreholes and providing oversight for the drilling, installation, and development of shallow and deep monitoring wells, as well as utilizing numerous drilling techniques including auger, rotary, and sonic methods. His project work has been focused in all phases of site characterization and remediation including optimizing well performance, design and implementation of aquifer testing, oversight of borehole and surface geophysical surveys and well rehabilitation surveys. He is also experienced in the design and installation of dual-phase extraction (DPE) wells and oversight of excavation (dig and haul) of contaminated soils for site remediation purposes. Mr. O'Connell is proficient in Python, ArcGIS, Surfer, MATLAB, LogPlot, and Groundwater Vistas.

**Select Project Experience**

**Groundwater Flow Model of the East and South Las Posas Sub-Basins, Calleguas Municipal Water District, Thousand Oaks, CA. 2018. Project Hydrogeologist.**

Assisted with predictive model simulations for four (4) climate scenarios with variable pumping scenarios and sensitivity analysis of model parameters. Developed Python scripts for generating transient, zone-specific RCH and EVT packages.

**Long Range, Reservoir-Basin Conjunctive Use Pre-Feasibility Report, Kleinfelder/City of San Diego, San Diego, CA. 2018. Project Hydrogeologist.** Compared technical memorandums prepared by separate consultants for projects with overlapping scopes of work and provided recommendations for the final report to ensure consistency.

**Alamitos Model Extension, Orange County Water District, Orange County, CA. 2018. Project Hydrogeologist.** Assisted with development of the extended seawater intrusion model. Generated transient CHD package using Python and Perl scripts.

**Sand City Water Supply Project (SCWSP) Phase 1 New Wells, City of Sand City, Sand City, CA. 2018. Project Hydrogeologist.** Prepared driller bid specifications and aquifer testing work plan for brackish water production wells.

**Test Drilling, Glenn-Colusa Irrigation District, CA. 2014. Project Hydrogeologist.** Logged direct rotary drill cuttings, interpreted borehole geophysical (resistivity suite, gamma, spontaneous potential) logs, prepared lithological logs and helped prepare preliminary well design diagrams for five 550-foot deep test holes.

**Groundwater Flow Modeling, Confidential Client, Whittier, CA. 2018. Project Hydrogeologist.** Prepared water level data for the development of a groundwater flow model to be used for capture zone analysis and design of an extraction system.

**Caltech Submillimeter Observatory (CSO) Decommissioning, California Institute of Technology, Hawai'i, HI. 2018. Project Hydrogeologist.** Prepared a hydrogeological evaluation of potential impacts to groundwater and surface water habitats from leachate discharge at the summit of Maunakea. Simulated vadose zone transport using VS2DI.

**Years of Experience:** 6

**Office Location:** Los Angeles, CA

**Education:**

- MS, 2018, Geology, California State University, Long Beach
- BS, 2012, Earth Science, University of California, Santa Cruz

**Professional Registrations/Affiliations:**

- Geologist-in-Training (CA)
- Member, Groundwater Resources Association of California
- Member, National Ground Water Association
- Member, Groundwater Relief

**Professional History:**

- 2018-Present Hydrogeologist – INTERA, Inc., Los Angeles, CA
- 2016 – 2018 Graduate Research Assistant – California State University, Long Beach, CA
- 2014 – 2016 Hydrogeologist – West Yost Associates, Walnut Creek, CA
- 2012 – 2014 Staff Environmental Geologist – GHD, Emeryville, CA

**Specialized Training & Software:**

- 40-Hour HAZWOPER, 10-Hour OSHA
- ArcGIS, Aqtesolv, AquiferWin32, Geochemist's Workbench, gINT, Groundwater Vistas, Leapfrog, LogPlot, MATLAB, Python, SQL

**ASR Feasibility and Monitoring Well Program, City of Yuba, CA. 2015. *Project Hydrogeologist.*** Oversaw construction and development of three (3) nested monitoring wells, installed to determine ambient groundwater gradients in different aquifer zones. Two (2) wells were logged and drilled using directory mud rotary while the other was done with sonic coring. Lithological and geophysical logging/interpretation and well design support.

**PCE/TCE Site Characterization and Remediation, AGI-Acquisition, Inc., Ontario, CA. 2014 – 2016 *Project Hydrogeologist.*** Assisted with preparation of site characterization and remediation report by incorporating regional hydrogeological information for the Chino Basin into text, created cross-sections, tables and figures. Helped prepare the soil vapor characterization and remediation and indoor-air assessment work plans. Site investigation work included logging three (3) 360-foot deep sonic boreholes to refine the site conceptual model and install nested soil-vapor monitoring probes, and installation oversight of six (6) new soil-vapor extraction (SVE) wells to improve soil vapor remediation performance. Sampled soil vapor monitoring probes and prepared quarterly soil vapor and groundwater monitoring reports.

**Volta Wells Assessment – Radius of Influence Determination, US Bureau of Reclamation, Central Valley, CA. 2015. *Project Hydrogeologist.*** Determined the 1-year radius of influence incurred by two (2) pumping wells full-screened through a confined aquifer, using the distance-drawdown method from the Cooper and Jacob (1946) solution, implemented in AquiferWin32. Aquifer parameters were determined in a previous study and used along with one (1) monitoring well and one of the pumping wells (when not pumping) to determine drawdown. The confined aquifer was determined nonleaky based on shallow monitoring well data.

**Fractured Rock Well Siting, Shaver springs, Country of Fresno, CA. 2015 – 2016. *Project Hydrogeologist.*** Interpreted existing well production data, geological maps and resistivity fence diagrams produced by a Zonge International controlled-source audio-frequency magnetotellurics (CSAMT) survey, to determine the most probable/productive fracture zone to site to a new water supply well. Compiled data in ArcGIS for visualization and helped Zonge with CSAMT data collection during the 1-week survey.

**Westbrook Aquifer-Storage and Recovery (ASR) Well Design, Westpark Developments Inc., City of Roseville, CA. 2015 – 2016. *Project Hydrogeologist.*** A 520-foot deep ASR well and nested monitoring well were drilled with reverse-circulation mud rotary and built and determined to have >20 gpm/foot specific capacity. Lithological and geophysical logging/interpretation and well design support.

**Production Well Design, First Solar, Desert Stateline and Silver State South Projects, CA and AZ. 2014 – 2016. *Project Hydrogeologist.*** Helped design, oversee construction/development and monitor water quality of three (3) >500-foot deep production wells and one (1) 420-foot deep monitoring well, drilled with reverse-circulation mud rotary. Lithological and geophysical logging/interpretation and well design support. Water quality was monitored to evaluate potential aquifer degradation as result of potential migration of brackish water beneath nearby playa lake.

**Washington Park Well Rehabilitation, City of Burlingame, CA. 2015. *Project Hydrogeologist.*** Implemented a mechanical, chemical and redevelopment treatment program to rehabilitate the well. Troubleshooted concerns about sand production by identifying the well had no bottom cap, initially thought to be due to incorrect screen slot sizing choice.

**Report of Waste Discharge for Wastewater Treatment Facilities, Cities of Galt, Lodi, Modesto and the East Bay Municipal Utility District, CA. 2015 – 2016. *Project Hydrogeologist.*** Managed water quality Excel databases using a variety of INDEX/MATCH functions and links. Performed hypothesis testing of trends of constituents of concern in on-site monitoring wells versus background wells, using nonparametric statistical analyses (i.e., Mann-Whitney and Wilcoxon-Rank-Sum in XLSTAT in Excel).

**Nitrate Contamination Investigation, City of Atwater, CA. 2015 – 2016. *Project Hydrogeologist.*** Assisted with development of and implemented a monitoring well installation work plan to investigate potential nitrate contamination of the shallow aquifer beneath an inactive biosolids disposal site. Analyzed and visualized nitrate soil profile data. Conducted a sensitive receptor survey by filtering through several hundred California Department of Water Resources (DWR) well logs and verifying the status of wells proximal to the site. Researched background nitrate levels in the aquifer and potential sources.

# STATEMENT OF QUALIFICATIONS

## 4 - PROJECT EXPERIENCE



## 4 – PROJECT EXPERIENCE

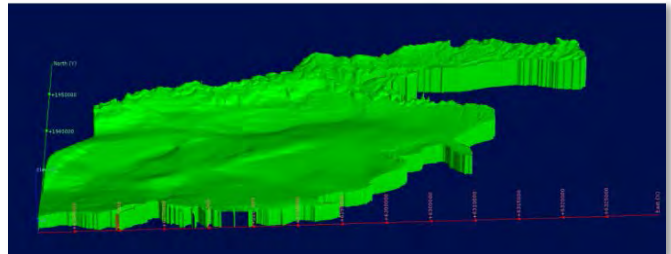
Representative examples of INTERA’s project experience, relevant to providing support for developing GSPs, are provided below. To ensure that the experience and lessons learned from these projects are successfully transferred to our work for UVRGA and MBGSA, members of our proposed project team have participated on all of these projects.

### ■ Development of a Groundwater Flow Model of the East and South Las Posas Basins, Thousand Oaks, CA

**Client:** Calleguas Municipal Water District

**Proposed Staff Who Worked on Project:**

David Jordan; Abhishek Singh; Raghu Suribhatla; Joan Blainey; Jevon Harding



INTERA worked with Bryan Bondy, Calleguas Municipal Water District’s contract hydrogeologist, to successfully understand basin hydrogeology, develop a numerical groundwater flow model, and work with the FCGMA (the local GSA) their Technical Advisory Group (TAG), and their GSP consultant to support the GSP development process. Other objectives of the project included using the numerical model to evaluate potential aquifer storage and recovery (ASR) management alternatives, as well as to understand the interaction between surface-water flows and the groundwater system.

The basins are characterized by complex hydrostratigraphy (faulting and folding) and dynamic interactions with surface water flows in the Arroyo Las Posas. Discharge of treated wastewater effluent to Arroyo Las Posas has resulted in a transition to perennial flow from historical conditions where surface water flows only occurred in Arroyo Las Posas during large precipitation events. Through close coordination with Mr. Bondy, INTERA developed a detailed numerical representation of the Arroyo, capturing the highly dynamic flow, width, and stage relationships characteristic of different reaches along the Arroyo. Data from aerial surveys, streamflow gages, shallow groundwater wells, and dry-weather flow studies was integrated into the surface-water/groundwater modeling framework. The model was used to assess historical and future water budgets (incorporating the impact of climate change using SGMA guidelines and data sets) and assess various project and management actions for the GSP preparation.

Throughout the project INTERA worked with Bondy Groundwater in an efficient and cost-effective manner to achieve the project goals. This was accomplished via regular communication through weekly conference calls, technical memoranda, and presentations to stakeholders. INTERA completed the work on time and under budget by regularly communicating with Bryan Bondy. We have an extensive and successful track record of this and can do the same for your project. We also collaborated successfully with numerous other Basin parties such as the FCGMA, their TAG, and their GSP consultant, on what will likely be one of the first GSPs developed in the State of California under SGMA. We have a successful track record of working with your GSP Plan Manager (PM).

### ■ Development of a Long-term Water Supply Plan, Albuquerque, NM

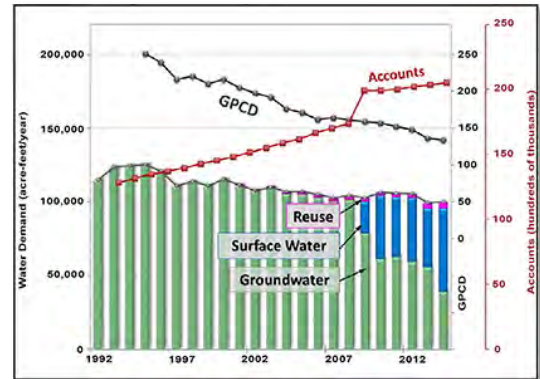
**Client:** Albuquerque Bernalillo County Water Utility Authority

**Proposed Staff Who Worked on Project:**

David Jordan; Abhishek Singh; Raghu Suribhatla; Joanna Stakutis; Erik Anderson

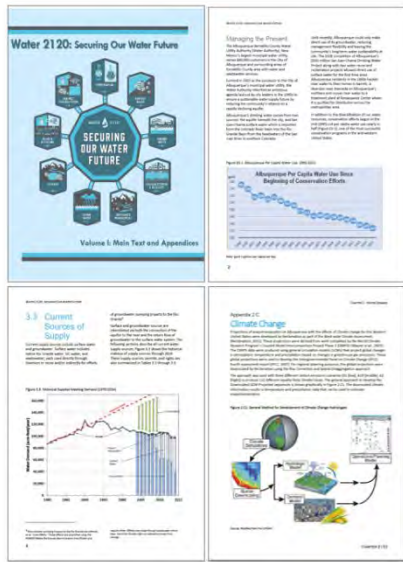
INTERA’s role as the prime contractor and overall project manager for developing a water plan for the Albuquerque Bernalillo County Water Utility Authority (Water Authority) has resulted in a plan that was not only approved unanimously by the Water Authority’s Governing Board, but one that puts the agency at the forefront

of water planning in the U.S. Water 2120 (the Plan) was the result of a two-year effort involving Water Authority staff and multiple consultants. Development of the Plan included interaction with the Water Authority’s Technical Customer Advisory Committee (TCAC) and their Governing Board. In addition, the Plan was enhanced through an exhaustive public outreach program that included community conversations, a Town Hall meeting, and multiple presentations to federal and state stakeholders such as Bureau of Reclamation, the Corps of Engineers, U.S. Fish & Wildlife, the New Mexico Interstate Stream Commission, and many others. The Plan was also endorsed by the Nature Conservancy and local economic development organizations such as the Albuquerque Chamber of Commerce and the New Mexico Homebuilder’s Association.



Water 2120 looks at the current water situation in Albuquerque and projects the community’s needs based on various scenarios of climate variability and population growth. The Plan builds on the Water Authority’s past planning successes with conservation and the addition of surface water to the supply portfolio, both of which have allowed significant recovery of the aquifer that was previously the sole source of supply. The Plan is based on making prudent future investments in conservation, ASR, stormwater capture, watershed restoration, and wastewater reuse. In so doing, it provides for a sustainable and resilient water supply in the face of an uncertain future, while assuring groundwater sustainability. INTERA also assisted with document management and

technical editing of the various parts of the Plan over the course of the Water 2120 project. We hosted and mediated many of the TCAC meetings and catalogued all the detailed input gained from this input process. From December 2015 to May 2016, TCAC members received early drafts of the Plan chapters and provided thousands of written comments. INTERA processed and organized all these draft comments and the status of being addressed, considered, or not addressed, and any related explanation provided by Subject Matter Expert (SME) authors.



INTERA worked closely with Water Authority SMEs to be certain all edits were approved by the Water Authority. Since the document chapters and ancillary parts such as appendices were each so large and detailed, many different files needed to be managed during development. Later in the project, INTERA became the gatekeeper of all drafts to avoid version confusion. As the drafts progressed, INTERA kept logs of different versions of each chapter or appendix and who was in possession of each draft at the time. When concurrent revisions occurred, INTERA ran comparisons of drafts to be sure all revisions were captured. INTERA provided Quality

Assurance support by checking data presented in the text and tables where needed. INTERA applied the template developed by the Water Authority and assisted with working out the inconsistencies in the template and the challenges of applying the template while including a wide variety of graphics.

As the Plan came together, INTERA developed the design of the exterior cover, prefacing materials, divider pages, and numerous attachments to use Water Authority logos and colors. INTERA was also contracted to produce the final pdf and print versions of the Plan. The final Plan and companion documents about the Water 2120 project are available at [http://www.abcwua.org/Water\\_Resources\\_Management\\_Strategy.aspx](http://www.abcwua.org/Water_Resources_Management_Strategy.aspx)

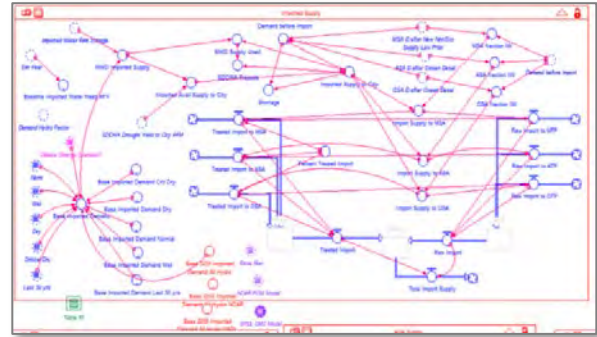
### ■ Conjunctive Use Feasibility Study, San Diego, CA

**Client:** City of San Diego

**Proposed Staff Who Worked on Project:**

Abhishek Singh; Raghu Suribhatla; Patrick O’Connell

INTERA developed a decision-support framework to support long range planning and feasibility study of conjunctive use projects in the El Monte and Moreno groundwater sub-basins within the San Diego River Basin. The basins are downstream from two large reservoirs – the El Capitan and San Vicente Reservoirs, respectively. For this project, INTERA was part of a multi-firm team of hydrogeologists and engineers, which included Mr. Bryan Bondy. INTERA worked closely with this team to develop a conceptual model of the sub-basins. Hydrologic records (precipitation and groundwater levels) as well as operational records from the reservoirs were used to develop analytical relationships for groundwater storage, natural recharge from the river, recharge from reservoir releases, and managed recharge/extraction capacities.



As part of this study several conjunctive use project alternatives have been identified, the team evaluated project costs and benefits, in terms of improvement in long-term water supply reliability. For this study INTERA updated and utilized a dynamic simulation model of the San Diego surface-water, groundwater, and conveyance systems. The model consists of analytical functions that relate inflows and outflows from different system components. The model facilitates the analysis of local and imported water supply storage and transfer between any of these storage facilities to minimize spills, evaporative losses, and maximize overall (including imported) water storage opportunities under multiple demand and supply scenarios. For this effort, INTERA also incorporated long term projections for (native and imported) water supplies as well as water demands under baseline and climate-change impacted conditions. INTERA served as the ‘gate keeper’ for the different technical components and collaborated and communicated with various team members (including Bondy Groundwater) and City Staff to develop a comprehensive report with the analysis and recommendations for future conjunctive use projects. The project was successfully completed in an expedited timeframe and within budget.

### ■ DST for Conjunctive Use Planning and Management Alternative Analysis, Rockland County, NY

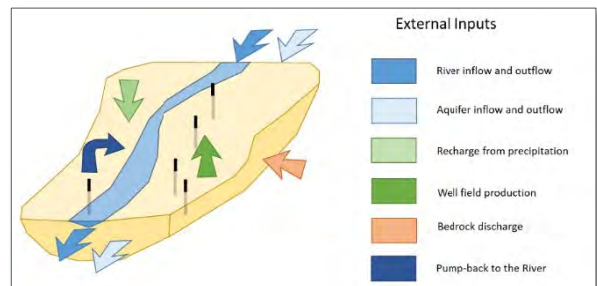
**Client:** Suez Water New York

**Proposed Staff Who Worked on Project:**

Abhishek Singh; Erik Anderson; Raghu Suribhatla

INTERA developed a model, analytic tools, and a decision support tool (DST) for Suez Water New York (SWNY) for their Ramapo Valley Well Field (RVWF) in Rockland County, NY.

SWNY needed to evaluate the potential for producing additional groundwater supply from the Ramapo Aquifer, while minimizing impacts on surface-water flows to keep the Ramapo river flowing above permit limits.

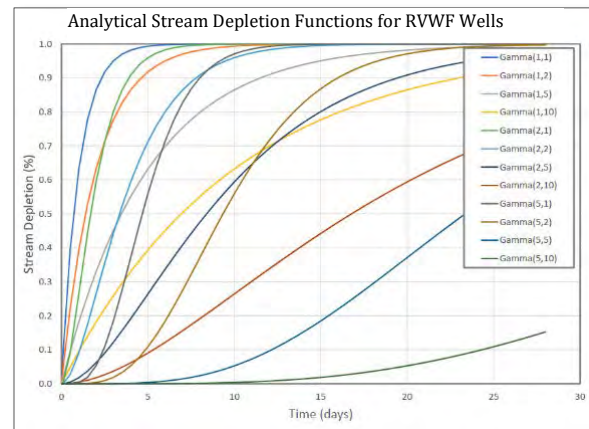


As part of this project, INTERA conducted a thorough evaluation of the hydrological and hydrogeological capabilities of the Ramapo Aquifer and Ramapo River watershed. The main objective of the evaluation was to determine river/groundwater interaction under various pumping conditions at the RVWF and the effects of supplementing river flow from surface water sources on well field yield under various conditions (e.g., seasonal and drought scenarios).



One of the central questions about the river/aquifer system was the spatial distribution of streambed interactions. INTERA designed and implemented a monitoring and field-testing investigation that helped understand the interaction of the wells in the alluvial aquifer and the adjacent Ramapo River. The field data collection and testing included measurement of stream flows, stream-depletion rates, water levels, fluxes, stages, streambed hydraulic parameters and pumping rates. This data was used to develop a detailed three-dimensional surface-water/groundwater model of the Ramapo River watershed.

To support efficient evaluation of operational and hydrologic scenarios in the DST, INTERA developed analytical stream depletion functions to relate streamflow losses to pumping from each of the production wells. The analytical streamflow depletion functions were used to predict how stream flows may change and how the well operations impact the Ramapo River flows – especially under summer or drought conditions. The DST (with the imbedded streamflow depletion functions) was used to assess the yield from the RVWF well-field under various future scenarios, incorporating a range of hydrologic conditions and upstream surface water releases. This insight became the basis of recommendations for operating existing production wells and other assets while meeting the permit for withdrawal.



The new operations model provides operational guidance to stretch the supply during any set of conditions, all while meeting existing limitations. Model results were assembled to identify the best (most economical, most sustainable, lowest impact, etc.) approach to maximizing production and meeting the permitted minimum flow requirements. The DST, flow model, and analytical streamflow depletion functions provide guidance about the consequences of various pumping configurations, while meeting the regulatory flow, especially during extended drought.

### ■ Technical Editing and Document Management Support for the 2018 NM State Water Plan, Santa Fe, NM

**Client:** New Mexico Interstate Stream Commission

**Proposed Staff Who Worked on Project:** David Jordan; Joanna Stakutis

The New Mexico State Water Plan is released periodically, as mandated by the State Water Plan Act, NMSA §72-14-3.1. The State Water Plan is intended to provide valuable information to water policy decision-makers in the State, but also to all New Mexico water users. The proposed document was intended to include supply and demand calculations for the 16 water planning regions in the state, as well as listings of the most pressing water issues and proposed actions submitted by steering committees of the water planning regions. INTERA was selected to provide technical editing support and document management support to the development of this latest State Water Plan.

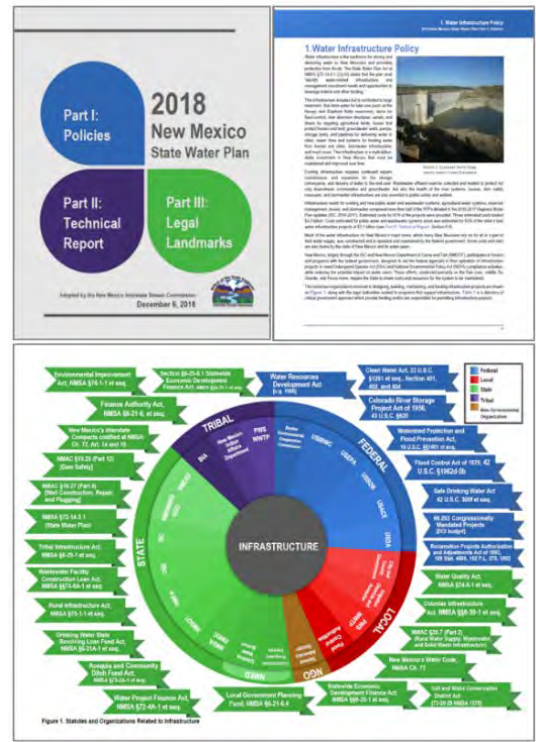
INTERA assisted in document management and editing of the Plan over the course of two years. The first year involved working with New Mexico Interstate Stream Commission (ISC) staff along with their subcontracted authors and project manager on the draft State Water Plan Technical Report (which eventually became Part II of the final plan) and the Town Hall Background Report, in preparation for a large town hall public input event. INTERA built and maintained the online project management space using Basecamp 3, for exchanging files, commenting on drafts, and collective revision. As team members were in multiple states, asynchronous project management tools were instrumental to the project’s success. INTERA frequently met with ISC and subcontracted staff, at first to develop the layouts and templates for the main parts of the document as well as

supplemental figures and appendices. INTERA assisted in setting timelines and deadlines, building the vision of this Plan, and organizing the large amount of information into structures all readers could follow.

The State Water Plan Town Hall event was held in December 2017, where INTERA attended the event as a participant. Once the public input was processed, the scope expanded into a three-volume document. INTERA worked closely with the team to develop the complex figures wanted for Part I, as directed by the ISC to ensure the final products would be of the highest quality.

As the plan developed into three volumes, many redundancies needed to be eliminated and purposes of the sections needed to be made clear for readers. INTERA contributed several pieces of writing to the introductions and sentences throughout to help keep the big-picture perspective and make the document more accessible to public readers. INTERA was also contracted to manage final print production and electronic distribution of the 2018 New Mexico State Water Plan. To facilitate the process of final editing, INTERA sent printed proof copies to the technical team. Printed proofs were essential to creating the graphical layouts and setting up the multiple parts and sections as intended. The document was produced using twin-wire binding, which results in a very professional finish which is suitable for reference documents that will be frequently used. INTERA created the covers and section tabs of all three parts, as well as a 'master' cover. INTERA ensured all photos used were available under Creative Commons licensing or were owned by ISC. Any photographs used under Creative Commons were cited inside the cover or in captions as appropriate.

The final 2018 New Mexico State Water Plan was accepted by the Board of the ISC on December 6, 2018, with no revisions requested. Once the official version was accepted, INTERA produced the final print copies to be distributed around the State and collaborated with the ISC webmaster to provide online PDF versions and an online 'interactive' version in a web-based, linked environment. INTERA prepared the files as needed for the webmaster to be able to post this online version effectively. The PDF versions are available for download at [http://www.ose.state.nm.us/Planning/state\\_plan.php](http://www.ose.state.nm.us/Planning/state_plan.php), and the online interactive version is under construction, expected mid-2019.



# STATEMENT OF QUALIFICATIONS

## 5 - PROJECT APPROACH



## 5 – PROJECT APPROACH

INTERA is committed to providing GSP development support to both the UVRGA and MBGSA to ensure that both GSPs are complete and approved by the respective GSAs by January 31, 2022. We will do so by working closely with and under the guidance and direction of the GSP PM, Mr. Bryan Bondy. In addition, INTERA will collaborate closely with other technical leads involved with the GSPs, including Kear Groundwater (for UVRGA) and UWCD (for MBGSA), to ensure that any technical and non-technical gaps are filled in a timely and budget-efficient manner, as the need arises. All INTERA's proposed personnel are fully committed to the success of this work and are available to assist with completing the GSPs in accordance with the statutory deadline.

Through weekly conference calls (or in-person meetings, as necessary) with the GSP PM (and other team members, as necessary) we will discuss upcoming project needs and report progress on on-going tasks. Through these discussions and our deep understanding of SGMA requirements, we will develop task-orders with clearly defined scope, schedule, and budget for various GSP development sub-tasks. Our approaches to the primary tasks required to develop the GSPs are provided below.

### Task 1 – Literature Review

INTERA will review all relevant background material necessary to develop the GSP for each of the GSAs. Key references for the UVRGA include: Ventura River Watershed Management Plan (Ventura River Watershed Council, 2015); Sustainable Water Use in the Ventura River Watershed (Gardner et al., 2013); Groundwater Management Plan for the Upper and Lower Ventura River Basin (DBS&A, 2010); Ventura River Watershed Hydrology Model Report (Tetra Tech, 2009); and Surface-Water and Groundwater Interaction Report (Entrix, 2001), among others. Key references for the MBGSA include: Ventura Regional Groundwater Flow Model and Updated Hydrogeologic Conceptual Model (UWCD, 2018); Groundwater and Surface Water Conditions Report (UWCD, 2015); Hydrogeologic Assessment of the Mound Basin (UWCD, 2012); and Simulation of Groundwater/Surface Water Flow in the Santa Clara-Calleguas Basin (Hanson, 2003). In addition, we will review SGMA related documents for both GSAs such as the Sustainable Groundwater Planning (SGWP) Grant Application, Basin Boundary Modification Memorandum, and associated references for both GSAs. Note, that INTERA has already reviewed several of these documents as part of this proposal development. Finally, we will review reports/memoranda generated from on-going data-collection, monitoring, and modeling efforts for both basins.

### Task 2 – GSP Documentation Support

Based on DWR guidelines, the GSPs will consist of the following chapters (with several sub-sections): Executive Summary; 1) Introduction; 2) Plan Area and Basin Setting; 3) Sustainable Management Criteria; 4) Project and Management Actions to Achieve Sustainability Goals; 5) Plan Implementation; 6) References and Technical Studies; and Appendices. Much of the information for the earlier chapters (1 and 2) already exists in various reports and documents. Under direction of the GSP PM, INTERA can populate the relevant sections with available information, while identifying gaps and inputs needed from the various contributors for both GSPs. Several team members will be contributing to the different GSP chapters. For the UVRGA, Kear Groundwater and Bondy Groundwater Consulting will be the main contributors. Similarly, UWCD and Bondy Groundwater will be the main contributors to the MBGA GSP. Lorraine Walter (who prepared the Ventura River Watershed Management Plan) may contribute to the background sections for the GSPs. INTERA will work closely with the GSP PM as well as the individual contributors to identify where and in what form input will be required from each person for different parts of the GSP. As necessary, INTERA can fill gaps, assist the contributors with their sections, and complete one or more of the GSP chapters.

In addition to GSP documentation, INTERA will assist with technical presentations for stakeholder and TAG meetings, developing slide content, figures, and maps, as needed.

### Task 3 – Analytical Modeling

SGMA requires the GSP to quantify and manage pumping induced depletion of interconnected surface-water and associated impacts on beneficial use of surface water. An integrated surface-water groundwater model is still under development and will likely not be available for the UVRGA GSP. To meet SGMA requirements for the UVRGA GSP, INTERA proposes developing an analytical model to assess surface-water groundwater interactions and evaluate pumping impacts on the Upper Ventura River flows.

As depicted in **Figure 5-1**, flows in the Upper Ventura River are complex, with the northern portion of the River characterized as a ‘dry reach’ with intermittent flows (except during storm events) and the southern portion characterized as a ‘wet reach’ with perennial flows. The extent and timing of the dry and wet reaches are driven by surface flows, groundwater levels, and basin stratigraphy. **Figure 5-2** shows INTERA’s interpreted water levels on a cross-section of the Upper Ventura River. The stage in the river is co-dependent on the groundwater table and dry segments can vary dynamically based on surface flows and groundwater elevations. Standard analytical models such as Glover and Balmer (1954) or Jenkins (1968), which rely on a specified head or flux boundary are not applicable in this setting. The appropriate analytical model needs to be iterative, first assessing discharges from the river under given water level conditions and then adjusting the stream boundary (allowing it to go dry, if necessary) based on the availability of flows in the River. Such an iterative analytical model has been developed by Bruker and Haitjema (1996) and is part of the GFLOW of analytical modeling suite<sup>1</sup>.

Moreover, GFLOW also allows for changes in aquifer properties and stratigraphy, which are important in this basin setting. INTERA personnel have successfully used GFLOW and other analytical modeling tools on several projects involving dynamic interactions between surface and groundwater flows. We propose to develop a GFLOW model with the River and aquifer properties consistent with on-going numerical modeling efforts. Model parameters will be

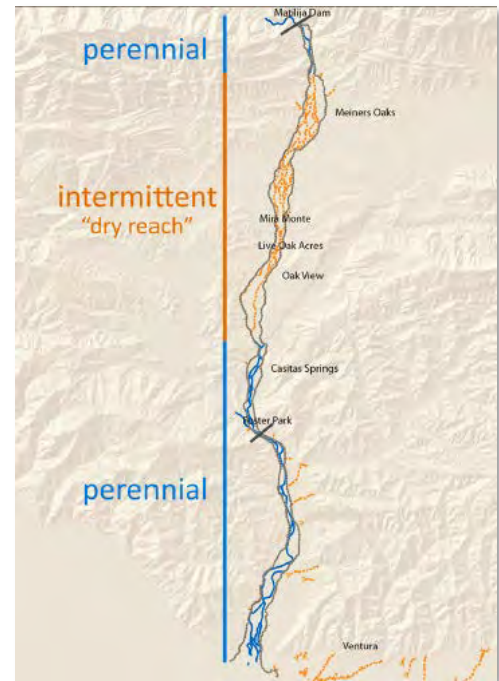


Figure 5-1. Flow characteristics in the Upper Ventura River

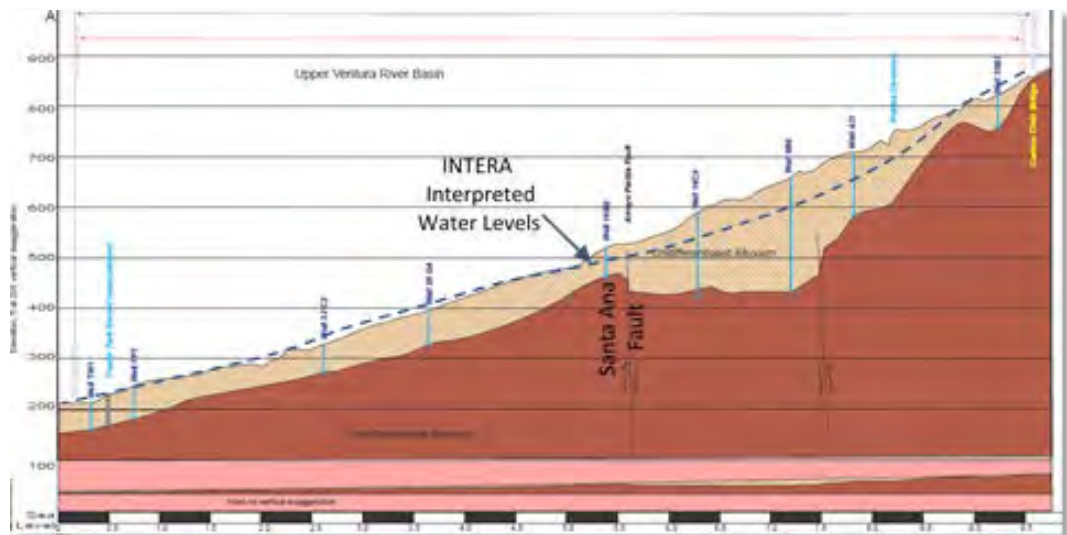


Figure 5-2. Cross-section of Upper Ventura River showing interpreted water levels

<sup>1</sup><https://www.haitjema.com/screenshots/gallery11.html>

adjusted (within reasonable bounds) to match historical conditions and observed extents of the dry and wet reaches. The analytical model will then be used to assess stream depletions and flow conditions (dry or wet) under current and future pumping and hydrologic scenarios.

Our team brings unparalleled expertise in the application of analytical models to solving complex groundwater/surface-water problems (especially in the absence of numerical models). Through our experience we can guarantee that the proposed analytical modeling approach is efficient, both in terms of budget and schedule.

The INTERA team also brings tremendous experience and skills developing hydrogeologic conceptual models and water budgets, assessing potential climate-change impacts, and developing and applying integrated groundwater/surface-water numerical models. As such, INTERA can also assist on-going modeling efforts for both GSPs, as needed. For example, we could assist in the development of the current and future water-budgets for the GSPs. We could also support UWCD in processing DWR climate-change datasets (something we have direct experience with through our work for Calleguas on the FCGMA GSP) to develop predictive model inputs for the Mound Basin.

#### **Task 4 – GSP Document and Data Management**

Both the UVRGA and MBGSA GSPs will require collaboration and input from multiple technical and non-technical team-members. A stable, secure, reliable, and user-friendly document and data management framework is essential for the efficient execution and completion of the GSPs. INTERA will serve as the document and data clearinghouse for the GSP teams, with dedicated personnel providing editing, formatting, comment management, and version control of the GSP documents.

For each of the GSPs, we will develop Microsoft Word templates that are consistent with the Windows platforms across the multiple-users. The GSP templates will be consistent with the DWR annotated outlines for the GSPs. These outlines will be shared with the team-members and necessary changes made, based on comments and input. We will work closely with the GSP PM, to identify section leads and contributors for each part of the GSP. A separate word document will be created for each GSP Chapter, to be edited and commented on by different contributors. INTERA’s Technical Lead for GSP Document Management, Joanna Stakutis will incorporate the various edits and comments into consistent versions, that will be subsequently integrated into a master GSP document. INTERA will also provide templates and guidelines for maps and figures for the different sections. We can utilize existing GIS templates/MXD from the SGMA Grant and Basin Boundary Modification applications to ensure seamless transition into the GSP documentation phase. If needed, we can also provide graphics and GIS support for the various maps, figures, and appendices that are typically included in GSPs.

For both GSPs, INTERA proposes using the ‘Basecamp’ online project management platform for exchanging files, commenting on drafts, and sharing ideas or concerns. Basecamp eliminates the need for project participants to deal with email threads with myriad attachments or download links. Basecamp also allows the transfer of large file sizes, usually greater than most email programs. It also features other spaces such as places to upload important emails that the whole team should see or discussion board spaces to set up discussions about certain graphs or items within drafts. INTERA successfully used Basecamp to manage the New Mexico State Water Plan document, integrating input and contributions from multiple authors across several versions and chapters.

#### **Task 5 – Technical Review**

INTERA’s Project Manager will serve as a member of the UVRGA’s Technical Review Group (TRG) and will work with the other review team members to assess the data gap tasks and data interpretation and analysis methods for the GSP. For the MBGSA, INTERA’s Project Manager will review GSP sections and provide comments/edits on a regular and timely basis.

# STATEMENT OF QUALIFICATIONS

## 6 - REFERENCES



## 6 – REFERENCES

INTERA brings a proven track record of completing public agency projects similar to the work anticipated for UVRGA and MBSA on time and within budget. We are proud of our project accomplishments and welcome the Agencies to contact any, or all, of these references to verify our past performance.

### Reference #1

**Agency/Organization:** Albuquerque Bernalillo County Water Utility Authority

**Contact:** John Stomp, PE, Chief Operating Officer; Tel: (505) 289-3150; [Jstomp@abcwua.org](mailto:Jstomp@abcwua.org)

**Brief Description of Work:** Development of a 100-year water plan for the Albuquerque Bernalillo County Water Utility Authority, called Water 2120.

**Contract Fee:** \$1.4M

**Period of Performance:** 2010- 2019; Ongoing

### Reference #2

**Agency/Organization:** Calleguas Municipal Water District

**Contact:** Susan Mulligan, General Manager; Tel: (805) 579-7115; [smulligan@calleguas.com](mailto:smulligan@calleguas.com)

**Brief Description of Work:** Development of a numerical groundwater flow model as part of a long-term operational plan for Calleguas' Las Posas Basin ASR project.

**Contract Fee:** \$720,000

**Period of Performance:** 2016 –2019; Ongoing

### Reference # 3

**Agency/Organization:** New Mexico Interstate Stream Commission

**Contact:** Lucia Sanchez, Water Planning Manager; Tel: (505) 476 – 5397; [Lucia.Sanchez@state.nm.us](mailto:Lucia.Sanchez@state.nm.us)

**Brief Description of Work:** Provide technical editing support and project coordination support to the development of the New Mexico State Water Plan.

**Contract Fee:** \$55,000

**Period of Performance:** 2018 -2019; Completed

### Reference # 4

**Agency/Organization:** Public Utilities Department, City of San Diego

**Contact:** Khuram Shah, Associate Engineer, (619) 533 – 4222; [Khshah@sandiego.gov](mailto:Khshah@sandiego.gov)

**Brief Description of Work:** Development of a decision-support framework to support long range planning for conjunctive use and system optimization of the San Vicente Reservoir, El Capitan Reservoir, and groundwater injection/extraction/storage in the El Monte Valley and/or Moreno Valley groundwater sub-basins within the San Diego River Basin.

**Contract Fee:** \$155,000

**Period of Performance:** 2017 – 2019; Ongoing



# STATEMENT OF QUALIFICATIONS

## 7 - CONFLICT OF INTEREST



## 7 – CONFLICT OF INTEREST

INTERA has no conflicts of interest with respect to performing this work for the GSAs. This includes no current or foreseeable conflicts of interest through any work being performed now or in the past for the stakeholders, water rights holders, or land owners in the Upper Ventura River and Mound subbasins.

# STATEMENT OF QUALIFICATIONS

## 8 - FEE SCHEDULE



8 - FEE SCHEDULE

## 8 – FEE SCHEDULE

INTERA’s fee schedule, including all labor categories of personnel being proposed to support the project, is provided as **Table 8-1**. This schedule includes rates for each fiscal year of the project.

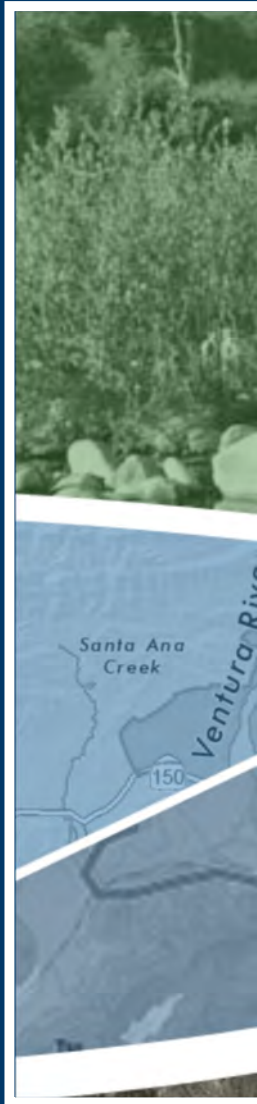
**Table 8-1. INTERA Fee Schedule**

| Labor Category                   | Proposed Staff                   | Hourly Rate Per Fiscal Year (July 1 through July 30) |           |           |           |
|----------------------------------|----------------------------------|--|-----------|-----------|-----------|
|                                  |                                  | 2018-2019  | 2019-2020 | 2020-2021 | 2021-2022 |
| Principal Engineer/Scientist I   |                                  | \$250  | \$257     | \$264     | \$271     |
| Principal Engineer/Scientist II  | David Jordan                     | \$225  | \$231     | \$237     | \$244     |
| Principal Engineer/Scientist III |                                  | \$210  | \$216     | \$221     | \$227     |
| Senior Engineer/Scientist I      | Abhishek Singh; Erik Anderson    | \$195  | \$200     | \$206     | \$211     |
| Senior Engineer/Scientist II     |                                  | \$180  | \$185     | \$190     | \$195     |
| Senior Engineer/Scientist III    | Raghu Suribhatla                 | \$165  | \$169     | \$174     | \$179     |
| Senior Engineer/Scientist IV     | Joan Blainey                     | \$150  | \$154     | \$158     | \$162     |
| Engineer/Scientist I             |                                  | \$140  | \$144     | \$148     | \$152     |
| Engineer/Scientist II            | Jevon Harding; Patrick O’Connell | \$130  | \$134     | \$137     | \$141     |
| Engineer/Scientist III           |                                  | \$120  | \$123     | \$127     | \$130     |
| Engineer/Scientist IV            | Erick Fox                        | \$110  | \$113     | \$116     | \$119     |
| Senior Technician                |                                  | \$115  | \$118     | \$121     | \$125     |
| Technician                       |                                  | \$72   | \$74      | \$76      | \$78      |
| Senior Technical Editor          |                                  | \$115  | \$118     | \$121     | \$125     |
| Tech Editor                      | Joanna Stakutis                  | \$83   | \$85      | \$88      | \$90      |
| Senior CAD/Graphics              |                                  | \$87   | \$89      | \$92      | \$94      |
| CAD/Graphics                     |                                  | \$76   | \$78      | \$80      | \$82      |
| Project Analyst/Assistant        |                                  | \$105  | \$108     | \$111     | \$114     |
| Project Associate                |                                  | \$75   | \$77      | \$79      | \$81      |



**INTERA Incorporated**  
**3838 W Carson Street, #380**  
**Torrance, CA 90503**  
**424.275.4055**

[www.intera.com](http://www.intera.com)



# Master Services Agreement

This Master Services Agreement (the "MSA") is made and entered into by and between Mound Basin Groundwater Sustainability Agency ("MBGSA"), and [REDACTED] ("Service Provider") (each a "Party" and collectively the "Parties") as of this [REDACTED] day of [REDACTED] 2019 (the "Effective Date"). The words "we", "us", and "our" refer to MBGSA, and the words "you" and "your" refer to the Service Provider.

By signing this MSA, the Parties agree as follows:

## 1. MSA Documents

This MSA sets forth basic terms that will apply to your performance of services during the term of this MSA. Additional and specific terms that will apply to a particular project ("Project") and the performance of particular services will be set forth in one or more statements of work ("SOWs") substantially in the form of Exhibit A. Each SOW will be governed by this MSA. If any term in this MSA conflicts with a term in a SOW, the terms and conditions of this MSA will control, unless the SOW specifies that its terms and conditions will control. Specific terms in a SOW will not affect any other SOW governed by this MSA without explicit agreement of the Parties in writing.

## 2. Statements of Work / Purchase Orders

You will be responsible for providing all services described in a SOW ("Services"). Each SOW will detail the material terms and conditions applicable to the Services to be provided pursuant to that SOW. A SOW may add additional Services and obligations of the Parties and include additional legal terms and conditions. If either Party requires an assigned purchase order number on invoices, it is understood and agreed that the purchase order document is for internal accounting purposes only and that neither or nor any accompanying form will in any way modify, add to, or delete any of the terms and conditions of this MSA or any SOW.

## 3. Fees and Payment

Invoicing and payment intervals will be defined in each SOW ("Fee Terms"). Unless the Fee Terms clearly indicate otherwise, we will pay invoices within thirty (30) days of receipt of invoice. All invoices or invoice disputes must be emailed to [kriss@unitedwater.org](mailto:kriss@unitedwater.org) to receive timely payment.

If, for any reason, we dispute the performance of the Services or the applicable Fees, we will (a) promptly pay all undisputed Fees and (b) provide a detailed description of the nonconforming Services or disputed Fees sufficient for the Parties to discuss and make a good faith attempt to resolve the dispute ("Invoice Dispute"). If we do not make payment or issue an Invoice Dispute within 60 days, you may provide us with 10 days' written notice of non-payment, after which, if the failure to pay or issue an Invoice Dispute is not cured, you may suspend performance of all Services until we either (i) make payment or (ii) issue a sufficiently detailed Invoice Dispute.

Unless expressly stated in the SOW, you will bear sole responsibility for all expenses incurred in connection with the performance of Services. If a SOW specifies that we will be reimbursing any of your travel and out-of-pocket expenses ("Expenses"), you agree to comply with each of our travel and reimbursement policies, whether formal or informal. Any policy waivers or exceptions must be confirmed in writing by us before you incur the expense. You also agree to provide us with advance notice and estimated anticipated Expenses and to invoice us at your cost and/or IRS-approved rates where applicable and provide copies of original receipts.

## 4. Confidentiality

We will direct the Services provided by you and communications with you regarding this matter will be through us. All Services and communications are protected by the attorney-client privilege and attorney work product doctrine. Accordingly, all documents, reports, disclosures, plans, and other information of any nature and description, which MBGSA supplies to you or which you discover or develop in performance of the Services is deemed confidential. You must not disclose any of the same to any third party without our prior written authorization, except to the extent that information is in the public domain, was in your possession prior to disclosure to MBGSA or you are required by law.

## 5. Term and Termination

The term of this MSA will be perpetual from the Effective Date until terminated by either Party on written notice; provided, however, that no termination will affect obligations incurred under this MSA before termination or which, by their nature, extend beyond the term. Notwithstanding the preceding sentence, this MSA will remain in effect for so long as you are obligated to provide Services under any operative SOW.

## 6. Work and Labor

You agree to observe all laws, ordinances, rules, and regulations of any government unit or agency affecting items furnished and/or the performance of Services.

## 7. Standard of Work Performed and Materials Sourced

You warrant that you will perform all Services satisfactorily and in a timely manner in accordance with our agreed-upon SOW, specifications, drawings, samples, and any other description you furnish to us prior to or during the course of your Services. In the absence of exact specifications otherwise in the SOW, we will assume that all materials furnished will be of the highest grade and best quality, and the work will be performed in a professional and first-class manner consistent with the customary care and skill ordinarily exercised by professionals in your industry.

In addition to any other rights or remedies available at law or in equity, you agree to re-execute, at your own cost and expense, any defective or reasonably unsatisfactory work that appears during progress of the Services and will remedy and replace, at your own cost and expense, any defects due to faulty materials or workmanship which appear within a period of one (1) year from the date of acceptance of the completed work by us.

## 8. No Liens or Encumbrances

You warrant that no liens, encumbrances, security interests, or other third-party claims of any type will attach to real or personal property owned or leased by us as a consequence of your performance of Services hereunder. (For yourself, your successors, and others acting both through or under you.) You also agree, upon request, to furnish to us standard forms of waiver of lien signed by you and all contractors, subcontractors, and materialmen who will furnish labor and materials hereunder.

## 9. Ownership of Work

Except to the extent that it is expressly limited in any particular SOW, all right, title and interest in the work product of your Services will be and remain our sole property and will constitute a "work-made-for-hire" as such term is understood under U.S. copyright laws. We will have the exclusive right, but not the obligation, to use, adapt, alter, delete from, add to, or rearrange such work product, or any part thereof, to combine the same with other works, and to patent, register for trademark protection, and/or otherwise exploit any and all of the foregoing in any manner as we may determine in our sole discretion. You agree to execute other instruments, give further assurances, and perform acts which are or may become necessary or appropriate to effectuate and carry out the provisions of this Section 9. To the extent ownership of

any work product resulting from your Services for us does not by operation of law vest in us, you hereby assign, sell, transfer, grant, and convey all right, title, and interest in such work product to us. However, during the course of this MSA, you may further develop your knowledge, skills, and experience. Other than as may fall within the "Confidentiality" section of this MSA, nothing in this MSA is intended to limit your use of any knowledge, skills, experience, ideas, concepts, know-how, and techniques developed before or during the course of this MSA, without limitation, in the development, manufacturing, and marketing of your Services.

## 10. Indemnity

You agree to defend (with counsel acceptable to us), indemnify, and hold us (including our affiliates, member agencies, employees, agents, and representatives) harmless against any and all claims, demands, or other liabilities for suits, injuries, damages, losses, fines, expenses, or costs of any sort, including attorney's fees (collectively, "Claims") to the extent caused by your negligent performance of Services, your intentional misconduct, or your breach of any other obligation under this MSA; except that you need not indemnify with respect to that portion of a Claim resulting from our negligence or intentional misconduct, or to the extent of your reliance on the express written approval, acceptance, or instructions of us with respect to the act or omission giving rise to the Claim. You will, as soon as reasonably possible after receiving notice of a third-party Claim for which indemnity might be sought, notify us in writing, provided that the failure to notify will not relieve you of your obligations.

## 11. Workers Compensation Insurance

Both Parties will each insure its own employees and agents with a minimum of \$1,000,000 Workers' Compensation Insurance and, regardless of policy limit, will hold each other harmless from any claims by its own employees, contractors, subcontractors, and materialmen who have furnished labor hereunder, or successors for injury, disability, or death arising from any work associated with this MSA. Upon request by either Party, a certificate of workers' compensation insurance will be provided evidencing such coverage.

## 12. Insurance

During the term of this MSA and for a period of three (3) years thereafter, you agree to keep and maintain, at its sole expense, additional insurance as follows:

- (a) General Commercial Liability Insurance with combined bodily injury, property damage, product liability, completed operations, and contractual liability coverage in the amount of \$1,000,000 per occurrence and \$2,000,000 in the aggregate, which specifically covers this MSA, and names the other Party, its subsidiaries, and affiliated entities as additional insured Parties;
- (b) Automobile Liability Insurance, including coverage for hired, owned, or non-owned vehicles, in the amount of \$1,000,000 which specifically covers this MSA and names the other Party, its subsidiaries, and affiliated entities as additional insured Parties; and
- (c) You will furnish to us, upon request, an insurance certificate from a carrier with an A.M. Best rating of "A" or better satisfying the above requirements and containing a complete waiver of subrogation. Your insurance coverage may not be terminated or materially changed without thirty (30) days' prior written notice to us.

## 13. Subcontracting/Assignment

You may not assign or subcontract any portion of your obligation to perform Services, nor may you assign any money due or to become due under this MSA, without our prior written consent. We may not assign this MSA without your written consent, which may not be unreasonably withheld; provided that such consent will not be necessary for the assignment, by operation of law or otherwise, to any of our parents, subsidiaries, affiliates, or any entity that succeeds our business in connection with a merger, reorganization, or sale of all or substantially all of our assets or voting securities. This MSA will be binding upon and inure to the benefit of the Parties and their respective successors and assigns.

## 14. Independent Contractor/No Third-Party Beneficiaries or Exclusivity by Service Provider

Nothing in this MSA will provide any benefit to any third party; it being the intent of the Parties that this MSA will not be construed as a third-party beneficiary contract. You are acting as our independent contractor and nothing in this MSA will be construed to create or imply a joint venture, partnership, association, or similar obligation between us. As such, any and all sums paid by us to you that are subject to taxing deductions, if any, will be your sole responsibility and you will indemnify and hold us harmless from any and all damages, claims, and expenses, including reasonable attorney's fees, arising out of or resulting from any claims asserted by any taxing authority as a result of or in connection with said payments. Nothing in this MSA will impose any obligation on you to provide exclusive services to us.

## 15. Conflict of Interest

You represent and warrant to us that to your best knowledge, neither you nor any individual who will be performing Services for us has any other interests or business relationships of any kind which could either conflict with our interests or create the appearance of a conflict. You will immediately and fully apprise us of any potential conflicts that may arise.

## 16. General Warranties

Each Party represents and warrants that: (i) it is duly organized, validly existing, and in good standing under the laws of the jurisdiction of its formation and is qualified to conduct its business in those jurisdictions necessary to perform this MSA; (ii) the execution and delivery of this MSA are within its powers, have been duly authorized by all necessary action and do not violate any of the terms or conditions in its governing documents or any contract to which it is a Party or any law applicable to it; (iii) this MSA constitutes a legal, valid, and binding obligation of such Party enforceable against it in accordance with its terms (subject to any equitable defenses); (iv) there are no bankruptcy, insolvency, reorganization, receivership, or other similar proceedings pending or being contemplated by it, or to its knowledge threatened against it; and (v) there are no suits, proceedings, judgments, rulings, or orders by or before any court or any governmental authority that could materially adversely affect its ability to perform this MSA.

## 17. Force Majeure

Force Majeure is the only excuse for non-performance of this MSA by either Party and all other excuses waived. Each Party shall be relieved of its obligation to perform any part of this MSA to the extent its performance is prevented or rendered impracticable by any events or circumstances beyond its reasonable control including, but not limited to, war, fires, floods, acts of God (natural disasters), governmental restrictions, labor lock-outs, civil uprising resulting in damage or destruction of any facilities. Each Party will promptly notify the other in writing of any inability to perform and the cause thereof, as well as its good faith estimate of the date upon which the event will end and its performance will resume. You agree that in the event of a Force Majeure, your allocation of available resources or supply to us will be based on fair allocation by volume among your customers without regard to price or profitability. If the event is anticipated to extend beyond 60 days, we may, at our option, cancel the SOW and/or this MSA and be relieved from our obligations as of the date of cancellation. Both Parties will make reasonable efforts to avoid the adverse impacts of a Force Majeure and to expeditiously resolve the event or occurrence once in order to resume performance.

**18. Events of Default**

An "Event of Default" means, with respect to a Party (the "Defaulting Party"): (a) any false or misleading representation or warranty made by a Party or the failure of a representation or warranty made by a Party to remain true during the Term hereof; or (b) a Party: (i) makes an assignment or any general arrangement for the benefit of creditors; (ii) files a petition or otherwise authorizes the commencement of a proceeding under any bankruptcy or similar law for the protection of creditors, or has such petition filed against it and such petition is not withdrawn or dismissed for 20 business days after such filing; (iii) otherwise becomes bankrupt or insolvent; (iv) is unable to pay its debts when due; (v) fails to post, maintain, renew, or increase collateral when and as may be required hereunder during any Term and such failure is not remedied within two (2) business days after written notice thereof is received; (c) the failure of a Party to perform a material obligation under this MSA or SOW when such failure is not excused by Force Majeure; or (d) any other event affecting such Party specified as an Event of Default in this MSA.

In addition to any other remedies available at law or equity, if an Event of Default with respect to a Defaulting Party has occurred and is continuing, the other Party will have the right to (a) provide written notice of (and stating the nature of) such Event of Default to the Defaulting Party; (b) designate a date between 1 and 20 days after such notice is effective on which this MSA will terminate; (c) withhold payments due to the Defaulting Party; and (d) suspend performance.

**19. Governing Law**

This MSA will be governed by the laws of California, notwithstanding any state's choice of law rules to the contrary.

**20. Miscellaneous**

All provisions of this MSA which must, in order to give full force and effect to the Parties' rights and obligations, survive the termination or expiration of this MSA, will so survive. Amendments to this MSA are not enforceable unless in writing and executed by both Parties. If any provision in this MSA is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way. No waiver or consent, express or implied, of any default will operate as a waiver or consent of any other default. In entering into this MSA, the Parties represent that they have each had an opportunity to consult with their own attorneys and that all of the Parties have cooperated in the drafting and preparation of this MSA. The language of this MSA may not be construed for or against any Party on the grounds that any specific Party or Parties authored this MSA.

**21. Notices and Billings**

Notices shall be provided to the addresses below. Notices must be provided by facsimile, electronic email, or hand delivery and will be deemed received on the business day it was transmitted or delivered (unless transmitted or delivered after the close of business in which case it will be deemed received on the next business day), and notice by overnight mail or courier will be deemed received two business days after it was sent:

Either Party may change their address for the purpose of this MSA by giving written notice of such change to the other Party in the manner provided in this paragraph.

|   |   |
|---|---|
| MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY |   |
| All Notices:                                  | Billings                                |
| Bryan Bondy, Executive Director               | Kris Sofley                             |
| P.O. Box 3544<br>Ventura, CA 93006-3544       | P.O. Box 3544<br>Ventura, CA 93006-3544 |
| Phone No.: 805-212-0484                       | Phone No.: 805-525-4431                 |
| Email: bryan@bondygroundwater.com             | Email: kriss@unitedwater.org            |

And

|                         |                |
|-------------------------|----------------|
| [SERVICE PROVIDER NAME] |                |
| All Notices:            | Billings       |
| [NAME]                  | [NAME]         |
| [ADDRESS]               | [ADDRESS]      |
| Phone No.:              | Phone No.:     |
| Facsimile No.:          | Facsimile No.: |
| Email:                  | Email:         |

**THIS MSA, INCLUDING ANY EXHIBITS AND SCHEDULES, CONSTITUTES THE PARTIES' COMPLETE AGREEMENT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND SUPERSEDES ANY PRIOR AGREEMENTS OF ANY TYPE, WHETHER WRITTEN OR ORAL. BY SIGNING BELOW, THE PERSON SIGNING FOR YOU WARRANTS THAT HE OR SHE IS DULY AUTHORIZED TO SIGN ON YOUR BEHALF. IF THIS MSA IS ALTERED IN ANY WAY, IT WILL BE VOID AB INITIO.**



IN WITNESS WHEREOF, the Parties, by their respective duly authorized representatives, have executed this MSA effective as of the Effective Date.

| [SERVICE PROVIDER NAME]                                       | MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY                 |
|---|---|
| By: _____<br>Print Name: _____<br>Title: _____<br>Date: _____ | By: _____<br>Print Name: _____<br>Title: _____<br>Date: _____ |

# Statement of Work – [PROJECT NAME]

To: [PROVIDER NAME]  
[ADDRESS]  
Attention: [NAME]  
Email:

From: Mound Basin Groundwater Sustainability Agency  
P.O. Box 3544  
Ventura, CA 93006-3544  
Attention: Bryan Bondy  
Email: bryan@bondygroundwater.com

In accordance with our Master Services Agreement (“MSA”) dated \_\_\_\_\_, 2019, the following Statement of Work (“SOW”) is entered into by Mound Basin Groundwater Sustainability Agency (“Customer”) and \_\_\_\_\_ (“Provider”) for a new project and/or services (collectively, “Services”):

**GENERAL NATURE OF SERVICES:** [PROJECT DESCRIPTION] [IF APPLICABLE: Provider shall ensure all work is performed under the supervision of a California Professional Civil Engineer or Professional Geologist.]

**SCOPE OF SERVICES:** \_\_\_\_\_

**TERM:** \_\_\_\_\_

**COMPENSATION AND PAYMENT:** Time and material services, not-to-exceed \$ \_\_\_\_\_, without prior written authorization. Labor Rates per MSA.

### PAYMENT TERMS

Payments shall be due:

- upon the completion of the SOW
- as follows: Billing will occur on a monthly basis and shall be based on time and materials. All invoices will be payable on a Net-30 basis. Invoices are due on the 5<sup>th</sup> business day of each month. Invoices received after the 5<sup>th</sup> business day of the month are payable on a Net-60 basis. Payment may be delayed up to 30 days beyond these terms in the event of Board of Directors meeting cancellations.

### ADDITIONAL TERMS AND CONDITIONS

This SOW will be governed by the terms and conditions of the MSA. In the event of any conflict between the terms set forth in this SOW and the MSA, the MSA shall be deemed to control the relationship between the parties with respect to the SOW.

### ACCEPTED AND AGREED:

| “PROVIDER”<br>[NAME] | “CUSTOMER”<br>MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY |
|----------------------|---|
| By: _____            | By: _____   |
| Print Name: _____    | Print Name: _____   |
| Title: _____         | Title: _____  |
| Date: _____          | Date: _____   |

**MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY**

**Item No. 8(b)**

**DATE:** March 21, 2019  
**TO:** Board of Directors  
**FROM:** Executive Director  
**SUBJECT:** Joint Request for Proposals from Auditors with Fillmore and Piru Basins GSA

SUMMARY

As a Special District, the Mound Basin GSA is required to have an annual audit of its financial statements and provide a copy of the audited financial statements to the County of Ventura by June 30, 2019. An audit firm must be selected for the first audit of the GSA’s financials, covering Fiscal Year 2017-18.

RECOMMENDED ACTION

Staff recommends that the Board consider approving the attached Joint RFP to solicit bids from audit firms.

BACKGROUND

The Fillmore and Piru Basins GSA published and distributed a Request for Proposals for Auditing Services in December 2018 and did not receive any submissions. Staff assumes the dollar amount of the project wasn’t attractive to independent auditors. Staff suggests joining the Mound Basin GSA and Fillmore and Piru Basins GSA’s needs for auditing services in an effort to make the work offer more appealing.

Due to the fact that both Agencies have contracted with UWCD to handle accounting and administrative services, the opportunity to package the auditing services together for the selection of one auditor is both economically feasible and efficient. The Fillmore and Piru Basins GSA Board will consider this same option at its Board meeting on March 21, 2019. Each Agency will be responsible for payment of its portion of the audit services.

FISCAL SUMMARY

There is no fiscal impact associated with the issuance of the RFP.

ATTACHMENTS:

Attachments: A – Joint RFP for Professional Auditing Services  
B – Auditor RFP Distribution List

Proposed Motion: “Motion to approve the attached Joint RFP to solicit bids for an auditor along with the Fillmore and Piru Basins GSA.”

1<sup>st</sup>: Director \_\_\_\_\_ 2<sup>nd</sup>: Director \_\_\_\_\_

S. Rungren \_\_\_ M. Mobley\_\_\_ G. Shephard\_\_\_ J. Chambers\_\_\_ C. Everts\_\_\_\_\_



**Fillmore and Piru Basins**  
**Groundwater Sustainability Agency**

Fillmore and Piru Basins Groundwater Sustainability Agency

And



**MoundBasin**  
GROUNDWATER SUSTAINABILITY AGENCY

Mound Basin Groundwater Sustainability Agency

REQUEST FOR PROPOSALS  
For  
PROFESSIONAL AUDITING SERVICES

Kris Sofley, Clerk of the Board  
FPB GSA and MB GSA  
c/o UWCD  
106 N 8<sup>th</sup> Street  
Santa Paula, CA 93060

## I. Introduction

Fillmore and Piru Basins Groundwater Sustainability Agency (FPB GSA) and Mound Basin Groundwater Sustainability Agency (MB GSA) (Agencies) are two small, recently-formed California Special Districts that are each requesting proposals from qualified certified public accountant firms to audit their financial statements. Both agencies contract with United Water Conservation District for their accounting and administrative services; therefore, the Agencies desire to contract with one auditing firm for both Agencies. Their annual budgeted revenues are approximately \$575,000 (FPB GSA) and \$204,000 (MB GSA).

Each Agency is requesting proposals for an audit of the fiscal year ending June 30, 2018, with the option of auditing its financial statements for each of the two (2) subsequent fiscal years, in addition to performing other financial audits and reviews as specified below. These audits are to be performed in accordance with auditing standards generally accepted in the United States of America, the standards set forth for financial audits contained in the current *Government Auditing Standards* issued by the Comptroller General of the United States, and the U.S. Office of Management and Budget (OMB) Circular A-133 *Audits of State and Local Governments and Non-Profit Organizations*.

To be considered, one (1) copy of a proposal must be received by Kris Sofley, Clerk of the Board, at UWCD, 106 N 8<sup>th</sup> Street, Santa Paula, CA 93060, by **5:00 P.M. on April 12, 2019**. The Agencies reserve the right to reject any or all proposals submitted.

## II. Scope of Work

The Agencies each desire an audit report and audited financial statements to be prepared, as well as any other reports required by law and/or auditing standards.

The selected independent auditor will be required to perform the following tasks for each Agency:

- The audit firm will perform an audit of all funds of each of the Agencies. The Agencies each currently consist of one Enterprise Fund. The audit firm will also apply limited audit procedures to Management's Discussion and Analysis (MD&A) and required supplementary information, if required by auditing standards.
- If required, the audit firm will perform a single audit on the expenditures of federal grants in accordance with OMB Circular A-133 and render the appropriate audit reports, if applicable. The Agencies currently have not received any federal grants.
- The audit firm shall issue a separate "management letter" that includes recommendations for improvements in internal control, accounting procedures and other significant observations that are considered to be non-reportable conditions. Management letters shall be addressed to each Agency's respective Executive Director.

- The audit firm shall, at the Agencies' request, prepare the Annual State Controller's Report for each of the Agencies.

### III. Auditing Standards

To meet the requirements of this Request for Proposals, the audit shall be performed in accordance with:

- Generally Accepted Auditing Standards as set forth by the American Institute of Certified Public Accountants;
- The most recent standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States;
- The provisions of the Single Audit Act as most recently amended; and
- The provisions of U. S. Office of Management and Budget (OMB) Circular A-133, *Audits of State and Local Governments and Non-Profit Organizations*.

### IV. Proposal Requirements

Please include the following in your proposal:

- Firm Qualifications and Experience, including a list of all current government clients
- Partner, Supervisory and Staff Qualifications and Experience
- List of similar engagements with other government entities
- Total all-inclusive maximum price **for each agency individually** using the Audit Work Cost Proposal form in Attachments A and B
- Identification of any anticipated potential audit problems and the firm's approach to resolving these problems
- License to Practice in California
- Affirmative statement of independence
- Copy of a report on its most recent external quality control review (peer review), with a statement whether that quality control review included a review of specific government engagements
- Circumstances and status of any disciplinary action taken or pending against the firm during the past three (3) years with State regulatory bodies or professional organizations.
- Working paper retention policy

Attachment A

**AUDIT WORK COST PROPOSAL FORM**

| <b>Service</b>                        | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> |
|---------------------------------------|----------------|----------------|----------------|
| FPB GSA Audit and Related Reports     | \$             | \$             | \$             |
| Single Audit and Related Reports      | \$             | \$             | \$             |
| FPB GSA State Controller's Report     | \$             | \$             | \$             |
| Total for Fiscal Year (not-to exceed) | \$             | \$             | \$             |

| <b>Service</b>                        | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> |
|---------------------------------------|----------------|----------------|----------------|
| MB GSA Audit and Related Reports      | \$             | \$             | \$             |
| Single Audit and Related Reports      | \$             | \$             | \$             |
| MB GSA State Controller's Report      | \$             | \$             | \$             |
| Total for Fiscal Year (not-to exceed) | \$             | \$             | \$             |

Attachment B

**ESTIMATE OF COST**

Name of Firm:

Address:

Contact Name:

Contact Phone #:

Fax #:

Contact Email:

**1. Auditor's Standard Billing Rates**

| <b>Auditors Standard Hourly Billing Rates</b> |                |                |                |                |                |
|---|----------------|----------------|----------------|----------------|----------------|
| <b>POSITION</b>                               | <b>2017/18</b> | <b>2018/19</b> | <b>2019/20</b> | <b>2020/21</b> | <b>2021/22</b> |
| <b>Partner</b>                                | \$             | \$             | \$             | \$             | \$             |
| <b>Manager</b>                                | \$             | \$             | \$             | \$             | \$             |
| <b>Senior Accountant</b>                      | \$             | \$             | \$             | \$             | \$             |
| <b>Staff Accountant</b>                       | \$             | \$             | \$             | \$             | \$             |
| <b>Clerical</b>                               | \$             | \$             | \$             | \$             | \$             |



| Company                        | Fname   | Lname      | Title     | Email  | City            |
|--------------------------------|---------|------------|-----------|--|-----------------|
| Rogers Anderson Malody & Scott | Terry   | Shea       | partner   | <a href="mailto:Terry@Ramscpa.net">Terry@Ramscpa.net</a>                           | San Bernadina   |
| Fechter & Company CPAs         | Craig   | Fechter    | principal | <a href="mailto:cfechter@gmail.com">cfechter@gmail.com</a>                         | Sacramento      |
| Bartlett, Pringle & Wolf, LLP  | Danna   | McGrew     | Partner   | <a href="mailto:dmcgrew@bpw.com">dmcgrew@bpw.com</a>                               | Santa Barbara   |
| Glenn Burdette                 | Stacie  | Lager      | Manager   | <a href="mailto:stacie.lager@glennburdette.com">stacie.lager@glennburdette.com</a> | San Luis Obispo |
| KPGM                           | Felicia | Cartagena  |           | <a href="mailto:fcartagena@kpmg.com">fcartagena@kpmg.com</a>                       | Los Angeles     |
| Moss, Levy & Hartz             | Craig   | Hartzheim  |           | <a href="mailto:chartzheim@mlhcpas.com">chartzheim@mlhcpas.com</a>                 | Culver City     |
| Nasif Hicks Harrison & Co      | Sara    | Turner     |           | <a href="mailto:sturner@nhhco.com">sturner@nhhco.com</a>                           | Santa Barbara   |
| Poindexter & Company, CPA      | Mark    | Poindexter |           | <a href="mailto:mark@poindexterandco.com/">mark@poindexterandco.com/</a>           | Ventura         |
| Vasquez & Co. LLP              | Donald  | Nino       |           | <a href="mailto:dnino@vasquezcpa.com">dnino@vasquezcpa.com</a>                     | Los Angeles     |