Stanislaus & Tuolumne Rivers Groundwater Basin Association
Groundwater Sustainability Agency
1231 11th Street | Modesto, CA 95354
Email: strgba@mid.org

STRGBA GSA AGENDA

November 13, 2024 (1:30 p.m. – 3:00 p.m.)
Webinar Digital Platform or Phone Meeting
https://us02web.zoom.us/j/82844864384
By phone: 1-669-900-9128
Webinar ID: 828 4486 4384

PUBLIC PARTICIPATION
The public may participate in this meeting in the three ways described below.

Instructions for Participating in STRGBA GSA & Technical Advisory Meeting via Zoom Webinar or Phone

On your desktop/iPad or tablet/laptop:

1. To join the webinar, click the link published in the Agenda for the current meeting about 5 minutes before the webinar begins.
2. Follow the on-screen instructions to install and/or launch the Zoom application.
3. If prompted, enter the Webinar ID published in the Agenda.
4. All public attendees will enter the meeting muted.
5. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, click on the "Raise Hand" button to request to speak.

On your phone:

1. To attend the meeting by phone, call the number published in the Agenda for the meeting.
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4. If you wish to speak under Business from the Public, or after the Chairman calls for Public Comment, press *9 on your phone to "Raise Hand" or simply request to speak.

In person: Oakdale Irrigation District 1205 E. F Street, Oakdale

To view a physical copy of the agenda, please visit the Oakdale Irrigation District office at 1205 East F Street, Oakdale. A complete copy of the agenda packet is also available on www.strgba.org.

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1. Call to Order/Welcome and Introductions
   (Four agencies are needed for a quorum)

2. Business from the Public
   Who: Public
   Expected Outcome: Interested persons are welcome to introduce any topic within the Agency's jurisdiction. Matters presented under this heading may be discussed but no action will be taken by the Agency at this meeting. It is not required, but speakers may provide their name and address. Public Comments will be limited to five minutes per speaker.

3. Topic: Approve October 9, 2024 Meeting Minutes [Action Item]
   Who: Eric Thorburn, Committee
   Expected Outcome: Approval

4. Topic: Approve Draft Well Mitigation Program and Management Actions Workgroup Member List [Action Item]
   Who: Eric Thorburn, Committee
   Expected Outcome: Approval

5. Topic: Approve Contract with Woodard Curran for the Development of a Well Mitigation and Management Actions Plan [Action Item]
   Who: Jesse Franco, Committee
   Expected Outcome: Approval

6. Topic: DWR's Draft Interconnected Surface Waters Paper
   Who: Todd Groundwater, Committee
   Expected Outcome: Discussion

7. Topic: Discussion of Formation of STRGBA GSA Attorney Group
   Who: Eric Thorburn, Committee
   Expected Outcome: Discussion

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8. Next Meeting
   December 11, 2024, at 1:30 p.m.

9. Committee Comments/Reports

Stanislaus & Tuolumne Rivers Groundwater Basin Association
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1231 11th Street | Modesto, CA 95354
Email: strgba@mid.org

MEETING MINUTES

October 9, 2024 (1:30 p.m. – 3:00 p.m.)

The meeting was called to order at 1:31 p.m.

1. **Welcome and Introductions**

   The following members of the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) attended either in-person or via Zoom.

   In-Person Attendees:

Modesto Irrigation District (MID):	Jesse Franco
Oakdale Irrigation District (OID):	Eric Thorburn
Stanislaus County:	Christy McKinnon
City of Oakdale:	Ian Sather
City of Modesto:	Tim Barahona
City of Riverbank:	Darin Smallen
City of Waterford:	Mike Pitcock

   Other Attendees:

Liz Elliott	Alexis Stevens
Stacy Henderson	Janice Keating
Kira Becker	Rebecca Ramirez
Dave Cameron	Emily Sheldon
Melissa Williams	Scot Moody
Luke Crawford	

2. **Business from the Public**
   N/A

3. **Approve 8/14/2024 Meeting Minutes [Action item]**
   Franco moved, second by Pitcock to approve the 8/14/2024 meeting minutes.

4. **Approve 2025 STRGBA GSA Budget [Action item]**
   Barahona moved, second by Sather to approve the 2025 STRGBA GSA Budget.

   - Thorburn explained that the budget amount in the Annual Report has changed since the previous budget discussion, increasing from $190,000 to $191,305.

5. **STRGBA GSA Comment Letter to Notice of Preparation of a PEIR for the Salida Community Plan Amendment Area [Action item]**
   Franco moved, second by McKinnon to approve the 2025 STRGBA GSA Budget.

6. **Spring 2024 Groundwater Level Analysis Presentation**
   Elliott gave a presentation on the Spring 2024 Groundwater Level Analysis. The presentation can be viewed here https://youtu.be/Tvzf_4eUe-o.

7. **Next Meeting**
   November 13, 2024, at 1:30 p.m.

8. **Committee Comments/Reports**
   - Thorburn provided an update on the two proposals for the RFP/RFQ. The selected consultant would lead the development of a well mitigation plan and related management actions.
   - The ad hoc committee received 27 applications for the workgroup, which will include various members of the public representing all areas within the Modesto subbasin. After the selection process, GSA member agencies will vote to approve the final selection of workgroup committee members.
   - Stevens and Henderson provided comments about attorneys being excluded from selection as workgroup committee members.
   - Keating provided comments on elected officials being selected as a workgroup committee member.
   - The Eastern San Joaquin Groundwater Authority's draft GSP is now open for review, with the review period closing on October 31. The board will meet on December 11 to recommend the adoption of the GSP.

STRGBA GSA
WMP & MAs Workgroup Applicant List

Applicant Name

Last Name	First Name	Area(s)
Chituras	Charleen	City of Modesto - LO
Chituras	Katharine	City of Modesto - LO
Moradian	Michael	City of Modesto - LO
Alvarez	Miguel	City of Modesto - Staff
Ochoa	Juan	City of Modesto - STRGBA GSA (Alt)
Barahona	Timothy	City of Modesto - STRGBA GSA (Primary)
Hernandez	Rachel	City of Riverbank (Council Member)
Withrow	Terry	County BOS
Mortensen	James	MID - LO
Wheeler	David Wrangler	MID - LO
Durrer	Erik	MID - LO
Durrer	Erika	MID - LO
Roddy	Sean	MID - LO & Well Driller
Henderson	Stacey	MID
Frobose	Robert	MID Director & MID/OID - LO
Byrd	Larry	MID Director (President)
Fogarty	William	NDEast - Dry
Absger	Ann	NDEast - Dry
Toste	Matthew	NDEast - Irr
Cameron	David	NDEast - Irr
Brichetto, Sr	Louis	NDEast - Irr
Brichetto	Louie	NDEast - Irr
Berry	Julia	NDEast - Irr
Ratto	Anthony	NDW/MID - LO
Stevens	Alexis	NDWest
Brichetto	John	OID
DeBoer	Brad	OID Director (Vice President)
Hewes	Leroy	Turlock - LO
Rossiter	Cooper	Turlock - LO

STRGBA GSA

WMP & MAs Workgroup Members

DRAFT

Applicant Name

Last Name	First Name	Area(s)
Chituras	Charleen	City of Modesto - LO
Moradian	Michael	City of Modesto - LO
Alvarez	Miguel	City of Modesto - Staff
Hernandez	Rachel	City of Riverbank (Council Member)
Withrow	Terry	County BOS
Henderson	Stacey	MID
Byrd	Larry	MID Director (President)
Fogarty	William	NDEast - Dry
Berry	Julia	NDEast - Irr
Ratto	Anthony	NDW/MID - LO
Stevens	Alexis	NDWest
Brichetto	John	OID
DeBoer	Brad	OID Director (Vice President)

Statement of Qualifications and Proposal for Modesto Irrigation District on behalf of the Stanislaus & Tuolumne Rivers' Groundwater Basin Association Groundwater Sustainability Agency

Development of a Well Mitigation Plan & Management Actions for the Modesto Subbasin Groundwater Sustainability Plan

September 30,
2024

Woodard & Curran

TODD GROUNDWATER

Section One

Cover Letter

801 T Street
Sacramento, CA 95811
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9/30/2024

Jesse Franco
Civil Engineering Manager
Modesto Irrigation District
Civil Engineering Department
1231 11th Street
Modesto, CA 95354

RE: Proposal for Consultant Services to Develop a Well Mitigation Plan and Management Actions for the Modesto Subbasin Groundwater Sustainability Plan

Dear Mr. Franco:

Woodard & Curran is pleased to submit our proposal to provide Modesto Irrigation District (MID) and the Stanislaus & Tuolumne Rivers' Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) with services to assist with the development and implementation of a Well Mitigation Plan and Management Actions to support the 2022 Groundwater Sustainability Plan (GSP) for the Modesto Groundwater Subbasin (Subbasin), as revised in July 2024 (Project). This proposal includes an enhanced scope of services that reflects the commitments made by the STRGBA GSA in their response to the California Department of Water Resources (DWR) Incomplete Determination letter dated January 18, 2024. It is tailored to ensure that the needs and interests of the STRGBA GSA members are also met through the management action development process. As requested, we have also provided a level of effort matrix and overall schedule workplan for completing the program development by the January 31, 2026 deadline.

Woodard & Curran is an industry leader in groundwater studies and evaluations, integrated groundwater and surface water modeling, integrated regional water management, environmental assessment and remediation, data management, water recycling, and strategic planning nationwide. Over the last 45 years, our firm of 1,300 professionals has developed a proven record of completing projects on time and on budget while meeting our clients' goals and objectives. We offer specialized services in groundwater management, integrated regional planning, water supply and treatment, watershed management, water quality permitting, water recycling, flood protection and stormwater management, and wastewater collection and treatment, and have worked on 17 GSPs across California. The Woodard & Curran Team (including Todd Groundwater) offers the Modesto Irrigation District and the STRGBA GSA the perfect combination of focused development and implementation expertise with dedicated local project delivery.

As described in our proposal, the Woodard & Curran Team will work in a collaborative process with the STRGBA GSA members to take the management actions (Well Mitigation Plan and Groundwater Use Management Program, further described below) framed in the 2024 GSP to fully implementable programs, and to attain acceptance of these programs as they are implemented in the Subbasin. Our proposed Woodard & Curran Team will be led by

Leslie Dumas, who has experience working in the Modesto Subbasin and brings extensive experience in compliance with the Sustainable Groundwater Management Act (SGMA) and similar efforts in management action program development occurring elsewhere in the Central Valley. As Project Manager, Leslie will also lead development of the Groundwater Use Management Program with **Dominick Amador** as Deputy Project Manager, and **Ali Taghavi** as technical advisor and Principal-in-Charge. We have also included our strategic teaming partner, **Todd Groundwater**, who also have significant experience in SGMA and direct experience in developing the framework for the Well Mitigation Plan as contained in the Subbasin's 2024 GSP. Also included as part of our project team are **Katie Evans**, our public outreach and stakeholder engagement expert. While we know that the STRGBA GSA is planning to take lead on outreach and public engagement, Katie and the rest of our project team are available to support the GSA in these efforts upon request and as needed. In consultation with the STRGBA GSA, we will be contacting Self-Help Enterprises early in the project schedule to discuss a potential role in developing/implementing the well mitigation plan; however at this time, their role (if any) is to be determined and the scope of work to be further defined.

Groundwater Use Management Program

The GSP presents projects and management actions that have been shown to be feasible in achieving sustainability by 2042. However, it is also recognized that the GSP objectives in arresting groundwater level declines quickly could be threatened by significant drought cycles resulting in insufficient water supplies available for use. Accordingly, this proposal presents a Groundwater Use Management Program to expedite the implementation of the most practical and workable management actions. As envisioned in our proposal, the Groundwater Use Management Program will consist of a series of sub-programs consistent with the 2024 GSP's Pumping Management Framework and Demand Reduction Strategies management actions. Sub-programs existing under the umbrella of the Groundwater Use Management Program include:

1. Groundwater extraction accounting and reporting program
2. Groundwater allocation program
3. Groundwater extraction fee
4. Groundwater pumping credit/trading program
5. Voluntary conservation program

Each sub-program will be developed collaboratively with a proposed GSA Working Group following a similar process in which feasible concepts and options will be identified and screened. The most practical and workable option(s) will then be expanded to create a viable program for implementation. The draft program will be presented to the STRBGA GSA, and feedback received incorporated. The revised program will then be presented to Subbasin groundwater users and the public for consideration and comment, including education around the need for the program(s) and possible impacts. The final resulting programs will then be presented in a second public workshop during which the program implementation process will be explained, and materials provided for initial execution.

Well Mitigation Plan

Todd Groundwater will be leading the preparation of the Well Mitigation Plan. Plan development will include the institutional framework, terms, potential mitigation measures, funding plan, and claims process (including owner agreements) needed for implementation. Throughout this process, Todd Groundwater will provide technical input about the components and work with the GSA Working Group to prepare the Plan for Modesto Subbasin.

Project Outreach and Meetings

Project communication, outreach and meetings with the GSA Working Group to develop the well mitigation plan and management action programs, and with the STRGBA GSA and Subbasin groundwater users for input and feedback will be essential to developing justifiable, implementable, trackable, and meaningful programs. We recognize that the GSA member agencies are very busy with their primary roles for their districts, cities and county; as such, we have proposed the formation of the GSA Working Group, an ad hoc committee, to guide the development of management action programs and to act as a sounding board on behalf of their fellow member agencies. This will limit the time required by all entities, provide focused program development, resulting in the timely completion of the well mitigation plan and management actions while reflecting the interests and concerns of the Subbasin's groundwater users.

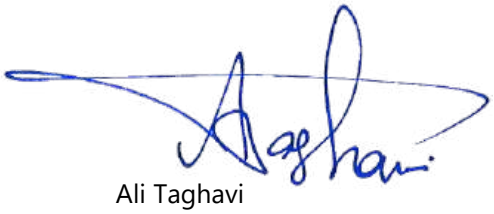
While the goals of the management actions contained in the 2024 Revised Modesto GSP are admirable, there is a significant amount of work to be completed within the timeframe committed in that document. As such, we feel it important that the programs and subprograms to be developed are prioritized, ensuring those that will have the greatest impact are completed first. We believe that the well mitigation plan, groundwater extraction and surface water delivery reporting program, and pumping allocations first and foremost must be developed as these sub-programs will provide much needed data on groundwater use and will form the basis for pumping reductions and demand management needed to achieve the Subbasin's interim milestones. The groundwater extraction fee should then follow as it will provide the funds for GSP implementation and to create the other programs that will further groundwater use reductions in the Subbasin. To the extent the schedule allows, the remaining programs can be expanded beyond what was presented in the GSP and further developed to complete the suite of management actions to be rolled out as part of GSP implementation. Our team will work with the GSA to expedite the development of these sub-programs to the best of our ability by not recreating the wheel. We will prepare strawman proposals that reflect our experiences from other basins in the State and present management ideas, along with relevant pros and cons, for consideration.

In regards to the Standard Agreement for Consultant Services included in the RFQ/RFP, Woodard & Curran has reviewed the draft form of agreement and generally accepts Modesto Irrigation District's form, provided, we would request an opportunity to revise certain risk-based allocation terms to be consistent with the provision of professional services, including but not limited to the standard of care, indemnity, limitations of liability and related insurance provisions, among others.

We thank you again for this opportunity to work with the STRGBA GSA and its member agencies in the development of these important programs that are essential in helping the Subbasin to achieve its groundwater sustainability goal by 2042. We are excited and ready to support you in the development and implementation of these important programs. Please feel free to contact either Leslie Dumas (ldumas@woodardcurran.com) or Ali Taghavi (ataghavi@woodardcurran.com) if you have any questions regarding this proposal or require any further information.

Sincerely,

WOODARD & CURRAN, INC.



Leslie Dumas, PE
Vice President/Project Manager

Ali Taghavi
Vice President/Principal-in-Charge

Section Two

Proposed Scope of Services

Woodard & Curran

2 | PROPOSED SCOPE OF SERVICES

BACKGROUND AND APPROACH

The California Department of Water Resources' (DWR's) January 2024 determination letter for the Modesto Subbasin's Groundwater Sustainability Plan (GSP) provided two Recommended Actions for the Stanislaus & Tuolumne Rivers' Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) to address. The first Recommended Action is to develop a well mitigation plan to mitigate water supply wells that failed due to declining groundwater levels caused by overdraft. The second Recommended Action is to revise the GSP to present reasonable means to stop groundwater level declines and address overdraft conditions in the Subbasin. Specifically, DWR requested that the GSP include a feasible collection of projects and management actions to raise groundwater levels to avoid undesirable results.

The GSA has responded to DWR's Recommended Actions with proactive research and the development of a framework for a well mitigation program tailored to the conditions and management objectives of Modesto Subbasin. The GSA has also identified a viable portfolio of management actions to arrest groundwater level declines by 2027 and to raise groundwater levels after 2027 to manage the Subbasin sustainably. In both cases, this process (part of the 2024 GSP revision) resulted in a Resolution that commits to developing and implementing the Well Mitigation Program and a suite of programs that will manage pumping and reduce demands by January 31, 2026. This is a challenging schedule but can be accomplished with a cohesive, experienced and knowledgeable team who will work closely with the GSAs and stakeholders, and who bring a proven record in achieving and demonstrating results quickly.

Our approach is to build on the previous GSP work. The well mitigation planning developed a preliminary framework for a Well Mitigation Plan that included discussion of topics such as plan components, funding options, public outreach, and a claims process. At the time, the Well Mitigation work was organized as a draft memorandum of understanding (Draft MOU) for TAC Planning Group review and commentary, but can now serve as an outline for a Well Mitigation Plan document. Todd Groundwater will lead the development of the Well Mitigation Plan, combining our local knowledge with experience in other basins. Similarly, our previous work efforts developed and assessed management actions, including demand reduction actions, a pumping management framework, a groundwater allocation program, water use accounting and/or monitoring program, groundwater extraction fee, and potential groundwater allocation exchange program. These management actions have been documented in the GSP and found feasible; we will combine our Modesto-specific knowledge with experience from other basins to implement the actions as described below.

Our approach is collaborative. To develop the Well Mitigation Plan, we will work with the GSA, the outreach team at Modesto Irrigation District, and potentially with other organizations. To develop

the management actions efficiently, we recommend the formation of a GSA Working Group—an ad hoc committee comprised of a subset of GSA member representatives who will act as the sounding board for the overall STRGBA GSA. Our goal would be to have representatives of both urban, agricultural and white areas of the Subbasin represented in the Working Group, considering representation of both the eastern, western and central portions of the Subbasin. The primary purpose of the GSA Working Group will be to guide the development of management actions and facilitate decision making, while acting nimbly to provide timely and relevant feedback.

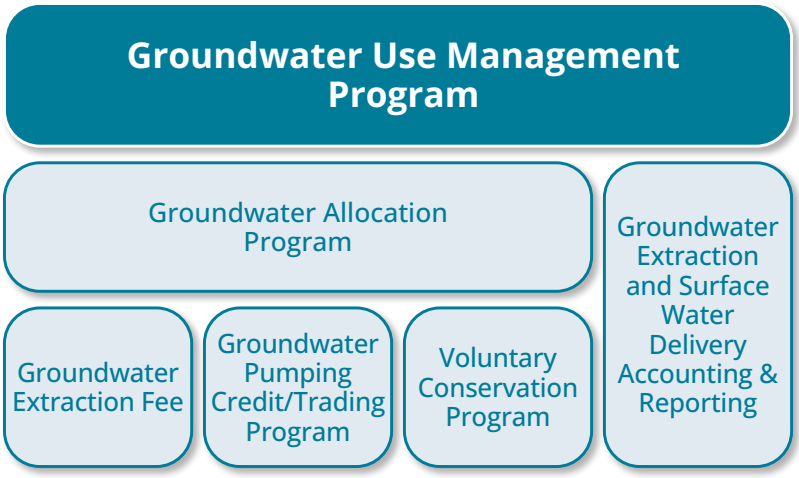
Our approach is practical and results oriented. Within the GSP timeframe, a significant amount of work needs to be completed and management actions need to be implemented without delay to augment groundwater and/or conserve it. As a first step, the Groundwater Use Management Program and subprograms will be prioritized to secure the 'low hanging fruit', those projects that have the greatest and quickest benefits and/or are relatively easy to implement. We believe that the well mitigation plan, groundwater extraction and surface water delivery reporting program, and pumping allocations first and foremost must be developed. The groundwater extraction fee should then follow as it will provide the funds for GSP implementation and to create the other programs that will enhance groundwater use reductions in the Subbasin. To the extent the schedule allows, the groundwater accounting/market/trading program and voluntary conservation programming can be outlined in greater detail than was presented in the GSP and further developed to complete the suite of management actions to be rolled out as part of GSP implementation. Our team will work with the GSA to expedite the development of these sub-programs to the best of our ability by not recreating the wheel. We will prepare strawman proposals that reflect our experiences from other basins in the State and present management ideas, along with relevant pros and cons, for consideration.

SCOPE OF SERVICES

Task 1: Groundwater Use Management Program

The Groundwater Use Management Program, a management action contained in the 2024 Modesto GSP, is intended to expedite the implementation of the most practical and workable management actions. As envisioned herein, the Groundwater Use Management Program will consist of a series of sub-programs consistent with the 2024 GSP's Pumping Management Framework and Demand Reduction Strategies management actions. Sub-programs existing under the umbrella of the Groundwater Use Management Program include:

1. Groundwater extraction and surface water delivery accounting and reporting program
2. Groundwater allocation program
3. Groundwater extraction fee
4. Groundwater pumping credit/trading program
5. Voluntary conservation program



Development of the five sub-programs will generally follow the same steps and will be developed concurrently. In general, the overall program development process will occur in seven steps.

In Step 1, the Woodard & Curran team will work together to expand the frameworks contained in the GSP and develop program details for consideration by the GSA Working Group. These program details will be based on similar programs that the project team has successfully developed and implemented to date or are similar to programs currently being developed in other groundwater basins. These concepts will consider the interconnections and intersections of the sub-programs, both through consistency of thought and development, and in terms of how the programs build off and support each other. The overview concepts and options will be presented to the GSA Working Group in a face-to-face workshop as Step 2 for discussion, revision, elimination and/or for adding additional elements. Using input from the GSA Working Group, the Woodard & Curran team will then utilize the concepts and selected options in Step 3 to develop the draft sub-programs. In Step 4, a second in-person workshop will be held with the GSA Working Group to review and refine the sub-programs and identify and resolve any remaining issues. Woodard & Curran will take the results from the second workshop and develop revised sub-programs for presentation at a public workshop. As needed, additional virtual meetings may occur during this period to resolve any remaining issues or questions and to prepare for the public workshop.

STEP 1 Develop Overview Concepts & Options

STEP 2 GSA/Working Group Review Concepts/ Options and Shortlist

STEP 3 Develop Draft Program Components

STEP 4 GSA/Working Group Review Draft Program Components

STEP 5 Public Workshop to Present Revised Draft Program

STEP 6 Develop Final Program

STEP 7 Present Groundwater Use Management Program

The first public workshop will be the initial presentation of the proposed Groundwater Use Management Program to groundwater users and the public. The goals of this workshop are to educate the Subbasin users of groundwater as to why the programs are needed, to present the draft program elements for public consideration and feedback, to discuss and address concerns, and to start the process toward public acceptance of the program's need. Using public input from the first workshop, the Woodard & Curran team will develop the final sub-programs under the Groundwater Use Management Program. The STRGBA GSA will be provided a screencheck version of the Final Groundwater Use Management Program for review prior to

finalizing the documents. Woodard & Curran will then work with the STRGBA GSA to prepare for and hold a second public workshop to present the finalized program to the Subbasin public and growers, and to show upcoming dates for implementation. Services provided to the STRGBA GSA for both workshops will include preparing workshop materials (workshop agenda, presentation and program FAQ handout). Woodard & Curran can provide Modesto Irrigation District and the STRGBA GSA with additional outreach and communications services upon request.

As noted, the five sub-programs under the Groundwater Use Management Program umbrella are intended to be separate individual programs integrated together, with each sub-program intended to support a specific action, but with the sub-programs complementing and supporting each other. The five sub-programs can initially be envisioned as follows.

Subtask 1.1: Groundwater Extraction and Surface Water Delivery Accounting and Reporting Program

California Water Code (CWC) Section 10725.6 of SGMA allows GSAs to require the registration of a groundwater extraction facility (e.g., well), while Section 10725.8 allows GSAs to require the use of water-measuring devices, or though other reasonable identified methods, to measure extractions and annual reporting of extractions during the previous water year. Many groundwater basins in the State (including those under probation by the SWRCB) have implemented well registration programs, and many have paired those registration programs with extraction measurement and reporting requirements. In the Cuyama Subbasin, Woodard & Curran developed a Well Metering Program, including guidance on well meter data reporting, meter installation, and data collection. In the Merced Subbasin, we have worked with the Subbasin GSAs to incorporate use of the California Water Data Consortium's Groundwater Accounting Platform into their basin management operations.

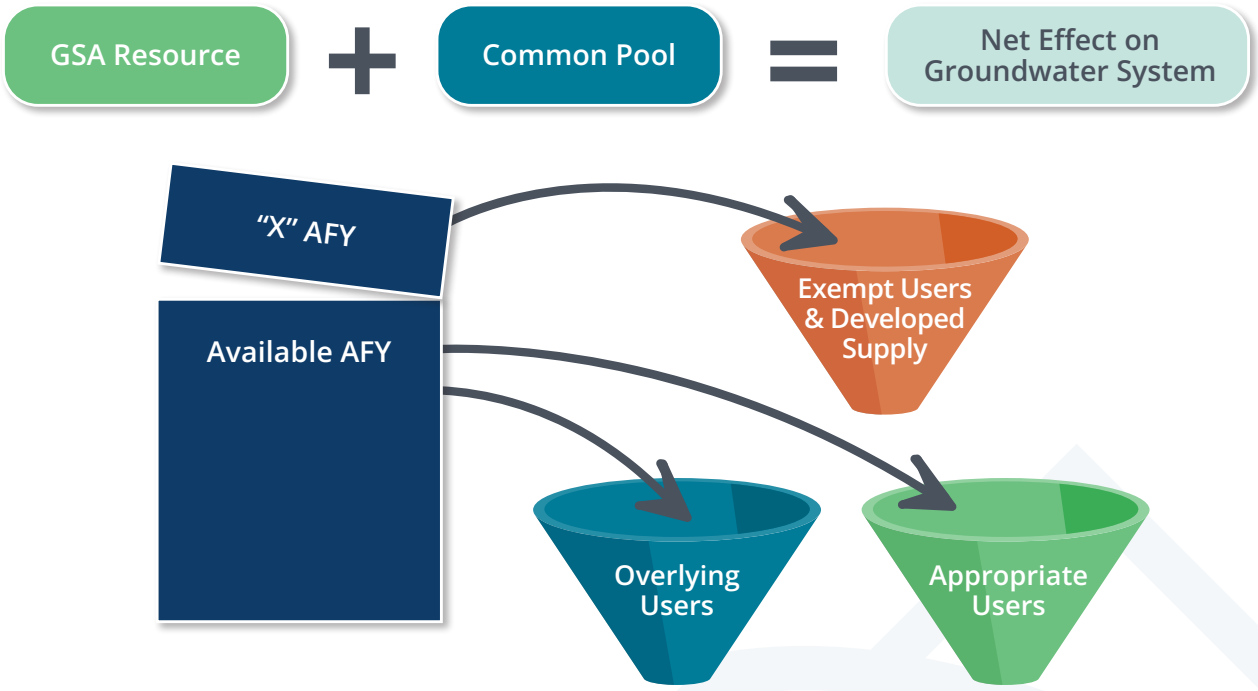
In Subtask 1.1, we will work with the GSA Working Group to first develop the rules and programming for well owners to register their wells with the GSA. Once that program has been defined, the programming for groundwater use metering must then be developed. Specific details of this part of the program includes identifying who must have a meter on their well, the types of meters that are acceptable, requirements for meter calibration, and methodologies for estimating groundwater extractions using accepted alternative methods other than metering. The two program parts will then be brought together in a framework for implementation that includes when and how water use/deliveries are reported, who is responsible for collecting and maintaining those data, and the rules for enforcement, among other items.

Subtask 1.2: Groundwater Allocation Program

CWC Section 10726.4 allows GSAs to control groundwater extractions by regulating, limiting, or suspending extractions from individual groundwater wells or extractions from groundwater wells in the aggregate, construction of new groundwater wells, enlargement of existing groundwater wells, or reactivation of abandoned groundwater wells, or otherwise establishing groundwater extraction allocations. While most of the 2020 and 2022 GSPs submitted to the State did not include groundwater allocation programs, many are now developing those as part of GSP amendments and/or resubmittals. Woodard & Curran has supported development and implementation of a groundwater allocation program in the Cuyama groundwater basin and is currently supporting the development

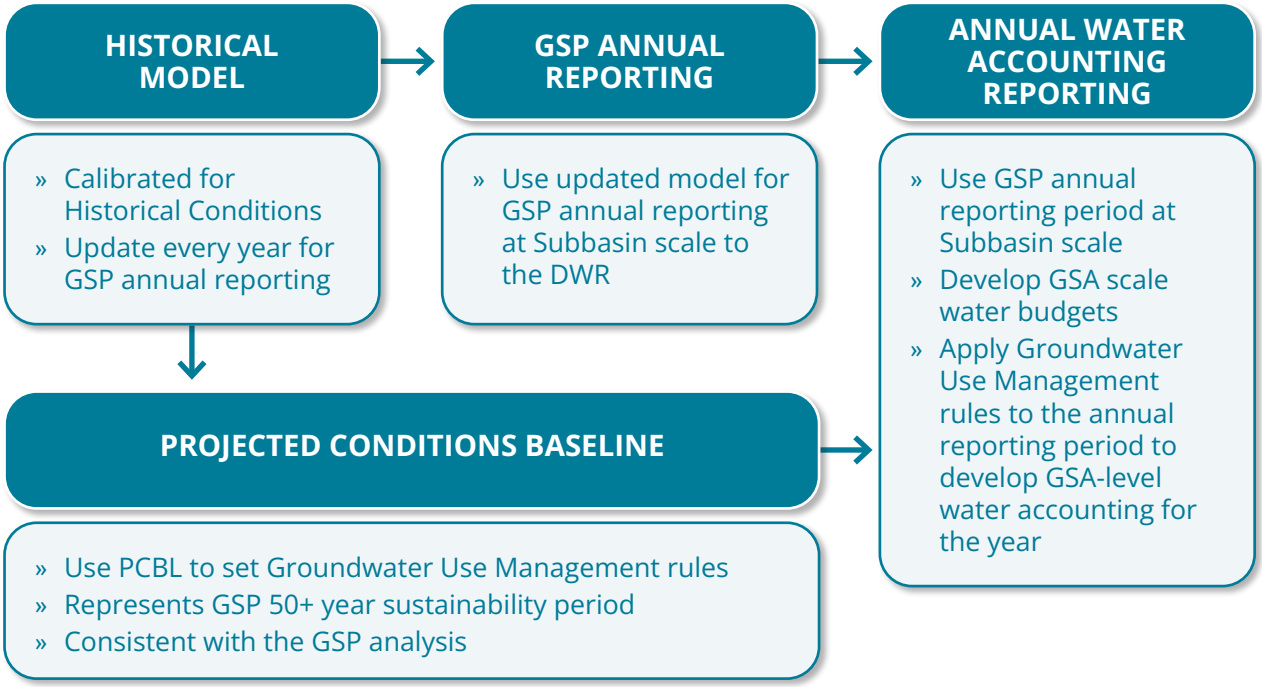
of similar programs in the Delta-Mendota, Eastern San Joaquin, and Merced Subbasins. We will bring these 'lessons learned' from these nearby basins to inform development of a similar program in the Modesto Subbasin.

Groundwater allocation programs vary considerably based on groundwater basin conditions and local preferences. The Cuyama groundwater basin, as a non-contiguous coastal groundwater basin, focused heavily on restricting groundwater pumping to address overdraft conditions. Programs being developed in the Delta-Mendota, Eastern San Joaquin and Merced Subbasins are overdraft mitigation/groundwater allocation programs to both reduce groundwater pumping and encourage increased surface water use. Several basins or regions are agreeing to simple percent reductions across the board or allocations on an acre-foot per acre basis, while others are developing more targeted reductions that consider access to surface water, hydrostratigraphy (such as aquifer thickness), user class (e.g., agricultural versus urban use) and socioeconomic factors. There have also been circumstances where allocation programs have specific conditions and criteria that are enforced. For example, one allocation program, developed with the assistance of Woodard & Curran, assigns distinct management zones to address spatial variability in hydrogeologic conditions. Parcels that are eligible to be part of the allocation program are then assigned a portion of a predetermined yield. Additionally, certain parcels are granted additional allowances to their allocation, which is gradually reduced over time. This program allows the GSAs to better target areas that have experienced significant overdraft conditions while allowing them time to prepare to secure alternative water supplies in the future.



Once the groundwater allocation process has been established, it is recommended that this process, and the resultant numbers, be revisited on an annual basis in coordination with preparation of the required annual reports. This will allow for annual modifications to the allocations based on recent hydrology and groundwater basin conditions, such as increasing reductions if necessary to

prevent a worsening of conditions. However, the annual review of may also allow the GSA to cease or reduce pumping reductions once the goals of the program have been achieved. It is also recommended that, as part of the annual evaluation process, growers in the Subbasin are informed early in the year (e.g., February) as to their expected annual pumping allocations so that they can plan accordingly for planting, similar as to what is currently done by the State for surface water deliveries South-of-the-Delta.



Subtask 1.3: Groundwater Extraction Fee

CWC Sections 10730 and 10730.2 allows GSAs, in addition to other powers authorized by the California Constitution and other applicable laws, to levy taxes and fees including, but not limited to, permit fees and fees on groundwater extraction or other regulated activities. These taxes and fees may be used to fund the costs of preparing, adopting, and amending a groundwater sustainability plan, as well as investigations, inspections, compliance assistance, enforcement, and program administration, including a prudent reserve. While these fees may be a direct regulatory fee, the use of both baseline and tiered fees can provide incentives to use available surface water in-lieu of groundwater pumping and/or to reduce/conserve groundwater use. Regardless of the type of fee or tax used, specific processes and requirements (such as those set forth under Proposition 218) must be followed to comply with California law.

To date, there have been several successful fee structures successfully implemented in California. Woodard & Curran has been working in the Cuyama Groundwater Basin since the passing of SGMA and supported the basin in the development of their fee basis and program structure. In this basin, the fees are set annually based on the projected GSP implementation budget and estimated pumping. There is a uniform fee per acre-foot of water pumped by all groundwater users except de minimis users and well users on State and federal lands. Other basins, such as the Salinas Valley groundwater basin, apply a uniform fee that allocates the costs differently to different users. In the

case of Salinas Valley, 90% of the costs are allocated to agricultural users and 10% are allocated to all other groundwater users. In the Santa Rosa Plain groundwater basin (Sonoma County), multiple user classes were considered, including municipalities/large water service providers, small water service providers, agriculture and irrigation use, rural residential and urban residential with a well. And in many cases, such as in the Salina Valley and portions of the Delta-Mendota Subbasin, tiered fee structures similar to those used by water and other utilities are currently under consideration.

One of the goals of using a groundwater extraction fee in the Modesto Subbasin is to reduce groundwater use and incentivize the use of available surface water. This is exemplified by the current status of the MID Long-term Groundwater Replenishment Program, which has encountered resistance to using surface water in lieu of groundwater because of the cost. We recommend a fee structure combining a minimum uniform fee with a tiered rate structures for larger water users. This will provide a base-level income to implement the GSP, incentivize groundwater use reductions, and provide a funding stream for land purchases for fallowing or non-irrigated reuse, as needed.

Subtask 1.4: Groundwater Pumping Credit/Trading Program

CWC Section 10726.4 allows GSAs to establish accounting rules to allow unused groundwater extraction allocations issued by the agency to be carried over from one year to another and voluntarily transferred, if the total quantity of groundwater extracted in any five-year period is consistent with the provisions of the groundwater sustainability plan. To date, only a few groundwater pumping/banking/trading programs have been established (most notably, the Fox Canyon groundwater market and the Tule Subbasin groundwater trading program), while many are in the works. Similar to groundwater allocations, consideration of basin hydrogeology is needed for a successful groundwater pumping credit/trading program. A basin-wide trading program and market is feasible in certain basins, however, specials considerations, such as aquifer thickness or proximity to features such as the Corcoran Clay, may make basin-wide programs unreasonable or infeasible. Under these circumstances, however, programs can be tailored to manage groundwater on a smaller scale.

For example, the San Joaquin River Exchange Contractors (SJREC) have subdivided their GSA area into non-SGMA management areas for the purpose of groundwater management. Their annual groundwater assessment program requires an annual review of groundwater conditions and preparation of a supplemental assessment report that includes recommendations on how each management area within the SJREC area should be managed for the current year. These recommendations include limitations on the export of groundwater in impacted areas if groundwater elevations are below established trigger levels. Given the disparity in net groundwater use in the Modesto Subbasin and significant difference in land use and hydrogeology within the Subbasin, regional groundwater management, including the trading and banking of groundwater 'credits' may be something the STRGBA GSAs should consider.

It should be noted that, per commitments made in the Subbasin's 2024 GSP, there is limited time and funding for developing the sub-programs under the Groundwater Use Management Program umbrella. This sub-program is considered less imperative than the other components and as such, would only be developed to the extent allowed by the project schedule and budget.

Subtask 1.5: Voluntary Conservation Program

While the groundwater allocation program and groundwater extraction fee programs provide the "stick" towards correcting Subbasin overdraft conditions, a voluntary conservation program could provide a "carrot". As envisioned herein, potential voluntary urban and agricultural conservation programming would be identified and preliminarily outlined. At a minimum, the urban water purveyors in the Subbasin, such as the City of Modesto, will be required to comply with the new Conservation as a Way of Life legislation, which will mandate further reductions in urban water use. Conservation programming to support this initiative will result in reduced groundwater use by the urban water purveyors. Similarly, as part of the 2025 Agricultural Water Management Plans that will be prepared, new agricultural conservation programming may be identified. These new conservation initiatives can be considered and subsidized at the Subbasin level, potentially utilizing funding raised under the groundwater extraction fee program, to incentivize their implementation and resulting in further permanent groundwater use reductions and water savings.

Task 1 - Assumptions

- → Two (2) In-person presentations/workshops with GSA Working Group
- → Four (4) virtual meetings with GSA Working Group for program completion and workshop preparation
- → In-person presentation of Public Draft Groundwater Use Management Program to STRGBA GSA/ Technical Advisory Board (TAC)
- → The STRBGA GSA will provide access to the Subbasin DMS and provide information and data for program development including, but not limited to, the types and numbers of meters in the Subbasin, surface water delivery locations, groundwater use, existing fee structures at local program levels and existing urban and agricultural conservation programming

Task 1 - Deliverables

- → Groundwater Use Management Program - Administrative Draft (electronic and 8 hard copies)
- → Groundwater Use Management Program - ADA-compliant Public Draft (electronic and 8 hard copies)
- → Groundwater Use Management Program - Screencheck Final (electronic)
- → Groundwater Use Management Program - ADA-compliant Final (electronic on external drive and 8 hard copies)

Task 2: Well Mitigation Plan

As described in the following subtasks, this task provides a working outline of a Well Mitigation Plan and then develops the plan components, including the institutional framework, terms, potential mitigation measures, funding plan, and claims process including owner agreements. The deliverable will be a Well Mitigation Plan document. Throughout this task, Todd Groundwater will provide technical input about the components and then work with the GSA Working Group to tailor the components for Modesto Subbasin.

Subtask 2.1: Develop Framework for Well Mitigation Plan/Program

Todd Groundwater will help develop a framework for the Well Mitigation Plan (and for the subsequent Well Mitigation implementation program). As previously noted, this process begins with the establishment of a GSA Working Group to oversee Program development and to report to the

GSA Technical Advisory Committee (TAC); we anticipate that the GSA Working Group will lead this effort. This task also includes definition/confirmation of the purpose, potential program mitigation measures, and term and applicability limits of the plan (e.g., applies to impacts after January 31, 2022, GSP adoption). These components will be presented systematically by Todd Groundwater and following discussion, the decisions will be documented as preliminary draft sections of the Well Mitigation Plan.

Subtask 2.2: Provide Recommendations for a Well Mitigation Fund

Todd Groundwater will work with the GSA Working Group to develop recommendations for a Well Mitigation fund, including funding sources and structure for funding responsibility and disbursement. In the Resolution included in the 2024 Revised GSP, the GSA committed to a baseline funding amount of $300,000. Upon implementation, the well mitigation program will continue. It is anticipated that the GSA will fund the Well Mitigation Program on an annual basis based on recommendations from the GSA Working Group. It is anticipated that the annual funding may come from GSA fees and assessments, funds generated through implementation of other projects and management actions (e.g., fines and/or penalties), county/state/federal funding, as available, and other sources as identified. These sources will be discussed along with items such as accounting, budget cycle, budget review, and in-kind services. Following discussion, Todd Groundwater will document the decisions as preliminary draft sections of the Well Mitigation Plan.

Subtask 2.3: Develop Well Owners Claims Process

Todd Groundwater will work with the GSA Working Group to develop a claims process for well owners. This process will include stakeholder outreach and definition of claim eligibility and claim application requirements. We can provide examples of claim application requirements for review by the GSA Working Group. Todd Groundwater will coordinate with the GSA Working Group to develop a systematic process for reviewing and responding to claim applications. This will include methods for review, reporting, and recommendations that address for example, eligibility, portion of responsibility for the well failure, and recommendations for mitigation. We will also present a draft appeals process. A draft framework for well owner agreements will also be presented. As discussed during preparation of the Draft MOU earlier this year, we recommend formation of a Technical Review Committee as part of the Well Mitigation Plan implementation. We anticipate that the GSA Working Group and GSA will decide on the composition and terms of this committee. Following discussion of all the above, Todd Groundwater will document the decisions as preliminary draft sections of the Well Mitigation Plan.

Subtask 2.4: Prepare Well Mitigation Plan Documentation

Todd Groundwater will prepare the Well Mitigation Plan documentation. As indicated above, we will document throughout the process and then compile an Administrative Draft Well Mitigation Plan for review by the GSA Working Group. Comments received will be incorporated into a Public Draft, which will be distributed to the STRBGA GSA and public for review. We will incorporate comments from the GSA and the public into a Final Well Mitigation Plan.

Task 2 - Assumptions:

- → Public workshop and outreach effort will be led by STRGBA GSA and Modesto Irrigation District, with support from both Todd Groundwater and Woodard & Curran.
- → Self-Help Enterprises will be contacted early to discuss a potential role in developing/implementing the well mitigation plan. Their role (if any) is currently uncertain.

Task 2 - Deliverables:

- → Administrative Draft Well Mitigation Plan (electronic and 8 hard copies)
- → ADA-compliant Public Draft Well Mitigation Plan (electronic and 8 hard copies)
- → ADA-compliant Final Well Mitigation Plan (electronic on external drive and 8 hard copies)

Task 3: Project Meetings and Public Outreach

Task 3 will be conducted concurrently with Tasks 1 and 2 to enable the preparation of management actions (Well Mitigation Plan and Groundwater Use Management Program) through meetings with the GSA Working Group and to support public understanding through outreach efforts. We expect Modesto Irrigation District to lead public outreach, with additional support from Woodard & Curran upon request. Early engagement with Self-Help Enterprises is recommended to discuss a potential role in developing or implementing the Well Mitigation Plan.

Subtask 3.1: Facilitate and Participate in a Program Development Working Group

The Woodard & Curran team will meet with the STRGBA GSA for a project kickoff and to form the GSA Working Group, an ad hoc committee which will guide the development of management action programs. This kickoff meeting will cover the project scope, schedule, responsibilities, and proposed methods for developing the programs in parallel. Regular meetings with the GSA Working Group are expected, with frequency to be determined in coordination with that group.

The budget assumes monthly, 90-minute virtual meetings with the GSA Working Group unless otherwise requested. The Woodard & Curran team will facilitate the meetings, prepare agendas and materials, and document key decisions. When the administrative draft of the programs is ready, Woodard & Curran will present the programs at an in-person STRGBA GSA meeting to discuss the outcomes.

Subtask 3.2: Assist With and Participate in Public Workshops and Outreach Efforts

This task involves communication, outreach, and engagement with interested parties and groundwater users within the Subbasin. We assume that the STRGBA GSA and Modesto Irrigation District will lead the public workshop and outreach, with Woodard & Curran and Todd Groundwater assisting with presentation topics and participation. Woodard & Curran can provide additional outreach, communication support, and facilitation upon request as an optional task.

The Woodard & Curran team will attend one STRGBA GSA meeting and two public workshops. The administrative draft programs will be presented at the STRGBA GSA meeting for discussion and approval. The public draft programs will be presented at a public workshop to educate groundwater users on the need for the programs, how the programs will be implemented, to solicit feedback, and address any concerns. This input will be considered for the final version of the management action programs, which will then be presented at a second public workshop along with key implementation schedule milestones.

For budgeting purposes, attendance at the STRBGA GSA meetings can be covered under the existing contract between the City of Modesto and Todd Groundwater/Woodard & Curran to conduct the Annual Reports and Update the Groundwater Sustainability Plan, which already includes these meetings.

Task 3 - Assumptions:

- One (1) in-person kickoff meeting
- Up to twelve (12) virtual ad hoc committee (GSA Working Group) meetings to present/discuss the management action programs.
- One (1) in-person STRGBA GSA meeting to present the Public Draft of the management action programs. This meeting will be covered under the existing GSP contract with the City of Modesto.
- Two (2) in-person public workshops to (a) solicit public feedback on the draft programs and (b) to present the final programs.
- Public workshop and outreach efforts will be led by STRGBA GSA and Modesto Irrigation District with support from the Woodard & Curran team upon request and as needed

Task 3 - Deliverables:

- Workshop materials, including an agenda, presentation, handouts, and meeting notes.

Task 4: Project Management and Communications

Project management and communications will include both day-to-day contract management (including regular communications with the STRGBA GSA project manager, monthly invoice and progress reporting), regular coordination with the STRGBA GSA member agencies (on an as-needed basis), plus communications with groundwater users in the Subbasin and the public.

Woodard & Curran will also implement its quality control program as part of the project management task. This includes the internal review of deliverables, technical editing for compliance with mandated Website ADA Guidelines (WCAG 2.0) for visually impaired persons, and regular tracking of project schedule, budget and earned value (EVA) to ensure that the project is completed on time and within the allocated budget.

Task 4 - Deliverables:

- Monthly invoices and progress reports

Section Three

Firm Experience

FIRM & TEAM EXPERIENCE

Woodard & Curran has been in business since 1979 (45 years in business) and has grown to over 1,300 professionals in that time. Having served hundreds of clients over the past four decades years, we have a proven record of completing projects on time and on budget while meeting our clients' goals and objectives. Woodard & Curran is a privately held company and is steadily growing; serving public and private clients locally and nationwide. We offer specialized services in groundwater management, integrated regional planning, water supply and treatment, watershed management, water quality permitting, water recycling, flood protection and stormwater management, and wastewater collection and treatment. The Woodard & Curran Team (including Todd Groundwater) offers the Modesto Irrigation District and the Stanislaus & Tuolumne Rivers' Groundwater Basin Association (STRGBA) GSA, the perfect combination of focused development and implementation expertise with dedicated local project delivery.

Our proposed Project Manager is an expert in the groundwater field, and presented at the 2022 AEP Conference and spoke on "What is SGMA?"

Woodard & Curran has become an industry leader in groundwater studies and evaluations, integrated groundwater and surface water modeling, integrated regional water management, environmental assessment and remediation, data management, water recycling, and strategic planning. Our team of professionals have been actively involved in the development of Groundwater Management Plans since the passage of the Groundwater Management Act in 1992, and we are currently working with agencies around the State to comply with regulations created by the passage of the Sustainable Groundwater Management Act (SGMA). We have worked with many local and regional agencies throughout California—as well as the Department of Water Resources (DWR) and State Water Resources Control Board (SWRCB)—on groundwater-related projects. Through this work and our industry involvement, Woodard & Curran has helped agencies in California with the development of tools, such as integrated hydrologic models, decision support system models, and data management systems, moving toward long-term sustainable groundwater management. Woodard & Curran brings sound technical expertise and big-picture thinking to a broad range of local and regional water-related projects.

Woodard & Curran has emerged as a leader in providing support and technical studies related to Groundwater Sustainability Plans (GSPs) and their implementation. **Woodard & Curran has worked on 17 GSPs across California**; ranging from complex multi-GSA coordinated plans in critically over-drafted basins, to streamlined existing Groundwater Management Plan transforming into a GSP in very low priority basins. Our specific areas of expertise related to GSPs and hydrogeologic studies includes:

- GSP development & implementation
- Facilitation of Board, Policy Advisory, Technical Advisory and Stakeholder groups related to GSP development
- Hydrologic conceptual model development
- Basin-scale technical studies
- Water budget development
- Allocation frameworks
- Integrated surface water-groundwater modeling
- Data Management Systems and Applications
- Water accounting/pumping allocation frameworks
- Data gap assessment and monitoring network design
- Sustainable management criteria development and evaluation
- Groundwater monitoring network development
- Streamflow depletion evaluation and assessment
- Groundwater Dependent Ecosystem mapping
- Decision Support Tool Development and Consensus Building
- Climate and Related Water Supply Studies
- Conservation programming
- Finance/fiscal planning

Key issues for the 17 GSPs we've worked on range from developing cost-effective plans that reflect local needs and conditions, to prioritizing and preserving local control over water resources now and into the future while meeting the SGMA regulatory requirements for DWR. We are now implementing a range of projects and management actions in various basins statewide, such as developing groundwater recharge strategies and programs, furthering initial well inventories, metering program implementation, FloodMAR program development, and ASR program development.

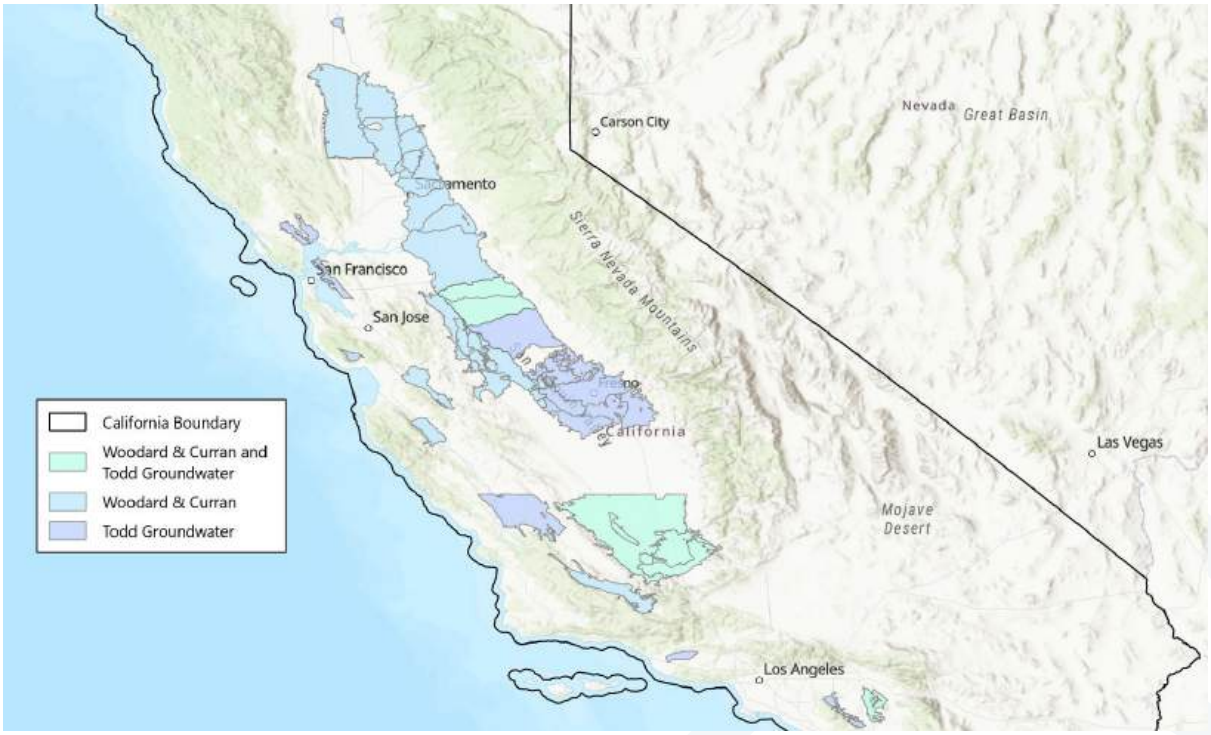
Leading our team are Senior Principals and Vice Presidents – **Leslie Dumas** (Project Manager) and **Ali Taghavi** (Principal-in-Charge). Their experience, academic training, and professional registrations and certifications are located in Section 4 – Project Team Experience and the Appendix – Resumes.

The table on the next page shows office addresses for the facilities where our work will be performed, which type of work or services will be performed in those offices, the percentage of work to be performed, and our manpower within those office.

Office Addresses	Available Manpower	% of Work	General Tasks
Sacramento 801 T Street Sacramento, CA 95811	22 Employees	Approximately 62%	• Project Management • Technical Guidance & QC Review • Groundwater Modeling • Water Resources Planning & Management • Project Administration
Los Angeles 515 S. Flower Street 18th Floor Los Angeles, CA 90071	15 Employees	Approximately 13%	• Infrastructure Design • Water Resources Planning & Management
Home Offices Various Locations	300+ Virtual Employees One Virtual Employee on the Team	Approximately 25%	• Technical Guidance and Analyses • Integrated Water Resources

Joining our team is **Todd Groundwater**, Woodard & Curran' strategic teaming partner for years. Todd Groundwater is joining the team for their expertise in Well Mitigation Planning and hydrogeology.

WOODARD & CURRAN AND TODD GROUNDWATER SGMA EXPERIENCE



Woodard & Curran and Todd Groundwater have been engaged in over 30 groundwater basins since the passing of the 2014 Sustainable Groundwater Management Act. Both Woodard & Curran and Todd Groundwater continue to jointly work together to assist basin agencies in meeting regulatory requirements in locations such as the Modesto, Turlock, Kern County, and San Jacinto groundwater basins.

Todd Groundwater specializes in the planning, development, management, and protection of groundwater and related surface water resources. For 46 years, Todd Groundwater has provided the full spectrum of hydrogeological and groundwater management services to clients. Their work—mostly for public agencies—includes basin characterization, water supply assessment, groundwater exploration, well siting, design, and installation, wellfield optimization, water quality characterization and geochemistry, water supply planning, groundwater flow and water quality modeling, managed aquifer recharge (MAR), environmental impact evaluations, engineering evaluations and annual reporting, and development of Groundwater Sustainability Plans (GSPs). They bring expertise with SGMA and have been deeply involved in SGMA implementation and compliance over the past ten years, providing technical support to more than 20 GSAs across California. These GSAs are in various stages of GSP implementation, including pumping management, demand reduction and dry well mitigation programs, as well as monitoring and reporting to demonstrate progress toward sustainability. Todd Groundwater is an employee-owned and California-registered Small Business Enterprise.

The table below shows office addresses for the facilities where Todd Groundwater's work will be performed, which type of work or services will be performed in those offices, the percentage of work to be performed, and our manpower within those office.

Office Addresses	Available Manpower	% of Work	General Tasks
Alameda 1301 Marina Village Parkway, Suite 320 Alameda, CA 94501	20 Employees	100% of Todd Groundwater's Work	• Well Mitigation Plan & Technical Guidance

Leading the Todd Groundwater team are two of their Principals. **Iris Priestaf** (President of Todd Groundwater) and **Liz Elliott** (Principal Hydrogeologist of Todd Groundwater). Their experience, academic training, and professional registrations and certifications are located in Section 4 – Project Team Experience and the Appendix – Resumes.

PROJECT EXPERIENCE

Merced GSP, Merced Water Resources Model and Merced County Groundwater Ordinance | Merced Irrigation District, City of Merced, and Merced County

Consultant Fee: $5,966,173
Completion Date: Ongoing (Woodard & Curran recently completed the GSP amendment and it was resubmitted July 2024)
Client Representative: Hicham Eltal, Deputy General Manager, Merced Irrigation District, 744 West 20th Street, Merced, CA 95340; 209.354.2854
Subconsultants Involved: Lotus Water; Brownstein, Hyatt, Farber, Schreck; The Catalyst Group; Lingustica Interpreting & Translation; Quad Knopf

Woodard & Curran has been engaged in the Merced Subbasin since 2005 with the development of various plans and projects for the Merced Area Groundwater Pool Interest (MAGPI), including construction of the state-of-the-art Merced Water Resources Model (MercedWRM), which became the primary analytical tool for developing the Subbasin's GSP and implementing the Merced County Groundwater Ordinance. The MercedWRM was initially developed in support of the Integrated Regional Water Management (IRWM) Plan, previously prepared by Woodard & Curran, and was refined and updated to support development of the Merced basin Groundwater Sustainability Plan (GSP) and the Merced County Groundwater Ordinance. MercedWRM provides a comprehensive understanding of the dynamics of the surface water and groundwater systems in the Merced area and evaluates environmental and hydrologic benefits and impacts of the water supply system and conjunctive use projects. As part of the model development, Woodard & Curran conducted extensive geologic and hydrogeologic investigation of the Merced groundwater basin, including evaluation of the USGS texture model for the area to prepare a detailed stratigraphic information to support the development of the model.

Woodard & Curran has provided guidance to the Merced Subbasin in addressing the water supply needs in the critically-overdrafted subbasin through the development and implementation of the GSP itself. This effort included identifying the level of overdraft in the Subbasin in a way that could be accepted by the stakeholders and public and that could drive an allocation process to ultimately reduce groundwater use and increase groundwater recharge. Since submission of the GSP to DWR, our team has been responsible for managing and coordinating ongoing implementation of the GSP, including developing grant applications, drafting annual reports, and leading meetings with stakeholders and decision makers. Woodard & Curran is currently preparing the Subbasin's 2025 Periodic Evaluation and GSP Amendment and has prepared all annual reports for the Subbasin to date. Development of these plans and reports included robust stakeholder engagement programs and evaluation of alternative demand management and supply side project alternatives.

Key Issues, Challenges & Unique Circumstances Addressed

- → **Planning for Sustainability:** Designated as significantly overdrafted by the Department of Water Resource, the Merced Subbasin GSAs needed to identify methods to increase groundwater recharge and/or reduce groundwater extraction. Woodard & Curran worked with the GSAs and stakeholders to identify potential projects and management actions, including recharge efforts and demand reduction programs and supported a successful grant application. For the GSP, Woodard & Curran modeled the proposed projects and management to assess against the minimum thresholds and definitions of undesirable results. This effort included developing an understanding of the sensitivity of groundwater conditions to the management of neighboring subbasins.
- → **Identifying Equitable Solutions:** Like many subbasins in the Central Valley, resources are not evenly distributed. Some portions of the basin have surface water resources, while others do not. Areas with surface water resources tend to have a higher degree of historical groundwater

management and more monitoring resources. Woodard & Curran worked with the GSAs and stakeholders to identify equitable methods to account for available groundwater resources, methods to establish representative monitoring wells, and methods to develop domestic well mitigation strategies.

→ **Quantification of depletions of interconnected surface water:** With three major rivers and many smaller watercourses, surface water is important for a range of beneficial uses and users. Quantification of depletions of interconnected surface water was necessary not only to respond to a Recommended Corrective Action from DWR, but also to develop a scientific understanding of the quantity, location, and timing of depletions. Woodard & Curran developed a modeling-based approach to achieve this by isolating the impacts of groundwater pumping in a separate scenario and assessing where and when and to what quantity changes in surface water flows occurred in the Merced Subbasin and beyond.

Eastern San Joaquin Subbasin SGMA Support | Eastern San Joaquin County Groundwater Authority

Consultant Fee: $5,190,362
Completion Date: Ongoing (the GSP amendment will be available for public review in October 2024)
Client Representative: Brandon Nakagawa, Senior Civil Engineer (Water Resources/Stormwater), Eastern San Joaquin Groundwater Authority, 1810 E. Hazelton Avenue, Stockton, CA 95201; 209.953.7460
Subconsultants Involved: NV5; Kleinfelder; Lucy & Company; Costera Waste & Environment

After developing a successful Proposition 1 Counties with Stressed Basins grant application for San Joaquin County's SGMA planning activities in 2015, Woodard & Curran assisted San Joaquin County, on behalf of the Eastern San Joaquin Subbasin GSAs, in implementing its SGMA Readiness Program, including developing a defensible, stakeholder-supported integrated hydrologic model that met the County's SGMA planning and management needs. Woodard & Curran supported development of a single GSP with the Subbasin's 16 GSAs and coordinated GSP adoption and submittal to DWR. Woodard & Curran subsequently supported GSP implementation, including responding to DWR identified deficiencies in its 2022 incomplete determination of the GSP. Work efforts conducted in support of GSP implementation include preparation of Annual Reports as required by SGMA, siting and construction of monitoring wells to fill data gaps, preparation of grant applications for obtaining funding under DWR's Sustainable Groundwater Management grant program, and analyzing DWR's comments on the adopted GSP and drafting preliminary responses and approaches to address identified deficiencies.

In support of GSP implementation, Woodard & Curran has led technical studies, modeling analyses, and policy and management criteria evaluation, in addition to improving features of the Subbasin's Data Management System, and developing new tools such as a mobile and tablet interface for the DMS to facilitate the real-time upload of data collected in the field, and a financing planning tool to

improve GSP implementation-related budgeting and fee estimation. Recently, Woodard & Curran has been supporting the ESJ Groundwater Authority and the 16 Subbasin GSAs in preparing its first 5-Year Periodic Evaluation, responding to DWR's recommended corrective actions, and preparing the GSP amendment. This work includes facilitating work with the Project Management Committee tasked with representing the GSAs and providing technical direction, conducting technical work to address the recommended corrective actions contained in DWR's approval letter, completing a substantial update to the ESJWRM integrated flow model to include new data such as Airborne Electromagnetic (AEM) surveys, completing updated water budgets and sustainable yield estimates, and revising the sustainable management criteria and representative monitoring networks for the groundwater quality, subsidence and interconnected surface water sustainability indicators.

Key Issues, Challenges & Unique Circumstances Addressed

- **Domestic Well Mitigation Program:** In response to requests from DWR, the Subbasin is developing a Domestic Well Mitigation Program. Few similar programs have been implemented to date, therefore we have reviewed the completed programs but also drawn on our ongoing work in other subbasins provide examples and recommendations to the Subbasin's GSAs.
- **Demand Reduction Program:** The ESJ Subbasin is a critically-overdrafted subbasin, and therefore, long term demand reduction will be required to achieve sustainability. We developed the framework for this program by first updating the ESJWRM integrated flow model with the latest hydrostratigraphic and hydrologic data, and then running demand reduction scenarios to estimate the required extent of reduction. We then worked collaboratively with the GSAs to discuss and select the timing of reductions considering recharge project implementation. The demand reduction program framework was included in the Subbasin's 2024 Amended GSP as a management action, and we will continue to work with the GSAs going forward to formalize and implement the demand reduction program.
- **Surface Water-Groundwater Interaction:** One of the Recommended Corrective Actions (RCAs) from DWR was to demonstrate that the groundwater levels were protective of groundwater dependent ecosystems (GDEs) and to develop sustainability criteria for interconnected surface waters (ISWs) based on rates and volumes of depletions. (The 2020 and 2022 GSPs for the Subbasin used groundwater levels as a proxy.) To address this RCA, we updated GDE mapping and conducted modeling evaluations to demonstrate that the groundwater level minimum thresholds were protective of the GDEs. We also updated the ESJWRM model to include a new layer simulating the shallowest part of the aquifer system (the part where the aquifer and surface waters are interacting) and used that to map reaches of ISW. Finally, after considering the request to use the rate and volumes of depletions as a metric for ISW SMC, we decided to use groundwater levels as a metric as those could be simulated in the model and as the rates (gradients) are dependent on groundwater levels. From that we established ISW-specific SMC, and developed a ISW-specific representative monitoring network.
- **Stakeholder Involvement:** After reviewing new DWR guidance on 5-year periodic evaluations and GSP amendments and consider the regulatory deadline for submittal of those documents, it was agreed that an ad hoc committee, the Project Management Committee (PMC), would be formed to drive the work that needed to be done to meet the deadline. The PMC membership consists of 7 representatives from the Subbasin's 16 GSAs, and reflects the Subbasin as a whole (geographically and by water use sector). The PMC is charged with driving the work products and acting as decision-making body. While the PMC met regularly during the preparation of

the 5-year Periodic Evaluation and GSP Amendment process, the resultant work products were presented to the Steering Committee and the ESJGWA Board of Directors (standing committees) for final approval. This kept time commitments and the number of meetings significantly down, allows work to proceed quickly and the regulatory deadlines to be met.

GSP Revision for the Turlock Subbasin: Well Mitigation Program and Management Actions | West Turlock Subbasin Groundwater Sustainability Agency and East Turlock Subbasin Groundwater Sustainability Agency

Consultant Fee: GSP Revision: $387,560; Well Mitigation Plan: $50,000
Completion Date: GSP Revision: Completed in July 2024; Well Mitigation Plan: Ongoing (Estimated completion January 31, 2025)
Client Representative: Michael Cooke, Water Resources and Regulatory Affairs, 156 S. Broadway, Suite 270, Turlock, CA 95380; 209.883.8364

The team of Todd Groundwater and Woodard & Curran assisted the West Turlock Subbasin Groundwater Sustainability Agency and East Turlock Subbasin Groundwater Sustainability Agency (together the GSAs) with GSP preparation and submittal in 2022. In 2024, DWR released its Determination Letter, which designated the GSP as incomplete and provided two corrective actions. In brief these are 1) to analyze the effects on wells of additional lowering of groundwater levels, and 2) to provide details of feasible projects and management actions to mitigate overdraft and raise groundwater levels. Todd Groundwater and Woodard & Curran were retained by the GSAs to prepare a Revised GSP, to conduct the necessary analyses, and to revise the GSP in accordance with DWR's corrective actions. The revised GSP—developed with significant interaction among the consultant team, GSAs, stakeholders, and DWR—was completed within a challenging 180-day schedule.

To address the first corrective action, the team analyzed potential impacts on wells of declining groundwater levels. The Revised GSP, completed and submitted on time in July 2024, includes a Resolution that commits to developing and implementing the Well Mitigation Program by January 31, 2025. The GSAs subsequently retained Todd Groundwater in August 2024 to develop a Well Mitigation Plan, with a challenging schedule of five months until plan adoption by the GSAs. This schedule can be accomplished only with strong commitment, clear communication, and frequent coordination among parties. Todd Groundwater has committed two experienced principals (Iris Priestaf and Liz Elliott) to work closely with the TAC Planning Group and the Well Mitigation Committee (when formed) with reporting to the TACs. The technical effort will build on the planning outlined in the July 2024 Resolution and will involve a sequence of subtasks starting with establishment of the Well Mitigation Committee, including development of program details, and compilation of a plan. This Well Mitigation planning is underway.

The revised GSP also addressed several key issues in response to DWR's second corrective action regarding the GSP. A major challenge was ensuring the plan not only captured a clear understanding of groundwater conditions under various hydrologic scenarios, but also provided a robust detailing of Projects and Management Actions (PMAs) that would guarantee sustainability. A major enhancement was the focus on demand reduction, which included measures like improving recharge opportunities, multi-benefit land repurposing, more efficient water use practices, and enhanced irrigation technology. This approach was designed to reduce overall water demand while maintaining agricultural productivity, offering a practical path toward balancing groundwater extraction and recharge over the long term.

Beyond technical improvement, the GSAs effectively integrated feedback from diverse stakeholders - such as agricultural, municipal, and environmental groups - ensuring that the revised plan reflected the interests of all parties while complying with state mandates. Through improved stakeholder collaboration, the GSAs were able to align local priorities with DWR's sustainability requirements. Ultimately, these efforts not only addressed the state's corrective actions but also established a strong foundation for the long-term sustainability of the Turlock Subbasin.

Key Issues, Challenges & Unique Circumstances Addressed

- Few Well Mitigation Programs have been implemented at this time; this challenge is being met by research and inquiry into multiple (6+), quite variable examples from across California in order to be comprehensive and to capture potentially useful ideas for GSA consideration.
- For additional implementation assistance, we have researched the potential role of Self-Help Enterprises and are consulting with them.
- The uniquely challenging schedule is being met with commitment of a locally experienced team and by building on Well Mitigation Program planning conducted during the GSP Revision process.
- The challenges of a subbasin with different groundwater conditions in east and west are being addressed by independent and credible research and input from Todd Groundwater, which are used for discussion and collaborative decision-making by the GSAs.

Section Four

Project Team Experience

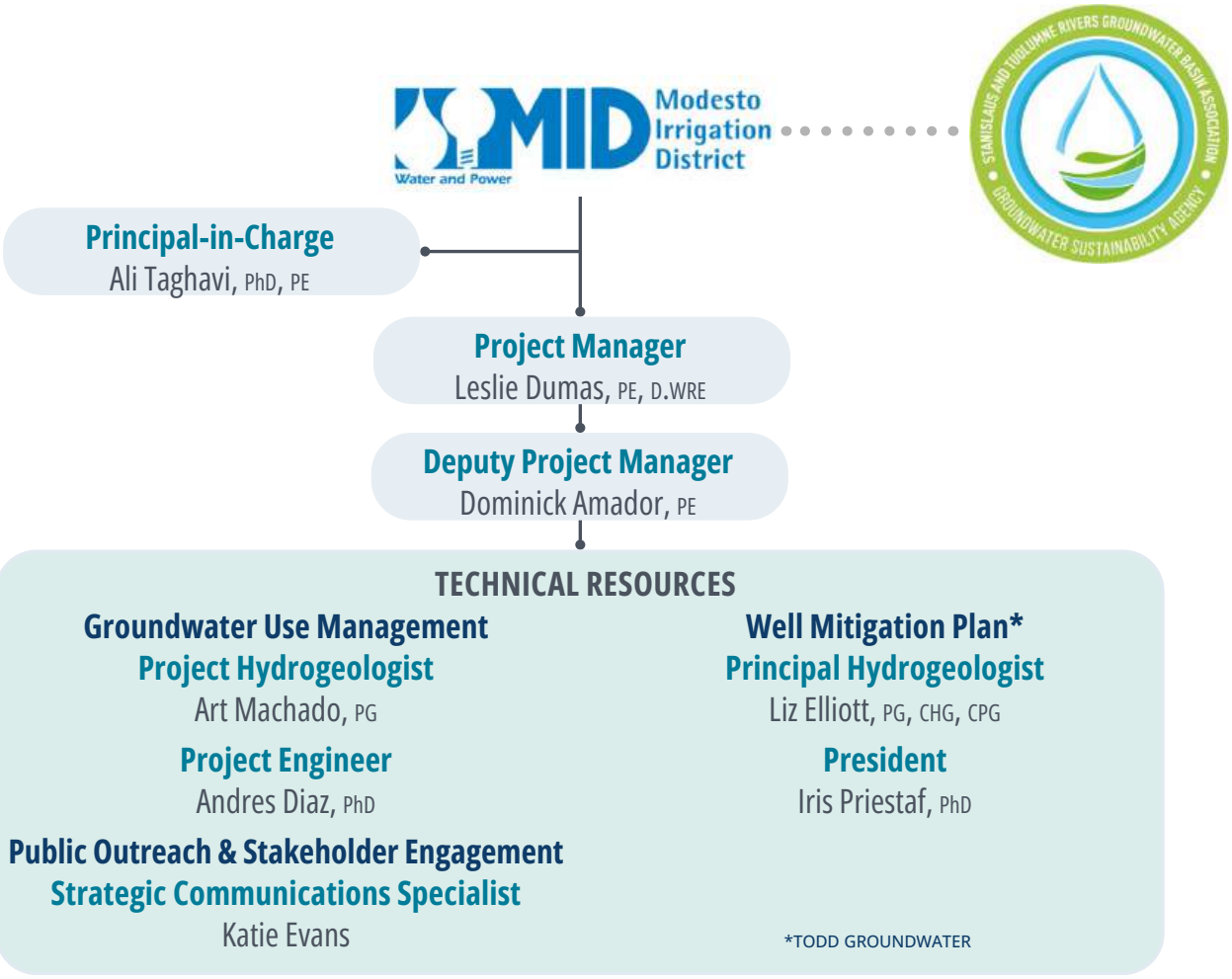
4 | PROJECT TEAM EXPERIENCE

With an experienced management team, you can be confident we will provide the necessary guidance to ensure project success. Our Project Manager, **Leslie Dumas**, has over 30 years of experience with groundwater management in California. Leslie will be responsible for the overall management of the contract and will be the primary point of contact for Modesto Irrigation District (MID). Supporting Leslie is Deputy Project Manager **Dominick Amador**. Dominick has 11 years of experience and will not only provide project management support, but will also act as the analytical lead focusing on modeling in support of program development. **Ali Taghavi** will serve as Principal-in-Charge, providing as needed support and guidance to the team. Ali will oversee this project and will ensure MID's overall satisfaction with Woodard & Curran's work. He will mobilize additional resources as needed to meet the project schedule or address project changes and will provide senior level technical feedback to the project team. **Art Machado** and **Andres Diaz** will support our team in evaluating the management actions, developing program details, conducting modeling and other analytical analyses to formalize the Groundwater Use Management Program, and engaging the GSA Working Group and public during the development process and program roll-out. **Katie Evans** is Woodard & Curran's Strategic Communication Specialist, who brings expertise in public outreach and stakeholder engagement. We have brought her onto the team as an optional service to support MID upon request/as-needed for the STRGBA GSA meetings and public workshops.

Joining our team is **Todd Groundwater**, with whom we have built a professional relationship with since 2005. Leading the Todd Groundwater team are two of their principals – **Iris Priestaf** (President of Todd Groundwater) and **Liz Elliott** (Principal Hydrogeologist). Todd Groundwater has been supporting California clients through a full spectrum of hydrogeological and groundwater management and program envisionment.

On the following pages we have included an organizational and summaries our of team's experience and qualifications, as well as their availability and commitment to this project. We have included resumes for our key personnel in the Appendix, where we go into more detail about their qualifications and representative experience within the last 5 years.

Organizational Chart



Meet Our Team

Leslie Dumas, PE, D.WRE | Project Manager

Education: Masters, Civil Engineering (Hydraulics/Hydrology), University of California-Berkeley; Bachelors, Civil Engineering (Hydraulics/Hydrology), Virgina Polytechnic Institute and State University; Multiple Subject, Clear Teaching Credentials, St. Mary's College of Education

Registrations: Professional Engineer – CA, 43897 (Civil); Certified Groundwater Professional (CGWP) – National Groundwater Association, 119931; Single Subject Teaching Credential (Both Mathematics and Geosciences) – CA Commission on Teaching Credentialing, 150031116

Years of Experience with Woodard & Curran: 19

Years of Experience Prior to Woodard & Curran: 18

Proposed Responsibilities: Project Management, Technical Guidance, Senior Technical Review, Direct Project Communications

Leslie has 37 years of experience and is a hydrologist, water resource engineer and project manager providing hydrogeologic, hydrologic, environmental and scientific consultation for projects throughout the United States. She has managed multi-disciplinary teams on a wide variety of projects, including groundwater investigation and management, modeling, resource planning, water resources planning, funding and financing, environmental permitting, stormwater runoff planning, and the investigation and clean-up of hazardous waste sites. Leslie has experience developing and implementing Management Actions, including reductions in groundwater pumping, and optimization of management within California basins. Leslie is adept at managing pumping management framework and water demand reduction. Her broad range of experience and expertise makes her a valuable project manager in that she's able to expertly lead teams of widely varying technical staff on a vast range of projects, and allows her to pull ideas and solutions from divergent project types to formulate multi-benefit solutions. As a Senior Principal at Woodard & Curran, Leslie has direct access to the firm's extensive professional resources to bring in technical experts to address whatever problem is at hand. Leslie has direct responsibility for leading the Management Actions and Well Mitigation Plan development, as well as coordinating the required services.

Dominick Amador, PE | Deputy Project Manager

Education: Masters, Bioresource and Agricultural Engineering, California Polytechnic State University; Bachelors, Biological & Environmental Engineering, Cornell University
Registrations: Professional Engineer – CA, 86145 (Civil)
Years of Experience with Woodard & Curran: 11
Years of Experience Prior to Woodard & Curran: n/a
Proposed Responsibilities: Project Management Support, Analytical and Technical Guidance and Oversight, Project Communications

Dominick has 11 years of experience in sustainable groundwater management, specializing in hydrologic modeling systems. He applies advanced knowledge in computational flow dynamics, agricultural operations, and regional groundwater management. His engineering experience extends to the development and application of several integrated surface water-groundwater modeling systems and maintains a strong background in water resources planning. Through Dominick's education and background, he maintains a robust foundation in agricultural systems and processes relating to the optimization of water resources, climate resiliency, and irrigation management. Notably, Dominick has served as project and technical manager for multiple Groundwater Sustainability Plans across California's Central Valley and the Department of Water Resources' San Joaquin Basin Watersheds Studies.

Ali Taghavi, PhD, PE | Principal-in-Charge

Education: Doctorate, Civil & Environmental Engineering, University of California-Davis; Masters, Civil Engineering, University of California-Davis; Bachelors, Civil & Environmental Engineering, University of California-Berkeley
Registrations: Professional Engineer – CA, 50494 (Civil)
Years of Experience with Woodard & Curran: 25
Years of Experience Prior to Woodard & Curran: 9

Proposed Responsibilities: Project Management Support, Senior Technical Review and Guidance, Quality Control Review

Dr. Ali Taghavi, a recipient of the prestigious Fischer Delta Award from the California Water and Environmental Modeling Forum, has 34 years of experience in water resources planning and management, groundwater planning and regulatory compliance, integrated water planning, sustainable groundwater management, integrated groundwater and surface water modeling, water budget analysis, water quality assessment, reservoirs operations, and conveyance and distribution systems operations. Ali is recognized as an expert in development and implementation of Groundwater Sustainability Plans (GSP) and has served as project director, project manager, or technical director for development of several important GSPs for critically overdrafted basins, as well as high priority basins throughout the state.

Ali has coordinated a wide range of water resources, hydrologic, hydrogeologic, and geologic investigations for integrated water management programs, as well as groundwater management, conjunctive use and other water supply plans. He has been involved in the planning and design of conjunctive use projects and other major basin planning efforts in the Sacramento Valley, San Joaquin Valley, Southern California, the high desert areas, as well as in the Central Coastal region of California. He has provided hydrologic and water quality analysis in support of environmental reviews and has managed and directed many water resource planning efforts through the complete project life cycle—data collection, basin characterization, model development, establishment of goals and objectives, feasibility studies, conceptualization and screening of alternatives, and support for environmental evaluations.

Art Machado, PG | Groundwater Use Management: Project Hydrogeologist

Education: Masters, Geology, Georgia State University; Bachelors, Geology, University of Georgia
Registrations: Professional Geologist – CA, 10244
Years of Experience with Woodard & Curran: 1
Years of Experience Prior to Woodard & Curran: 6
Proposed Responsibilities: Technical Support, Regulatory Guidance, Outreach & Engagement

Art is a registered professional geologist with over seven years of experience evaluating and managing groundwater resources and the remediation of sites in both public and private sectors. Through his experience in public service with both the California Department of Water Resources (DWR) and Department of Toxic Substances Control, Art has extensive knowledge of California's groundwater and environmental regulations. During his appointment within the DWR's Sustainable Groundwater Management Office, Art evaluated and provided recommendations on Groundwater Sustainability Plans and Annual Reports for several medium to high priority and critically overdrafted designated groundwater basins throughout California. In this position, Art also acted as a basin assessment lead which allowed him to evaluate all reviews completed by Department staff for each section of the Groundwater Sustainability Plans and presented these findings to executive staff with a proposed determination. Art has experience with scheduling, implementing and overseeing field work and programs.

Andres Diaz, PhD | Groundwater Use Management: Project Engineer

Education: Doctorate, Civil & Environmental Engineering, University of California-Davis; Masters, Civil & Environmental, University of California-Davis; Bachelors, Civil & Environmental Engineering, Universidad de los Andes
Years of Experience with Woodard & Curran: 4
Years of Experience Prior to Woodard & Curran: 3
Proposed Responsibilities: Modeling and Technical Support

Andres has seven years of experience in water resources engineering, including atmospheric and hydrologic modeling. He has worked in groundwater modeling, stochastic analysis of hydrologic processes and climate change impacts. His experience includes the development, calibration and use of water resources models, development of scripts in aid of model data processing and use of GIS and spatial analysis. Andres was responsible for calibration and application of the model to support the Turlock (West Turlock Subbasin and East Turlock Subbasin Groundwater GSAs) GSP development, including development of historical water budgets, establishment of sustainable management criteria, and assessment of projects and management actions. Andres has been supporting the GSAs in converting highly technical modeling results in easily understood graphical and tabular information for presentation to the Technical Advisory Committee and the GSA board of Directors.

Katie Evans | Public Outreach & Stakeholder Engagement: Strategic Communications Specialist

Education: Masters, Journalism, Arizona State University; Bachelors, Public Policy & Management, Northwestern University
Registrations: Water Treatment Operator Grade 2 – CA, 30322; Water Distribution D2 – CA, 35342; J. Lindsey Wolf Certification in Communication – CA; Grade 2 Water Practitioner – AWWA – CA & NV Section, 1902
Years of Experience with Woodard & Curran: 2
Years of Experience Prior to Woodard & Curran: 13
Proposed Responsibilities: Public Outreach and Stakeholder Engagement

Katie has 15 years of experience in strategic communications and community outreach for public agencies. Her approach to large-scale outreach efforts begins with a research-based assessment of the best localized outreach techniques and the most effective key messaging. This research helps determine the most efficient and effective ways to engage the community – from hotlines and websites to door-to-door contacts. Katie's previous work in disadvantaged communities has included collaborating with grassroots organizations that are trusted by community members to develop relationships on behalf of the project. Prior to Woodard & Curran, Katie worked for Coachella Valley Water District as their Director of Communications and Conservation. She managed strategic outreach and education including District branding, website management, social media, digital and print advertising, email campaigns, press campaigns, various internal and external newsletters, press releases and news conferences. Katie oversaw all tours, workshops, and events.

Liz Elliott, PG, CHG, CPG | Well Mitigation Plan: Principal Hydrogeologist *(Todd Groundwater)*

Education: Masters, Hydrologic Sciences, University of California-Davis; Bachelors, Earth & Environmental Sciences, Wesleyan University
Registrations: Professional Geologist – CA, 8446; Certified Hydrogeologist – CA, 973; Certified Professional Geologist – American Institute of Professional Geologists, 10931
Years of Experience with Todd Groundwater: 11
Years of Experience Prior to Todd Groundwater: 14
Proposed Responsibilities: Well Mitigation Planning, Technical Guidance

Liz Elliott is an accomplished hydrogeologist with over 25 years of consulting experience. She has extensive experience with hydrogeologic characterization of groundwater basins, MODFLOW groundwater flow models and groundwater management plans, including Groundwater Sustainability Plans (GSPs). All her GSP experience is with Todd Groundwater. She is currently serving as Project Manager on GSP implementation projects in the Modesto and Turlock subbasins including annual reporting, monitoring, and projects and management actions. Her major current commitments include GSP implementation work for the Turlock Subbasin GSAs. This includes a recent proposal to prepare the SGMA annual report, which will be completed by April 1, 2025 and the contracted Well Mitigation Report to be completed for adoption by January 31, 2025. Liz also is committed to the contract for the Modesto Subbasin Annual Reports and GSP Update, which extends to 2029; Liz regards the Modesto Well Mitigation Plan as complementary and even synergistic with that effort. She has the availability, interest, and resources for the Well Mitigation Report.

Iris Priestaf, PhD | Well Mitigation Plan: President *(Todd Groundwater)*

Education: Doctorate, Geography, University of California-Berkeley; Masters, Geography, University of California-Berkeley; Bachelors, Geography, University of California-Santa Barbara
Years of Experience with Todd Groundwater: 41
Years of Experience Prior to Todd Groundwater: n/a
Proposed Responsibilities: Well Mitigation Planning, Technical Guidance, Senior Technical Review

Iris Priestaf has 41 years' experience in groundwater basin management including SGMA planning for seven GSPs and three Alternative Plans. She has participated in all aspects of SGMA implementation, including the three projects below (all with Todd Groundwater) that are directed to mitigation of potential impacts on wells of groundwater level declines associated with basin management. She currently serves as Principal-in-Charge for four SGMA projects (Modesto, Turlock, Indio, and San Benito subbasins) with varying timelines and levels of effort but has availability to commit to preparation of the Modesto Well Mitigation Plan.

Team Member Commitments

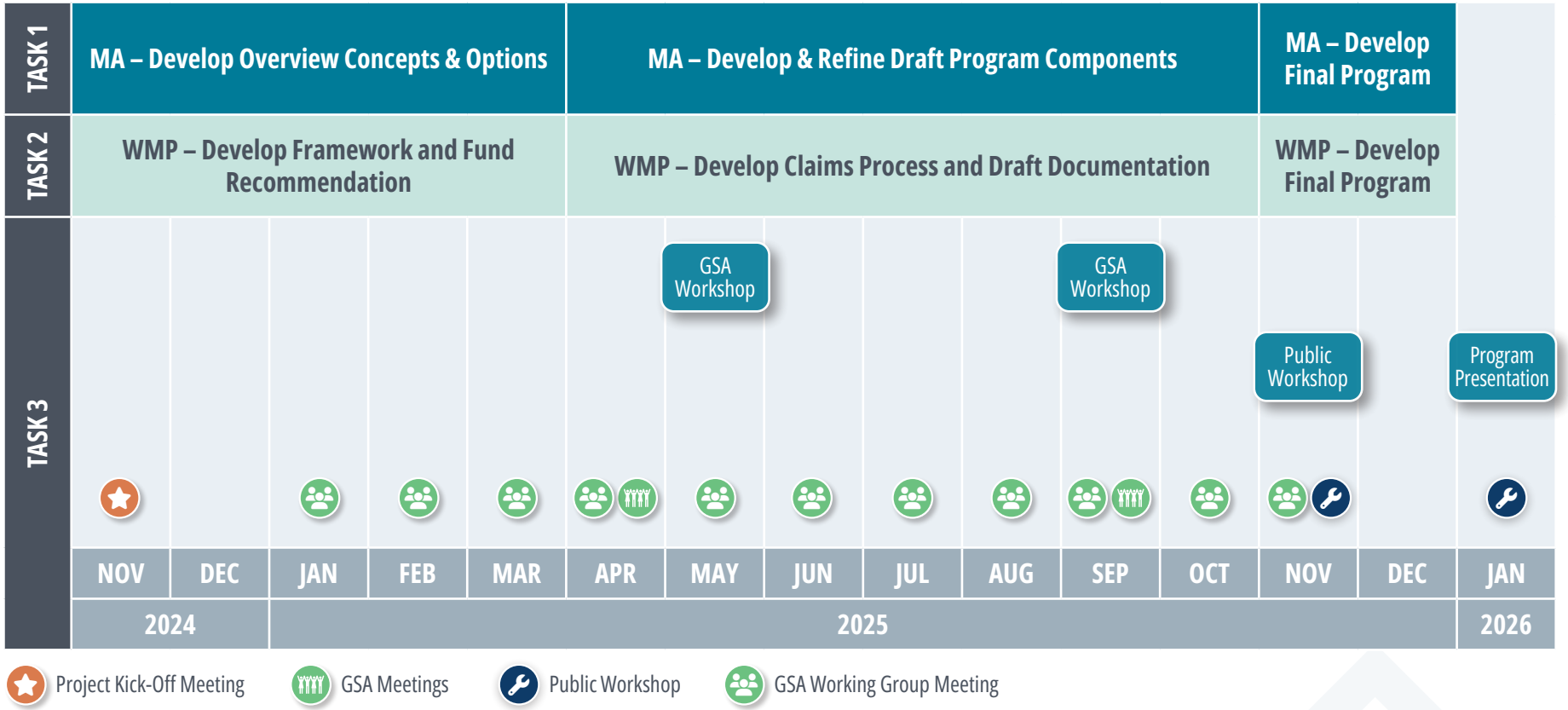
The table on the next page highlights information on all projects that are currently in progress to which the team member is committed, the level of commitment, and when that commitment is expected to end.

Team Member	Project Commitments	Level of Commitment	Expected End Date of Commitments
Leslie Dumas, PE, D.WRE Project Manager	• Sutter Subbasin • Eastern San Joaquin Subbasin • Calaveras River Watershed Study	• 30% • 15% • 15%	• March 31, 2026 • December 2025 • March 31, 2026
Dominick Amador, PE Deputy Project Manager	• Modesto Subbasin • Turlock Subbasin • Department of Water Resources	• 20% • 20% • 20%	• January 2027 • January 2027 • August 2027
Ali Taghavi, PhD, PE Principal-in-Charge	• Modesto Subbasin • Turlock Subbasin • DWR • EMWD • Cuyama • Eastern San Joaquin	• 10% • 10% • 20% • 10% • 5% • 10%	• January 2027 • January 2027 • August 2027 • April 2025 • Dec. 2025 • April 2025
Art Machado, PG Groundwater Use Management: Project Hydrogeologist	• Merced Subbasin • Bulletin 118 Support • North American Subbasin • Confidential Project/Client	• Approximately 80% across all commitments	• 40% through early 2025 • 40% through early 2027
Andres Diaz, PhD Groundwater Use Management: Project Engineer	• Modesto Subbasin • Turlock Subbasin • Department of Water Resources	• 25% • 25% • 10%	• January 2027 • January 2027 • August 2027
Katie Evans Public Outreach & Stakeholder Engagement: Strategic Communications Specialist	• Sonoma County GSAs Outreach and Dashboard • Coachella Valley Regional Water Management Group and associated funding programs • Eastern Municipal Water District Conservation Marketing and Outreach	• 20% • 15% • 10%	• March 1, 2025 • June 30, 2025 • June 30, 2025
Liz Elliott, PG, CHG, CPG Well Mitigation Plan: Principal Hydrogeologist	• Modesto Subbasin • Turlock Subbasin	• 15-40% • 40%	• Through April 2029 • Through April 2025
Iris Priestaf, PhD Well Mitigation Plan: President	• Modesto Subbasin Annual and 5-yr • Indio Subbasin • San Benito Subbasin • Turlock Subbasin	• 10% • 10% • 10% • 15%	• Through Dec 2026 • Through Oct 2025 • Through March 2025 • Through March 2025

Section Five

Proposed Project Schedule

Our Proposed Project Schedule is shown below.



Section Six

Estimated Level of Effort Matrix

Woodard & Curran

Client: Modesto Irrigation District & STRGBA GSA
Project: 2024 Well Mitigation Program and GSP Management Actions

Phases	Labor		
	Woodard & Curran	Todd Groundwater	Total Labor
Task 1: Groundwater Use Management Program			
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program	50	0	50
1.2 Groundwater Allocation Program	94	0	94
1.3 Groundwater Use Extraction Fee	50	0	50
1.4 Groundwater Pumping Credit/Trading Program	71	0	71
1.5 Voluntary Conservation Program	50	0	50
Subtotal Task 1:	315	0	315
Task 2: Well Mitigation Plan			
2.1 Develop Framework for Well Mitigation Plan/Program	0	6	6
2.2 Provide Recommendations for a Well Mitigation Fund	0	14	14
2.3 Develop Well Owners Claims Process	0	30	30
2.4 Prepare Mitigation Plan Documentation	8	43	51
Subtotal Task 2:	8	93	101
Task 3: Project Management and Public Outreach			
3.1 Facilitate and Participate in a Program Development Working Group	100	44	144
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	86	28	114
3.3 As-Needed Outreach (optional)	0	0	0
Subtotal Task 3:	186	72	258
Task 4: Project Management and Communications			
4.1 Monthly Invoicing and Progress Reports	48	2	50
4.2 Project Communication/Coordination	60	16	76
Subtotal Task 4:	108	18	126
TOTAL	617	183	800

Woodard & Curran

Client: Modesto Irrigation District & STRGBA GSA

Project: 2024 Well Mitigation Program and GSP Management Actions

Phases	Ali Taghavi	Leslie Dumas	Dominick Amador	Andres Diaz	Art Machado	Staff Engineer/Planner	Katie Evans	Sr. Project Assistant	Total Hours
	PIC	PM	DPM	Modeling Support	PG	E2/P2	**OPTIONAL** Outreach	Project Administrator	
Task 1: Groundwater Use Management Program									
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program	2	16				32			50
1.2 Groundwater Allocation Program	2	8	16	60	8				94
1.3 Groundwater Use Extraction Fee	2	16	8		24				50
1.4 Groundwater Pumping Credit/Trading Program	3	12	12	20	24				71
1.5 Voluntary Conservation Program	2	8	8			32			50
Subtotal Task 1:	11	60	44	80	56	64	0	0	315
Task 2: Well Mitigation Plan									
2.1 Develop Framework for Well Mitigation Plan/Program									0
2.2 Provide Recommendations for a Well Mitigation Fund									0
2.3 Develop Well Owners Claims Process									0
2.4 Prepare Mitigation Plan Documentation	4	4							8
Subtotal Task 2:	4	4	0	0	0	0	0	0	8
Task 3: Project Management and Public Outreach									
3.1 Facilitate and Participate in a Program Development Working Group	8	30	30	16	16				100
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	6	24	24	12	12			8	86
Subtotal Task 3:	14	54	54	28	28	0	0	8	186
Task 4: Project Management and Communications									
4.1 Monthly Invoicing and Progress Reports		14	20					14	48
4.2 Project Communication/Coordination	6	20	20					14	60
Subtotal Task 4:	6	34	40	0	0	0	0	28	108
TOTAL without Optional Support	35	152	138	108	84	64	0	36	617

TODD GROUNDWATER

Client: Modesto Irrigation District & STRGBA GSA

Project: 2024 Well Mitigation Program and GSP Management Actions

Phases						
	Iris Priestaf	Liz Elliott				Total Hours
	President	Principal Hydrogeologist	Senior Hydrogeologist	GIS/Graphics	Admin.	
Task 1: Groundwater Use Management Program						
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program						0
1.2 Groundwater Allocation Program						0
1.3 Groundwater Use Extraction Fee						0
1.4 Groundwater Pumping Credit/Trading Program						0
1.5 Voluntary Conservation Program						0
Subtotal Task 1:	0	0	0	0	0	0
Task 2: Well Mitigation Plan						
2.1 Develop Framework for Well Mitigation Plan/Program	2	4				6
2.2 Provide Recommendations for a Well Mitigation Fund	4	8	2			14
2.3 Develop Well Owners Claims Process	8	16	6			30
2.4 Prepare Mitigation Plan Documentation	10	20	4	7	2	43
Subtotal Task 2:	24	48	12	7	2	93
Task 3: Project Management and Public Outreach						
3.1 Facilitate and Participate in a Program Development Working Group	10	24	10			44
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	8	14	6			28
Subtotal Task 3:	18	38	16	0	0	72
Task 4: Project Management and Communications						
4.1 Monthly Invoicing and Progress Reports					2	2
4.2 Project Communication/Coordination		16				16
Subtotal Task 4:	0	16	0	0	2	18
TOTAL	42	102	28	7	4	183

Statement of Qualifications and Proposal for Modesto Irrigation District on behalf of the Stanislaus & Tuolumne Rivers' Groundwater Basin Association Groundwater Sustainability Agency

Development of a Well Mitigation Plan & Management Actions for the Modesto Subbasin Groundwater Sustainability Plan

PROPOSED COMPENSATION

September 30,
2024

Woodard & Curran

TODD GROUNDWATER

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Sacramento, CA 95811
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T 916.999.8700
F 916.999.8701

9/30/2024

Jesse Franco
Civil Engineering Manager
Modesto Irrigation District
Civil Engineering Department
1231 11th Street
Modesto, CA 95354

RE: Proposed Compensation for Consultant Services to Develop a Well Mitigation Plan and Management Actions for the Modesto Subbasin Groundwater Sustainability Plan

Dear Mr. Franco:

Thank you for the opportunity for Woodard & Curran to submit our proposal for the Development of a Well Mitigation Plan and Management Actions for the Modesto Subbasin Groundwater Sustainability Plan. Our Fee Proposal includes the following attachments:

- **Fee Estimate, including other direct costs/expenses**
- **Rate Sheets showing labor rates by position**

We anticipate direct costs to include reproduction, delivery, mileage (rates will be those allowed by current IRS guidelines), and travel expenses (e.g., tolls). Furthermore, this estimate does not include costs (labor and expenses) for optional services such as support for outreach, public communication and/or facilitation services provided by either Katie Evans of Woodard & Curran or by Self-Help Enterprises. The fee for these services will be provided based on the scope of the requested services. All scopes and fees for these optional additional services will be agreed upon prior to implementation. Finally, our overall multiplier for this work is 4.02.

Thank you for giving Woodard & Curran the opportunity to propose on this project. Our proposal will be submitted electronically and provided in hard copy form as a separate package. Leslie Dumas is authorized to sign legal binding commitments, and you can reach her at 916.999.8778 or ldumas@woodardcurran.com. Thank you again for the opportunity to submit our proposal.

Sincerely,

WOODARD & CURRAN, INC.

Leslie Dumas, PE
Vice President/Project Manager

Ali Taghavi, PhD, PE
Vice President/Principal-in-Charge

Section Seven

Proposed Compensation

Woodard & Curran

Fee Estimate

Client: Modesto Irrigation District & STRGBA GSA

September 2024

Project: 2024 Well Mitigation Program and GSP Management Actions

Phases	Labor			ODCs	Total
	Woodard & Curran	Todd Groundwater	Total Labor Costs (1)	Total ODCs (2)	Total Fee
Task 1: Groundwater Use Management Program					
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program	$14,250	$0	$14,250	$0	$14,250
1.2 Groundwater Allocation Program	$28,750	$0	$28,750	$0	$28,750
1.3 Groundwater Use Extraction Fee	$16,170	$0	$16,170	$0	$16,170
1.4 Groundwater Pumping Credit/Trading Program	$22,235	$0	$22,235	$0	$22,235
1.5 Voluntary Conservation Program	$13,850	$0	$13,850	$0	$13,850
Subtotal Task 1:	$95,255	$0	$95,255	$0	$95,255
Task 2: Well Mitigation Plan					
2.1 Develop Framework for Well Mitigation Plan/Program	$0	$1,760	$1,760	$0	$1,760
2.2 Provide Recommendations for a Well Mitigation Fund	$0	$3,940	$3,940	$0	$3,940
2.3 Develop Well Owners Claims Process	$0	$8,300	$8,300	$0	$8,300
2.4 Prepare Mitigation Plan Documentation	$2,920	$11,255	$14,175	$0	$14,175
Subtotal Task 2:	$2,920	$25,255	$28,175	$0	$28,175
Task 3: Project Management and Public Outreach					
3.1 Facilitate and Participate in a Program Development Working Group	$32,760	$12,060	$44,820	$240	$45,060
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	$26,710	$7,720	$34,430	$1,000	$35,430
3.3 As-Needed Outreach (optional)	$0	$0	$0	$0	$0
Subtotal Task 3:	$59,470	$19,780	$79,250	$1,240	$80,490
Task 4: Project Management and Communications					
4.1 Monthly Invoicing and Progress Reports	$13,370	$320	$13,690	$0	$13,690
4.2 Project Communication/Coordination	$17,750	$4,640	$22,390	$0	$22,390
Subtotal Task 4:	$31,120	$4,960	$36,080	$0	$36,080
TOTAL	$188,765	$49,995	$238,760	$1,240	$240,000

Notes:

1. The individual hourly rates include salary, overhead and profit.
2. Other direct costs (ODCs) such as reproduction, delivery, mileage (rates will be those allowed by current IRS guidelines), and travel expenses, will be billed at actual cost.
3. W&C reserves the right to adjust its hourly rate structure and ODC markup at the beginning of the calendar year for all ongoing contracts.
4. Additional Woodard & Curran staff may perform work on the project, based on our standard billing rate schedule currently in effect.

Woodard & Curran

Client: Modesto Irrigation District & STRGBA GSA

Project: 2024 Well Mitigation Program and GSP Management Actions

Phases	Ali Taghavi	Leslie Dumm	Dominick Amador	Andres Diaz	Art Machado	Staff Engineer/Planner	Katie Evans	Sr. Project Assistant	Total Hours	Total Labor Costs (1)
	PIC	PM	DPM	Modeling Support	PG	E2/P2	**OPTIONAL** Outreach	Project Administrator		
	$365	$365	$315	$295	$295	$240	$355	$140		
Task 1: Groundwater Use Management Program										
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program	2	16				32			50	$14,250
1.2 Groundwater Allocation Program	2	8	16	60	8				94	$28,750
1.3 Groundwater Use Extraction Fee	2	16	8		24				50	$16,170
1.4 Groundwater Pumping Credit/Trading Program	3	12	12	20	24				71	$22,235
1.5 Voluntary Conservation Program	2	8	8			32			50	$13,850
Subtotal Task 1:	11	60	44	80	56	64	0	0	315	$95,255
Task 2: Well Mitigation Plan										
2.1 Develop Framework for Well Mitigation Plan/Program									0	$0
2.2 Provide Recommendations for a Well Mitigation Fund									0	$0
2.3 Develop Well Owners Claims Process									0	$0
2.4 Prepare Mitigation Plan Documentation	4	4							8	$2,920
Subtotal Task 2:	4	4	0	0	0	0	0	0	8	$2,920
Task 3: Project Management and Public Outreach										
3.1 Facilitate and Participate in a Program Development Working Group	8	30	30	16	16				100	$32,760
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	6	24	24	12	12			8	86	$26,710
Subtotal Task 3:	14	54	54	28	28	0	0	8	186	$59,470
Task 4: Project Management and Communications										
4.1 Monthly Invoicing and Progress Reports		14	20					14	48	$13,370
4.2 Project Communication/Coordination	6	20	20					14	60	$17,750
Subtotal Task 4:	6	34	40	0	0	0	0	28	108	$31,120
TOTAL without Optional Support	35	152	138	108	84	64	0	36	617	$188,765

TODD GROUNDWATER

Fee Estimate

Client: Modesto Irrigation District & STRGBA GSA

September 2024

Project: 2024 Well Mitigation Program and GSP Management Actions

Phases	Iris Priestaf	Liz Elliott				Total Hours	Total Fee
	President	Principal Hydrogeologist	Senior Hydrogeologist	GIS/Graphics	Admin.		
	$300	$290	$210	$185	$160		
Task 1: Groundwater Use Management Program							
1.1 Groundwater Extraction & Surface Water Delivery Accounting and Reporting Program						0	$0
1.2 Groundwater Allocation Program						0	$0
1.3 Groundwater Use Extraction Fee						0	$0
1.4 Groundwater Pumping Credit/Trading Program						0	$0
1.5 Voluntary Conservation Program						0	$0
Subtotal Task 1:	0	0	0	0	0	0	$0
Task 2: Well Mitigation Plan							
2.1 Develop Framework for Well Mitigation Plan/Program	2	4				6	$1,760
2.2 Provide Recommendations for a Well Mitigation Fund	4	8	2			14	$3,940
2.3 Develop Well Owners Claims Process	8	16	6			30	$8,300
2.4 Prepare Mitigation Plan Documentation	10	20	4	7	2	43	$11,255
Subtotal Task 2:	24	48	12	7	2	93	$25,255
Task 3: Project Management and Public Outreach							
3.1 Facilitate and Participate in a Program Development Working Group	10	24	10			44	$12,060
3.2 Assist with and Participate in Public Workshops and Outreach Efforts	8	14	6			28	$7,720
Subtotal Task 3:	18	38	16	0	0	72	$19,780
Task 4: Project Management and Communications							
4.1 Monthly Invoicing and Progress Reports					2	2	$320
4.2 Project Communication/Coordination		16				16	$4,640
Subtotal Task 4:	0	16	0	0	2	18	$4,960
TOTAL	42	102	28	7	4	183	$49,995

Woodard & Curran

Rate Schedule

Water Standard 2024

STAFF TYPE	HOURLY RATE
Project Assistant	$140
Drafter	$160
Designer / Engineer 1 / Planner 1 / Technical Specialist 1	$210
Engineer 2 / Planner 2 / Technical Specialist 2	$240
Engineer 3 / Planner 3 / Senior Designer / Technical Specialist 3	$265
Project Engineer 1 / Project Planner 1 / Project Technical Specialist 1	$280
Project Engineer 2 / Project Planner 2 / Project Technical Specialist 2	$295
Project Manager 1 / Technical Manager 1	$315
Project Manager 2 / Technical Manager 2	$330
SCADA Service Manager / Senior Project Manager / Senior Technical Manager	$355
Senior Technical Leader	$365
National Practice Leader	$370

EXPENSES	
Travel	$0.67 / mile
Other Direct Costs	At Cost Plus 10%
Subconsultants/Subcontractors	At Cost Plus 10%

NOTES

Mileage rate will change as the federal allowable rate is modified.

TODD GROUNDWATER

PLANNING • DEVELOPMENT • MANAGEMENT • PROTECTION

SCHEDULE OF CHARGES

2024

Professional Services	Hourly Rate
Principal Consultant	$ 300 to $ 315
Principal Geologist/ Hydrogeologist	$ 275 to $ 300
Principal Engineer	$ 275 to $ 300
Consulting Hydrogeologist/Modeler/Engineer	$ 250 to $ 290
Senior Engineer	$ 240 to $ 290
Senior Geologist/Hydrogeologist	$ 240 to $ 290
Senior Hydrologist	$ 260 to $ 295
Associate Geologist/Hydrogeologist/Engineer	$ 185 to $ 235
Staff Geologist/Hydrogeologist/Engineer	$ 155 to $ 180
Technical Services	
Data Analyst/GIS/Graphics	$ 165 to $ 185
Administrative/Clerical	$ 140 to $ 160

Rates are subject to adjustment in January

Travel Time
Travel time will be charged at regular hourly rates.

Litigation, Depositions, and Testimony
Deposition and trial testimony are charged at twice hourly rates.

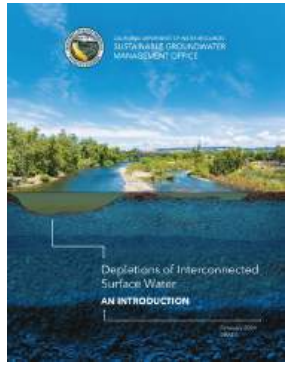
Outside Services
All services not ordinarily furnished by Todd Groundwater, including printing, subcontracted services, local mileage, travel by common carrier, etc. are billed at cost + 15%. Local mileage is billed at the current Federal mileage rate.

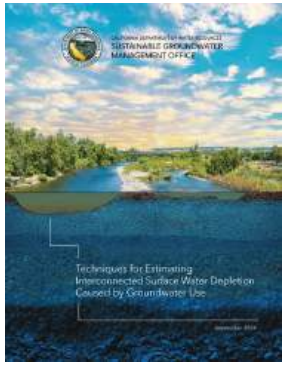
DWR's Draft Interconnected Surface Water Papers

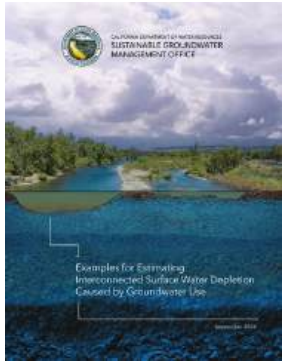
STRGBA GSA Meeting
November 13, 2024

DWR's Draft ISW Papers

- DWR released three DRAFT papers in 2024 with technical information related to interconnected surface water (ISW) and depletions of ISW caused by groundwater use.
- Purpose is to provide GSAs with technical information on ISW depletion, including data needs, quantification methods, and examples from hypothetical basins.
- A public comment period is open until November 18, 2024.

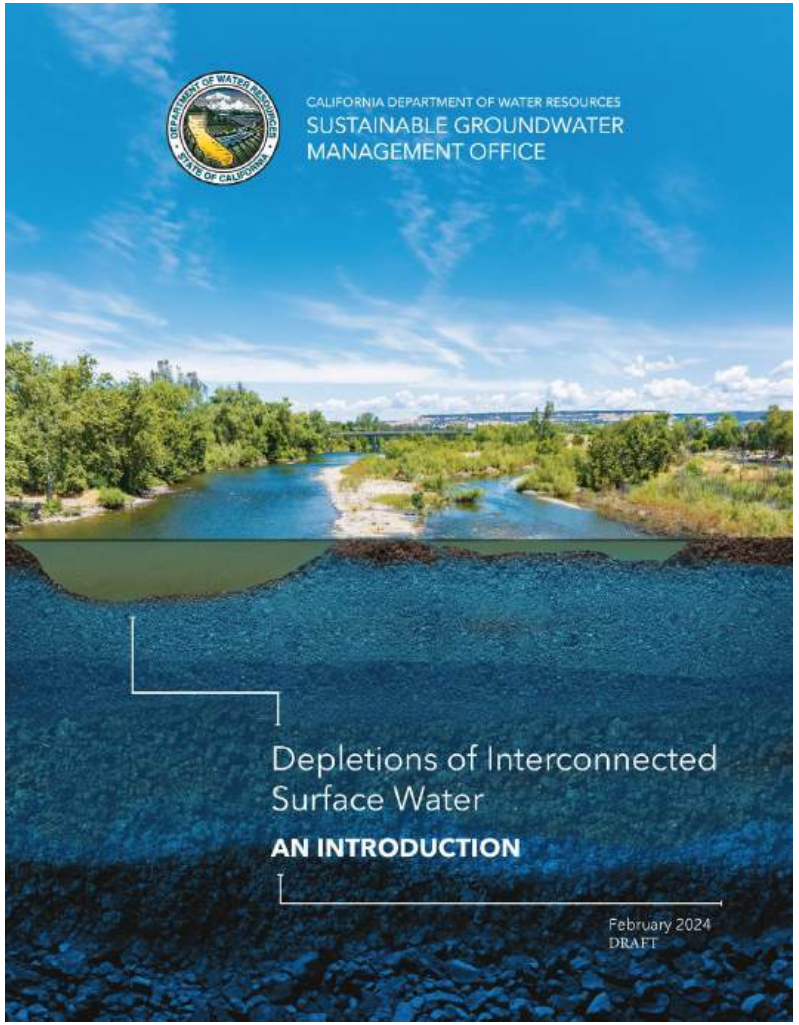






** These are <u>not</u> guidance documents. DWR will work on guidance documents for ISW depletion following the release of these papers.

Paper #1: Depletions of Interconnected Surface Water, An Introduction



Describes what ISW conditions are and how they can be depleted by groundwater pumping

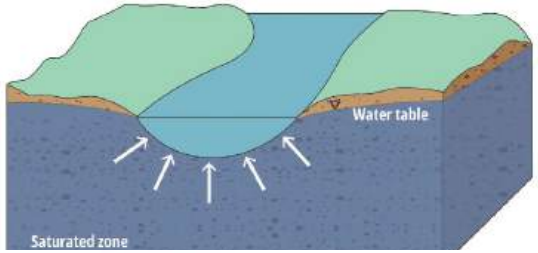
February 2024

TODD GROUNDWATER

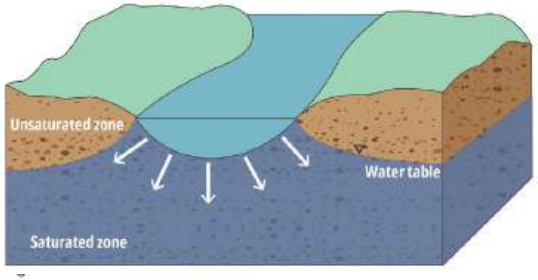
DRAFT

Paper #1
What is Interconnected Surface Water?

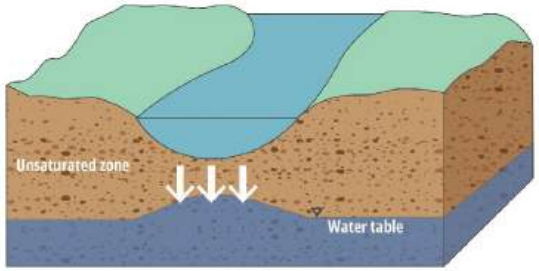
"Interconnected surface water refers to surface water that is hydrologically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted."



Interconnected: groundwater elevation is higher than the surface water elevation, groundwater flows to surface water (gaining)



Interconnected: groundwater elevation is lower than the surface water elevation, surface water flows to groundwater (losing)



Disconnected: unsaturated zone separates the surface water from the groundwater. Further lowering of groundwater elevations does not change flow rate from surface water to groundwater.

TODD GROUNDWATER

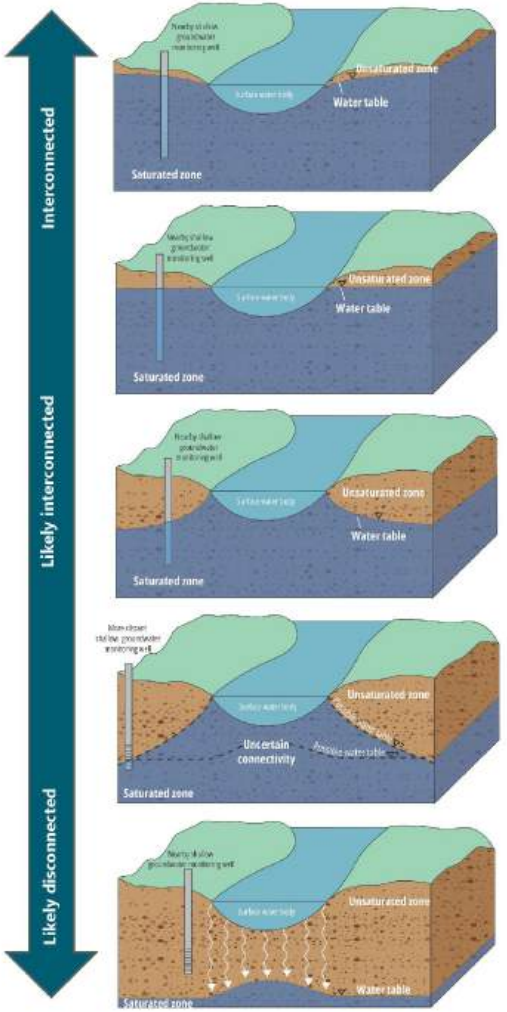
DRAFT

Paper #1
How to identify ISW with groundwater elevation data?

Compare groundwater elevation data at wells near the surface water body with the elevation of the bottom of the surface water body.

- Shallow groundwater elevations close to the elevation of the streambed may suggest connectivity through a saturated zone.
- Nearby shallow wells that exhibit groundwater elevations that mirror water levels in the adjacent surface water body may indicate a connection.

(Certainty of using groundwater elevation data depends on wells distance from the stream and the difference between the stream levels and the groundwater levels.)



Paper #1
What are Depletions of Interconnected Surface Water?

Depletions are defined as conditions where groundwater pumping results in reductions in flow or water levels of ISW.

- Pumping lowers groundwater levels, which results in a reduction in streamflow or volume of water in a surface water body in two ways:
  - A reduction of inflow to an ISW from groundwater
  - An increase in outflow from an ISW to groundwater
- Depletions occur with any volume or rate of pumping; there is no level of pumping that would not affect ISW.
- Depletions cannot be measured directly because they represent the difference in surface water flows with groundwater pumping in place, which can be measured, and surface water flows without groundwater pumping in place, which cannot be measured.
- There is a time lag between pumping and depletions – it can take years, decades or centuries after pumping before full impact of pumping on depletions is experienced.

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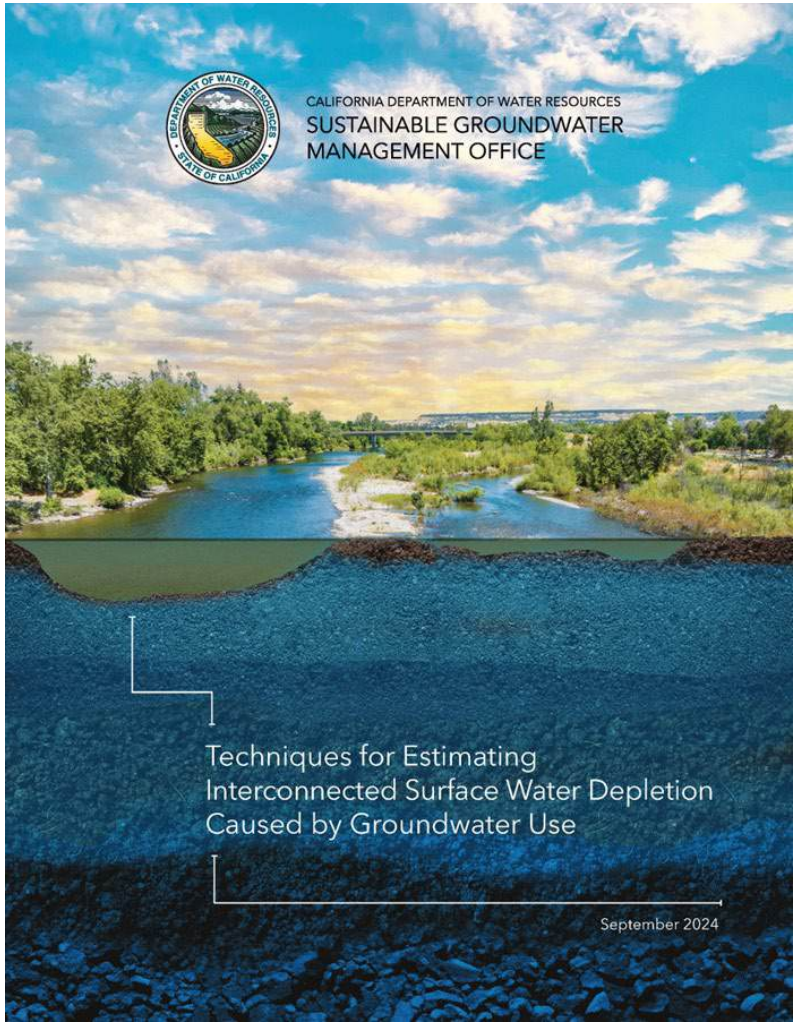
Paper #2: Techniques for Estimating Interconnected Surface Water Depletion Caused by Groundwater Use



Identifies the types of data and methodologies commonly used to estimate ISW depletion

September 2024

TODD GROUNDWATER

DRAFT

Paper #2
ISW Depletion Estimation is a Function of Two Types of Data

- Pumping information
  - Quantity
  - Horizontal location (where wells are located)
  - Vertical location (depth where pumping occurs)
- Aquifer and Surface Water Interface Characteristics
  - Horizontal and vertical hydraulic conductivity
  - Thickness and geometry of aquifers
  - Aquifer storage parameters
  - Conductance of the surface water beds
  - Characteristics of faults that can influence the flow of groundwater

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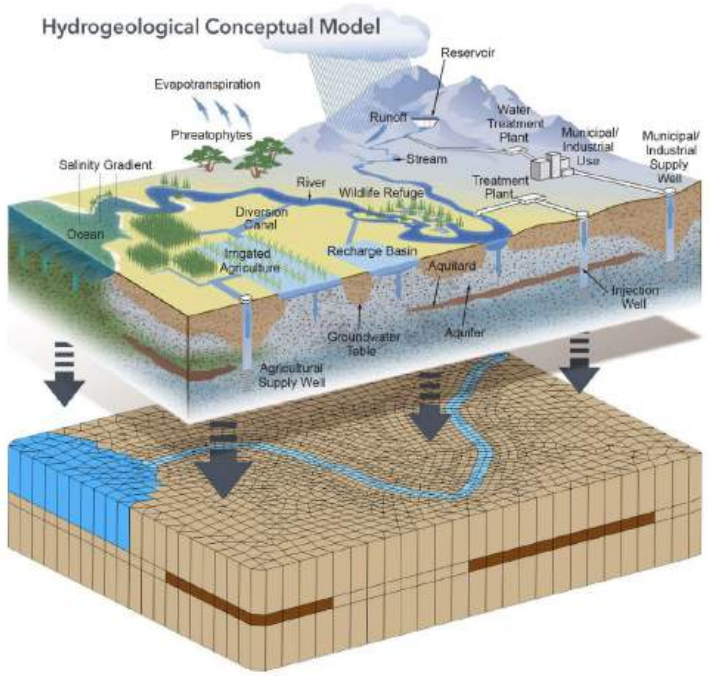
Paper #2: Methods to Estimate ISW Depletion

- Analytical Methods – can account for only limited complexity, significant simplifying assumptions
- Statistical Methods – analyze relationship between stresses (pumping) and impacts (depletion), major limitations
- Numerical Models – can accommodate complexity and represent changing conditions in time and space. DWR: "best available tool"



Numerical Integrated Groundwater Model Grid

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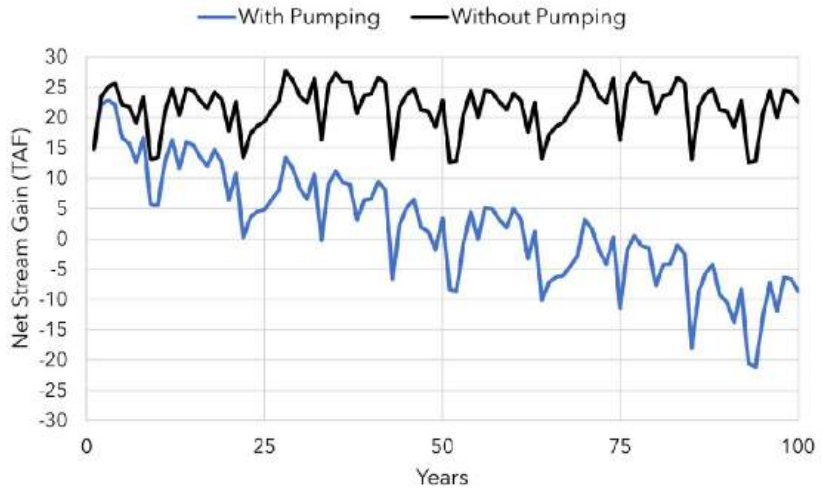
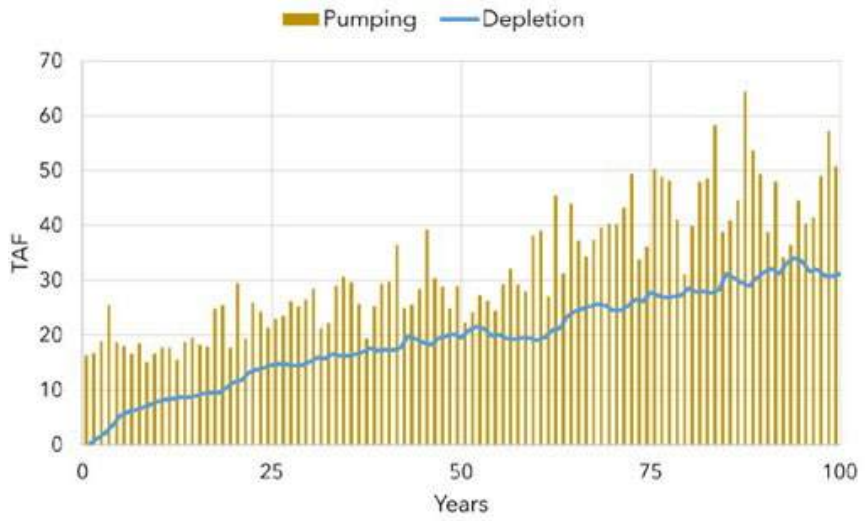
Paper #2: Applying Numerical Models

Three Steps:

- Run the model with pumping
- Rerun the model without pumping
- Subtract the model-computed flow rates to and from streams in Step 1 from Step 2 to determine net change in flow between the aquifer and the streams. <u>This is the ISW depletion caused by groundwater use.</u>





Paper #2:
Modeling Methodology Has Complexities

- What model code do you use?
- What is the temporal extent of the simulation?
- What is the spatial extent and resolution of the model?
- What is the vertical extent and resolution of the model?
- How is surface water represented (geometry, conductance)?
- Is the model well calibrated?

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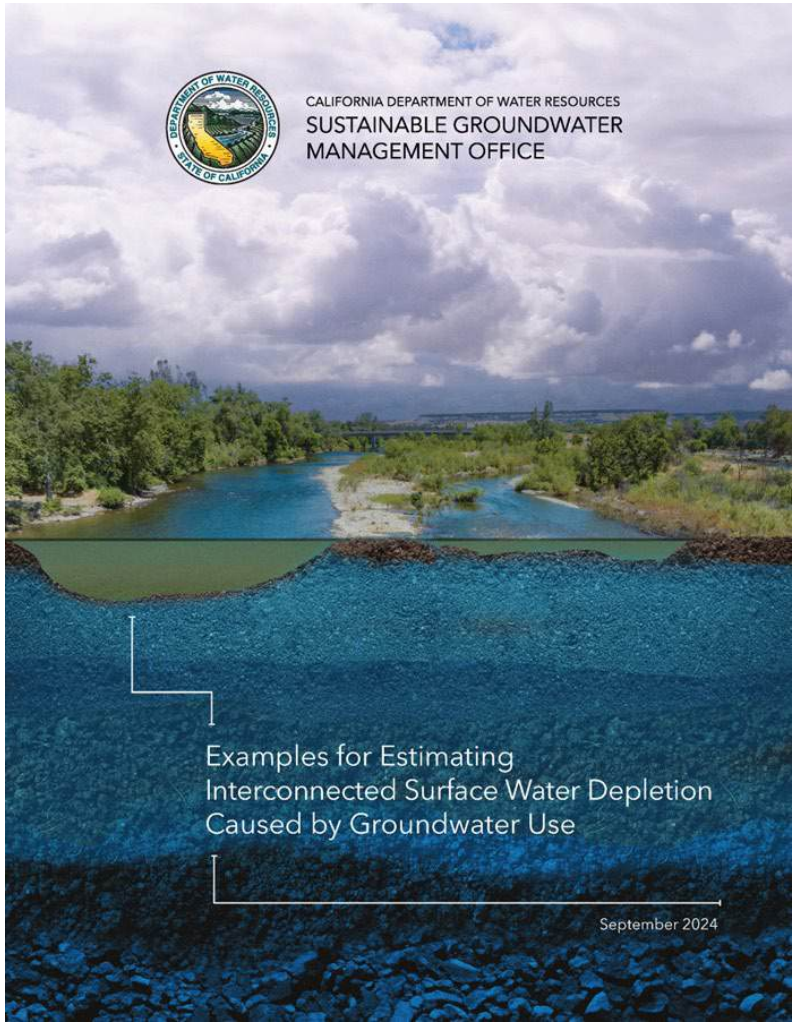
Paper #3: Examples of Estimating Interconnected Surface Water Depletion Caused by Groundwater Use



Provides examples of how to use numerical groundwater models, which will likely be the most common and defensible method, for ISW depletion.

September 2024

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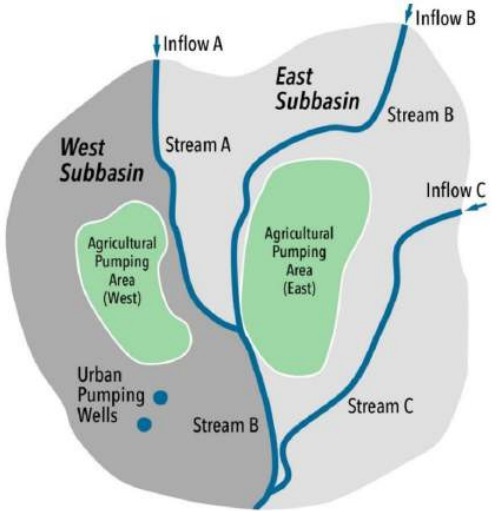
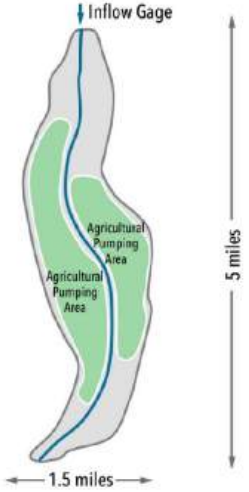
Paper #3: Two Detailed Examples of Using Numerical Models to Evaluate ISW Depletion



Basin 1: Groundwater basin subdivided into two subbbasins with multiple streams and aquifers

(most applicable to Modesto Subbasin)



Basin 2: Relatively narrow alluvial groundwater basin with a single stream

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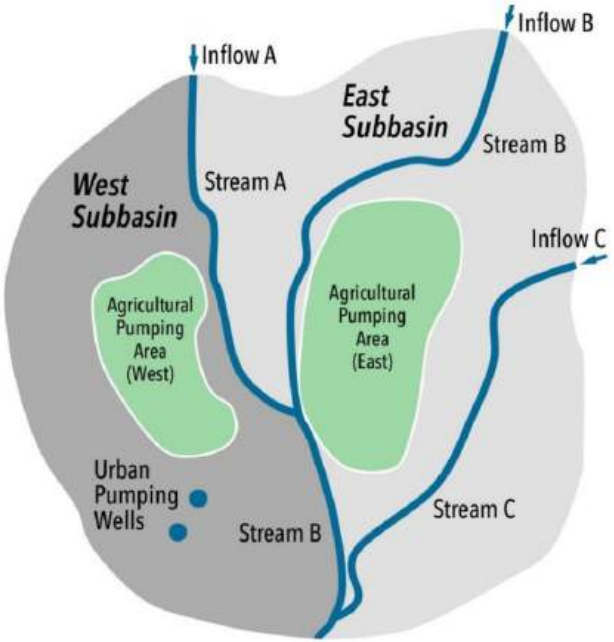
Paper #3
Example Basin 1

- With pumping scenario: 50 years of historical pumping and 50 years of projected pumping
- Without pumping scenario: 100 years without pumping (assumes ag land converted to native land).
- Analyze location and timing of depletion by running difference scenarios.



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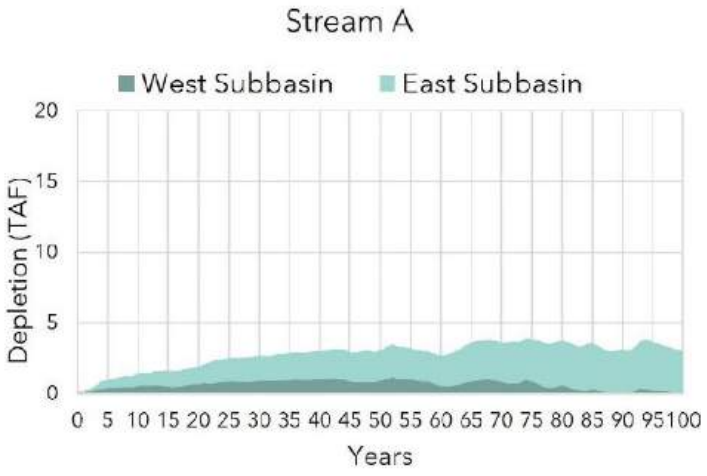
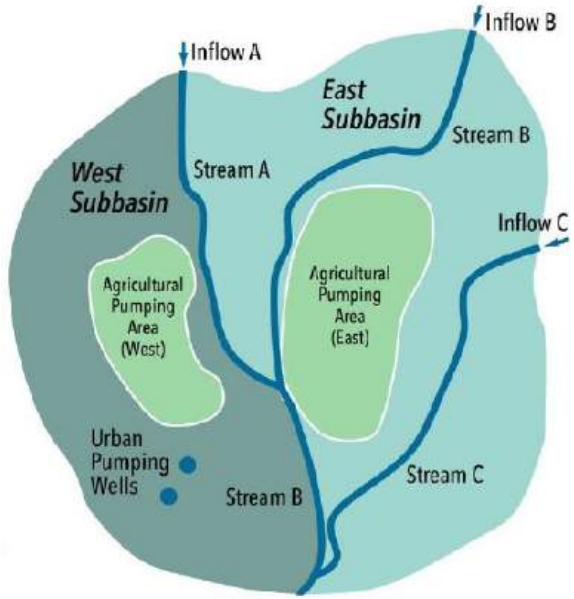
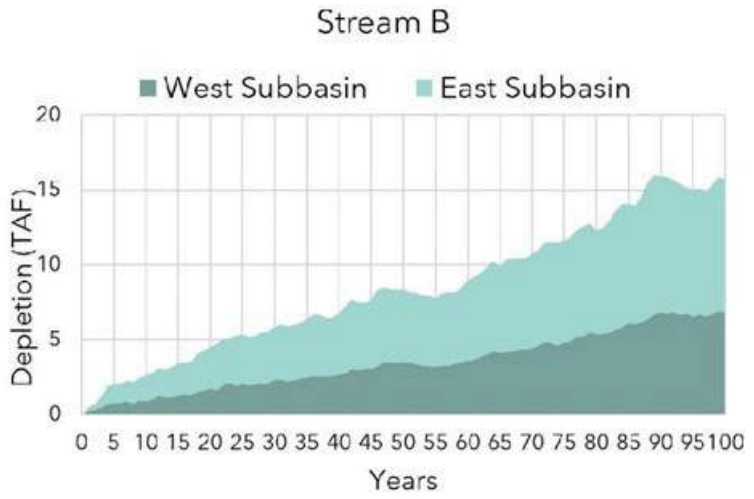
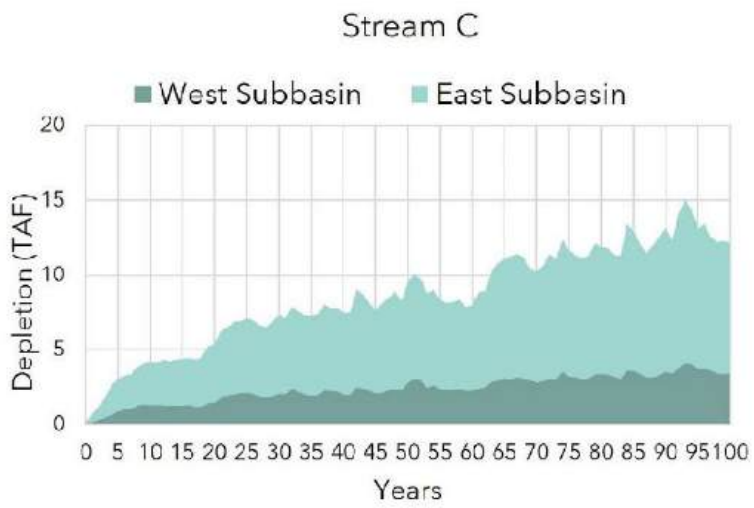
Paper #3
Example Basin 1 - Results

Depletion in each stream caused by pumping in both subbasins



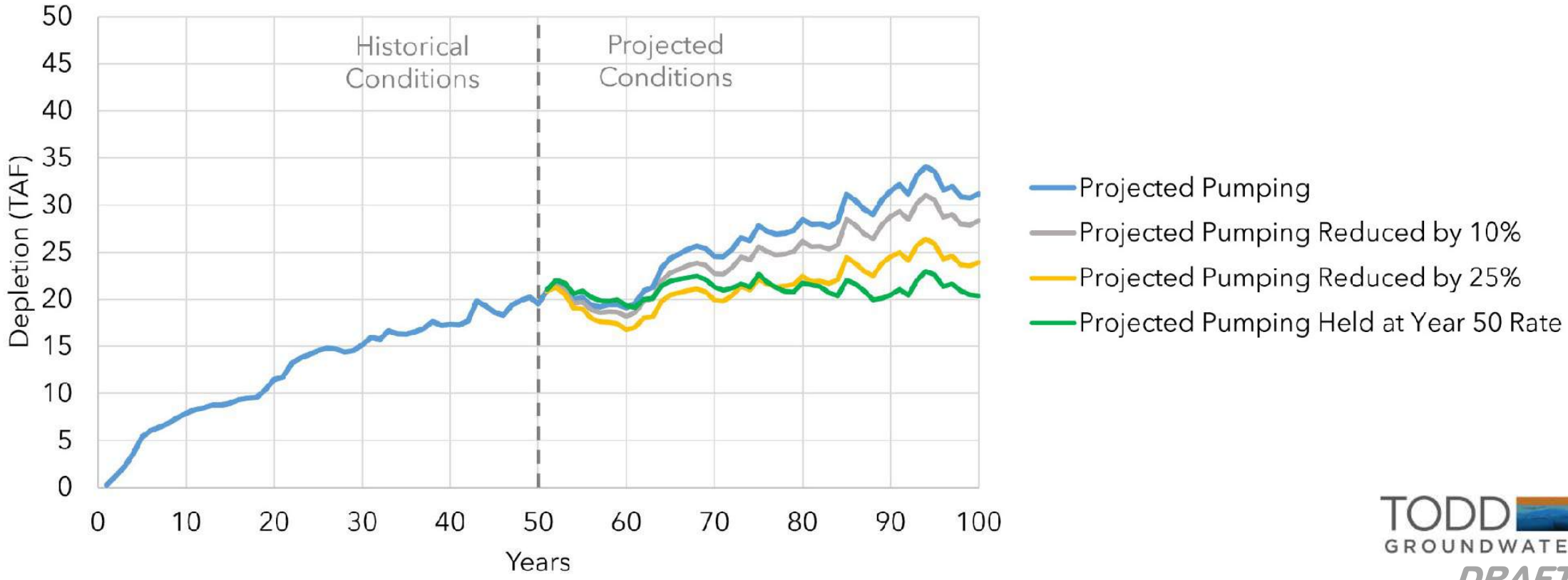






Paper #3
Example Basin 1 - Results

Depletion under different pumping scenarios



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QUESTIONS?