

TO ALL DIRECTORS OF THE PLEASANT VALLEY GROUNDWATER SUSTAINABILITY
AGENCY BOARD:

NOTICE IS HEREBY GIVEN that the Board of Directors meeting of the Pleasant Valley
Groundwater Sustainability Agency is scheduled for Tuesday, July 29, 2025, at 10:00 AM.

The meeting will be made accessible for interested parties by teleconference at the call-in number
below. Directors will attend in person.

[Join the meeting now](#)

Meeting ID: 269 053 557 832

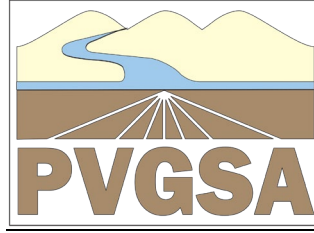
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AGENDA

MEETING OF THE BOARD OF DIRECTORS PLEASANT VALLEY GROUNDWATER SUSTAINABILITY AGENCY

Meeting Held at:
Harris Ranch Inn & Restaurant
Belmont Room
24505 W Dorris Ave, Coalinga, CA 93210

Also made accessible by video at the link:

[Join the meeting now](#)

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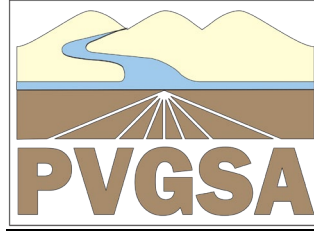
July 29, 2025, at 10:00am

CALL TO ORDER-PVGSA MEETING.

ROLL CALL. A roll call will be taken to identify a quorum of the PVGSA Board of Directors.

PUBLIC COMMENT. The Board of Directors welcomes participation in Board meetings by the public. The public may address matters under the authority of the Board that have not been included in the agenda. However, California Law prohibits the Board from acting on any matter that is not on the posted agenda unless the Board of Directors determines that it is an emergency or one of the other situations specified in Government Code section 54954.2. The Chairman may limit the total amount of time allocated for public testimony on issues for each individual speaker. Public Comment is available to anyone on the teleconference or by emailing comments to info@pvwdgsa.org. The comments will be read into the teleconference if received by email.

POTENTIAL CONFLICTS OF INTEREST. Any Board member who has a potential conflict of interest may now identify the item and recuse himself or herself from discussing and voting on the matter. (FPPC § 87105.)



I. CORRESPONDENCE

II. APPROVAL OF MINUTES

Approve the minutes from the following Board Meetings:

1. April 22, 2025 (**Action Required**)

III. WATER POLICY REPORT

1. GSP Implementation. Update on the following activities:

- a) Summary of June 18th Water Policy Committee meeting
- b) State Board Process Update
- c) Review of EKI Proposal and Presentation of Approach (**Action Required**)
- d) Discuss proposed Groundwater Recharge Policy (**Action Required**)
- e) Set future date for adoption of Groundwater Allocation Policy

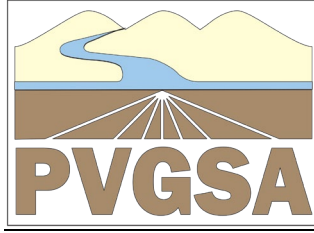
2. Metering. Update on the following activities

- a) June 30th meter readings complete

IV. FINANCE & ADMINISTRATIVE

1. Financial

- a) Approve and Ratify checks written April 1, 2025, through July 25, 2025 (**Action Required**)
- b) Balance Sheet and Budget to Actual report as of June 30, 2025 (**Action Required**)
- c) Review and approve Provost & Pritchard scope of services for the 2025/2026 fiscal year (**Action Required**)
 1. Discuss Administrative Assistant
 2. Discuss District Manager
- d) Review and approve 2025/2026 Operating Budget (**Action Required**)
- e) Discuss Proposition 218 Assessment for the 2025/2026 fiscal year – Set hearing date



- V. DIRECTOR COMMENTS. The Board may discuss other items as permitted by the California Government Code.

ADJOURN AS THE PVGSA BOARD MEETING.

Members of the public may directly address the Board of Directors on any item of interest to the public within the Board's subject matter jurisdiction before or during the Board's consideration of the item.

Written materials related to an agenda item to be considered in open session that are public records will be made available for public inspection upon request.

A person with a qualifying disability under the Americans with Disabilities Act of 1990 may request the Agency provide a disability-related modification or accommodation in order to participate in any public meeting of the Agency. Such assistance includes appropriate alternative formats of the agenda and agenda packets used for any public meetings of the Agency. Requests for such assistance and for agenda and agenda packets shall be made in person, by telephone or written correspondence to the Agency at least 48 hours before a public District meeting.

MINUTES OF THE QUARTERLY MEETING OF
THE BOARD OF DIRECTORS OF THE
PLEASANT VALLEY WATER DISTRICT
GROUNDWATER SUSTAINABILITY AGENCY

April 22, 2025

The Board of Directors of the Pleasant Valley Water District held the Quarterly Board Meeting on Tuesday, April 22, 2025 at 24505 W. Dorris Avenue, Coalinga, CA and by teleconference. A quorum was established, and the meeting was called to order by President Gleason at approximately 11:31 a.m. Directors attending the meeting were Brad Gleason, Craig Finster, Joseph Lovelace, James Nichols, Dustin Walker, Sebastian Silveira, Karen d'Artenay, Kyle Murai and Travis Millwee. Also in attendance were Linda Whelan, Conor Gillespie, Roy Jimenez, Rebecca Spicer, Taylor Christensen, Peter Allbright, Lauren Layne, Jim Anderson, Amanda Peish, MaryBeth O'Bryan, Cameron Hewitson, Annette Harrington, Dick Hewitson, Brett Hewitson, Zack Hewitson, Dan Bergmann, Kyle Wilken, Courtney McKeever, Doug Jackson, Ryan Gregg, Andrew McHanney, Phil Christensen Calvin Monreal, David Kahn (General Counsel) and Donna Wilt (bookkeeper).

PUBLIC COMMENT. Jim Anderson – request for Brad Gleason's resignation.

CONFLICT OF INTEREST. None at this time.

CORRESPONDENCE. March 31, 2025, e-mail from Brad Gleason to Board of Directors, letter from Phillip Christensen, letter from James Anderson, letter from Brad Gleason and website correspondence procedure. Phil Christensen letter – Lauren Layne of Baker Manock & Jensen, stated that no Board action was taken on North Pipeline Reimbursement Agreements. Jim Anderson letter – Courtney McKeever of Whitney, Thompson & Jeffcoach, highlighted the concerns of the letter – 1) notes to Brad's self-interests, 2) pumping rights, and 3) lack of confidence.

MINUTES. The minutes of the Quarterly Board Meeting on January 28, 2025 were reviewed and discussed. Director Walker motioned to approve the January 28, 2025 Minutes, which was second by Director Nichols. The motion was unanimously approved by the attending Directors. The minutes of the Special Board Meeting on March 28, 2025 were reviewed and discussed. Director Murai motioned to approve the March 28, 2025 Minutes, which was second by Director Lovelace. The motion was unanimously approved by the attending Directors.

FINANCE & ADMINISTRATIVE. Director Walker reported to the Board on the following matters.

1. Financial

- a. Ratify Checks – The Board reviewed the checks that had been written from October 23, 2024 through March 31, 2025. Director Millwee motioned to approve the checks from October 23, 2024 through March 31, 2025, which was second by Director Murai. The motion was unanimously approved by the attending Directors.

b. Balance Sheet/Income Statement – The Board reviewed and discussed the March 31, 2025, Balance Sheet and Budget to Actual reports. Director Murai motioned to approve the March 31, 2025 Balance Sheet and Budget to Actual reports, which was second by Director Silveira. The motion was unanimously approved by the attending Directors.

c. Broken Cup Studio – The Board reviewed and discussed the scope of services for Broken Cup Studio. Director Murai motioned to approve the scope of services for Broken Cup Studio, which was second by Director Lovelace. The motion was unanimously approved by the attending Directors.

2. Administrative

a. District Manager – Finance and Administrative Committee will figure out a salary and job description.

WATER POLICY REPORT. Director Murai reported to the Board on the following items.

1. GSP Implementation Updates

a. April 14, 2025 Summary – There was a good turnout. Discussed the allocation process.

b. April 11, 2025 State Board call – The call was informal. Will work on the 3 areas requested by DWR.

2. Metering

a. No report.

OUTSIDE COUNSEL’S REPORT. General Counsel David Kahn reported to the Board on the following.

1. Public Records Act – April 9, 2025 letter from Baker Manock & Jensen, we responded on April 21, 2025.

ENGINEER’S & HYDROGEOLOGIST’S REPORT. Calvin Monreal of Provost and Pritchard reported to the Board on the following.

1. Annual Report – Submitted annual report on time to Department of Water Resources and State Board.

ECOLOGICAL CONSULTANT REPORT. Conor Gillespie of Ecotone, LLC reported to the Board on the following.

1. Water quality.

2. Prop 4 – The North Pipeline Group could be qualified for two of the grant projects.

3. USDA Loan – The North Pipeline Group could be qualified for this loan.

DIRECTOR COMMENTS. None at this time.

ADJOURNMENT. Director Murai motioned for adjournment, which was second by Director Walker. The motion was unanimously approved by the attending Directors. The meeting was adjourned at approximately 11:20 a.m.

Respectfully submitted,

Craig Finster, Secretary

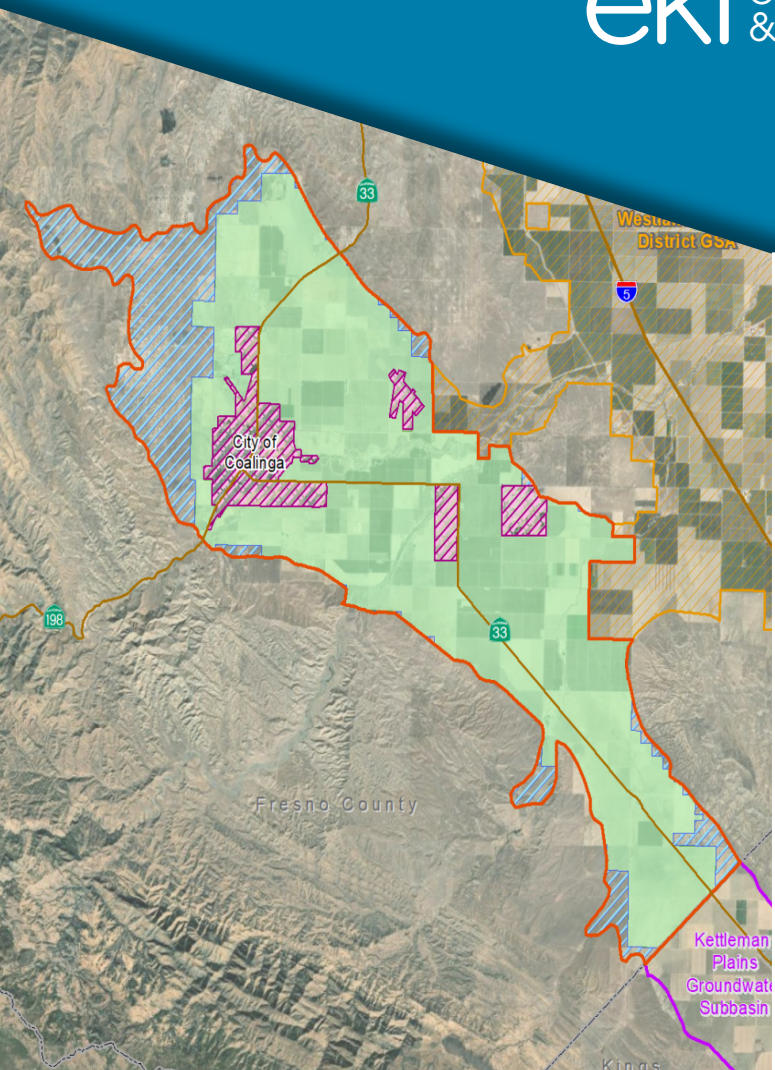


PLEASANT VALLEY
SUBBASIN GSAS

PROPOSAL FOR

Completing the Response to the Inadequate Determination Issued by CA DWR for the Pleasant Valley Subbasin Groundwater Sustainability Plan

eki environment
& water



22 July 2025

Board of Directors
Pleasant Valley Groundwater Sustainability Agency (PVGSA)

Subject: Proposal to Develop a Revised Groundwater Sustainability Plan in Response to the
Inadequate Determination for the Pleasant Valley Subbasin (EKI C50207.00) - Revised

Dear PVGSA Board of Directors:

EKI Environment & Water, Inc. (EKI) has assembled a highly qualified team to support the development of a revised Groundwater Sustainability Plan (Revised GSP) for the Pleasant Valley Subbasin (Basin) in its response to the recent California Department of Water Resources (DWR) Inadequate Determination. Given our Sustainable Groundwater Management Act (SGMA) expertise and background supporting basins to avoid a probationary designation, EKI is uniquely qualified to support the Basin to navigate through the current SGMA and State Board process in a time- and cost-efficient manner.

Proven Leadership and Strong Technical Qualifications. Our Principal, Anona Dutton, PG, CHG is a recognized leader in SGMA implementation throughout California. She is supported by a highly-qualified project team with extensive SGMA experience, including with GSP development and approval, Groundwater Sustainability Agency (GSA) administration, data analysis, numerical modeling, engineering, and implementation of projects and management actions.

Demonstrated GSP Approval and State Board Experience. EKI has been supporting SGMA compliance throughout California and has successfully completed approved GSPs in the Salinas Basin, Cosumnes Subbasin, and White Wolf Subbasin. EKI is actively supporting multiple other basins with GSP implementation and the Kern County Subbasin, Delta-Mendota Subbasin, Tule Subbasin, and the Kaweah Subbasin to exit the State Board probationary process.

Strong Communication and Stakeholder Engagement Skills. EKI is known for our ability to present planning, engineering, and technical information in an accessible fashion to staff, boards, the public, and stakeholder groups through the development of well-conceived work products and compelling graphics and dynamic presentations. This skillset will be especially important in the Basin to support expedited and effective decision-making and to support discussions with the State Board and DWR.

Highly Responsive and Skilled Team. As a 150+ employee firm we are nimble and take pride in offering the Basin GSAs access to a wide range of expertise and skillsets. We plan to work closely and cooperatively with the Basin GSAs and existing consulting team(s) to leverage resources in a cost-effective manner.

Project Focus and Commitment. We understand the Basin GSAs' desire to prepare a Revised GSP in a time- and cost-effective manner and to secure approval from the State Board (and DWR). EKI's

proposed team has demonstrated a strong capability to adhere to established schedules and achieve results and will dedicate the necessary resources to achieve the objectives.

We look forward to supporting the PVGSA and other Basin GSAs to develop and implement an effective response to the Inadequate Determination in support of Basin sustainability.

Very truly yours,

EKI ENVIRONMENT & WATER, INC.



Anona Dutton, PG, CHg
Vice President

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GENERAL INFORMATION AND EXPERIENCE

About EKI Environment & Water, Inc.

EKI Environment & Water, Inc. (EKI) is an employee-owned, registered S-Corporation that has provided comprehensive water resources and engineering services to public and private sector clients since our founding in 1989. Our staff includes over 150 engineers, geologists, hydrogeologists, environmental scientists, computer-aided designers, geographic information system (GIS) and database specialists, and support staff in offices throughout California and the United States.

EKI's staff comprises an effective mix of disciplines comprising water resources, engineering, environmental, and litigation support. This complementary mix is an asset to understanding and effectively resolving a wide variety of complex technical challenges.

Areas of Expertise

EKI's related planning, engineering, and hydrogeology services include:

- Strategic and technical support for Sustainable Groundwater Management Act (SGMA) compliance, including Groundwater Sustainability Plan (GSP) development and implementation;
- Grant Procurement and Administration;
- Groundwater supply assessment and development, including basin safe yield assessments, aquifer testing, groundwater quality assessments, and numerical groundwater modeling;
- Water supply portfolio development and management, including water transfers;
- Aquifer storage and recovery (ASR), and groundwater augmentation and recharge including recycled water for direct or indirect potable reuse purposes;
- Water supply portfolio development and management, including water transfers;
- Land re-purposing program implementation and development of water budgets;
- Water supply, wastewater treatment and recycled water system planning, design, construction management, and program management, including cost estimation and feasibility evaluations;
- Large-capacity water supply well design, construction, and testing;
- Technical expert support for basin adjudication proceedings and litigation services; and,
- Local and state regulatory and permit support.



35+ Years
in Business



150+
Professionals

EKI's Experience Supporting Basins Through the State Board Process

As shown in the adjacent figure, EKI has been providing technical, strategic, and administrative support to Groundwater Sustainability Agencies (GSAs) throughout the state since SGMA inception, with a focus on successful GSP development and implementation.

EKI has been providing strategic and technical support to several GSAs and basins through the evolving State Water Resources Control Board (State Board) intervention process, including revising GSPs to update applicable Sustainable Management Criteria (SMCs), refine Basin-wide water budgets, and support stakeholder engagement. We have worked closely with the GSAs and the State Board to identify mutually agreeable approaches to identified deficiencies with a laser-focus on restoring these basins to local control.

The table below illustrates the EKI Team's extensive experience related to the potential tasks identified herein.



EKI is working with entities throughout California to develop strategic responses to comply with SGMA, including developing the technical information required for GSPs implementing projects and management actions, and securing and managing grants.

RELEVANT EXPERIENCE	SELECTED BASINS
Lead GSP Development and Implementation	Cosumnes Subbasin, White Wolf Subbasin, Kern County Subbasin, Monterey Subbasin, Castac Basin, Merced Subbasin, Delta-Mendota Subbasin, Santa Ynes Valley Basin, East Bay Plain Subbasin, San Mateo Plain Subbasin, Monterey Subbasin, Livermore Valley Basin, Cuyama Basin, Kings Basin, Kaweah Basin, Eastern San Joaquin Subbasin, Turlock Subbasin, Madera Subbasin, North Yuba Subbasin, Pajaro Valley Subbasin
Lead GSP Periodic Evaluation / 5-Year Update	Cosumnes Subbasin, Kern County Subbasin, White Wolf Subbasin, Delta-Mendota Subbasin, Castac Basin, Monterey Subbasin, Livermore Valley Basin, Westside Basin, Kings Subbasin, Solano Subbasin, Kaweah Subbasin
Technical Assistance Following GSP Determination / State Board Intervention	Kern County Subbasin, Kaweah Subbasin, Delta-Mendota Subbasin, Kings Subbasin, Tule Subbasin
Support for GSP Development and/or Implementation	North Yuba Subbasin, Turlock Subbasin, Santa Ynez Valley Basin, Eastern San Joaquin Subbasin, East Bay Plain Subbasin, Merced Subbasin, Santa Inez Valley Basin, Kings Subbasin, Cuyama Subbasin, Tule Subbasin

RELEVANT EXPERIENCE	SELECTED BASINS
Basin-Scale Numerical Model Development and/or Application	Livermore Valley, Cosumnes Subbasin, White Wolf Subbasin, Kern County Subbasin, Monterey Subbasin, Castac Basin, Delta-Mendota Subbasin, Westside Basin, Cuyama Basin, Solano Subbasin, Kings Subbasin, Merced Subbasin, Kaweah Subbasin, Eastern San Joaquin Subbasin, Turlock Subbasin, Castac Basin, San Mateo Plain Subbasin
Basin Boundary Modification and Basin Re-prioritization	Kern/White Wolf Subbasins, Eastern San Joaquin/Tracy Subbasins
Monitoring and Data Management / Preparation of Annual Reports / Database Management	Kern County Subbasin, San Mateo Plain Subbasin, White Wolf Subbasin, Monterey Subbasin, Cosumnes Subbasin, Castac Basin
Grant Application and Administration	Cosumnes Subbasin, White Wolf Subbasin, City of East Palo Alto, Valley of the Moon Water District, Monterey Subbasin, Westlands Water District, Chowchilla Subbasin, North Coast County Water District, Ukiah Basin, Santa Inez Valley Basin
Community and Stakeholder Outreach and Engagement	Cosumnes Subbasin, White Wolf Subbasin, Delta-Mendota Subbasin, Monterey Subbasin, Merced Subbasin, Kern County Subbasin, San Mateo Plain Subbasin, Castac Basin
Litigation Support Services	Las Posas Subbasin, Antelope Valley Basin, Kern County Subbasin, Chino Basin, Salinas Valley Basin, Tule Subbasin,

Selected References

References that can speak to EKI's experience supporting basins in the SGMA and State Board process are listed below:

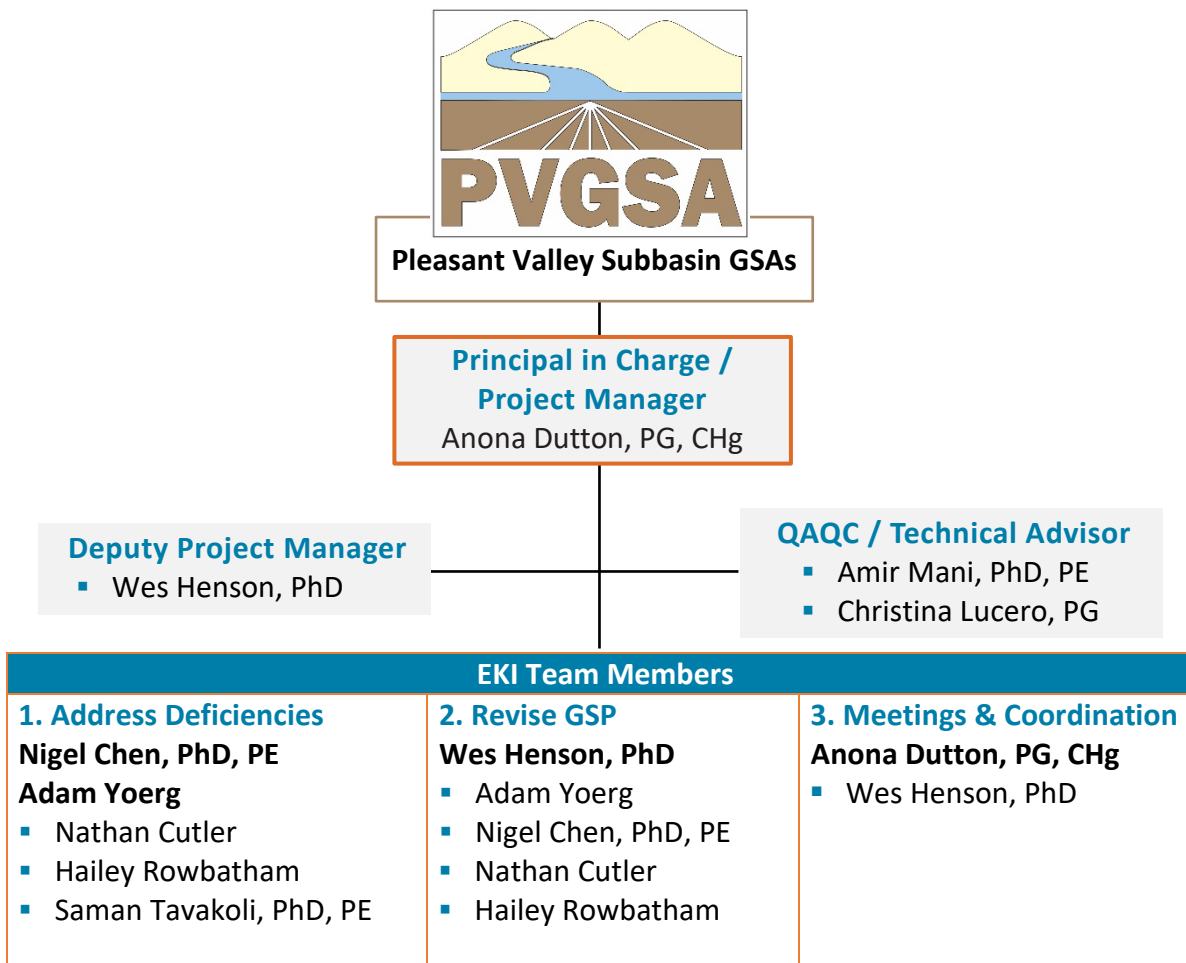
Kern Subbasin: Jeevan Muhar, PE – Engineer-Manager
Arvin-Edison Water Storage District, PO Box 175, Arvin, CA 93203 Ph: (661) 854-5573; Mobile: (661) 747-0062; jmuhar@aebsd.org
Delta-Mendota Subbasin: Jarrett Martin, PE – General Manager
Central California Irrigation District, 1335 West I Street, P.O. Box 1231, Los Banos, CA 93635 Ph: (209) 826-1421; jmartin@ccidwater.org
Turlock Subbasin: Sarah Woolf – General Manager
Eastside Water District, 731 East Yosemite Avenue, Suite B #147, Merced, CA 95340 Ph: (559) 341-0174; sarahwoolf@me.com
Lower Tule River and Pixley Irrigation Districts: Eric Limas – General Manager
Tea Pot Dome Water District, 357 E Olive Ave, Tipton, CA 93272 Ph: (559) 686-4716; elimas@ltrid.org
Cuyama Basin Water District: Byron Albano, Vice President
1518 Mill Rock Way, Suite 100, Bakersfield, CA 93311 Ph: (213) 309-2347; byronalbano@gmail.com

PROJECT TEAM

EKI Team Organization

EKI has assembled a team of highly experienced and specialized professionals to support the Basin GSAs with strategic, technical and administrative efforts related to the revision and adoption of a Revised GSP that addresses the deficiencies identified by DWR. The figure below shows EKI's proposed team organization chart. Detailed resumes of our proposed team members are available in an **Appendix** to this proposal. These team members will be supported by other qualified EKI staff as appropriate.

Team Organization Chart



EKI Team Personnel

At EKI, we understand that the successful completion of a project is founded on the performance of key individuals. We are aware of the importance our clients place on the selection of a capable Project Manager supported by technical specialists to effectively guide their projects to completion. Key EKI Team member roles, qualifications, educational background, and certifications are highlighted below.

ANONA DUTTON, PG, CHG – PRINCIPAL IN CHARGE/PROJECT MANAGER



- Professional Geologist in California (#7683)
- Certified Hydrogeologist in California (#841)
- MS, Hydrogeology, Stanford University, 2000
- BS, Environmental Sciences, Stanford University, 1998

Ms. Dutton has over 20 years of professional experience performing and managing integrated water resources projects. She has managed multi-million-dollar efforts to secure reliable water supplies for water agencies, including leading the technical efforts to assess groundwater and surface water rights and supply yields; securing water transfer options; and evaluating the feasibility of developing new water supply sources such as recycled water and desalination water. Ms. Dutton has worked closely with multiple GSAs across the state to respond effectively to SGMA, including GSA formation and administration, GSP development and implementation, stakeholder engagement, and annual reporting. Ms. Dutton has also been providing technical, strategic, and administrative support to GSAs dealing with the State Board intervention process since 2022, providing key technical and strategic support in basins that needed to revise their GSPs to the State Board's satisfaction to maintain local control.

As Principal in Charge/Project Manager, Ms. Dutton will serve as the primary Client contact. She will also provide strategic and technical direction, support communication and coordination efforts, and ensure that staff resources are available to meet project needs. Ms. Dutton will lead all the stakeholder meetings and coordination needed for this project.

WES HENSON, PHD – DEPUTY PROJECT MANAGER



- PhD, Agricultural and Biological Engineering, University of Florida, 2016
- MS, Hydrogeology, Mackay School of Earth Science and Engineering, University of Nevada, 2011
- BS, Geology, Mackay School of Earth Science and Engineering, University of Nevada, 2008

Dr. Henson is a seasoned hydrogeologist and numerical groundwater modeler with over 17 years of experience in water resources simulation, decision support tool development, and sustainable land and water management. He has led teams to support evaluation of water supply sustainability for several groundwater agencies in California and Florida. Dr. Henson is known for developing innovative, high-impact models including a multi-million-dollar system model for a coastal basin to industry-standard software for forecasting supply, demand, and climate impacts. He has led interdisciplinary teams and stakeholder-driven projects focused on climate vulnerability, water use efficiency, and nutrient management, with work informing both state and national policy.

As Deputy Project Manager, Dr. Henson will support day-to-day administration of the Project, coordinate the team's work on a daily basis, track budget and overall project schedule, and implement the technical approach to developing the proposed deliverables and drafting the Revised GSP.

AMIR MANI, PHD, PE – QA/QC AND TECHNICAL ADVISOR



- Professional Civil Engineer in California (#C89426)
- PhD, Civil and Environmental Engineering, Louisiana State University, 2016
- MS, Civil and Environmental Engineering, University of Tehran, 2011
- BS, Civil Engineering, University of Tehran, 2009

Dr. Mani has more than 14 years of academic and project experience in integrated water resources management and modeling, groundwater supply development, climate change adaptation and mitigation strategies, wastewater and recycled water program implementation, permitting, and compliance. Dr. Mani has been deeply involved with SGMA implementation in several basins across the state, supporting the development and implementation of multiple GSPs, and conducting special studies such as development of groundwater allocation frameworks, integrated hydrological models, and data management and automation. He has been supporting the Delta-Mendota Subbasin's response to the DWR Inadequate Determination / State Board intervention process since March 2023.

Dr. Mani will provide expert technical and strategic support and conduct QA/QC.

CHRISTINA LUCERO, PG – QA/QC AND TECHNICAL ADVISOR



- Professional Geologist in California (#9262)
- BS, Geology, University of California, Davis, 2010

Ms. Lucero has 15 years of experience and is assisting several groundwater basins in their response to SGMA, including GSP development, developing data management systems, and groundwater flow model development and implementation. Ms. Lucero has provided technical support to the White Wolf GSA through both GSP development and GSP implementation, including securing multiple grants to support ongoing planning, data gap filling efforts, numerical groundwater flow model development, and monitoring well installations. Furthermore, she has been supporting the Kern County Subbasin's response to the DWR Inadequate Determination / State Board intervention process since 2022.

Ms. Lucero will provide expert technical and strategic support and conduct QA/QC.

JIANCONG (NIGEL) CHEN, PHD, PE – SENIOR HYDROGEOLOGIST/ NUMERICAL MODELING LEAD



- Professional Engineer in California (#95722)
- PhD, Environmental Engineering, University of California, Berkeley, 2020
- MS, Civil & Environmental Engineering, University of California, Berkeley, 2016
- BS, Environmental Science, Tongji University, Shanghai, 2015

Dr. Chen brings extensive experience in integrated water resources management and modeling, with a focus on integrated hydrologic model development, groundwater supply assessment, and strategic compliance with SGMA. His expertise in the development of numerical groundwater flow models includes various platforms such as MODFLOW- and IWFEM-based models, demand prediction tools such as IWFEM-IDC and MODFLOW-OWHM, and surface water models such as PRMS and BCM. Dr. Chen is proficient in water budget

development, sustainable yield estimation, basin setting analyses, and P/MA evaluation. Dr. Chen has published numerous peer-reviewed journal articles related to groundwater modeling, watershed ecosystem modeling, subsurface heterogeneity site characterization, and deep learning.

Dr. Chen will lead technical evaluations to address the Deficiencies and Corrective Actions, including development of the Basin model and drafting of the Revised GSP.

ADAM YOERG – PROJECT HYDROGEOLOGIST



- MS, Geology (Hydrogeology Emphasis), University of Kansas, 2018
- BS, Geology with Honors, University of Kansas, 2016

Mr. Yoerg has 7 years of experience as a hydrogeologist, providing expertise in numerical and analytical groundwater modeling and field implementation. His experience ranges from site to basin-scale efforts and includes SGMA planning and implementation as well as groundwater management in adjudicated basins.

Mr. Yoerg has supported clients plan for SGMA compliance using modeling platforms including MODFLOW-OWHM and IWFM-IDC. Mr. Yoerg has also supported the planning and implementation of P/MAs such as aquifer storage and recovery and infiltration basin design. He has extensive field experience with various drilling methods and has led efforts in siting, installing, developing, and rehabilitating high-capacity production wells as well as representative monitoring wells to support SGMA implementation.

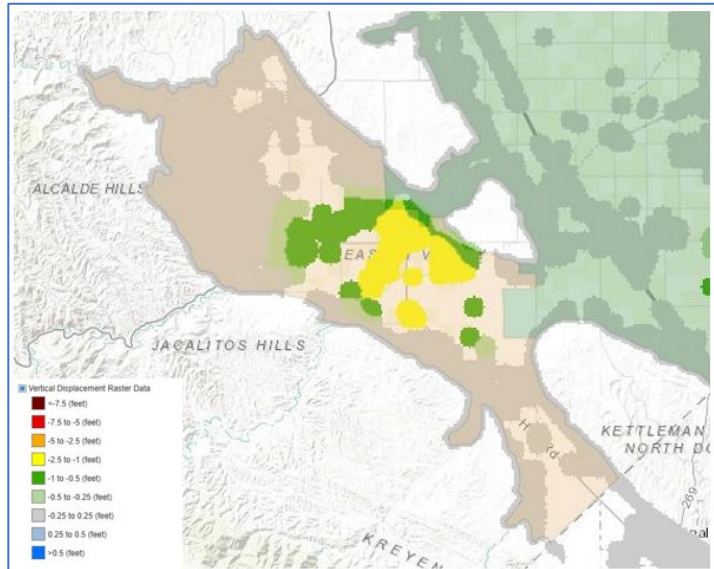
Mr. Yoerg will lead technical evaluations to address the Deficiencies and Corrective Actions and support drafting of the Revised GSP.

PROJECT APPROACH AND SCOPE OF WORK

Project Understanding

The purpose of this project is to address the following deficiencies (DWR Deficiencies) that were identified in the DWR Inadequate Determination letter, issued to the Pleasant Valley Subbasin (Basin) on 27 February 2025.

- **Deficiency #1:** The GSP does not provide sufficient information to support the selection of the sustainable management criteria (SMCs) for chronic lowering of groundwater levels.
- **Deficiency #2:** The GSP does not include a reasonable assessment of overdraft conditions and reasonable means to mitigate overdraft.
- **Deficiency #3:** The GSP does not provide sufficient information to support the selection of the SMCs for water quality.



*Subsidence has been flagged by DWR
as an issue in the Basin*

To address these deficiencies, DWR identified the following Corrective Actions, some of which have been partially addressed in the 2024 GSP:

- **Corrective Action 1:**
 - (a) Clearly define and disclose significant and unreasonable effects related to chronic lowering of groundwater levels that could be experienced in the Basin. The significant and unreasonable effects must be considered and incorporated in establishing the minimum thresholds (MTs).
 - (b) Quantitatively define undesirable results (URs) based on a combination of MT exceedances required by the GSP Regulations. The GSAs should also describe and discuss the rationale for the UR definition.
 - (c) Select the MT at a level indicating a depletion of supply that may lead to URs; sufficiently support the assumptions and methodology used for the development of MTs; discuss how the selected MTs could impact beneficial uses and users, including both agricultural and domestic wells. For domestic wells, the GSAs should consider referring to the Department's guidance document titled *Considerations for Identifying and Addressing Drinking Water Well Impacts*.
 - (d) Sufficiently discuss the relationship between the MT for groundwater levels and other applicable sustainability indicators such as reduction of groundwater storage, degradation of groundwater quality, and land subsidence. Explain how the basin conditions at the

groundwater level MTs will avoid URs for reduction of groundwater storage (i.e., overdraft), degradation of groundwater quality, and land subsidence.

- **Corrective Action 2:**

- (a) Reevaluate the assessment of overdraft conditions in the Subbasin to develop and report the most accurate estimate of current and projected future overdraft under current and future conditions. Specifically, the Plan should include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions and are representative of average expected overdraft during the Plan implementation and planning horizon. Among other relevant factors, the Plan should factor in the likely increased water demand (and groundwater pumping) to support the expanding acreage of pistachios and full water demands as those crops fully mature. In addition, the Plan should also consider potential impacts of climate change on the overdraft quantification.
- (b) Provide a reasonable means to mitigate the overdraft in the Subbasin. Specifically, the Plan should include and describe feasible, effective projects and management actions (P/MAs) that can sufficiently augment the water supply to mitigate the Basin's current and projected overdraft. Among other relevant factors to include in the Plan (see 23-CCR §354.44), the Plan should demonstrate that the GSAs have fully considered the tasks and actions required to implement the P/MAs, the length of time these tasks and actions will take, are committed to and financially capable of implementing the P/MAs (even without grant funding), and develop and include a mandatory demand reduction management action in case the water supply augmentation projects are not timely implemented or do not provide the expected benefits.

- **Corrective Action 3:**

- (a) Establish SMCs for all identified constituents of concern (COCs) to prevent significant degradation that would impair water supplies and impact the beneficial uses and users in the Basin (including agricultural and domestic uses) and to avoid exacerbating the existing conditions of already elevated concentrations of COCs.
- (b) Revise the definition of URs for degraded groundwater quality to expressly consider and include exceedances of MTs caused by groundwater extraction within the Basin, in addition to degradation caused by the GSAs implementation of projects. Provide additional information and a detailed rationale to support the selection of these MTs.

Key Priorities and Mitigation of Risk Factors

We understand a key risk to the Basin relates to the State Board's ability to collect significant fees from groundwater pumpers as part of their management of the Basin as well as likely requiring significant demand management (e.g., allocations) should the Basin go into probation. To reduce the risk of the Basin being subject to State Board intervention, EKI is proposing to support the Basin GSAs to revise their GSP, with a focus on addressing the DWR Deficiencies and Corrective Actions. However, significant risks remain, as the State Board has the authority to identify additional deficiencies but has not committed to sharing those deficiencies with the GSAs in advance of the probationary hearing process. As such, the full extent of required GSP revisions is not currently known; nor is it known what

“standard” the State Board will have for acceptance of this Revised GSP as their process has been different in every basin.

EKI will proactively work with the Basin GSAs to identify and mitigate this risk to the extent possible. As outlined below, our approach will be informed by close reading and adherence to the regulations and relevant guidance, as well as proactive communication, to the extent allowed, with the State Board and DWR. *Based on our work in other basins we will identify likely “hot button” issues for the State Board, including domestic well impacts, demand management, water quality, and stakeholder outreach, and work with the Basin GSAs to reasonably address these issues.* EKI will also work closely with the Basin’s SGMA legal Counsel and the Basin GSAs and relevant subcommittees on the technical, legal and policy issues.

Scope of Work

The proposed scope of work is structured to provide a clear path towards completion of a Revised GSP for the Basin, while recognizing that the possibility of future developments related to State Board and/or DWR feedback and guidance (among other things) may require changes to the currently proposed approach.

Due to the complex and comprehensive nature of GSPs in general, and particularly in active engagement with the State Board, there are many technical elements to cover, and therefore careful task planning and coordination is needed. As described in further detail below, this scope of work is focused on developing the content of the Revised GSP in an appropriately organized set of efforts. It should be noted that Tasks 1 through 5 are expected to take place in parallel and non-duplicative fashion. Presentations of interim work products will be provided for GSA feedback at regular intervals throughout the process to ensure that there are no surprises and feedback can be incorporated.

Task 1: Data Compilation, Review, and Analysis

EKI will compile and review the relevant documents, files, data, and information necessary to develop the Revised GSP and bring the content up through current conditions (i.e., through 2025), including, but not limited to the following:

- Compilation and review of data from the Basin’s Data Management System (DMS) pertaining to groundwater levels, groundwater quality, and land subsidence;
- Review and careful parsing of the deficiencies identified in DWR’s Inadequate Determination letter, dated 27 February 2025;
- Recent Annual Reports and supporting data;
- Supporting data and information from outside sources not currently included in the 2024 GSPs, such as data on water quality and land subsidence available from other public sources.

Based on the above, EKI will develop a “GSP data roadmap” – i.e., a summary of data to be used as part of the GSP revision as well as identification of data gaps and inconsistencies and a plan to address these data gaps.

Deliverables

- A Request for Information (RFI) to ensure that applicable data are requested/provided by the GSAs in support of this effort.

- A “GSP data roadmap” identifying data requirements, existing data sources, data gaps, and recommended pathways and schedule for the GSAs to address or resolve them.

Task 2: Update Current Groundwater Conditions for Each Applicable Sustainability Indicator

An understanding of current groundwater conditions (i.e., through 2025), especially in relation to the Deficiencies, Corrective Actions, and planned SMC revisions (i.e., the measurable objectives [MOs], interim milestones [IMs], and MTs), is crucial to the Basin’s efforts to respond to the identified DWR Deficiencies and to educate the State Board on the particular conditions encountered in the Basin. *Task 2 aims to develop the supporting the development of the technical material that will be used to address Corrective Actions 1, 2 and 3.*

Subtask 2.1: Develop Updated Assessment of Basin Groundwater Conditions

Consistent with the requirements of 23-CCR §354.16 and 23-CCR §356.4, EKI will prepare an updated assessment of groundwater conditions through current (2025) conditions using the best available data and information that includes the following:

- Compilation of available historical water level data and development of long-term hydrographs for applicable wells, including assessment of water level trends relative to the planned revisions to the SMCs, hydrology, and local and regional pumping;
- Assessment of flow direction, seasonal low and seasonal high (Spring and Fall) groundwater elevations using the WY 2024 groundwater elevation contour maps included in the Annual Reports;
- Assessment of the nature and extent of lateral and vertical groundwater gradients based on recent data included in the Annual Reports;
- Estimation of annual and cumulative change in storage between seasonal high groundwater elevations (Spring) using Annual Report estimates and model simulations (Subtask 4.2);
- Preparing maps of storage change showing spatial changes in storage between WY 2015 and WY 2024 seasonal high groundwater elevations;
- Analyzing groundwater quality and preparing maps of known contamination sites, plumes, and Representative Monitoring Well (RMW) concentration plots;
- Identification of potential land subsidence areas through the development of two sets of maps illustrating total subsidence: (1) from WY 2015 to WY 2020, and (2) from WY 2021 to WY 2025, using DWR InSAR data;
- Quantification of historical rate, trend, and relative magnitude of subsidence by developing plots of measured subsidence and as presented in Annual Reports;
- Evaluation to confirm the lack of Interconnected Surface Water (ISW) and Groundwater Dependent Ecosystems (GDEs).

Deliverables

- Exhibits (tables and figures, etc.) illustrating groundwater conditions for each applicable Sustainability Indicator (SI) – assumed to be Groundwater Levels (with Groundwater Storage as a proxy), Water Quality, and Subsidence.

Task 3: Subbasin Monitoring Network

Establishing and implementing appropriate representative monitoring networks (RMNs) and protocols are essential components of a GSP. Per 23-CCR §354.34 and the DWR Monitoring Best management Practice (BMP), appropriate monitoring networks must be designed to collect the necessary information to track progress towards sustainability goals, support compliance with reporting requirements, and identify issues that may require response and/or mitigation by the GSAs. The RMNs must therefore be designed with beneficial uses and users in mind and must relate in a logical way to the established SMCs.

Under Task 3, EKI will conduct a review and analysis of the existing RMNs and protocols, identify areas needing improvement (both in terms of spatial coverage and process/protocol), and develop proposed revisions to the RMNs in coordination with the GSAs.

Deliverables

- Revised monitoring networks and protocols for applicable SIs – assumed to be Groundwater Levels (with Groundwater Storage as a proxy), Water Quality, and Subsidence.

Task 4: Revise Sustainable Management Criteria and Basin Water Budget

The Deficiencies and Corrective Actions identified by DWR are primarily focused on the SMCs and Basin water budget. Under Task 4, EKI will complete the technical analysis related to SMCs, water budget, and other key elements of the GSP, in coordination with the GSAs and the State Board.

Subtask 4.1: Further Analysis and Potential Revisions to SMCs

Subtask 4.1 aims to address Corrective Actions 1 and 3, using supporting information developed under Task 2. EKI will complete the update to the SMCs for all applicable SIs (assumed to be Groundwater Levels [with Groundwater Storage as a proxy], Water Quality, and Subsidence) in accordance with 23-CCR §354.26, §354.28, and §354.30.

The use of new information to inform the SMCs will be consistent with the GSP data roadmap developed under Task 1, but will also be driven by the Regulations, DWR's BMPs, and guidance documents, both basin-specific and general/state-wide, anticipated to come from DWR and the State Board (e.g., the DWR's forthcoming guidance on addressing Land Subsidence in GSPs). The SMCs will be applied at specific RMN sites (Task 3) and used to support analysis of impacts to beneficial users and other SIs, and other efforts.

Subtask 4.2: Update to the Basin-wide Water Budget

Subtask 4.2 aims to address Corrective Action 2. In accordance with 23-CCR §354.18 requirements and DWR's Water Budget BMP, EKI proposes to use the publicly available Central Valley Hydrologic Model Version 2 (CVHM2) as the foundational model (Model) for the Basin. To support SGMA implementation and directly address the DWR-identified deficiencies and corrective actions, the Model will be used to:

- Quantitatively assess historical and projected overdraft conditions and estimate long-term sustainable yield under varying hydrologic conditions (**Deficiency #2**).
- Support the justification and revision of water level SMCs and other SIs, consistent with SGMA guidance, and evaluate relationships with other SIs (**Deficiency #1**).
- Support the development and implementation of P/MAs under different climate change scenarios to inform adaptive management and long-term sustainability (**Deficiency #2**).

CVHM2, developed by the US Geological Survey (USGS) and US Bureau of Reclamation (USBR), provides a technically robust, peer-reviewed and DWR-supported framework for basin-scale water budget development and overdraft evaluation. EKI will evaluate how well the Model represents groundwater conditions within the Basin by comparing simulated groundwater elevations, fluxes and subsidence to observed data. This evaluation will confirm whether CVHM2 adequately represents local Basin dynamics for the purposes of SGMA compliance. If Model refinements are recommended, EKI will present options to the Basin GSAs for consideration (see Optional Task 4.3).

EKI will incorporate climate change scenarios in the Basin water budget results using DWR's Central Tendency Climate Change Projections (i.e., 2030 and 2070 Central Tendency). These scenarios will include changes in precipitation and evapotranspiration using climate change factors within the Basin, with adjustments to other fluxes as needed based on available DWR datasets. This process will help evaluate the Basin's long-term water supply reliability, inform updates to SMCs and P/MAs, and support adaptive management and drought preparedness.

In addition, EKI will develop and simulate Basin planned P/MAs and evaluate their efficacy to support adaptive Basin management and demonstrate progress towards sustainability. These scenarios may include planned increased recharge, demand reduction, land use changes, pumping redistribution, and/or infrastructure improvements. EKI will work collaboratively with the GSAs to define realistic P/MA assumptions and implementation timelines, in accordance with Task 5. The Model will be used to evaluate the P/MA's effectiveness in improving groundwater levels, reducing overdraft, and mitigating land subsidence. Results will be presented in a comparative framework to support prioritization, and phasing of implementation strategies.

Subtask 4.3: Optional Task – Local Model Refinement

If the evaluation conducted pursuant to Task 4.2 indicates that greater spatial resolution and other Model refinements are needed to support representation of: (1) current conditions, (2) the benefits of specific P/MAs, and/or (3) compliance with SMCs, EKI proposes to update CVHM2 to a refined, higher-resolution localized model for the Basin. This refined model would build upon the CVHM2 framework and incorporate enhanced spatial/temporal discretization, local hydrogeologic data, adjusted boundary conditions, and relevant calibrated parameters including critical parameters that are used to simulate subsidence. The refined model would be calibrated to improve goodness-of-fit for local Basin conditions and tailored to reflect detailed P/MAs implementation scenarios. This task would be executed in close coordination with the Basin GSAs, as needed.

Deliverables

- Exhibits (charts and tables) and documentation related to the Basin-wide water budgets, its components' data, change in storage, and estimation of the sustainable yield.
- CVHM2 Model files and supporting information.
- Refined Model files and supporting information, if the optional task is pursued.

Task 5: Update Representation of Projects and Management Actions

Task 5 aims to address Corrective Action 2. Planned and ongoing P/MAs undertaken by the GSAs are the primary tools to achieve Basin's sustainability goal by 2042. An updated understanding of the P/MA benefits and impacts on groundwater conditions will inform potential SMC revisions and the Basin's sustainable yield estimates and facilitate future management and compliance with SGMA.

Subtask 5.1: Prepare Updated Description of P/MA Planning, Implementation, and Benefits

EKI will compile and summarize available information for the P/MAs identified in the current GSP, including for any P/MAs added or refined since the 2022 GSP submission. EKI will solicit input from the GSAs on the status of P/MA implementation and any quantifiable benefits and documentation that can be provided (e.g., summary of recharge volumes since the year 2022).

Following the P/MA inventory and implementation update, EKI will work with the GSAs to develop a refined plan for the updated list of P/MAs, including information on P/MA status, schedule, funding, permitting process, coordination with lead entities, triggers for implementation, and anticipated impacts on groundwater conditions. The level of detail will depend on the information provided by the GSAs.

Subtask 5.2: Conduct Quantitative Projection of P/MA Benefits

EKI will utilize the Model (Task 4) to analyze the quantitative effects of a specific group of P/MAs on current and projected groundwater conditions. This assessment will demonstrate how these P/MAs contribute to the attainment of sustainable conditions by 2042 and assist the GSAs in justifying their SMCs and sustainable yield estimates. The evaluation will involve three projection scenarios based on projected baseline, and the central tendency 2030 and 2070 climate change scenarios. This analysis will focus on the high-priority P/MAs, including significant water supply projects and/or demand/pumping management MAs.

Deliverables

- Exhibits (tables and figures, etc.) that illustrate groundwater conditions relative to SMCs.
- Tabular summary of P/MA description and implementation status.
- Exhibits demonstrating P/MA impacts on current and projected groundwater conditions.

Task 6: Revision of Plan Elements

EKI will prepare a Revised GSP as follows:

Subtask 6.1: Revision of Plan Area and Basin Setting Chapters

Subtask 6.1 aims to document GSP revisions made in response to Corrective Actions 1, 2 and 3 and bring the GSP up to current conditions. EKI will use the information included in the existing GSP as our primary resource to prepare the Plan Area chapter. While revisions to this chapter are expected to be comparably minor, EKI will use relevant information from Tasks 1 through 5, the Annual Reports, and new information gathered through coordination with the GSAs to update and revise the chapter.

The Basin Setting Chapter revision will include targeted updates and edits to the Hydrogeologic Conceptual Model (HCM) and Groundwater Conditions Sections per 23-CCR §354.14 and §354.16. The Water Budget and Sustainable Yield will be subsections of Basin Setting in the Revised GSP but are prepared under Subtask 5.3.

Subtask 6.2: Revision of Water Budget and Sustainable Yield Chapters

Subtask 6.2 aims to document GSP revisions made in response to Corrective Action 2. The water budget and sustainable yield analyses conducted under Tasks 2, 4 and 5 will be summarized, and corresponding sections and appendices will be developed to be included in Basin Setting Chapter per 23-CCR §354.18. This subsection will include a comprehensive discussion of Sustainable Yield estimation conducted under Task 4 and an evaluation of historical overdraft. Per the RFP, the GSA's

plans for mitigation of this overdraft and sustainable management of the Basin will be discussed herein and in the SMC and P/MA chapters.

Subtask 6.3: Revision of Sustainable Management Criteria Chapters

Subtask 6.3 aims to document GSP revisions made in response to Corrective Actions 1 and 3. The SMC chapter will build off the work conducted in Tasks 2 through 4. Based on the DWR Deficiencies, revisions will be made to the water level, water quality and subsidence SMCs, including a comprehensive well impact analysis demonstrating historical impacts of groundwater elevation decline and projected impacts based on the revised SMCs. It is anticipated that this will likely be an iterative process whereby EKI will make proposals to the GSAs and once there is concurrence from the GSAs, the approach will be presented to the State Board. Depending on State Board feedback, additional analysis may be required or different approaches considered.

Subtask 6.4: Revision of Projects and Management Actions and Plan Implementation Chapters

Subtask 6.4 aims to document GSP revisions made in response to Corrective Action 2. EKI will summarize the information gathered under Tasks 4 and 5 to provide a clear projected timeline of P/MAs that are under consideration or implementation for sustainable management of the Basin. The Plan Implementation Chapter will also include a detailed implementation schedule of the prioritized P/MAs, monitoring network refinements, and studies and data collection to address important data gaps in the Basin. EKI will identify future funding opportunities and prepare an operating and projected basin-wide budget in coordination with the GSAs to be included in this Chapter.

Subtask 6.5: Revision of Executive Summary and Introduction Chapter

EKI will revise the Introduction Chapter based on recent data and reports on stakeholder outreach and engagement activities, including commenting process and a summary of GSP revisions. The Executive Summary will be developed following the preparation of the other chapters with the objective of providing an abstract of the key information in the Revised GSP through concise and simple language.

Deliverables

- Administrative Draft Revised GSP
- Public Review Draft Revised GSP
- Final Revised GSP

Task 7: Project Management and Coordination

Task 7 involves facilitating coordination efforts during the project, as well as technical project management (invoicing, staffing/resource management, scheduling, etc.). Coordination is expected to include preparation for and participation in GSA meetings as needed, as well as meetings with outside parties including representatives from DWR and the State Board. Specifically, EKI will:

- Provide support, including developing meeting agendas, presentations, and packets as applicable, and participate in the following meeting venues:
 - Up to twelve (12) Subbasin GSA meetings that are up to two (2) hours in duration; Assuming up to four in-person and up to eight remote meetings; and,
 - Up to twelve (12) monthly one-hour planning meetings conducted remotely.

- Participate in inter-basin coordination efforts with the adjacent basins on an as-needed basis; Assuming up to one (1) one-hour meetings conducted remotely.
- Provide support, including developing meeting agendas, presentations, and packets as applicable, and participate in up to one stakeholder workshop; assuming remote and two hours in duration.
- Participate in meetings with DWR and the State Board; Assuming up to four (4) one-hour meetings, conducted remotely and up to four (4) two-hour meetings conducted in person.

Deliverables

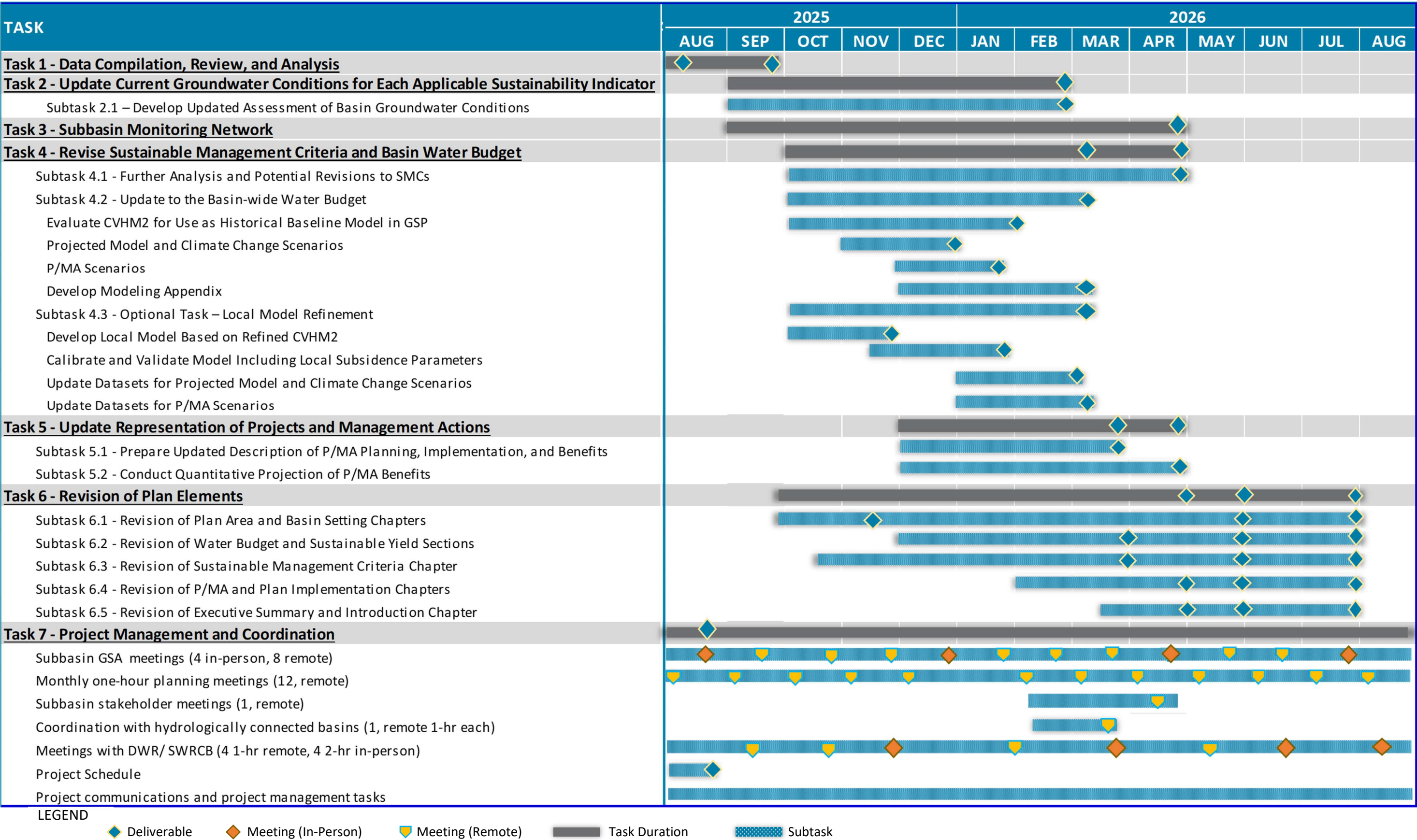
- Meeting materials
- Monthly invoices and progress summary reports
- Project Schedule, regularly updated

Major Assumptions

Major assumptions regarding the scope and assumed level of effort are included below:

- The Revised GSP will be developed over the course of 13-months (August 2025 – August 2026), inclusive of public review periods.
- EKI will focus the Revised GSP on addressing DWR Deficiencies and will not conduct a comprehensive revision to the Basin HCM, for example. If a significant issue is identified with the current Basin HCM or other elements of the 2024 GSP beyond what is identified herein, EKI will bring this information to the Basin GSAs for consideration.
- The Basin GSAs will be responsive to requests for data and review in accordance with mutually agreed upon schedules and processes (i.e., the PVGSA will consolidate comments provided by all parties into one single set of comments on all work products).
- The final scope and level of effort may be significantly different than shown herein depending on whether the State Board identifies additional deficiencies and/or does not approve of the Basin's proposed approach to resolving the DWR Deficiencies.
- The above scope assumes that the 2024 GSP is correct in finding that Interconnected Surface Waters and Groundwater Dependent Ecosystems are not present in the Basin.
- The above scope assumes limited revisions will need to be made to Introduction, Plan Area, and P/MA and Implementation Chapters.
- The above scope does not include the development of a Well Mitigation Plan, Memorandums of Agreement with other parties, Annual Reports, or other non-GSP content.

PROJECT SCHEDULE



PROJECT BUDGET

EKI's detailed budget for completion of the tasks and subtasks listed in the "Project Approach and Scope of Work" section is included below. Our budget provides the estimated level of effort for each task and subtask.

Table 1 - Budget Estimate for Proposed Scope of Work

TASKS	Anona Dutton - Officer and Chief Engineer-Scientist	Wes Henson - Supervising II, Engineer-Scientist	Amir Mani - Supervising II, Engineer-Scientist	Christina Lucero - Senior II, Engineer- Scientist	Associate II, Engineer Scientist	Engineer-Scientist, Grade 2	Engineer-Scientist, Grade 5	TOTAL EKI Labor, including 4% Comm. Charge (1)	OTHER DIRECT COSTS	TOTAL EXPENSES (1)	TOTAL
	355	319	319	295	267	234	170	(\$)	15%	(\$)	(\$)
Task 1 - Data Compilation, Review, and Analysis	4	12	2	2	12	24	40	\$22,980			\$22,980
Subtotal	4	12	2	2	12	24	40	\$22,980	\$0	\$0	\$22,980
Task 2 - Update Current Groundwater Conditions for Each Applicable Sustainability Indicator											
Subtask 2.1 – Develop Updated Assessment of Basin Groundwater Conditions	24	32	2	2	32	60	80	\$58,386			\$58,386
Subtotal	24	32	2	2	32	60	80	\$58,386	\$0	\$0	\$58,386
Task 3 - Subbasin Monitoring Network	6	8	2	2	4	16	24	\$15,394			\$15,394
Subtotal	6	8	2	2	4	16	24	\$15,394	\$0	\$0	\$15,394
Task 4 - Revise Sustainable Management Criteria and Basin Water Budget											
Subtask 4.1 - Further Analysis and Potential Revisions to SMCs	16	20	6	6	24	60	100	\$55,320			\$55,320
Subtask 4.2 - Update to the Basin-wide Water Budget	16	56	8	8	104	96	180	\$113,660	\$1,000	\$1,150	\$114,810
Evaluate CVHM2 for Use as Historical Baseline Model in GSP	4	24	2	2	40	40	60	\$42,166	\$1,000	\$1,150	
Projected Model and Climate Change Scenarios	4	8	2	2	24	24	60	\$28,521			
P/MA Scenarios	4	8	2	2	16	16	36	\$20,109			
Develop Modeling Appendix	4	16	2	2	24	16	24	\$22,863			
Subtotal	32	76	14	14	128	156	280	\$168,979	\$1,000	\$1,150	\$170,129
Subtask 4.3 - Optional Task – Local Model Refinement											
Develop Local Model Based on Refined CVHM2	2	40	2	2	80	80	80	\$71,113	\$1,000	\$1,150	
Calibrate and Validate Model Including Local Subsidence Parameters	2	32	2	2	40	64	60	\$49,922			
Update Datasets for Projected Model and Climate Change Scenarios	2	4	2	2	12	24	50	\$21,355			
Update Datasets for P/MA Scenarios	2	4	2	2	8	8	50	\$16,351			
Subtotal (Optional Task Only)	8	80	8	8	140	176	240	\$158,741	\$1,000	\$1,150	\$159,891
Task 5 - Update Representation of Projects and Management Actions											
Subtask 5.1 - Prepare Updated Description of P/MA Planning, Implementation, and Benefits	4	6		2	8	16	20	\$13,732			\$13,732
Subtask 5.2 - Conduct Quantitative Projection of P/MA Benefits	4	6	4		24	24	32	\$22,957			\$22,957
Subtotal	8	12	4	2	32	40	52	\$36,700	\$0	\$0	\$36,700
Task 6 - Revision of Plan Elements											
Subtask 6.1 - Revision of Plan Area and Basin Setting Chapters	6	6		4	4	8	6	\$9,587			\$9,587
Subtask 6.2 - Revision of Water Budget and Sustainable Yield Sections	8	8	3		16	24	24	\$21,130			\$21,130
Subtask 6.3 - Revision of Sustainable Management Criteria Chapter	8	8		4	24	24	40	\$26,412			\$26,412
Subtask 6.4 - Revision of P/MA and Plan Implementation Chapters	6	6	3		12	8	20	\$14,016			\$14,016
Subtask 6.5 - Revision of Executive Summary and Introduction Chapter	6	6	3		8	8	16	\$12,198			\$12,198
Subtotal	34	34	9	8	64	72	106	\$83,400	\$0	\$0	\$83,400
Task 7 - Project Management and Coordination											
Subbasin GSA meetings (4 in-person, 8 remote)	64	24			12	12		\$37,844	\$2,000	\$2,300	\$40,144
Monthly one-hour planning meetings (12, remote)	12	12						\$8,412			\$8,412
Subbasin stakeholder meetings (1, remote)	4	4			2	2		\$3,846			\$3,846
Coordination with hydrologically connected basins (1, remote 1-hr each)	1	2						\$1,033			\$1,033
Meetings with DWR/ SWRCB (4 1-hr remote, 4 2-hr in-person)	48	24			16	16		\$34,020	\$2,000	\$2,300	\$36,320
Project Schedule	2	2						\$1,402			\$1,402
Project communications and project management tasks	12	32						\$15,047			\$15,047
Subtotal	143	100	0	0	30	30	0	\$101,700	\$4,000	\$4,600	\$106,300
TOTAL	251	274	33	30	302	398	738	\$487,600	\$5,000	\$5,800	\$493,300
TOTAL with optional subtask 4.3	259	354	41	38	442	574	1,001	\$646,341	\$6,000	\$6,950	\$653,191

Notes:

- (1) A communications charge of 4% of labor costs covers e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying.
- (2) "Other Direct Costs" includes direct expenses, as listed below, incurred in connection with the work and will be reimbursed at cost plus fifteen percent (15%) for items such as:
 - a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
 - b. Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
 - c. Rented vehicles, local public transportation and taxis, travel and subsistence.
 - d. Special fees, insurance, permits, and licenses applicable to the work.
 - e. Outside computer processing, computation, and proprietary programs purchased for the work."

SCHEDULE OF CHARGES FOR EKI ENVIRONMENT & WATER, INC.

1 JANUARY 2025

<u>Personnel Classification</u>	<u>Hourly Rate</u>
Officer and Chief Engineer-Scientist	355
Principal Engineer-Scientist	343
Supervising I, Engineer-Scientist	333
Supervising II, Engineer-Scientist	319
Senior I, Engineer-Scientist	306
Senior II, Engineer-Scientist	295
Associate I, Engineer-Scientist	283
Associate II, Engineer-Scientist	267
Engineer-Scientist, Grade 1	248
Engineer-Scientist, Grade 2	234
Engineer-Scientist, Grade 3	215
Engineer-Scientist, Grade 4	193
Engineer-Scientist, Grade 5	170
Engineer-Scientist, Grade 6	148
Project Assistant	139
Technician	133
Senior GIS / Database Analyst	175
CADD Operator / GIS Analyst	152
Senior Administrative Assistant	167
Administrative Assistant	132
Secretary	111

Direct Expenses

Reimbursement for direct expenses, as listed below, incurred in connection with the work will be at cost plus fifteen percent (15%) for items such as:

- a) Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b) Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
- c) Rented vehicles, local public transportation and taxis, travel, and subsistence.
- d) Special fees, insurance, permits, and licenses applicable to the work.
- e) Outside computer processing, computation, and proprietary programs purchased for the work.

A Communication charge for e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long-distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying will be charged at a rate of 4% of labor charges. Large volume copying of project documents, e.g., bound reports for distribution or project-specific reference files, will be charged as a project expense as described above.

Reimbursement for company-owned automobiles, except trucks and four-wheel drive vehicles, used in connection with the work will be at the rate of sixty cents (\$0.60) per mile. The rate for company-owned trucks and four-wheel drive vehicles will be seventy-five cents (\$0.75) per mile. There will be an additional charge of thirty dollars (\$30.00) per day for vehicles used for field work. Reimbursement for use of personal vehicles will be at the federally allowed rate plus fifteen percent (15%).

CADD and other specialized software computer time will be charged at twenty dollars (\$20.00) per hour. In-house material and equipment charges will be in accordance with the current rate schedule or special quotation. Excise taxes, if any, will be added as a direct expense.

Rate for professional staff for legal proceedings or as expert witnesses will be at a rate of one and one-half times the Hourly Rates specified above.

The foregoing Schedule of Charges is incorporated into the Agreement for the Services of EKI Environment & Water, Inc. and may be updated annually.

APPENDIX: RESUMES

Anona L. Dutton, PG, CHg

Vice President/Principal-in-Charge/Project Manager

Ms. Dutton has over twenty years of professional experience managing water resources projects. She has managed multi-million dollar efforts to secure reliable water supplies for water agencies and developers, including leading the technical efforts to minimize the water footprint of new and existing development, assessing groundwater and surface water supply yields and augmentation options, securing water transfer options, and evaluating the feasibility of developing new water supply sources such as recycled water, desalination water, and other non-potable sources.

Ms. Dutton is deeply involved in the implementation of the Sustainable Groundwater Management Act (SGMA) throughout the State, including provision of strategic and technical support for the Groundwater Sustainability Agency (GSA) formation, basin boundary adjustments, Groundwater Sustainability Plan (GSP) development and implementation, and securing grant funding. Her work to support GSAs has included development and improvement of representative monitoring networks, and numerical groundwater modeling, among other related efforts.

Selected Relevant Experience

- Sustainable Groundwater Management Act (SGMA) Implementation.** *Multiple Clients.* Ms. Dutton's recent SGMA work includes supporting coordination among GSAs, securing grant funding, basin boundary modifications, GSP preparation and implementation, installation of new monitoring wells, and Annual Report preparation. As part of SGMA compliance, she is overseeing stakeholder engagement efforts, assessments of groundwater conditions, numerical groundwater modeling, development of sustainability criteria, and projects and management actions (P/MAs), including recharge and conjunctive use. Her SGMA and modeling projects span California including: East Bay Plain Subbasin, San Mateo Plain Subbasin, Delta-Mendota Subbasin, Livermore Valley Basin, White Wolf Subbasin, Monterey Subbasin Turlock Subbasin, Castac Lake Valley Basin, Cosumnes Subbasin, Merced Subbasin, Cuyama Valley Basin, Kaweah Subbasin, Kern County Subbasin, Chowchilla Subbasin, North Yuba Subbasin, Santa Inez Valley Basin, and Kings Subbasin.
- SGMA Support to Address Inadequate Determination.** *San Luis Delta-Mendota Water Agency (SLDMWA) and Delta-Mendota Subbasin GSAs, Central Valley, CA.* Ms. Dutton is leading the technical



Education

- M.S., Hydrogeology, Stanford University, 2000
- B.S., Environmental Sciences, Stanford University, 1998

Registrations/Certifications

- Professional Geologist in California (#7683)
- Certified Hydrogeologist in California (#841)

Technical Expertise

- GSP and Periodic Evaluation Development and Implementation
- SGMA Compliance Support (Project and Management Action Implementation)
- Groundwater Resource Evaluations
- Numerical modeling
- Monitoring Network Development
- Stakeholder Engagement
- Related Water Resources Work (WSAs, UWMPs, Demand Management Strategies)

and strategic support to SLDMWA and 41 water agencies to develop and implement the GSP for the Delta-Mendota groundwater subbasin. This effort involves assessment of existing groundwater conditions, development of demand management programs, and analyzing impacts to water users. Under M. Dutton's supervision, the team is developing the Central Valley Hydrologic Model Version 2 based Basin-level water budget, and sustainable management criteria to support preparation of technical materials for State Water Resources Control Board's hearing and probation determination. EKI is also facilitating meetings with regulators and the public for this project.

- **Technical and Strategic Water Resources Support, Including SGMA Support to Address Inadequate Determination.** *South of Kern River GSAs, CA and Kern County Subbasin GSAs.* Since 2014 Ms. Dutton has provided strategic technical support to Arvin-Edison Water Storage District, Tejon-Castac Water District, Wheeler Ridge-Maricopa Water Storage District in groundwater sustainability matters. She is leading efforts to comply with SGMA in the White Wolf and Kern County Subbasins, including GSP preparation and implementation, and numerical model development and application. She is supporting efforts to develop conjunctive use projects and to maintain water quality and prevent additional subsidence impacts to the Friant-Kern Canal. She is supporting the costing, prioritization and implementation of P/MAs related to successfully procuring grant funds and developing land-repurposing and other demand reduction programs, in addition to supply augmentation projects. She developed a water rights-based water budget and groundwater allocation method that considered native safe yield, the surface water imports and water banking operations, and historical water use information for the GSAs and local landowners. She is currently supporting the Kern Subbasin through the State Board intervention process.
- **Zone 7 Water Agency.** *Alternative GSP and Technical and Strategic Water Resources Support. Alameda County, California.* Ms. Dutton lead the development of a Conjunctive Use (CU) Study to identify the preferred integration of known and potential future sources and new infrastructure to increase yield, operations, and reliability as part of the 2022 Water Supply Evaluation. The CU Study considered a variety of sources and options, including optimization of the groundwater basin, recharge of imported and reclaimed water, investments in LVE and Sites reservoir, and water bank operation, among other things. She also prepared the Periodic Evaluation for the approved Livermore Valley Basin Alternative GSP (which was approved by DWR), supported preparation of several Annual Reports, and successfully secured the highest award in the state from the Round 3 grant solicitation for the Zone 7 GSA. Current work efforts include the development, calibration, and application of a new groundwater flow model to support assessment of basin water budgets, surface water groundwater interaction, and PFAS transport.
- **Valley Water.** *Multiple Water Banking Related Analysis. Santa Clara County, California.* Ms. Dutton leads EKI's efforts to support Valley Water in the assessment of multiple water banking opportunities. Work efforts have included in-depth analysis of existing water bank performance and risk factors, including those related to water quality and declining groundwater levels, and systemizing the process to support Valley Water's on-going assessment of water bank performance and identification of new water banking sites.

Wesley Henson, PhD

Supervising Hydrogeologist/Deputy Project Manager

Dr. Henson is a seasoned Agricultural and Biological Engineer with over 17 years of experience in agricultural and water resource simulation, decision tool development, and sustainable land and water management. He has led science teams to support evaluation of water supply sustainability for several groundwater districts in California and Florida. Dr. Henson is known for developing innovative, high-impact models including a multi-million-dollar system model for one of the nation's most productive agricultural regions and contributing to industry-standard software for forecasting supply, demand, and climate impacts. He was the lead software developer that integrated the capability for simulating Karst aquifers into this software to allow for evaluation of groundwater management that includes spring flow. He has led interdisciplinary teams and stakeholder-driven projects focused on climate vulnerability, water use efficiency, and nutrient management, with work informing both state and national policy.



Relevant Experience

- **Various Projects.** *Marina Coast Water District. Monterey County, CA.* Modeler. Dr. Henson is assisting with the development and review of numerical groundwater flow and contaminant transport models that is needed for expert testimony to the California State Water Resources Control Board Administrative Hearing Office on behalf of Marina Coast Water District to discuss the potential impacts of the California America Water (CalAm) Monterey Peninsula Water Supply Project on MCWD's municipal groundwater supplies.
- **Various Projects.** *US Geological Survey (USGS).* Research Hydrologist. For over 17 years, Dr. Henson collaborated with state and local agencies to research climate risk, conduct vulnerability assessments, and evaluate sustainable agriculture practices. He managed large-scale, multi-agency research projects focused on sustainable agriculture and water resource management, serving as a trusted advisor in the planning and evaluation of solutions for agricultural land use and water systems. He led cross-functional teams from concept through completion, ensuring projects align with client goals. Additionally, he developed simulation model software to forecast supply and demand, supporting decision-making in water usage, agricultural operations, and climate adaptation strategies. This model is used by over 5 groundwater

Education

- Ph.D. Agricultural and Biological Engineering, University of Florida, 2016
- M.S., Hydrogeology, University of Nevada, 2011
- B.S., Geology, University of Nevada, 2008

Affiliations

- Water Leader, Water Education Foundation, 2018
- Water Institute Fellow, Florida Water, Institute, 2011

Technical Expertise

- Water use prediction and projection
- Hydrologic model development
- Climate modeling
- Decision support tool development
- SGMA and groundwater management
- Integrated Water Resources Master Planning

districts to assess groundwater availability and sustainability, evaluate potential water supply projects, and assess potential conditions to 2100.

- **Various Projects.** *University of Florida.* Water Institute Fellow. Mr. Henson provided expert advisory services to agribusinesses and government agencies on topics such as contaminant flow, nitrate biogeochemistry, and ecosystem risk related to water supply. He also led multi-disciplinary teams in delivering large-scale, complex projects for regional utility and water management agencies. He was the lead modeler for karst network components of the Collaborative Research Initiative on Springs Protection and Sustainability for the St. Johns Water Management District.

Presentations and Publications

Boyce, S.E., Hanson, R.T., Ferguson, I., Schmid, W., Henson, W.R., Reimann, T., Mehl, S.M., and Earll, M.M.*, 2020, One-Water Hydrologic Flow Model: A MODFLOW based conjunctive-use simulation software: U.S. Geological Survey Techniques and Methods 6–A60, 435 p., <https://doi.org/10.3133/tm6a60>

Brandt, J.T., Earll, M.M., Sneed, M., and Henson, W.R., 2021, Detection and measurement of land-surface deformation, Pajaro Valley, Santa Cruz and Monterey Counties, California, 2015–18: U.S. Geological Survey Open-File Report 2021-1101, 16p., <https://doi.org/10.3133/ofr20211101>

Earll, Marisa M. , Henson, W.R., Brian Lockwood, and Scott E. Boyce. 2024. Evaluating seawater intrusion forecast uncertainty under climate change in the Pajaro Valley, California. *Journal of Hydrology* 2024:131226 <https://doi.org/10.1016/j.jhydrol.2024.131226>

Hevesi, J., Henson, W.R., Hanson, R.T., and Boyce, S.E., 2019, Integrated hydrologic modeling of the Salinas River, California, for sustainable water management. SEDHYD 2019: Improving Resiliency and Sustainability of Watershed Resources and Infrastructure, Golden, Colorado, May 31–May 24. https://www.sedhyd.org/2019/openconf/modules/request.php?module=oc_program&action=view.php&id=222&file=1/222.pdf

Hanson, R.T., Ritchie, A.B., Boyce, S.E., Galanter, A.E., Ferguson, I.A., Flint, L.E., Flint, A., and Henson, W.R., 2019, Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and northern Chihuahua, Mexico: U.S. Geological Survey Scientific Investigations Report 2019–5120, 188 p., <https://doi.org/10.3133/sir20195120>.

Henson, W.R., Randy Hanson, Scott Boyce, Joseph Hevesi, and Elizabeth R. Jachens, 2025, Salinas Valley Integrated Hydrologic and Reservoir Operations Models, Monterey and San Luis Obispo Counties, California. Pre-print. <https://doi.org/10.31223/X5ZD9N>

Amir Mani, PhD, PE

Supervising Water Resources Engineer

Dr. Amir Mani is a Professional Civil Engineer in the state of California and brings expertise in various water resources engineering services, including integrated water resources management, hydrology, water supply development and planning, groundwater management and modeling, climate change adaptation and mitigation strategies, wastewater and recycled water permitting and compliance, and data analysis and management. In recent years, he has been heavily involved in assisting multi-stakeholder clients to comply with applicable regulations such as the Sustainable Groundwater Management Act (SGMA), Drought Planning for Small Water Suppliers and Rural Communities (Senate Bill-552), and Executive Order N-7-22.



Relevant Experience

- **SGMA Support to Address Inadequate Determination.** *San Luis Delta-Mendota Water Agency. Central Valley, CA.* Technical Lead. Dr. Mani is assisting 26 GSAs to respond to the inadequate determination of the six revised GSPs. He is leading the development of the revised GSP including revised water budget, performing hydrological model simulations, preparing technical materials for further application to GSPs' 2025 update. He is also helping facilitate the State Water Resources Control Board's hearing and probation determination, and basin's discussions with neighboring basins and entities for implementation actions with regards to complicated multi-jurisdictional multi-faceted subjects such as interconnected surface water and subsidence.
- **Development and Implementation of GSPs.** *Multiple Clients, Northern California.* Project Manager. As Project Manager and technical member, Dr. Mani developed, submitted, and supports the implementation of GSPs for multiple Groundwater Sustainability Agencies (GSAs). His duties have included overall project management; stakeholder management and outreach; administration of board, technical committee, and public meetings; development of integrated hydrological models; simulation of historical, current, and future conditions of the basins and water systems; adaptation planning to climate change; design and implementation of monitoring networks; developing and prioritizing short-term and long-term projects and management actions; grant writing and application; annual report preparation;

Education

- Ph.D., Civil & Environmental Engineering, Louisiana State University, 2016
- M.S., Civil and Environmental Engineering, University of Tehran, 2011
- B.S., Civil Engineering, University of Tehran, 2009

Registrations/Certifications

- Professional Engineer, CA (#89426)

Affiliations

- Member, ASCE
- Member, WaterReuse Association of California
- Member, Groundwater Resources Association of California (GRA)
- Member, California Water and Environmental Modeling Forum (CWEMF)

Technical Expertise

- Hydrological and Hydrogeologic Investigation and Modeling
- SGMA Planning and Implementation
- Water Supply Development
- Regulatory Compliance and Permit Negotiation

assisting in the development of sustainable management criteria and defining management policies and preparation of the draft and final GSPs.

- **Member Agency Groundwater Sustainability Plan (GSP) Implementation Support.** *Patterson Irrigation District and West Stanislaus Irrigation District, Stanislaus County, CA.* Project Manager. As Project Manager and technical member, Dr. Mani is providing assistance in developing the hydrogeologic conceptual model for the Districts, including the development of a 3-D geological model of its service area. The project involves detailed and fine-scale assessment of groundwater conditions, design of a local monitoring network, and assessment of potential recharge fields using the developed models and additional field studies to better position the District in complying with SGMA requirements and achieving sustainability and resiliency in the required timeline.
- **Member Agency GSP Implementation Support.** *Lindsay-Strathmore Irrigation District, Tulare County, CA.* Project Manager. As Project Manager and technical member, Dr. Mani is providing SGMA compliance and GSP implementation assistance to the District. He is leading fine-scale assessment of water budget and water allocation in the District, evaluation of GSP implementation and sustainable management criteria on the District's operation, and overall assistance in decision-making regarding Subbasin's GSP implementation.
- **GSP Implementation Support.** *North Fork Kings Groundwater Sustainability Agency. Kings County, CA.* Project Manager. As Project Manager and technical leader, Dr. Mani provides SGMA compliance and GSP implementation assistance to the GSA, specifically focusing on overdraft mitigation, interconnected surface waters assessment, and subsidence analysis and mitigation. He is leading innovative approaches to overcome data gaps prohibiting effective planning surrounding these topics to assist the GSA in its SGMA compliance and progress towards sustainability.
- **Modesto Subbasin.** Confidential Client, *Member Agency GSP Implementation Support, Stanislaus County, CA.* Project Manager. As Project Manager and technical lead Dr. Mani is leading discussions to support GSP implementation, develop sustainable and economically viable demand management programs including water rights-based water allocation frameworks, client coordination, meeting management and presentations, scenario generation and hydrological model simulation.
- **Member Agency GSP Implementation Support,** *East Turlock Subbasin Groundwater Sustainability Agency, Stanislaus County, CA.* Project Manager. As Project Manager and technical member Dr. Mani is leading the development of water rights-based water allocation frameworks, client coordination, meeting management and presentations, scenario generation and hydrological model simulation. Dr. Mani's work helped advance water allocation discussions in the Subbasin and transformed previous work to better conform to settled case law and California water rights.
- **Water Agency Water Resources Specialist.** *Mendocino County Water Agency. Mendocino County, CA.* Project Manager. As Project Manager and Technical Lead, Dr. Mani provided assistance to the County in reorganizing its Water Agency, improving its drought preparedness and County-wide water reliability, facilitating coordination and communication with federal, state, and local agencies and stakeholders, providing overall staff augmentation services.

Christina E. Lucero, PG

Senior Hydrogeologist

Ms. Lucero has fifteen years of experience in hydrogeologic data gathering, collection and evaluation; groundwater flow modeling and Geographic Information Systems (GIS). She is actively engaged in Sustainable Groundwater Management Act (SGMA)-related activities in four groundwater basins. Furthermore, she has experience utilizing both IWFM and MODFLOW platforms, and has successfully developed and implemented regional and site-specific models.



Relevant Experience

- White Wolf Groundwater Sustainability Agency (GSA) Groundwater Sustainability Plan (GSP) Development and Implementation.** *White Wolf Subbasin, CA.* Hydrogeologist. Ms. Lucero aided in Proposition 1 and Proposition 68 Grant Management and GSP development for the White Wolf GSA. Ms. Lucero developed a Basin-specific numerical groundwater flow model using MODFLOW-NWT. The model represents the Hydrogeological Conceptual Model (HCM) of the Basin, was calibrated to historical data, and was verified against current data. Ms. Lucero developed projected model scenarios that were used to assess impacts of climate change and projected land use and water availability conditions on sustainable management criteria and facilitate Project and/or Management Action (P/MA) planning, including site-specific analyses using particle tracking beneath a recharge facility. Model results played a critical role in guiding the GSA's future GSP implementation efforts. As part of GSP development, Ms. Lucero also aided in developing cross sections, conducted a current groundwater conditions analysis, summarized historical, current, and projected water budgets to support long-term planning, coordinated with the GSA entities to develop a SGMA monitoring network for each relevant sustainability indicator, and oversaw a field investigation on shallow water-bearing zone conditions and connectivity to the Principal Aquifer. As part of the field investigation, Ms. Lucero helped conduct monitoring well siting to optimize placement of the well to monitor shallow water levels adjacent to groundwater dependent ecosystems. Ms. Lucero continues to support the GSA with ongoing GSP implementation, including annual model extensions, ongoing data collection and processing, annual reporting, and P/MA planning support using the model. Finally, she continues to support the GSA with monthly Board meetings and stakeholder outreach including establishment of the P/MA Committee which aims to provide a venue for stakeholder and landowner input into the P/MA planning process. Most recently, Ms. Lucero aided in developing a successful grant application to secure funding for ongoing GSP implementation and initiation of key infrastructure P/MAs.

Education

- B.S., Geology, University of California, Davis, 2010

Registrations/Certifications

- Professional Geologist in California (#9262)

Technical Expertise

- Hydrogeological Conceptual Model Development
- GSP Development Support
- Water Budget Projection
- Grant Application and Administration
- Monitoring Well Siting
- SGMA Planning and Implementation

- **South of Kern River GSP Implementation and Kern County Subbasin GSP Revisions.** *Kern County Subbasin, CA.* Project Manager. Ms. Lucero is currently supporting the South of Kern River GSAs with their GSP implementation, and the Kern County Subbasin GSAs at large with their GSP revisions during the State Water Resources Control Board (SWRCB) probationary process. Ms. Lucero is a member of the Technical Working Group that has been tasked with developing subbasin-wide technical recommendations for addressing California Department of Water Resources (DWR)'s deficiencies identified in their inadequate determination letter. Work to date includes development of alternative chronic lowering of groundwater level sustainable management criteria (SMCs), and supporting technical analyses including spatial interpolations of minimum thresholds (MTs), measurable objectives (MOs), and well impacts analyses across the subbasin. Ms. Lucero also supports the subsidence subcommittee work addressing key comments from beneficial users of the California Aqueduct as it relates to groundwater management impacts on subsidence, and the exceedance subcommittee who has been tasked with developing a Action Plan outlining specific steps GSAs must follow after an MT exceedance occurs. Finally, Ms. Lucero serves as one of the representatives who actively coordinate with SWRCB staff regarding the Subbasin GSAs' proposed GSP revisions to address potential corrective actions. Coordination efforts entail weekly meetings with SWRCB staff which cover a broad range of technical and policy related topics, and communicating SWRCB staff feedback to the Subbasin GSAs. Finally, on behalf of the Subbasin GSAs, Ms. Lucero lead three stakeholder workshops to disseminate relevant GSP updates to the public, and was one of the technical presenters during the February 2025 SWRCB probationary hearing.
- **Arvin-Edison Water Storage District Coupled Groundwater Flow Model and Operational Decision Support Tool.** *Kern County, CA.* Project Manager. Ms. Lucero helped develop a coupled groundwater flow model and operational decision support tool for the Arvin-Edison Water Storage District. The calibrated model simulates historical groundwater level and subsidence conditions. Ms. Lucero provided oversight and review of simulated model stresses (pumping and recharge) to ensure that volumes were adequately represented based on prior metered data and estimates. She supervised development of projected scenarios, which include both a long-term 50-year projection to support SGMA planning efforts, as well as a near-term 5-year projection to support operational decision including where and when to spread and recovery water under various hydrologic conditions. The tool supports both the District's well siting, operational, and water quality decisions, and ongoing SGMA implementation and compliance efforts, including an assessment of near-term projected groundwater level conditions compared to SMCs. Ms. Lucero is currently managing the application of the tool to aid the District in recovery well siting and operational decisions, such as an assessment of pro-rates.
- **Cosumnes Subbasin GSP Development.** *Sacramento County, CA.* Hydrogeologist. Ms. Lucero aided in GSP development for the Cosumnes Subbasin. She developed cross-sections located through the middle of- and along the boundaries of the Subbasin to aid with numerical model grid mesh and layering refinements and for integration into the HCM. She refined and calibrated the IWFM numerical model to better represent the Cosumnes Subbasin HCM and groundwater conditions. She then integrated specific P/MAs, including winter flooding of fields and Flood-MAR, into the numerical model projected scenarios to quantify benefits to the basin. Ms. Lucero has helped oversee the extension and application of the IWFM model to support annual reporting.

Jiancong (Nigel) Chen, PHD

Environmental Engineer

Dr. Chen has several years of experience developing groundwater flow and transport models to support various water resources, hydrology and data science projects. His groundwater modeling specialties include MODFLOW suites of codes (MODFLOW-6, MODFLOW-USG, MODFLOW-2005) and IWFIM/IDC suites of codes. His modeling specialty has supported the development of Groundwater Sustainability Plans (GSP), provided strategic responses to the Sustainable Groundwater Management Act (SGMA), implemented modeling scenario analysis to support decision making. He also provides technical support for various projects involving decision support systems, hydrological modeling and testing, statistical modeling and analytics, environmental geophysics and remote sensing data analysis and processing, GIS data processing and data management.

His expertise in novel machine learning, deep learning and data-driven approaches expand EKI's modeling capabilities and domain. Dr. Chen has published numerous peer-reviewed journal articles related to deep learning, watershed ecosystem modeling, subsurface heterogeneity and site characterization, and has presented at conferences on topics including decision support tools, hybrid data-driven models for groundwater system modeling, and statistical-informed causation analysis.

Relevant Experience

- **Groundwater Flow and Transport Modeling.** *San Luis & Delta-Mendota Water Authority (SLDMWA), Delta-Mendota Subbasin.* As an Environmental Engineer and technical member, Dr. Chen is the main groundwater modeler to support SLDMWA's Groundwater Sustainability Plans (GSP) development. His duties include development of Central Valley Hydrologic Model Version 2 based Basin-level water budget, development of sustainable management criteria and support preparation of technical materials for State Water Resources Control Board's hearing and probation determination.
- **Groundwater Flow and Transport Modeling.** *White Wolf, Kern County, California.* As Environmental Engineer, Dr. Chen is actively aiding in GSP development for the Tejon-Castac Basin GSA. He has developed an advanced 4-Dimensional time-lapse visualization of groundwater level changes for the basin that help visualize spatiotemporal variability of water resources availability within the



Education

- Ph.D., Environmental Engineering, University of California, Berkeley, 2020
- M.S., Civil and Environmental Engineering, University of California, Berkeley, 2016
- B.S. Environmental Science, Tongji University, 2015

Registrations/Certifications

- Professional Engineer, CA (#95722)

Affiliations

- Active member, American Geophysical Union
- Active member, Society of Mining, Metallurgy and Exploration

Technical Expertise

- Groundwater Flow and Transport Modeling
- Statistical Modeling
- Geo-Spatial Data Analysis and Mapping
- Data Analytics and Visualization

basin. With advanced scripting skills, he also provided user-interactive graphics to identify regions that are sensitive to water sparsity. He has developed numerous R and Python programs to retrieve, revise and update groundwater quality data; updated MODFLOW input files and performed statistical analysis to identify trends and correlation.

- **Groundwater Flow Model Development, GSP Implementation.** *Arvin-Edison Water Storage District (AEWSD), Bakersfield, CA.* As Environmental Engineer, Dr. Chen led the development of the Arvin-Edison Groundwater Flow Model and Decision Support Tool (AEGFM-DST) in MODFLOW6 and provides technical support to retrieve data and information from GSA data management systems. AEGFM incorporates the most advanced model packages, including the Multi-aquifer Well (MAW) package, Skeletal Storage, Compaction and Subsidence (CSUB) package.
- **Decision Support Tool Development.** *Arvin-Edison Water Storage District (AEWSD), Bakersfield, CA.* As Environmental Engineer, Dr. Chen led the development of the Arvin-Edison Decision Support Tool (DST). DST integrates advanced statistical simulators and interactive dashboards that implements complex District's operations and provide intuitive dashboards and visualizations to aid District's stakeholders to make inform water management decisions and actions.
- **Groundwater Flow Model Development, GSP Implementation.** *Marina Coast Water District, Monterey, CA.* As an Environmental Engineer, Dr. Chen contributed numerical modeling, data analytics and visualization. He developed numerous programs to compare baseline and project scenarios; visualize temporal water use changes and water budget data at the Seaside subbasin for GSP implementation; construct data inputs for future projections that incorporate climate change and land use change; perform statistical analysis to identify spatiotemporal changes and conduct GIS analysis for both historical and projection model simulations.
- **GSP Development and Implementation.** *Zone 7 Water Agency, Alameda County, CA.* As Environmental Engineer, Dr. Chen assisted Zone 7 in updating subbasin water resources fluxes and their salt and nutrient management plan (SNMP). This work involves developing advanced visualization tools for percolation and runoff datasets; performing statistical analysis to update nitrogen loading rates; numerical model calibration and validation for estimating historical, current and projected future water resources availability within the Management Area.
- **Groundwater Sustainability Plan.** *Cuyama Basin Water District, Bakersfield, California.* Environmental Engineer. Dr. Chen provides technical support to retrieve data and information from GSA data management systems. He also developed scripting programs to visualize hydrographs and groundwater level changes at the Cuyama Basin as well as incorporating well log information to assist decision making.

Adam Yoerg

Hydrogeologist

Mr. Yoerg is a hydrogeologist with 7 years of experience in numerical and analytical groundwater modeling and field implementation. His experience ranges from site to basin-scale efforts and includes SGMA planning and implementation as well as groundwater management in adjudicated basins. Mr. Yoerg has supported clients plan for SGMA compliance using modeling platforms including MODFLOW-OWHM and IWFM-IDC. Mr. Yoerg has also supported the planning and implementation of P/MAs such as aquifer storage and recovery and infiltration basin design. He has extensive field experience with various drilling methods (flooded reverse circulation, roto sonic, hollow stem auger, direct push, and air and mud rotary), well siting, production and monitoring well design, installation, development and rehabilitation.



Relevant Experience

- **Groundwater Flow Modeling.** *Tule Subbasin, Tulare County, California.* Mr. Yoerg is actively supporting SGMA planning and implementation efforts in the Tule Subbasin using a MODFLOW groundwater flow model to evaluate the efficacy of planned P/MAs, including efforts to limit subsidence threatening critical infrastructure in the Central Valley.
- **Monitoring Well Installation.** *White Wolf Subbasin, Kern County, California.* Mr. Yoerg provided coordination and technical assistance for the siting and preliminary design of monitoring wells in the White Wolf Subbasin. Additionally, Mr. Yoerg was responsible for assembling a comprehensive public bid package including technical specifications for the replacement wells, as well as coordinating with the contractor and various stakeholders.
- **Aquifer Storage and Recovery Pilot Testing.** *Valley of the Moon, California.* Mr. Yoerg supports the evaluation of aquifer storage and recovery pilot test data through data cleaning, interpretation of hydrogeologic data, and preparation of report materials.
- **Groundwater Management under an Adjudication.** *Mojave River Basin Area, California.* Mr. Yoerg is actively supporting groundwater users subject to an adjudication in the Mojave River

Education

- M.S. Geology (Hydrogeology Emphasis), University of Kansas, 2018
- B.S. Geology with Honors, University of Kansas, 2016

Registrations/Certifications

- OSHA 40-Hour HAZWOPER

Affiliations

- National Groundwater Association (NGWA)
- Groundwater Resources Association of California (GRAC)

Technical Expertise

- Well installation and development
- High-capacity production wells
- Groundwater flow and transport modeling
- Aquifer testing and analysis

Basin through technical evaluations of the findings and recommendations of the basin Watermaster.

- **Monitoring Well Installation.** *United Water Conservation District, Ventura County, California.* Mr. Yoerg provided field oversight and coordination for the installation and development of clustered monitoring wells in the Point Mugu area to support the design of a planned extraction barrier and brackish water treatment facility. Mr. Yoerg was responsible for coordinating with the Contractor, training junior staff, and interfacing with the client during onsite visits.
- **Evaluation of Groundwater Monitoring Network.** *Hi Desert Water District, Yucca Valley, CA.* Mr. Yoerg evaluated a groundwater monitoring network installed around treated effluent recharge ponds at a water reclamation plant to assess the impacts of the recharging effluent on ambient groundwater levels and quality. The evaluation consisted of evaluating impacts to groundwater flow, groundwater quality, and an assessment of possible sources of sporadic bacteriological detections in the District's groundwater monitoring wells. He developed a workplan to implement quality assurance/quality control sampling to rule out ambient sources of bacteria in the groundwater samples.
- **High-Capacity Production Well Installation and Development.** *Marathon Petroleum Company, Wilmington, CA.* Mr. Yoerg was the field-lead for drilling, installation, development, and testing of a high-capacity groundwater production well and for the rehabilitation of an existing production well. He supported production well design using analysis of sieve samples and isolated aquifer zone testing results. Mr. Yoerg was responsible for coordinating with contractors and evaluating contractor submittals and performance against specifications.
- **Venetian Replacement Well Installation and Development.** *Las Vegas Sands Corporation, Las Vegas, NV.* Mr. Yoerg supported the replacement of a high-capacity groundwater production well using flooded-reverse circulation drilling under extensive scrutiny from client management. He assisted in development of technical specifications, oversaw the pilot boring, isolated aquifer zone testing, well construction, development, and testing. He supported production well design using analysis of sieve samples and isolated aquifer zone testing results. Mr. Yoerg analyzed and interpreted aquifer testing data, assessed specific capacity data to determine progress of well development and was responsible for the final reporting.
- **Monitoring Wells Installation.** *Edwards Air Force Base, Kern County, CA.* Mr. Yoerg provided oversight of the installation of two monitoring wells installed in bedrock using air-rotary casing hammer and one well installed in sedimentary material via rotosonic. Drilling was accompanied by simulprobe sampling to establish a vertical profile of contaminants discharging into the alluvial aquifer from fractured bedrock.
- **South Perris Desalter.** *Eastern Municipal Water District, Perris, CA.* Mr. Yoerg was the field and reporting lead for well siting analysis. His responsibilities included evaluating GIS and flow model data to identify optimal locations for future production wells and ground-truthing observations during field reconnaissance. He developed a semi-quantitative ranking mechanism to order potential locations relative to their quality. Supported technical specification development for exploratory drilling ahead of production well installation.

Saman Tavakoli, PhD, PE Hydrogeologist

Mr. Tavakoli is a hydrologist and water resources system analyst with over 10 years of experience in watershed quality and quantity modeling and management using MODFLOW. He is an expert in contaminant transport modeling in groundwater and surface water, specifically in agricultural groundwater systems, using fields, laboratories, and numerical modeling approaches to investigate nutrient transport and remediation in rangeland systems. He is experienced with reservoir system operations, water/wastewater utility design, and stormwater collection systems.

Mr. Tavakoli has experience of supporting clients in developing strategic responses to the Sustainable Groundwater Management Act (SGMA) and providing technical services related to groundwater supply and quality. He provides technical support for the projects that involve groundwater numerical modeling, statistical analysis, and data processing with Python, R, FORTRAN, MATLAB, ArcGIS, and MODFLOW.

Relevant Experience

- **IWFM Model Refinement for Water Planning and Sustainability.** *East Solano Water Company, Solano County, CA.* Refined and revised the IWFM model to support water planning and sustainability efforts, ensuring improved accuracy and reliability for groundwater management and resource planning.
- **GSA-Specific Water Budgets.** *West Stanislaus Irrigation District (WSID) & Patterson Irrigation District (PID), Stanislaus County, CA.* Provided technical support to WSID and PID Groundwater Sustainability Agencies (GSAs) in developing water budgets to support compliance with the Sustainable Groundwater Management Act (SGMA).
- **Litigation Support.** *Marina Coast Water District, Monterey County, CA.* Litigation Support. Mr. Tavakoli is a technical lead in the development and review of numerical groundwater flow and contaminant transport models and is supporting preparation of written expert testimony to discuss the potential impacts of the California America Water (CalAm) Monterey Peninsula Water Supply Project on MCWD's municipal groundwater supplies.
- **Litigation Support.** *Marina Coast Water District, Monterey County, CA.* Litigation Support. Mr. Tavakoli is a technical lead in development and calibration of soil moisture water balance using United States Geological Survey (USGS) Soil Water Balance (SWB2.0) model platform.



Education

- PhD, Hydrology and Water Resources, Colorado State University, 2018
- MS, Water Resources Engineering, Sharif University of Technology, 2012
- BS, Civil Engineering Department, Iran University of Science and Technology, 2010

Affiliations

- Member, Groundwater Resources Association of California
- Member, American Geophysical Union

Technical Expertise

- Hydrological and Hydrogeologic Modeling
- SGM Planning and Implementation support
- GSP Development Support
- Hydrogeologic Assessment & Supply
- Litigation Support

- **Tahoe Valley South Subbasin.** *El Dorado County, CA.* Litigation Support. Mr. Tavakoli is a technical lead in extending an existence flow model and development of a MT3D model to determine the contaminant plume for a private client in Tahoe Valley South Subbasin.
- **GSP Preparation.** *Arvin-Edison Water Storage District, Kern County, CA.* Water Resources Engineer. Mr. Tavakoli is providing strategic and technical support in the development of GSPs or GSP components for multiple agencies in the Kern County Subbasin. This effort has involved groundwater flow model development using MODFLOW6. Mr. Tavakoli has taken a lead role in developing subsidence package and model calibration.
- **Model Review and Update for Estimating Future Response to Additional Pumping Well.** *White Wolf Groundwater Sustainability Agency, Kern County, CA.* Hydrogeologist and groundwater modeler. Mr. Tavakoli led the technical analysis for model update and implementation to estimate future response to project pumping. He updated and employed an existing MODFLOW groundwater-flow model to calculate the representative monitoring well water levels caused by the proposed well.
- **White Wolf Subbasin.** *Preliminary Feasibility Assessment for Potential Recharge Facility. Kern County, CA.* Hydrogeologist. Mr. Tavakoli is currently aiding in assessing the feasibility of recharge facility located east of the Tejon Ranch Commerce Center and adjacent to California Aqueduct. He is using existing MODFLOW groundwater flow to quantify the storage changes and uses MODPATH to determine the travel time and distance of the recharged water and the possibility of being removed from the aquifer from nearby wells.
- **Litigation Support.** *Confidential Client. Central Coast, CA.* Litigation Support. Mr. Tavakoli worked on applying fate and transport modeling to assess the impacts of a proposed desalination plant on saltwater concentrations within a coastal aquifer.
- **GSP Development.** *Arroyo Santa Rosa Basin Groundwater Sustainability Agency, Arroyo Santa Rosa, CA.* Water Resources Engineer. Mr. Tavakoli provided technical support in the development of GSP component for the Santa Rosa Basin. Mr. Tavakoli took the lead in development of the DIS, BAS, UPW, and HFB packages for the MODFLOW model using Python Scripts, ArcGIS, and Groundwater Vistas.
- **Regional Brackish Water Reclamation Program Replenishment Study.** *Water Replenishment District, Los Angeles, CA.* Water Resources Engineer. Mr. Tavakoli led the technical team in evaluating project alternatives for the Regional Brackish Water Reclamation Program using MODFLOW-USG and MODPATH models for the Regional Brackish Water Reclamation Program Replenishment Study.
- **West Basin.** *Groundwater Modeling. Los Angeles, CA.* Water Resources Engineer. Mr. Tavakoli extended a developed MODFLOW-USG model using available injection and production data for West Basin, CA.
- **Sensitivity Analysis.** *San Geronio Groundwater Sustainability Agency, Banning, CA.* Water Resources Engineer. Mr. Tavakoli conducted the Sensitivity Analysis for an integrated surface/groundwater model for San Geronio Water Pass using PESTPP to analyze the watershed parameters on stream flows and water table elevations.
- **GSP Development.** *San Geronio Groundwater Sustainability Agency, Banning, CA.* Water Resources Engineer. Mr. Tavakoli developed a predictive model using a calibrated historical model for future scenario analysis. The process involves precipitation and evapotranspiration projection for surface water analysis, pumping projection, etc. to construct the predictive model. Mr. Tavakoli developed a MODFLOW Model for San Geronio Water Pass using Python scripts and ArcGIS to create a MODFLOW package (SFR, RCH, DRN, GHB) to temporally and spatially expand the existing USGS model.

Nathan Cutler, GIT Hydrogeologist

Mr. Cutler has several years of consulting experience supporting public and private clients with water resources projects. He has experience with field investigations, including design, instrumentation, collection, and processing of hydrogeologic data; analysis of hydrogeologic data for aquifer pumping tests and pilot infiltration studies; development and implementation of analytical and numerical groundwater flow models for water supply, planning, and construction dewatering applications; and spatial analysis, including development and processing of complex geologic and hydrogeologic datasets with GIS. Mr. Cutler has contributed to projects to locate, quantify, and define groundwater resource availability, support water right permit applications, and inform stormwater facility and construction dewatering designs.



Relevant Experience

- **Zone 7 Water Agency, Livermore Valley Hydrogeologic.** Livermore, CA. Groundwater Modeler. EKI is in the process of developing numerical groundwater flow and transport models based on an updated hydrogeologic conceptual model of the Livermore Basin. The models will be used to inform water resources and groundwater contaminant management decision making. Mr. Cutler processed large hydrological datasets, including public agency monitoring and operational data, for development of model inputs and developed and wrote MODFLOW 6 packages. Mr. Cutler has also performed model calibration, prepared PEST model runs, and developed post-processing and visualization tools, including analysis of groundwater levels, streamflow impact, water budgets and contaminant fate and transport evaluations.
- **Arvin Edison Water Storage District (AEWSD), Groundwater Flow, Support Tool & Surface Water Allocation; Sustainable Groundwater Management Act (SGMA) Compliance.** Arvin, CA. Groundwater Modeler. EKI updated our previously constructed Arvin-Edison Groundwater Flow Model and associated Decision Support Tool with transient input datasets through Water Year 2023. EKI is developing a 15-year predictive groundwater flow model to investigate hydrological and economic impacts of a curtailed water banking and recovery program. Mr. Cutler processed large hydrological datasets for development of model input data,

Education

- B.S., Environmental Geology, Northeastern University, 2016

Registrations/Certifications

- Geologist-in-Training, WA (#22010910)
- 40-hour HAZWOPER

Affiliations

- Association of Engineering Geologists, Puget Sound Chapter
- National Groundwater Association
- Groundwater Association of California

Technical Expertise

- Hydrogeologic Modeling
- Groundwater Flow Modeling
- Geo-Spatial Data Analysis and Mapping
- Data Analytics and Visualization

developed and wrote MODFLOW 6 packages, and performed analysis of simulation results for validation and reporting.

- **Young Woodbridge, LLP**, *Evaluate Imported Water Benefits to Groundwater Conditions Wheeler Ridge-Maricopa Water Storage District and AEWSO Overlap Lands*. Kern County, CA. Groundwater Modeler. EKI evaluated the impact associated with applied agricultural water water delivered to a water storage district jurisdictional overlap area. Groundwater level benefits in the aquifer underlying the overlap area were analyzed under various scenarios of water delivery from the two water districts involved using numerical model simulations by adjusting the groundwater extraction, surface water delivery, and downstream impacted fluxes using our numerical model covering the project area. Mr. Cutler developed and implemented the adjusted MODFLOW 6 packages and evaluated the resulting groundwater levels and flow budgets. Mr. Cutler generated figures, data tables, and contributed to writing a memo summarizing the results.
- **Arvin Edison Water Storage District**, *Support for Development of Demand Management Programs*. Arvin, CA. EKI has provided ongoing support to the water storage district for demand management planning, including assessing potential land repurposing by evaluating water savings potential and economic impact. EKI performed spatial analysis of land use and simulated crop water use using our Soil Moisture Balance Model for the project area to estimate water savings potential of repurposing various land types to inform program implementation prioritization. Mr. Cutler utilized the Soil Moisture Balance Model to produce data to support analysis of program implementation for various crop type assemblages and evaluated the associated economic benefits.
- **WestRock**, *Tacoma Mill Groundwater Supply and Water Rights*. Tacoma, WA. Field Hydrogeologist/Groundwater Modeler. This project included subsurface exploration, well installation, and testing and analysis for a hydrogeologic assessment of feasibility of a deep aquifer to supply industrial water demand. It also included water rights permit application process. Mr. Cutler contributed to the project with observation of subsurface exploration and test well installation; pumping test design, instrumentation, observation, and recording; groundwater and streamflow data processing and analysis; conceptual and numerical groundwater model development, calibration and analysis, and report writing and figure production. Mr. Cutler supported the implementation of a hybridized approach to the numerical modeling task by modifying the existing regional groundwater flow model with an improved representation of the stratigraphy at the area and depth of interest, while retaining other aspects of the original model. Mr. Cutler evaluated the impact of the proposed groundwater withdrawal by examining simulated water levels and flow budgets with specific focus on potential impact to streamflow and the influence of model error and uncertainty on simulated results.
- **Lane County**, *Blue River Community Wastewater Treatment System*. Blue River, OR. Hydrogeologist/Groundwater Modeler. This project included subsurface exploration, well installation, testing and analysis, and numerical model development for a hydrogeologic assessment of aquifer characteristics and feasibility of infiltration of treated effluent. Mr. Cutler contributed aquifer pumping test analysis, groundwater numerical model development, calibration, and analysis, and report writing and figure production.

Hailey Rowbatham, EIT

Environmental Engineer

Ms. Rowbatham provides technical support on a broad range of water resource projects. She has extensive experience with data analysis, report drafting, and policy review. Her technical skills include data processing using various programs, including Python, R, and Excel VBA, as well as cartographic design and data analysis with ArcGIS.

During her master's, Ms. Rowbatham studied contaminant transport and remediation methods for both common and emerging contaminants. She utilized this knowledge and her skillsets in her prior position to head a PFAS initiative aimed at sharing causes of contamination, potential remediation methods, and relevant regulations with clients. Ms. Rowbatham's educational background in civil and environmental engineering, combined with her industry experience, has provided her the knowledge to contribute to an array of water resources projects.

Relevant Experience

- **Wheeler Ridge-Maricopa Water Storage District (WRMWSD), Kern Subbasin Groundwater Sustainability Plan (GSP).** *Bakersfield, CA.* Ms. Rowbatham is currently supporting the Kern County Subbasin's effort to draft a Sustainable Groundwater Management Act (SGMA)-compliant GSP in coordination with numerous districts and government agencies. Ms. Rowbatham has helped assess potential impacts to beneficial well users in the Kern Subbasin through conducting a well impact analysis under the GSP's proposed thresholds for water levels. Additionally, Ms. Rowbatham has assisted in technical writing efforts, created visualizations of the Subbasin using ArcGIS, and helped prepare various presentation materials.
- **Tejon Castac Water District (TCWD), Support the Castac Basin.** *Lebec, CA.* Ms. Rowbatham has provided technical assistance on numerous tasks related to the Castac Basin, including updating model inputs related to pumping and water levels for representative monitoring wells and creating various graphics of basin conditions in ArcGIS. Ms. Rowbatham also assisted in preparing the Castac Annual Report for the 2023 Water Year by providing technical writing support, as well as through the preparation of data tables and figures using ArcGIS.



Education

- M.S., Environmental Engineering, University of California, Berkeley, 2023
- B.S., Civil and Environmental Engineering, University of California, Berkeley, 2022

Registrations/Certifications

- Engineer-in-Training, CA (#180339)
- SB88 Diversion Measurement "Qualified Individual"
- 40-hour HAZWOPER Training

Technical Expertise

- Water Supply Assessments
- Annual Water Supply and Demand Assessments
- GSP Development and Implementation Support
- Drought Resilience Planning Support
- Data Processing, Analysis, and Management
- GIS

- **Multiple Water Suppliers, *Water Supply Assessments (WSAs)*.** Ms. Rowbatham has helped prepare Senate Bill 610-compliant WSAs for various San Francisco Bay Area, Central Valley, and Los Angeles County developments. Several WSAs were prepared as support documents to the development of Environmental Impact Reports. The developments include a variety of land uses, including residential, office/R&D, hotel, transit center, and other commercial uses. Using a water demand estimation method that incorporates development details in land use, population, and conservation efforts, Ms. Rowbatham provided evaluations of available water supplies under various levels of hydrologic conditions and evaluated the potential impacts to the supply availability that may result from implementation of the proposed developments.
- **Multiple Water Suppliers, *Annual Water Supply and Demand Assessments (AWSDAs)*.** Ms. Rowbatham is currently working to prepare AWSDAs for 10 water suppliers throughout California, including six member agencies of the Bay Area Water Supply & Conservation Agency. As part of this process, Ms. Rowbatham evaluates projected supply and demand to determine if, under assumed drought conditions, the supplier would face water shortages and how the supplier planned to address any water shortage conditions. In 2024, Ms. Rowbatham also assisted in the preparation of AWSDAs for the California Water Service Company's 26 Districts.
- **Mendocino County Water Agency (MCWA), *Mendocino County Drought Resilience Plan*.** *Mendocino County, CA.* Ms. Rowbatham is currently supporting the development of Mendocino County's Drought Resilience Plan (DRP), as required under Senate Bill 552. As a member of the technical team supporting the County, she has played a key role in establishing drought response stages, identifying corresponding short- and long-term actions, and developing triggers for activating these stages based on current hydrologic conditions, the U.S. Drought Monitor, and dry well reports. She also contributed to the County's risk assessment, evaluating the physical and social vulnerabilities of domestic well users and state small water systems to drought impacts. In addition to these technical efforts, Ms. Rowbatham has supported the drafting of the DRP and the preparation of materials for County Drought Task Force meetings and community outreach events.
- **Community Water Center (CWC), *Drinking Water Tool Update*.** *Visalia, CA.* Ms. Rowbatham helped to prepare an update to the CWC's online drinking water tool that included an analysis of potential impacts to wells in California's Central Valley under SGMA conditions. This analysis included comparing public well construction information to groundwater level thresholds specified in each basin's GSP to assess potential impacts under SGMA conditions to domestic well users in the Central Valley. As part of this effort, Ms. Rowbatham compiled and cleaned various public datasets using Excel and R, extracted extrapolated water level information at each well position using ArcGIS, and utilized well construction information to determine whether wells would be fully dewatered, partially dewatered, or unaffected under SGMA conditions. Ms. Rowbatham summarized this work in a metadata document, as well as a well impact analysis document, which details the analysis steps taken. In addition to this document, the final deliverable included shapefiles used in the analysis for use in CWC's online drinking water tool.



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[https://sgma.pleasantvalleywaterdistrict.com/
water-management/](https://sgma.pleasantvalleywaterdistrict.com/water-management/)

[https://www.fresnocountyca.gov/Departments/Public-Works-
and-Planning/divisions-of-public-works-and-planning/wa-
ter-and-natural-resources-division/pleasant-valley-sub-basin](https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/water-and-natural-resources-division/pleasant-valley-sub-basin)

<https://mavensnotebook.com/tag/pleasant-valley-basin/>

PLEASANT VALLEY GROUNDWATER SUSTAINABILITY AGENCY GROUNDWATER RECHARGE POLICY

Adopted _____, 2025

The Board of Directors of the Pleasant Valley Groundwater Sustainability Agency (PVGSA), hereby adopts this policy and ordains as follows:

1. Background and Purpose

PVGSA is committed to sustainably managing groundwater in its jurisdictional area, consistent with views of significant and unreasonable undesirable results as set out in the PVGSA's Groundwater Sustainability Plan (PVGSA GSP). PVGSA finds the adoption of this Groundwater Recharge Policy will provide Landowner groundwater credits that import surface water into the Pleasant Valley Subbasin.

This policy is designed to implement the provisions of the PVGSA and may be amended at any time if necessary to achieve consistency with the PVGSA GSP and any steps needed to achieve sustainability.

2. Registration

Landowners are required to register their recharge project for groundwater credits. Water delivered for recharge will be metered by the Landowner and reported to the PVGSA. Landowners will provide accurate, verifiable records of the quantity and source of surface water monthly. PVGSA will accept records dating to January 1, 2020. Registration Form forthcoming.

3. Credit Against Future Pumping

a. Credit Recharger for Future Pumping

The three primary land use categories are 1) "irrigated agriculture-over application" 2) "Dedicated Recharge Basins" and 3) "in-lieu water application". Additionally, two temporal categories are recognized: "winter" spanning from October 1 to March 31, and "summer" covering April 1 to September 30. Any portion of water not directly credited to a user's account is assumed to percolate through the root zone and replenish groundwater levels, consequently augmenting the groundwater allocation for PVGSA.

Under California Water Code 10721(m), "In-lieu use" means the use of surface water by persons that could otherwise extract groundwater in order to leave groundwater in the basin. PVGSA will give landowners who used/use surface water, in-lieu recharge credit that can be used to justify future groundwater pumping.

The amount of groundwater credit received will be allocated based on the supporting documentation and subject to PVGSA review and approval. Upon approval, PVGA will provide landowner, in writing, documentation of the recognized allocation of credits.

Table 1. Recharge Credits – Indicating Fraction of Surface Water Credited to Landowner Account.

	October 1 – March 31	April 1 – September 30
Irrigated Agriculture – over application	90%	75%
Dedicated Recharge Basin	100%	90%
In-lieu Water Application	100%	100%

b. Carry Over

All groundwater credits stored pursuant to this policy can be extracted at any point past the date of storage, subject to the PVGSA GSP policies, rules and regulations.

c. Transfer Range Limit

All groundwater credits stored pursuant to this policy can be transferred to other landowners within the PVGSA, subject to the PVGSA GSP policies, rules and regulations. All requests to transfer groundwater credit must be submitted in writing and approved in advance, by the PVGSA. Transfer Form forthcoming.

4. Recharge Project Reporting

Landowners must submit monthly meter readings from their dedicated water meter using the PVGSA Recharge Operations Field Data Form. This submission should include the opening and closing meter readings, the water source, and any other pertinent information to validate the Recharge Credits. Recharge Operations Field Data Form forthcoming.

5. Effective Date

The Policy shall retroactively take effect as of January 1, 2020, and shall be published by title and summary on the PVGSA's website.

6. Indemnification

Any landowner claiming groundwater credits or exercising rights under this Policy, shall indemnify and hold the PVGSA, and its directors, officers and employees harmless from any claims, fees, penalties, fines, causes of action and damages asserted or levied by any person, entity, agency or government body, against the District related to such landowner's claims to groundwater credits or exercise of groundwater credits.

1:48 PM

07/25/25

Pleasant Valley GSA
Check Detail
April 22 through July 25, 2025

Type	Num	Date	Name	It	Account	Paid Amount
Bill Pmt -Check	1118	04/29/2025	Kahn Soares & Co...		General Checking -...	
Bill	22669	03/31/2025			Legal	-715.00
Bill	22671	03/31/2025			Legal	-422.50
Bill	22672	03/31/2025			Legal	-650.00
Bill	22678	03/31/2025			Legal	-162.50
TOTAL						-1,950.00
Bill Pmt -Check	1119	04/29/2025	Kenneth D. Schmid...		General Checking -...	
Bill	Mar...	03/31/2025			Annual summary re...	-10,977.14
TOTAL						-10,977.14
Bill Pmt -Check	1120	04/29/2025	Pacific Farm Mana...		General Checking -...	
Bill	258...	03/19/2025			Well Meter reading	-1,287.25
Bill	258...	03/21/2025			Well Meter reading	-18.76
Bill	258...	03/27/2025			Well Meter reading	-962.05
Bill	258...	04/02/2025			Well Meter reading	-216.80
Bill	259...	04/10/2025			Well Meter reading	-294.92
TOTAL						-2,779.78
Bill Pmt -Check	1121	04/29/2025	Provost & Pritchard...		General Checking -...	
Bill	118...	04/14/2025			Board Meetings	-975.00
					Annual summary re...	-33,583.35
TOTAL						-34,558.35
Bill Pmt -Check	1122	05/29/2025	Kahn Soares & Co...		General Checking -...	
Bill	23366	04/30/2025			Legal	-2,112.50
Bill	23367	04/30/2025			Legal	-1,202.50
Bill	23368	04/30/2025			Legal	-390.00
TOTAL						-3,705.00
Bill Pmt -Check	1123	05/29/2025	Pacific Farm Mana...		General Checking -...	
Bill	260...	05/08/2025			Well Meter reading	-650.40
TOTAL						-650.40
Bill Pmt -Check	1124	05/29/2025	Provost & Pritchard...		General Checking -...	
Bill	119...	05/21/2025			Board Meetings	-8,196.50
					Annual summary re...	-13,316.90
					Annual summary re...	-13,689.50
TOTAL						-35,202.90
Bill Pmt -Check	1125	07/15/2025	Pacific Farm Mana...		General Checking -...	
Bill	260...	05/22/2025			Well Meter reading	-433.60
Bill	261...	05/29/2025			Well Meter reading	-433.60
Bill	261...	06/04/2025			Well Meter reading	-433.60
Bill	261...	06/12/2025			Well Meter reading	-433.60
TOTAL						-1,734.40

1:48 PM

07/25/25

Pleasant Valley GSA
Check Detail
April 22 through July 25, 2025

Type	Num	Date	Name	It	Account	Paid Amount
Bill Pmt -Check	1126	07/15/2025	Provost & Pritchard...		General Checking -...	
Bill	120...	06/10/2025			Projects & mgt. acti...	-8,202.70
					Plan Modification	-5,654.10
					Projects & mgt. acti...	-454.50
					Annual summary re...	-1,310.40
					Annual summary re...	-1,066.00
TOTAL						-16,687.70

Pleasant Valley GSA

Balance Sheet

As of June 30, 2025

	Jun 30, 25
ASSETS	
Current Assets	
Checking/Savings	
Cash & Cash Equivalents	
General Checking - US Bank	92,845.92
Total Cash & Cash Equivalents	92,845.92
Total Checking/Savings	92,845.92
Accounts Receivable	164,351.50
Total Current Assets	257,197.42
Fixed Assets	
Monoriting Wells (3)	248,760.00
Total Fixed Assets	248,760.00
TOTAL ASSETS	505,957.42
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
Accounts Payable	54,861.36
Accounts Payable - PVWD	215,760.00
Total Accounts Payable	270,621.36
Other Current Liabilities	
Accrued Expenses - Audit	8,000.00
Total Other Current Liabilities	8,000.00
Total Current Liabilities	278,621.36
Total Liabilities	278,621.36
Equity	
Unrestricted Net Assets	249,367.75
Net Income	-22,031.69
Total Equity	227,336.06
TOTAL LIABILITIES & EQUITY	505,957.42

Pleasant Valley GSA
Profit & Loss Budget vs. Actual
July 2024 through June 2025

	<u>Jul '24 - Ju...</u>	<u>Budget</u>	<u>\$ Over Bud...</u>
Ordinary Income/Expense			
Income			
Income			
Metered extraction fees	233,576.50	255,000.00	-21,423.50
Total Income	233,576.50	255,000.00	-21,423.50
Total Income	233,576.50	255,000.00	-21,423.50
Expense			
Administration			
Accounting	8,000.00	8,000.00	0.00
Administrative Services	2,070.00	12,000.00	-9,930.00
Board Meetings	12,630.50	8,000.00	4,630.50
Legal	9,278.75	6,000.00	3,278.75
Total Administration	31,979.25	34,000.00	-2,020.75
DWR Annual Report			
Annual summary report	90,339.95	70,000.00	20,339.95
GIS data updates	0.00	2,500.00	-2,500.00
Groundwater quality	7,271.78	0.00	7,271.78
Projects & mgt. actions	38,578.75	15,000.00	23,578.75
Total DWR Annual Report	136,190.48	87,500.00	48,690.48
GSA Operating Expenses			
Well Meter reading	24,343.74	20,000.00	4,343.74
Well Monitoring	0.00	10,000.00	-10,000.00
Total GSA Operating Expenses	24,343.74	30,000.00	-5,656.26
GSP Development			
Plan Modification	63,094.72	20,000.00	43,094.72
Total GSP Development	63,094.72	20,000.00	43,094.72
Monitoring devices			
Monitoring wells (3)	0.00	25,000.00	-25,000.00
Well sounders	0.00	2,000.00	-2,000.00
Total Monitoring devices	0.00	27,000.00	-27,000.00
Total Expense	255,608.19	198,500.00	57,108.19
Net Ordinary Income	-22,031.69	56,500.00	-78,531.69
Net Income	-22,031.69	56,500.00	-78,531.69

PROVOST & PRITCHARD CONSULTING GROUP

455 W Fir Ave • Clovis, CA 93611 • (559) 449-2700
www.provostandpritchard.com

July 23, 2025

Bradford Gleason
Pleasant Valley Groundwater Sustainability Agency
PO Box 468
Coalinga, CA 93210

Subject: Engineering Support Services for the Pleasant Valley Groundwater Sustainability Agency

Dear Brad:

Thank you for the opportunity to submit this proposal to provide engineering support services for the Pleasant Valley Groundwater Sustainability Agency (PVGSA). This proposal discusses our understanding of the engineering services the PVGSA is seeking from Provost & Pritchard Consulting Group (P&P), recommends a scope of services together with associated fees, sets forth our assumptions and discusses other services that may be of interest to the PVGSA.

PROJECT UNDERSTANDING

We understand that PVGSA is in the process of identifying and prioritizing various tasks for the 2025-2026 fiscal year and has requested P&P provide engineering services in support of these projects. For budgetary purposes, P&P provides the following proposal along with the estimated fees.

P&P will perform work as directed by the PVGSA Board. The following tasks have been identified and are described below. P&P will submit a proposal for additional tasks from the board that do not fit under the below phases.

SCOPE OF SERVICES

Our proposed scope of work for this proposal is segregated into several phases, described below.

PHASE BORD: BOARD MEETINGS

This phase includes all work associated with preparing for and attending board meetings.

Deliverables

- *As directed by PVGSA Board.*

PHASE GEN: GENERAL ENGINEERING AS DIRECTED BY THE BOARD

This phase includes general engineering activities as requested by the Board. Including the following:

- On-Call Services,
- Board Administration Services
- Water Policy Development,
 - Demand Management,
 - Recharge Policy,
 - Domestic Well Mitigation

- Miscellaneous technical efforts (ex. coordinate cGPS, installing pressure transducers in RMS wells, etc.),

Deliverables

- *As directed by PVGSA Board.*

PHASE GSP: COORDINATION WITH HYDROGEOLOGIST (SUBCONSULTANT)

This phase includes work associated with activities with the including a subconsultant to assist with addressing the inadequacies from DWR on the 2024 GSP submittal. Including but not limited to the following:

- Submitting data collected to the subconsultant, including:
 - Groundwater levels,
 - Past stream data,
 - Historic Rain data,
 - Extraction amounts,
 - Water Quality Data,
- Completed work to date,
- Work in progress,
- Team Meetings with Subconsultant, and State Board as a representative of the GSA,

Deliverables

- *Transfer Data*

PHASE RPRT: ANNUAL REPORT

This phase includes preparing and submitting the Annual Report. Includes collecting and compiling all the data and preparing the Final Annual Report for the given year.

Deliverables

- *Submission of Annual Report.*

PHASE OR: OUTREACH

This phase includes outreach efforts to comply with the GSP.

Deliverables

- *Outreach Memos prepared after each outreach engagement*

PROFESSIONAL FEES

Provost & Pritchard Consulting Group will perform the services in this proposal on a time and materials basis, in accordance with our Standard Fee Schedule in effect at the time services are rendered. These fees will be invoiced monthly as they are accrued.

PROPOSED FEE	
PHASE	ESTIMATED FEE
Phase BORD	\$6,000
Phase GEN	\$25,000
Phase GSP	\$25,000
Phase OR	\$8,000
Phase RPRT	\$55,000
Total Estimated Fee:	\$119,000

The line items shown above are estimates and are not intended to limit billings for any given Phase. Total billings will not exceed the Total shown without additional authorization. If the scope changes materially from that described above, as a result of the client or any approving agency's decision, we will prepare a revised estimate of our fees for your approval before we proceed.

SCHEDULE

Each phase will have a separated schedule and will be identified at the time the Board or Board Representative executes the contract and authorizes P&P to perform the work.

ASSUMPTIONS

- The work proposed under each phase will be performed and billed on a time and materials basis. The estimates are for budgetary purposes only.
- The estimates are subject to change due to yearly fee increases. The Board will be notified of such increases when they occur and/or prior to the authorization of the work.

ADDITIONAL SERVICES

The following services are not included in this proposal, however these and others can be provided at additional cost, upon request.

- Representation at Board meetings other than the PVGSA.
- Solicit additional proposals for a GSA Subconsultant,

TERMS AND CONDITIONS

If this proposal is acceptable, please sign this Proposal and the Consultant Services Agreement, and return a copy to our office. These documents will serve as our Notice to Proceed. This proposal is valid for 30 days from the date above.

Sincerely Yours,
Provost & Pritchard Consulting Group

Calvin Monreal, RCE 65453
Principal Engineer

Alex Collins, RCE 78242
Director of Operations

TERMS AND CONDITIONS ACCEPTED

By Pleasant Valley Groundwater Sustainability Agency

Signature

Printed Name

Title

Date

Job Opportunity: District Manager — Pleasant Valley Water District

Location: Coalinga, CA **Employment Type:** Full-Time **Salary Range:** DOE

About Pleasant Valley Water District

We are a water district in California's central valley committed to sustainable groundwater management, regulatory compliance, and serving our landowners with excellence. We seek a forward-thinking, highly organized District Manager to lead operations and regulatory efforts in alignment with California's Sustainable Groundwater Management Act ("SGMA") and Brown Act requirements.

Key Responsibilities

The District Manager will oversee all district operations, regulatory compliance, financial management and stakeholder communication, including:

- **Water Operations & Oversight**
 - Supervise well meter readings across the district
 - Act as Water Master to coordinate and bill for surface water deliveries
- **SGMA Compliance & Engineering Coordination**
 - Supervise engineers with testing required for SGMA compliance
 - Oversee the preparation and filing of SGMA reports
- **Administrative & Legal Support**
 - Assist district counsel in legal matters and regulatory responses
 - Publish public notices in accordance with district and legal requirements
- **Governance & Public Interface**
 - Coordinate district director elections
 - Attend and represent the district at regional and statewide water meetings
 - Facilitate and attend board meetings
- **Documentation & Transparency**
 - Maintain district records and documents in an organized, accessible manner
 - Supervise website consultant and manage content updates

- Ensure website postings in compliance with Brown Act requirements
- **Financial Management**
 - Supervise district accounting using QuickBooks
 - Assist auditors with preparation of annual audited financial statements

Qualifications

- Proven experience in business management, public agency administration or similar field
- Strong knowledge of SGMA regulations and compliance practices
- Familiarity with QuickBooks and financial documentation
- Excellent organizational, leadership and communication skills
- Ability to manage public communications and district website content

How to Apply

Please send your resume, cover letter and professional references to info@pvwdgsa.org.

Pleasant Valley GSA
Budget
FYE 6/30/2026

Well Registration Fees	\$ -	
Metered Extraction Fees	750,000.00	(30,000 AF @ \$25/AF)
Total Income	<u>750,000.00</u>	
Accounting	8,000.00	
Administrative Services-P&P	25,000.00	
Board Meetings	8,000.00	
Board Meetings-P&P	6,000.00	
Legal	10,000.00	
Annual Summary Report-P&P	55,000.00	
GIS Data Updates	-	
Groundwater quality	7,500.00	
Projects & mgt. actions	40,000.00	
Outreach-P&P	8,000.00	
Grant Investigation	30,000.00	
Well Meter reading	25,000.00	
Well Monitoring	5,000.00	
Plan Modification-P&P	25,000.00	
Plan Modification-EKI	493,300.00	
Monitoring Wells	-	
Well Sounders	-	
Total Expense	<u>745,800.00</u>	
Net Income (Loss)	<u>\$ 4,200.00</u>	