



Committee Members
Leticia Gonzalez
Robert Macaulay

Any individual with a disability may request special assistance by contacting the chief clerk to the board of supervisors (acting on behalf of the Madera County GSAs).

Madera County
Groundwater Sustainability Agency
(in the Madera, Chowchilla, and Delta-Mendota Subbasins)
Special Committee Meeting
November 12, 2025
1:30 p.m.

Meeting Location
Madera County Government Center
200 W. 4th Street, Madera CA 93637
Board of Supervisors Chambers

REMOTE PARTICIPATION
<https://us06web.zoom.us/j/86400321898>

Supporting documents relating to the items on this agenda are available through the County of Madera websites at www.maderacounty.com and maderacountywater.com. These documents are also available at the Office of the Clerk of the Board of Supervisors (acting on behalf of the Madera County GSAs), 200 West 4th Street, 4th Floor, Madera, CA 93637. Supporting documents relating to the items on this agenda that are not listed as 'Closed Session' may be submitted after the posting of the agenda and are available at the Office of the Clerk of the Board of Supervisors (acting on behalf of the Madera County GSAs). Please visit the Office of the Clerk of the Board of Supervisors (acting on behalf of the Madera County GSAs) for updates.

1. Call to Order
2. Flag Salute





Committee Members
Leticia Gonzalez
Robert Macaulay

3. Public Comment – This is an opportunity for comment on items not on this agenda. This is also a place to suggest topics for future meetings. Comments can be five minutes or less.
4. New Business
 - a. Action Item: Approval of the Madera County Groundwater Sustainability Agency Committee Meeting Minutes from October 7, 2025
 - b. Action Item: Consideration and recommendation to the Board of Directors to sign a letter to the state Department of Water Resources (DWR) relating to implementation of the Domestic Well Mitigation Program in 2026
 - c. Action Item: Consideration and recommendation to approve a resolution to adopt rules for Domestic Well Mitigation in the Madera Subbasin, Madera County GSA
 - This proposed Resolution and Policy is consistent with the authority granted under the Sustainable Groundwater Management Act (SGMA), and is exempt from CEQA under Guidelines sections 15307, 15308, and 15061(b)(3).
 - d. Action Item: Consideration and recommendation to the Board of Directors to enter into a contract with Davids Engineering for management of Domestic Well Mitigation Program in 2026
 - e. Action Item: Consideration and recommendation to the Board of Directors to enter into a contract with Hydrosat for satellite measurement of water use
 - f. Informational Item: Well Driller Contract(s) for Domestic Well Mitigation in 2026
 - g. Informational Item: Prop 68 funded contracts with landowners related to recharge
 - h. Informational Item: Prop 68 Chowchilla 1 Construction





Committee Members
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- i. Informational Item: Demand Management Policy Options Moving Ahead
- j. Informational Item: Joint Power Authority in the Madera County GSA Delta-Mendota Subbasin for overall governance

5. Directors' Report

- a. Farm unit changes
- b. Opt-In letters
- c. Measurement choice forms
- d. Penalty warnings
- e. Bulletin 118 comments
- f. Miscellaneous

6. Adjourn





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.a

MINUTES

**MADERA COUNTY GROUNDWATER SUSTAINABILITY AGENCY
(In the Madera, Chowchilla, and Delta-Mendota Subbasins) COMMITTEE MEETING
Tuesday, October 07, 2025; 01:30 PM
MEETING LOCATION: Madera County Government Center
200 W. 4th Street, Madera CA 93637
Board of Supervisors' Chambers**

REMOTE PARTICIPATION

<https://us06web.zoom.us/j/87232694161>

Attendance:

County GSA Directors: Leticia Gonzalez, Robert Macaulay

County GSA Staff: Stephanie Anagnoson, Jeannie Habben, Lettie Tapia, Tukta Phetasa, Allison Medley, Emily Garcia, Aleta Allen, Jacinta Cabral, Jerod Weeks

County staff attending on behalf of the GSA: Regina Garza, Melisa DaSilva, Tatiana Echevarria

9 members of the public in person; 23 members of the public on Zoom

1. Call to Order: 1:30pm
The GSA Committee meeting was called to order by Director Gonzalez.
2. Flag Salute
This was led by Director Gonzalez.
3. Public Comment – There were 3 public comments.
4. Regular Business
 - a. Action Item: Approval of the Madera County Groundwater Sustainability Agency Committee Meeting Minutes from September 2, 2025.





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.a

Result: Motion passed
Moved: Director Macaulay
Second: Director Gonzalez
Ayes: Director Gonzalez; Director Macaulay

- b. Action Item: Consideration and recommendation to the Board of Directors to approve a Resolution adopting the Revised Delta-Mendota Subbasin Domestic Well Mitigation Policy.

This was presented by Jacinta Cabral. There were 2 public comments.

- This proposed Resolution and Policy is consistent with the authority granted under the Sustainable Groundwater Management Act (SGMA), and is exempt from CEQA under Guidelines sections 15307, 15308, and 15061(b)(3).

Result: Motion passed
Moved: Director Macaulay
Second: Director Gonzalez
Ayes: Director Gonzalez; Director Macaulay

- c. Action Item: Consideration and recommendation to the Board of Directors to approve Transfer of Appropriations No. 25-021 in the amount of \$100,700 transferring funds from the Appropriation for Contingency account to the Refunds and Reimbursements account to authorize payment to the Chowchilla Water District for allocation exceedance penalties collected in the Chowchilla Subbasin.

This was presented by Emily Garcia. There was 1 public comment.

Result: Motion passed
Moved: Director Macaulay
Second: Director Gonzalez
Ayes: Director Gonzalez; Director Macaulay

- d. Action Item: Consideration and recommendation to the Board of Directors to approve a Resolution adopting a Policy for Allocation of Carryover Credits and Penalties During Farm Unit Reorganization





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.a

This was presented by Lettie Tapia. There were 5 public comments.

- This proposed Resolution and Policy is consistent with the authority granted under the Sustainable Groundwater Management Act (SGMA), and is exempt from CEQA under Guidelines sections 15307, 15308, and 15061(b)(3).

Result: Motion passed
Moved: Director Macaulay
Second: Director Gonzalez
Ayes: Director Gonzalez; Director Macaulay

- e. Informational Item: Davids Engineering Contract with Chowchilla Water District for Demand Management and Subsidence Mitigation in the Chowchilla Subbasin
This was presented by Tukta Phetasa. There were no public comments.
 - f. Informational Item: Fiscal Year 2024-2025 Financial Analysis Update
This was presented by Emily Garcia. There were 4 public comments.
 - g. Informational Item: Domestic Well Mitigation in the Madera Subbasin
This was presented by Ms. Anagnoson. There were 3 public comments.
 - h. Informational Item: Measurement Methods Distribution and Costs
This was presented by Aleta Allen. There were 3 public comments.
 - i. Informational Update: Demand Management Policy Options Moving Ahead
This was presented by Ms. Anagnoson. There were 5 public comments.
5. Directors Report
Ms. Anagnoson reported.
6. Adjourn: 3:35pm





Committee Members

Leticia Gonzalez

Robert Macaulay

ITEM 4.b

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Consideration and recommendation to the Board of Directors to sign a letter to the state Department of Water Resources (DWR) relating to implementation of the Domestic Well Mitigation Program in 2026

DISCUSSION:

Background

Madera County Groundwater Sustainability Agency (Madera County GSA) and four other parties signed a Memorandum of Understanding in March 2023 outlining a domestic well mitigation program based on proportional cost sharing based on historical and future contribution to overdraft. The Madera County GSA share is 73% using this methodology.

In August of 2025, a number of parties elected to cover their own geographic area (within their groundwater sustainability agency). As a result, the Madera County GSA must work alone to fund the area within its boundaries.

The attached letter describes the process over 2025 to come to agreement for 100% coverage geographically. Discussions have been facilitated by Dave Ceppos and topics included potential cost allocation structures, per occurrence financial mitigation award, conditions to be mitigated and not to be mitigated, potential DWMP governance, and reporting.

FISCAL IMPACT:

Funds for domestic well mitigation are collected from a GSP fee within the Madera Subbasin, County GSA, and penalty for overuse within the Madera Subbasin, County GSA.





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.b

ATTACHMENTS:

1. DRAFT DWMP Letter
2. FINAL DWMP Letter – Signature Request

S.A





October XX, 2025

Paul Gosselin
Deputy Director
Department of Water Resources
Sustainable Groundwater Management Office
715 P Street, Box 94286
Sacramento, CA 94236-0001

Sent Electronically

RE: Madera Subbasin (5-022.06 Madera) – Domestic Well Mitigation Program Implementation

Dear Paul:

On behalf of the seven Groundwater Sustainability Agencies (GSAs) in the Madera Subbasin (Subbasin), it is my pleasure to update you on our recent activities and progress towards ensuring that domestic wells impacted by declining groundwater levels as a function of Groundwater Sustainability Plan (GSP) implementation within the Subbasin are both timely and appropriately mitigated. To that end, I would offer the following summary.

- Since Spring of this year and as made possible through a grant awarded to Madera County from the Department of Water Resources (DWR), the GSAs in the Subbasin have met monthly to discuss the design and implementation of a Domestic Well Mitigation Program (DWMP) or Programs within the Subbasin.
- The discussions have been supported by Mr. David M. Ceppos, who has extensive background and knowledge of not only the Sustainable Groundwater Management Act (SGMA), but the very specific issues relevant to groundwater management within the Subbasin.

- The discussions have been extremely helpful for a variety of issues, namely they have provided an open and transparent venue for the GSAs to discuss practical implementation items such as: potential cost allocation structures, per occurrence financial mitigation award, conditions to be mitigated and not to be mitigated, potential DWMP governance, and reporting, just to name a few.
- As of our October 9, 2025 meeting, each of the seven GSAs remain firmly committed to mitigating for impacts to domestic wells within their respective GSAs resulting from declining groundwater levels ~~within the Subbasin~~.
- As of October 9, 2025, each of the GSAs and/or groups of GSAs will immediately move forward with implementation of a DWMP within their individual or collective geographic boundaries. There will be no single DWMP for the Subbasin.

The GSAs wish to extend their sincere appreciation for DWRs assistance to support the GSAs to arrive at a mutually supported outcome. We look forward to reporting our progress in future annual reports. Should you have any questions, please feel free to contact me at (209) 404-8896.

Sincerely,

John B. Davids, P.E.
Madera Subbasin Point of Contact

Copy: Administration Files

cc: Madera Subbasin GSAs
Natalie Stork, State Water Resources Control Board
Amanda Peisch-Derby, DWR
Monica Salais, DWR



November 18, 2025

Paul Gosselin
Deputy Director
Department of Water Resources
Sustainable Groundwater Management Office
715 P Street, Box 94286
Sacramento, CA 94236-0001

Sent Electronically

RE: Madera Subbasin (5-022.06 Madera) – Domestic Well Mitigation Program Implementation

Dear Paul:

On behalf of the seven Groundwater Sustainability Agencies (GSAs) in the Madera Subbasin (Subbasin), it is my pleasure to update you on our recent activities and progress towards ensuring that domestic wells impacted by declining groundwater levels as a function of Groundwater Sustainability Plan (GSP) implementation within the Subbasin are both timely and appropriately mitigated. To that end, I would offer the following summary.

- Since Spring of this year and as made possible through a grant awarded to Madera County from the Department of Water Resources (DWR), the GSAs in the Subbasin have met monthly to discuss the design and implementation of a Domestic Well Mitigation Program (DWMP) or Programs within the Subbasin.
- The discussions have been supported by Mr. David M. Ceppos, who has extensive background and knowledge of not only the Sustainable Groundwater Management Act (SGMA), but the very specific issues relevant to groundwater management within the Subbasin.

- The discussions have been extremely helpful for a variety of issues, namely they have provided an open and transparent venue for the GSAs to discuss practical implementation items such as: potential cost allocation structures, per occurrence financial mitigation award, conditions to be mitigated and not to be mitigated, potential DWMP governance, and reporting, just to name a few.
- As of our October 9, 2025 meeting, each of the seven GSAs remain firmly committed to mitigating for impacts to domestic wells within their respective GSAs resulting from declining groundwater levels.
- As of October 9, 2025, each of the GSAs and/or groups of GSAs will immediately move forward with implementation of a DWMP within their individual or collective geographic boundaries. There will be no single DWMP for the Subbasin.

The GSAs wish to extend their sincere appreciation for DWRs assistance to support the GSAs to arrive at a mutually supported outcome. We look forward to reporting our progress in future annual reports. Should you have any questions, please feel free to contact me at (209) 404-8896.

Sincerely,

John B. Davids, P.E.
Madera Subbasin Point of Contact

Copy: Administration Files

cc: Madera Subbasin GSAs
Natalie Stork, State Water Resources Control Board
Amanda Peisch-Derby, DWR
Monica Salais, DWR



Committee Members

Leticia Gonzalez

Robert Macaulay

ITEM 4.c

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Consideration and recommendation to adopt rules for Domestic Well Mitigation in the Madera Subbasin, Madera County GSA

This proposed Resolution and Policy is consistent with the authority granted under the Sustainable Groundwater Management Act (SGMA), and is exempt from CEQA under Guidelines sections 15307, 15308, and 15061(b)(3).

DISCUSSION:

The Madera County Groundwater Sustainability Agency (Madera County GSA) is implementing the Domestic Well Mitigation Program (DWMP) to assist residents whose domestic wells are impacted by declining groundwater levels within the Madera Subbasin. The program fulfills a key commitment outlined in the Joint Groundwater Sustainability Plan (GSP) and supports the County GSA's goal of maintaining access to safe and reliable drinking water for rural residents.

In March 2023, Madera County GSA and four other GSAs in the Madera Subbasin executed a Memorandum of Understanding establishing a cost-sharing framework for domestic well mitigation. However, as of August 2025, several GSAs elected to independently manage their mitigation efforts, leaving the Madera County GSA responsible for implementing and funding mitigation activities within its jurisdictional boundaries.

To ensure timely and compliant implementation, the County issued a Request for Qualifications (RFQ) on October 15, 2025. The RFQ closed on November 4, 2025, with a total of three well driller submissions received. Responses were evaluated based on five key criteria by a selection committee consisting of representatives from the Madera County GSA and external subject matter experts. Following the review, firms will be selected to enter into contracts with the County GSA for well drilling services. These contracts will likely be considered by the board of directors at the December 9, 2025 or January 6, 2026 meetings of the board of directors.





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.c

FISCAL IMPACT:

The fees collected through the GSP fee and penalties fully recover the cost of providing this service, ensuring that the implementation of the Domestic Well Mitigation Program remains cost-neutral to the County GSA.

ATTACHMENTS:

1. Draft Program Application
2. Resolution Adopting Domestic Well Mitigation Program For the Madera Subbasin

J.W



Madera Subbasin – Domestic Well Mitigation Program Application

This application is for property owners seeking financial assistance through the Madera Subbasin Domestic Well Mitigation Program. Completion of this form does not guarantee eligibility or funding. It is the first step in the review and assessment process.

Application Instructions

- The property owner of record (Applicant) must complete this form.
- Submitting this application initiates the review process only. Eligibility verification, documentation, and an on-site assessment will be required before approval.
- A non-refundable application fee of \$100 must accompany the submission. If approved for mitigation funding, this fee will be reimbursed.
- After submission, the Program Manager will contact the Applicant to schedule an initial well assessment.

Applicant Information

Name:

Mailing Address:

Property Address:

Primary Phone:

Secondary Phone:

Email:

Property Information

Parcel Number (XXX-XX-XXX):

(You can find your parcel number on the Madera County Address Locator website:
<https://www.maderacounty.com/government/geographic-information-system-gis>)

Number of Occupants:

Do you live on the property? ☐ Yes ☐ No

Is the well's primary purpose for domestic use? ☐ Yes ☐ No

Have you participated in this program previously for this well? ☐ Yes ☐ No

Well Information

Please complete the following well information section to the best of your ability. Lack of well information will not automatically disqualify you from this program. Well information

may be found at the following resources:

- California Department of Water Resources – Online Well Completion Report Portal:
<https://wellcompletionrecords.water.ca.gov/>
- Madera County Environmental Health – Water Well Program: (559) 675-7823
- Your well/pump maintenance company

Well Status (☐ Producing ☐ Low Producing ☐ Not Producing)

Depth of Well (ft):

Depth to Water (ft):

Age of Well (years):

Pump Capacity (GPM):

Primary Reason for Current or Anticipated Well Failure:

Groundwater Conditions (Static / Pumping Level):

Casing Material:

Casing Diameter (in):

Depth to Bottom (ft):

Supporting Documentation

☐ Well Completion Report (if available)

☐ Water Level Records

☐ Water Quality Reports or Lab Results

☐ Photographs of Well Site

☐ Records of Prior Mitigation or Repairs

☐ Other: _____

Certification and Agreement

By signing below, I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that submission of this form does not guarantee funding and agree to pay the \$100 application fee required for eligibility review. If approved, this fee will be reimbursed.

Property Owner's Signature: _____

Date: _____

Submission Instructions

Submit the completed application and \$100 fee to the Madera Subbasin GSA Program Manager. Applications may be submitted in person or by mail. Incomplete applications will not be reviewed.

**BEFORE
THE BOARD OF DIRECTORS
OF THE COUNTY OF MADERA
GROUNDWATER SUSTAINABILITY AGENCY
FOR THE MADERA SUBBASIN**

In the Matter of)	Resolution No.: <u>2025 -</u>
)	
GROUNDWATER SUSTAINABILITY)	RESOLUTION ADOPTING
AGENCY)	DOMESTIC WELL MITIGATION
)	PROGRAM FOR THE
)	MADERA SUBBASIN
_____)	

RECITALS

WHEREAS, the Sustainable Groundwater Management Act, Water Code sections 10720-10737.8 (“SGMA”) was signed into law on September 16, 2014;

WHEREAS, SGMA requires that each groundwater basin be managed by a Groundwater Sustainability Agency (“GSA”), or multiple GSAs, and that such management be pursuant to an approved Groundwater Sustainability Plan (“GSP”), or multiple GSPs;

WHEREAS, the County of Madera (“County”) is the exclusive GSA for the portions of the Madera Subbasin that are in unincorporated areas of Madera County, and not otherwise covered by another public agency (hereinafter referred to in the singular as the “County GSA”), and the Board of Supervisors is the ex officio Board of Directors (hereinafter “Board of Directors”) for the County GSA;

WHEREAS, on December 17, 2019, the County GSA, along with the Madera Irrigation District GSA, the City of Madera GSA, and the Madera Water District GSA, adopted a GSP (the “Joint GSP”) for the portions of the Madera Subbasin within the

control of these GSAs that described a “sustainable yield” (“SY”) of native groundwater (water that naturally exists in the Madera Subbasin from seepage and percolation) of approximately 0.5 acre-feet per acre for the Madera Subbasin;

WHEREAS, in the Joint GSP the GSAs agreed to implement a Domestic Well Mitigation Program;

WHEREAS, on December 15, 2020, the Board of Directors adopted Resolution No. 2020-166 adopting an approach to allocating groundwater (the “Allocation Approach”) in the Madera Subbasin, allowing parcels meeting certain criteria (hereafter “eligible parcels”) to have access to groundwater classified using two designations:

- a. The SY of native groundwater; and
- b. “Transitional water” (“TW”) that is continued overdraft of the Madera Subbasin but will incrementally decrease during the GSP implementation period;

WHEREAS, in furtherance of the Allocation Approach, on June 8, 2021, the County GSA Board of Directors adopted Resolution No. 2021-069, providing for a per-acre allocation of SY and TW for enrolled eligible parcels within each County GSA based on best available data, to be limited to the use within the eligible parcel, or within a County GSA approved farm unit, that represents a combination of eligible parcels;

WHEREAS, the amount of groundwater available to properties under the Allocation Approach is calculated based on the overall acreage in the eligible enrolled parcel or approved farm unit;

WHEREAS, on August 17, 2021, the County GSA Board of Directors adopted Resolution No. 2021-113, establishing groundwater allocation refinements;

//

WHEREAS, on June 21, 2022, the Board of Directors adopted Resolution No. 2022-086, establishing a fixed fee (the “Project Fee”) of \$246 per acre of land enrolled in the Allocation Approach (“Enrolled Acre”), to provide funds sufficient for the County GSA to cover the costs of implementing GSP projects, including the Domestic Well Mitigation Program;

WHEREAS, in December 2022, the Madera County Superior Court enjoined collection of the Project Fee;

WHEREAS, following the Court’s ruling, on December 20, 2022, the Board of Directors adopted Resolution No. 2022-198 removing the Madera Subbasin GSP Project Fee from the 2022-2023 tax year secured property tax bills, until such time as the Court’s injunction was lifted;

WHEREAS, the Court dissolved the injunction on March 4, 2025, allowing the County GSA to resume collection of the Project Fee, but leaving the County GSA in a multi-year funding shortfall for the GSP projects;

WHEREAS, the County GSA, mindful of the hardship that would result from immediately collecting back-fees in excess of \$60 million to fill the funding shortfall created by the Court’s injunction, proposed to repeal and replace Resolution No. 2022-198 and amend Resolution No. 2022-086 to revise the Project Fee downward to collect funds sufficient for the County GSA to cover the costs of implementing the Domestic Well Mitigation Program only;

WHEREAS, an updated study report (“Supplemental Report”) to determine the amount of revenue required for the Domestic Well Mitigation Program was conducted by Raftelis, an independent consulting firm;

WHEREAS, on July 15, 2025, the County GSA Board of Directors adopted Resolution No. 2025-067—which repealed and replaced Resolution No. 2022-198 and amended Resolution No. 2022-086—adopting a new five-year rate schedule designed to fund only the Domestic Well Mitigation Program;

WHEREAS, agriculture water use represents the vast majority of water use in the Madera Subbasin;

WHEREAS, the Domestic Well Mitigation Program will provide financial assistance to landowners impacted by declining groundwater levels in the Madera Subbasin;

WHEREAS, the Domestic Well Mitigation Program, attached hereto as Exhibit “A” and incorporated herein by reference, establishes eligibility, funding, and procedures for domestic well mitigation in the Madera Subbasin; and

WHEREAS, this Resolution is exempt from the California Environmental Quality Act (“CEQA”) pursuant to CEQA Guidelines sections 15307 (action of regulatory agency to protect natural resources), 15308 (action of a regulatory agency to protect the environment), and 15061(b)(3) (the “common sense” exemption where a project is exempt if it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment).

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors for the County GSA, as follows:

1. The recitals set forth above are found to be true and correct and are incorporated herein by reference.

//

//

2. The Madera Subbasin Domestic Well Mitigation Program for the Madera County GSA in the Madera Subbasin, attached hereto as Exhibit "A" is hereby approved and adopted.

3. The Board of Directors directs that a Notice of Exemption be filed with the County Clerk in accordance with the CEQA Guideline.

* * * * *

The foregoing Resolution was adopted this _____ day of _____, 2025, by the following vote.

Director Warmhoff voted: _____

Director Rogers voted: _____

Director Poythress voted: _____

Director Gonzalez voted: _____

Director Macaulay voted: _____

Chair, Board of Directors

ATTEST:

Clerk, Board of Directors

Approved as to Legal form:
COUNTY COUNSEL

Rebecca D. Wilson
By Wilson

Digitally signed by: Rebecca D. Wilson
DN: CN = Rebecca D. Wilson email =
rwilson@lozanosmith.com C = US O =
LOZANO SMITH
Date: 2025.11.07 09:13:03 -08'00'

EXHIBIT A

MADERA COUNTY GSA

Domestic Well Mitigation Program

Program Overview

The Domestic Well Mitigation Program provides financial assistance to landowners impacted by declining groundwater levels in the Madera Subbasin. This program helps fund the drilling of new domestic wells to replace those that have gone dry or been damaged by subsidence.

Program Rules

Eligibility

You must be a landowner with a domestic well located within the Madera Subbasin and within the Madera County GSA boundaries. Eligible applicants may receive funding through this program.

Qualifications

The well must have gone dry due to declining groundwater levels. Wells impacted by subsidence (collapsed casing) may also qualify. A qualified professional will conduct an assessment after an application is submitted to confirm eligibility.

Funding

The program provides up to \$35,000 reimbursement for the cost of drilling a new well or connecting to an existing community water system. Not covered: pump work, electrical repairs, landscaping, or lowering pumps. Any cost over \$35,000 is the landowner's responsibility.

Mitigation Frequency

Each property (by APN) may only receive one mitigation through the program. The use of the program will be recorded on the property deed.

Process

1. Apply: Complete and sign the application and submit a \$100 refundable deposit.
2. Assessment: The Madera County GSA or its agents will contact you for an initial well assessment.
3. Approval: If your well qualifies, a driller will be assigned by the Program Manager.
4. Payment: The GSA will pay the driller up to \$35,000.
5. Record: After completion, the mitigation record is filed on the property deed.



Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.d

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Consideration and recommendation to the Board of Directors to enter into a contract with Davids Engineering for management of Domestic Well Mitigation Program in 2026

DISCUSSION:

The Madera County Groundwater Sustainability Agency (Madera County GSA) is responsible for implementing a Domestic Well Mitigation Program (DWMP) within its jurisdictional boundaries of the Madera Subbasin. This program is a required component of the Joint Groundwater Sustainability Plan (GSP) and is designed to mitigate impacts to domestic wells caused by declining groundwater levels as the subbasin progresses toward sustainability.

The program area is limited to Madera County GSA's jurisdictional boundaries within the Madera Subbasin, covering the unincorporated "white areas" not managed by other GSAs. Since several GSAs have opted to administer their own mitigation programs, the Madera County GSA must manage and fund the effort for its designated areas independently.

To ensure successful implementation, staff proposes contracting with Davids Engineering, Inc. (DE) to manage and administer the program. DE has been deeply involved in the Madera Subbasin since the development of the Joint GSP and has extensive technical knowledge of the area's hydrogeologic conditions, groundwater trends, and local stakeholder dynamics. Their prior work includes groundwater modeling, data management, and project implementation for multiple GSAs across the region.

Under the proposed agreement, DE will provide a full range of program management services, including:

- Developing and managing the DWMP application and eligibility review process.





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ITEM 4.d

- Conducting field inspections and coordinating with drillers and permitting agencies for well construction and abandonment
- Maintaining continuous landowner communication and providing quarterly progress reports.
- Leading public outreach through the creation and maintenance of a DWMP website, public presentations, and participation in community events.
- Preparing an annual report summarizing implementation progress, finances, outreach, and future projections.
- Providing on-call technical services as requested by Madera County GSA staff to address program needs.

DE's proven experience, strong relationships with regional agencies, and in-depth understanding of the Madera Subbasin make them uniquely qualified to provide program management services. Contracting with DE will ensure continuity, efficiency, and transparency in the DWMP's implementation.

Following Board approval, work is anticipated to begin upon Notice to Proceed in November or December 2025, with all tasks and deliverables to be completed by December 31, 2026. DE will provide quarterly updates and an annual report at the end of the contract period.

FISCAL IMPACT:

The total cost of the contract is \$513,896, which represents the full amount required to fund Davids Engineering Inc's. professional services through December 31, 2026. The source of revenue for this contract is the Groundwater Sustainability Plan (GSP) fee and overdraft penalties. Fees collected through the GSP program fully recover the cost of providing this service, ensuring that implementation of the Domestic Well Mitigation Program remains cost-neutral to the County.

ATTACHMENTS:

1. DWMP Contract with Davids Engineering

J.W



MADERA COUNTY CONTRACT NO. _____
(Madera Subbasin – Domestic Well Mitigation Program: Davids Engineering, Inc.)

THIS AGREEMENT is made and entered into this _____ day of _____ 2025, by and between the COUNTY OF MADERA, a political subdivision of the State of California and a Groundwater Sustainability Agency ("GSA") within the Madera Subbasin ("COUNTY"), and DAVIDS ENGINEERING, INC. ("CONSULTANT"), collectively the "Parties."

RECITALS

A. COUNTY is a GSA within the Madera Subbasin, and the COUNTY Board of Supervisors sits as the Board of Directors for the COUNTY GSA.

B. COUNTY has determined that it is in the public interest to have performed those services described in CONSULTANT's "Proposal for Professional Engineering Services" ("Proposal No. 1") dated September 30, 2025, attached hereto as Exhibit "A," and incorporated herein by reference.

C. COUNTY has determined the project involves the performance of professional engineering consultation services of a temporary nature.

D. COUNTY does not have employees available to perform the services required for the project.

E. CONSULTANT has the experience and expertise necessary for the performance of the professional engineering services required for the project.

F. COUNTY has requested that CONSULTANT perform the services outlined in Proposal No. 1 and CONSULTANT has agreed to do so under the terms and conditions of this Agreement.

//

AGREEMENT

1. **TERM.** This Agreement shall be effective as of the date of last signature ("Effective Date") and will terminate on December 31, 2026, unless sooner terminated.

2. **SCOPE OF SERVICES.** CONSULTANT shall perform engineering and other services related to the Domestic Well Mitigation Program for the Madera Subbasin in accordance with Proposal No. 1 as outlined in Exhibit "A."

3. **COMPENSATION AND INVOICING.** As payment for the satisfactory performance of services outlined in Proposal(s), CONSULTANT shall be compensated an amount not to exceed Five Hundred Thirteen Thousand Eight Hundred Ninety-Six Dollars (\$513,896.00) for services outlined in Proposal No. 1. CONSULTANT's compensation under this Agreement shall not be increased without the written modification of this Agreement by the COUNTY and CONSULTANT. Payment obligations under this Agreement are contingent upon the receipt, in a form and substance acceptable to COUNTY, of the deliverables required under Consultant's Proposal(s).

4. **NOTICES.** All notices required by this Agreement shall be in writing and shall be effective upon personal service or deposit in the mail, postage prepaid, and addressed as follows:

COUNTY

Stephanie Anagnoson, Director
County of Madera
Water and Natural Resources Dept.
200 West 4th Street
Madera, CA 93637

CONSULTANT

John Davids
Davids Engineering, Inc.
1772 Picasso Avenue, Suite A
Davis, CA 95618

//

With Copy to

Karen Scrivner, Clerk of the Board
Madera County Board of Supervisors
200 West 4th Street
Madera, CA 93637

5. **INSURANCE.** CONSULTANT shall maintain the following insurance: General liability, One Million Dollars (\$1,000,000.00) per occurrence and Two Million Dollars (\$2,000,000.00) aggregate, with additional-insured endorsement; automobile liability, One Million Dollars (\$1,000,000.00); workers' compensation as required by California law; and professional liability, One Million Dollars (\$1,000,000.00) per occurrence and Three Million Dollars (\$3,000,000.00) aggregate.

6. **CONFLICT OF INTEREST AND REPORTING.** CONSULTANT shall at all times avoid any conflict of interest, or appearance of a conflict of interest, in performance of this Agreement. CONSULTANT represents that CONSULTANT, its officers, and employees have no present financial or other conflict of interest that would disqualify any or all of them from entering into or performing services under this Agreement. CONSULTANT shall also refrain from engaging in business which opposes projects in which the COUNTY is involved while this contract is in place.

7. **CHANGE OF PERSONNEL.** COUNTY shall have the right to renegotiate this Agreement if project management staff as identified in the scope of work is changed.

8. **INDEPENDENT CONTRACTOR.** All services performed pursuant to this Agreement by CONSULTANT shall be performed as an independent contractor. Under no circumstances shall CONSULTANT, its officers, employees, or agents, look to COUNTY as its employer, or as a partner, agent, or principal. CONSULTANT shall not

be entitled to any benefits accorded to COUNTY's employees. CONSULTANT shall be responsible for providing, at its own expense, and in its name, disability, workers' compensation, or other insurance as well as licenses or permits usual or necessary for conducting the services hereunder. CONSULTANT shall pay, when and as due, any and all taxes incurred as a result of CONSULTANT's compensation hereunder.

9. **PERFORMANCE OF SERVICES.** CONSULTANT represents that it has the qualifications and ability to perform the services required under this Agreement. CONSULTANT will perform such services with reasonable care and diligence, and in a professional manner according to accepted standards. CONSULTANT shall be solely responsible for the performance of the services hereunder, and shall receive no assistance, direction, or control from COUNTY. CONSULTANT shall have sole discretion and control of its services and the manner in which it is performed. However, COUNTY retains the right to administer this Agreement so as to verify that CONSULTANT is performing its obligations in accordance with the terms and conditions of the Agreement.

10. **COMPLIANCE WITH APPLICABLE LAW.** CONSULTANT shall use reasonable care and diligence to comply with the applicable federal, state, and local laws in performance of work under this Agreement.

11. **NON-DISCRIMINATION.** During the performance of this Agreement, CONSULTANT will not discriminate against any employee or applicant for employment on any basis prohibited by state or federal law including race, religion, creed, color, national origin, sex, age or disability.

12. **OWNERSHIP AND RETENTION OF DOCUMENTS.** All reports and other documents prepared by CONSULTANT pursuant to this Agreement shall become the property of COUNTY. COUNTY is entitled to full and unrestricted use of such reports and other documents produced under this Agreement. COUNTY may also retain the original of the reports and other documents upon request. CONSULTANT shall not apply for copyrights or patents on all or any part of the work performed under this Agreement.

13. **TERMINATION FOR CONVENIENCE.** COUNTY may terminate this Agreement without cause by giving at least thirty (30) days written notice to the other party, which notice shall include the date of termination. If this Agreement is terminated prior to completion, CONSULTANT shall be paid for all work satisfactorily performed through the date of termination.

14. **REMEDIES UPON BREACH.** If CONSULTANT materially breaches the terms of this Agreement, COUNTY shall have all of the following remedies:

14.01: Immediately terminate the Agreement with CONSULTANT;

14.02: Retain the reports and other documents prepared by CONSULTANT;

14.03: Complete the unfinished work under this Agreement with a different consultant;

14.04: Charge CONSULTANT with the difference between the cost of completion of the unfinished work pursuant to this Agreement and the amount that would otherwise be due to CONSULTANT, had CONSULTANT completed the work.

15. **SUCCESSION AND ASSIGNMENT.** This Agreement is binding on CONSULTANT and its successors. Except as otherwise provided herein, CONSULTANT shall not assign, sublet, or transfer its interest in this Agreement or any part thereof, or delegate its duties hereunder without the prior written consent of the COUNTY.

16. **ENTIRE AGREEMENT.** This Agreement, and any exhibits attached hereto and incorporated by reference, shall constitute the entire agreement between CONSULTANT and COUNTY with respect to the subject matter hereof, and supersedes in its entirety all previous negotiations, proposals, commitments, writings, advertisements, publications, and understandings of any nature whatsoever unless expressly included in this Agreement. No other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind either of the Parties herein. The above-referenced recitals are integral to this Agreement and are hereby incorporated into the Agreement by reference.

17. **GOVERNING LAW.** The laws of the State of California shall govern the rights, obligations, duties, and liabilities of the Parties to this Agreement and shall also govern the interpretation of this Agreement. Venue for any dispute arising under this Agreement shall be the Superior Court for the County of Madera, California.

18. **INDEMNITY.** To the fullest extent allowed by law, CONSULTANT shall defend, indemnify, and hold harmless COUNTY, its officers, employees, and agents from any loss, cost, expense (including attorneys' fees), damage, claim, or liability resulting from, arising out of, or is in any way connected with the performance of this Agreement by CONSULTANT, its officers, employees, or agents, except to the extent

that such damage, claim, or liability is proven to be caused exclusively by COUNTY's sole negligence or willful misconduct in its performance of this Agreement. COUNTY will not be liable for any accident, loss, or damage to the work prior to its completion and acceptance.

19. **SURVIVAL OF OBLIGATIONS.** All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between the Parties shall survive the completion of the services hereunder and/or the termination of this Agreement.

20. **SEVERABILITY.** In the event that one or more provisions of this Agreement may be deemed unenforceable, the remainder of the Agreement shall continue in full force and effect.

21. **SECTION HEADINGS.** The section headings, enumeration, and sequence of sections appearing herein are for convenience purposes only and shall not be deemed to govern, limit, modify, or in any manner affect the scope, meaning, or intent of the provisions of this Agreement.

22. **TIME OF ESSENCE.** Time is of the essence to this Agreement.

23. **FORCE MAJEURE.** Neither the COUNTY nor CONSULTANT shall be liable to the other for damages or delay in performing under this Agreement, or for the direct or indirect costs resulting from such delay, arising out of labor strikes, riot, public disturbances, war, fire, accidents, extraordinary weather conditions, natural catastrophes, or any other cause beyond the control of either Party.

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IN WITNESS WHEREOF the foregoing Agreement is executed on the date and year first above-written.

COUNTY OF MADERA

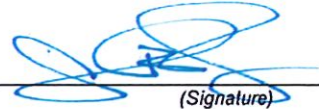
ATTEST:

Chair, Board of Supervisors

Clerk, Board of Supervisors

DAVIDS ENGINEERING, INC.

By: _____


(Signature)

PRINCIPAL ENGINEER
(Print Name)

Title: _____

Approved as to Legal Form:
COUNTY COUNSEL

Rebecca
By: D. Wilson

Digitally signed by: Rebecca D. Wilson
DN: CN = Rebecca D. Wilson
email = rwilson@lozanosmith.com
C = US O = LOZANO SMITH
Date: 2025.10.30 11:56:13 -07'00'

ACCOUNT NUMBER(S)

EXHIBIT A

Proposal for Professional Engineering Services

To: Stephanie Anagnoson
Director of Water and Natural Resources
Madera County – Madera GSA

From: Davids Engineering, Inc.
www.davidsengineering.com

Date: 09/30/2025

Subject: Madera County – Madera GSA Domestic Well Mitigation Program Implementation Support

Davids Engineering, Inc. (DE) is pleased to provide this proposal to the Madera County Groundwater Sustainability Agency in the Madera Subbasin (Madera County - Madera GSA) for professional services associated with implementation of the Madera County - Madera GSA Domestic Well Mitigation Program (DWMP).

1 Project Overview and Objective

The Madera County – Madera GSA is currently implementing an approved Groundwater Sustainability Plan (Joint GSP) for the “white area” of the Madera Subbasin (Subbasin) in an effort to achieve groundwater sustainability by 2040. An important component of the Joint GSP is implementation of a DWMP to mitigate for impacts to domestic wells caused during the implementation period, or until sustainability is achieved. The intent of the Madera County – Madera GSA DWMP is to mitigate domestic well impacts caused by declining groundwater levels in the Subbasin.

Discussions and stakeholder input during Joint GSP development indicated a clear desire to balance the water supply needs of all beneficial uses and users of groundwater in the Subbasin, to the greatest extent practicable. Stakeholders expressed a clear desire to protect domestic well users that rely on groundwater, while allowing for some level of continued groundwater decline in support of the vitally important agricultural economy. As detailed in Appendix 3.D. of the Joint GSP, implementing the DWMP would provide the best and most economically reasonable outcome for beneficial uses and users of groundwater in the Subbasin by preserving the local economy and protecting domestic well users’ access to groundwater. For this reason, the Madera County - Madera GSA has elected to mitigate for potential impacts to domestic well users within the confines of their GSA, as a function of declining groundwater levels, during the Joint GSP implementation period or until groundwater sustainability is achieved.

This proposal details tasks currently thought to be necessary and relevant to support implementation of the Madera County – Madera GSA DWMP on an annual basis, along with preliminary deliverables, assumptions, and an annual schedule.

2 Project Approach

In support of the Madera County – Madera GSA DWMP implementation, DE will leverage its deep experience in the Subbasin, its thorough understanding of the Joint GSP, relationships with the other GSAs in the Subbasin and other local stakeholders. Importantly, it should be noted that DE anticipates soliciting the support of a Subconsultant whose area of focus is in hydrogeology. As currently envisioned, the Subconsultant's assistance is likely to be in siting analysis, determination of necessary depth of all proposed new wells, well construction, well abandonment, inspection of new wells, and inspection of wells that have potentially failed.

3 Project Proposal

3.1 Scope of Services

The scope of professional services to be performed by DE is organized into four tasks as described below:

Task 1. Support Implementation of the Madera County – Madera GSA DWMP: DE will support the Madera County - Madera GSA with implementation of the DWMP within the Madera County – Madera GSA jurisdictional boundaries. Potential support is thought to include, but is not limited to:

1. Development of an application and associated process to assist domestic well owners in applying for domestic well mitigation within the Madera County – Madera GSA. As part of this task, DE will conduct a preliminary completeness review of the application to determine DWMP eligibility.
2. Support and coordination of temporary mitigation, as may be required, and as directed.
3. DE will implement a technical review of applicants' existing domestic well.
4. DE will perform field inspections of domestic wells to determine whether applicants are eligible for mitigation (cause of well failure).
5. Following appropriate due-diligence and analysis, DE will determine whether the domestic well meets the eligibility criteria and make a recommendation to the Madera County – Madera GSA for mitigation.
6. Coordinate new well construction with the applicable driller(s). Inclusive of the bidding process, as may be required.
7. Coordinate with applicable permitting agencies.
8. Coordinate final inspection, inclusive of the well completion report.
9. Coordinate abandonment of the existing well.
10. Coordinate filing of the well completion report, as applicable.
11. Continuous landowner coordination and communication during the application and mitigation process.
12. Recordation of mitigation on deed.
13. Complete and provide quarterly reports to the Madera County – Madera GSA.

Task 2. Support DWMP Public Outreach: DE will support the Madera County - Madera GSA with public engagement and outreach activities, including, but not limited to:

1. Preparation of DWMP related documentation for website publication, website creation, and completion of website maintenance, as necessary and as requested.
2. Make public presentations and facilitate workshops to review important DWMP topics, solicit feedback from the public, and guide next steps for implementation of the Madera County – Madera GSA DWMP.
3. Attend public health events for continued outreach and implementation of the DWMP, as requested and/or required.

Task 3. Complete Annual Report: Complete an annual report of DWMP implementation, including, but not limited to:

1. Summary of implementation actions taken during the year.
 - Number of applications received, reviewed, approved, and denied.
 - Spatial representation of wells approved for mitigation.
 - Technical summary for each new well drilled.
2. Summary of annual public outreach.
3. Summary and description of any implementation hurdles.
4. Complete and transparent summary of DWMP revenue and expenditures.
5. Forecasted implementation costs for the coming year.

Task 4. Perform On-call Professional Services: DE will work closely with applicable Madera County - Madera GSA staff as requested on an on-call basis to assist with other DWMP tasks that are not currently identified in this proposal, but may be necessary for successful DWMP implementation. DE will only complete on-call professional services as requested by Madera County – Madera GSA staff. Any and all deliverables will be mutually agreed to between DE and Madera County – Madera GSA staff.

3.2 Deliverables

The following deliverable(s) will be provided to the Madera County - Madera GSA (all deliverables will be in electronic format, unless otherwise noted):

Task 1.:

1. DWMP Mitigation Application.
2. Application Completeness Checklist.
3. Bid packages.
4. Notice of Award.
5. Well Completion Report.
6. Initial inspection checklist.
7. Final inspection checklist.
8. Proof of recordation on deed.

Task 2.:

1. Functional DWMP website.
2. Meeting agendas.
3. Meeting notes.
4. Attendance logs.

5. Public outreach items (newsletters, fliers, etc.).
6. PowerPoint presentations.

Task 3.:

1. Draft Annual Report.
2. Final Annual Report.

Task 4. Perform On-Call Tasks: Deliverables to be defined through mutual agreement between DE and Madera County - Madera GSA staff.

3.3 Assumptions

The following assumptions were made in developing this proposal. To the extent that these assumptions do not hold true, the effort and therefore the cost and schedule required to perform the services could be affected.

1. All deliverables, unless mutually agreed upon prior to finalization, will be provided in electronic format.
2. Madera County - Madera GSA will provide required information requested by DE in a timely manner.
3. DE cannot control the schedule or work products of 3rd party vendors supporting implementation of the DWMP (well drillers, permitting agencies, etc.).
4. DE will not provide any legal guidance and/or direction.
5. DE reserves the right to augment the DE team throughout the course of the project as deemed necessary for successful project completion.
6. Specific schedule or milestone dates are to be determined through mutual agreement between DE and Madera County – Madera GSA staff.
7. DE will not be responsible for any and all mitigation costs. Any and all costs associated with DWMP implementation will be paid by the Madera County – Madera GSA.
8. DE shall not and cannot be held liable for non-participating applicants.
9. DE shall not and cannot be held liable for non-cooperating applicants.
10. DE will not be responsible for any environmental permitting.
11. Prior to initiation of work outside that set-forth herein, DE and Madera County – Madera GSA shall coordinate as necessary regarding a potential/required scope and fee amendment. Any fee amendment shall be in accordance with DE rates then in effect.
12. The Madera County – Madera GSA shall coordinate any and all necessary private property access.
13. The Madera County – Madera GSA and DE will collaborate for all outreach, logistics for in-person meetings, and noticing for any and all public workshops.

3.4 Schedule

DE proposes to complete all work by December 31, 2026. Work will progress to meet the milestones set-forth in Table 1. Delays in the notice to process from Madera County - Madera GSA will result in corresponding delays or shifts to the subsequent milestones. Schedule implications or deviations from

the milestone dates that occur during the work will be made known to Madera Subbasin Joint GSP GSA as soon as practicable.

Table 1. Summary of project schedule including key milestones and milestone dates.

Milestone	Milestone Deadline
Notice to Proceed	November 1, 2025
Implementation of Madera County – Madera GSA DWMP	All year.
DWMP Updates	Quarterly basis.
Annual Reports	December 2026.

3.5 Cost Proposal

The estimated budget required to perform the work described above is \$513,896. For budgeting purposes, a detailed task budget was prepared and is provided in Table 2. While estimated costs are based on a detailed task-by-task buildup, actual project costs will not necessarily be tracked on a task basis, nor will individual task budgets constrain charges for work performed up to the total estimated budget.

Table 2. Project estimated budget summary by task.

Project Task No	Project Task Description	DE Cost	Direct Cost	Total Budget
1	Support Implementation of the Madera County - Madera GSA DWMP	\$310,004	\$4,200	\$314,204
2	Support DWMP Public Outreach	\$142,788	\$700	\$143,488
3	Complete Annual Report	\$16,204	\$0	\$16,204
4	Perform On-call Professional Services	\$40,000	\$0	\$40,000
Totals		\$508,996	\$4,900	\$513,896



Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.e

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Consideration and recommendation to the Board of Directors to enter into a contract with Hydrosat for satellite measurement of water use

DISCUSSION:

Background

Madera County Groundwater Sustainability Agency (Madera County GSA) tracks water uses for irrigated acres within its boundaries using satellite measurements and/or meters. The choice of measurement tool is a grower decision. Two separate existing contracts for satellite measurement expire in 2025 at the end of the calendar year.

Through a robust public engagement process, staff solicited proposals for measurement services, hosted interviews at a GSA Committee meeting, including questions from growers, and then issued a questionnaire to growers to select their preferred option. Approximately 35,000 acres responded. At the October 7, 2025, Madera County GSA Committee meeting, staff provided results of the grower questionnaire that showed 52% choosing Irriwatch/Hydrosat with 23% choosing the next most popular method. Staff recommends moving ahead Hydrosat (Irriwatch) for a three-year contract for \$493,020.

Additionally, there was also interest in a groundwater accounting platform. Madera County GSA hosted a webinar October 3, 2025, for the top three groundwater accounting platforms, that had the highest interest from growers. The webinar and zoom link are on the www.maderacountywater.com website. Costs for the accounting platform are shown below.





Committee Members

Leticia Gonzalez

Robert Macaulay

ITEM 4.e

1. California Water Data Consortium at \$123,00 for 1 year, which is \$0.97 per acre.
2. DE H2o Tech \$100,000 for 1 year, which is a range of about \$0.79 per acre.
3. 4 Creeks with Basinsafe 156,500 for 1 year, which is a range of about \$1.23 per acre.

Potential Vendor	First Year Cost	Cost per acre (total costs/total acres of 127,328)
California Water Data Consortium	\$75,000 + 48,000 (\$4k/month)	\$0.97
DE H2O Tech	\$100,000	\$0.79
4 Creeks	\$96,500 + \$60,000 (subscription for year)	\$1.23

Staff consider the above costs fairly comparable to one another. However, during reference checks on all vendors, it was noted that all accounting platforms had additional costs, which were often significant as the products need to be customized to the rules for the GSA. These costs are currently unknown and could be substantial. Staff also mailed out a questionnaire for growers to choose from the top three accounting platforms or choose no platform at all. This questionnaire was sent postal mail on October 15, 2025, with a request for return by October 31, 2025.

ATTACHMENTS:

Hydrosat Contract

A.A



MADERA COUNTY CONTRACT NO. _____
(Contract for Measurement Consulting Services: Hydrosat)

THIS AGREEMENT is made and entered into this _____ day of _____ 2025, by and between the COUNTY OF MADERA, a political subdivision of the State of California and a Groundwater Sustainability Agency ("GSA") within the Madera Subbasin ("COUNTY"), and HYDROSAT ("CONSULTANT").

RECITALS

A. COUNTY is a GSA within the Madera Subbasin, and the COUNTY Board of Supervisors sits as the Board of Directors for the COUNTY GSA.

B. COUNTY has determined that it is in the public interest to have performed those services described in CONSULTANT's "Proposal: Hydrosat remote sensing services for the Groundwater Sustainability Plan (GSP) of Madera County" ("Proposal"). The Proposal is attached hereto as Exhibit "A," and incorporated herein by reference.

C. COUNTY has determined the project involves the performance of professional engineering consultation services of a temporary nature.

D. COUNTY does not have employees available to perform the services required for the project.

E. CONSULTANT has the experience and expertise necessary for the performance of the professional engineering services required for the project.

F. COUNTY has requested that CONSULTANT perform the services outlined in the Proposal and CONSULTANT has agreed to do so under the terms and conditions of this Agreement.

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AGREEMENT

1. **TERM.** This Agreement shall be effective as of the date of last signature ("Effective Date") and will terminate on December 31, 2028, unless sooner terminated.

2. **SCOPE OF SERVICES.** CONSULTANT shall perform remote sensing services for the Groundwater Sustainability Plan ("GSP") in accordance with the Proposal, attached hereto as Exhibit "A."

3. **COMPENSATION AND INVOICING.** As payment for the satisfactory performance of services, CONSULTANT shall be compensated One Hundred Sixty-Four Thousand Three Hundred Forty Dollars (\$164,340.00) per year, as set forth in the Proposal, attached hereto as Exhibit "A." Total compensation for services under this Agreement shall not exceed Four Hundred Ninety-Three Thousand Twenty Dollars (\$493,020.00). CONSULTANT's compensation under this Agreement shall not be increased without the written modification of this Agreement by the COUNTY and CONSULTANT. Payment obligations under this Agreement are contingent upon the receipt, in a form and substance acceptable to COUNTY, of the deliverables required under the Proposal.

4. **NOTICES.** All notices required by this Agreement shall be in writing and shall be effective upon personal service or deposit in the mail, postage prepaid, and addressed as follows:

COUNTY

Stephanie Anagnoson, Director
County of Madera
Water and Natural Resources Dept.
200 West 4th Street
Madera, CA 93637

CONSULTANT

Hydrosat
Agro Business Park 10
6708 PW
Wageningen, The Netherlands

With Copy to

Karen Scrivner, Clerk of the Board
Madera County Board of Supervisors
200 West 4th Street
Madera, CA 93637

5. **INSURANCE.** CONSULTANT shall maintain the following insurance: General liability, One Million Dollars (\$1,000,000.00) per occurrence and Two Million Dollars (\$2,000,000.00) aggregate, with additional-insured endorsement; automobile liability, One Million Dollars (\$1,000,000.00); workers' compensation as required by California law; and professional liability, One Million Dollars (\$1,000,000.00) per occurrence and Three Million Dollars (\$3,000,000.00) aggregate.

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conducting the services hereunder. CONSULTANT shall pay, when and as due, any and all taxes incurred as a result of CONSULTANT's compensation hereunder.

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13.03: Complete the unfinished work under this Agreement with a different consultant;

13.04: Charge CONSULTANT with the difference between the cost of completion of the unfinished work pursuant to this Agreement and the amount that would otherwise be due CONSULTANT, had CONSULTANT completed the work.

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part thereof, or delegate its duties hereunder without the prior written consent of the COUNTY.

15. **ENTIRE AGREEMENT.** This Agreement, and any exhibits attached hereto and incorporated by reference, shall constitute the entire agreement between CONSULTANT and COUNTY with respect to the subject matter hereof, and supersedes in its entirety all previous negotiations, proposals, commitments, writings, advertisements, publications, and understandings of any nature whatsoever unless expressly included in this Agreement. No other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind either of the Parties herein. The above-referenced recitals are integral to this Agreement and are hereby incorporated into the Agreement by reference.

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17. **INDEMNITY.** To the fullest extent allowed by law, CONSULTANT shall defend, indemnify, and hold harmless COUNTY, its officers, employees, and agents from any loss, cost, expense (including attorneys' fees), damage, claim, or liability resulting from, arising out of, or is in any way connected with the performance of this Agreement by CONSULTANT, its officers, employees, or agents, except to the extent that such damage, claim, or liability is proven to be caused exclusively by COUNTY's sole negligence or willful misconduct in its performance of this Agreement. COUNTY

will not be liable for any accident, loss, or damage to the work prior to its completion and acceptance.

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IN WITNESS WHEREOF the foregoing Agreement is executed on the date and year first above-written.

COUNTY OF MADERA

ATTEST:

Chair, Board of Supervisors

Clerk, Board of Supervisors

Hydrosat

By: _____
(Signature)

Royce Dalby

(Print Name)

Approved as to Legal Form:
COUNTY COUNSEL

By: **Rebecca D. Wilson**
 Digitally signed by: Rebecca D. Wilson
DN: CN = Rebecca D. Wilson email
= rwilson@lozanosmith.com C =
US O = LOZANO SMITH
Date: 2025.09.26 13:11:27 -07'00'

Title: President

ACCOUNT NUMBER(S)

EXHIBIT A

Proposal: Hydrosat remote sensing services for the Groundwater Sustainability Plan (GSP) of Madera County

Cover Letter

To: Madera County GSA(s)

Date: June 12th, 2025

The Californian Sustainable Groundwater Management Act (SGMA) is an excellent vehicle to reduce groundwater withdrawals. By defining allocations on the basis of Evapotranspiration from Applied Water (ETAW), two great steps forward are achieved: (i) only the amount of groundwater that has physically left the river basin will be accounted for (not gross withdrawals that includes recoverable water to other users) and (ii) ETAW is measurable from satellites. Hydrosat is therefore pleased to submit herewith a proposal with an action plan for 2025 and beyond. We believe that together with Madera County GSA(s) we can build on continuation of our experiences in the region and work closely with Davids Engineering on presentation of the results to the client and compare the results with field measurements.

Several Governments and Development Agencies outside the USA have expressed interest in copying what's now become internationally known as 'the Madera solution' to reduce groundwater withdrawals. It is with great pleasure we submit this proposal to continue our work with Madera County GSA(s) towards the implementation of their Groundwater Sustainability Plan (GSP) by providing data on water use for the County and its affiliated growers.

Over the past 5 years, we have closely worked with Madera County GSAs to provide our satellite measurement services for calculation of water use based on evapotranspiration from applied water (ETAW). This concept has been tailored to respond to the requirement of the county

Throughout the past few years, we have tailored our product, web portal, and API output to best serve the requirements of Madera County GSA(s) and its growers. In the early years of the program, we made model improvements and aligned the methodologies to make sure the different measurements methods for growers are comparable. In addition, we have revamped our web portal to make it simpler and easier to navigate.

Starting in 2025, the IrriWatch product has access to additional high resolution satellite imagery from Hydrosat which helps improve the accuracy of satellite measurements. Our first thermal satellite was launched in August 2024 and the second is scheduled to launch in June, 2025. Afterwards, additional satellites will be launched in 2026, 2027, and beyond. Access to proprietary high-resolution satellite data ensures more frequency and higher accuracy in the product.

The Hydrosat Team leverages its experience, project understanding, and lessons learned offering the following:

1. Experience in energy balance modeling to provide actual evapotranspiration at 10m pixel resolution.



2. Experience and knowledge about water balance modeling and calculations of evapotranspiration from applied water (ETAW) and from precipitation (ETPR).
3. Quick access to the data and irrigation portal in real-time daily timesteps: IrriWatch provides in addition to the data layers, an online platform at County level as well as at grower level to monitor water use, have access to budget tables for allocations, ETAW, remaining amounts of water, etc.
4. Irrigation scheduling information and crop monitoring is available from the IrriWatch portal for growers with daily updates.

The Hydrosat team is highly experienced and uniquely qualified to provide water use measurements from satellites. We look forward to the opportunity to continue working with Madera County GSA(s) toward sustainable groundwater management.

With kind regards,

Hydrosat Team



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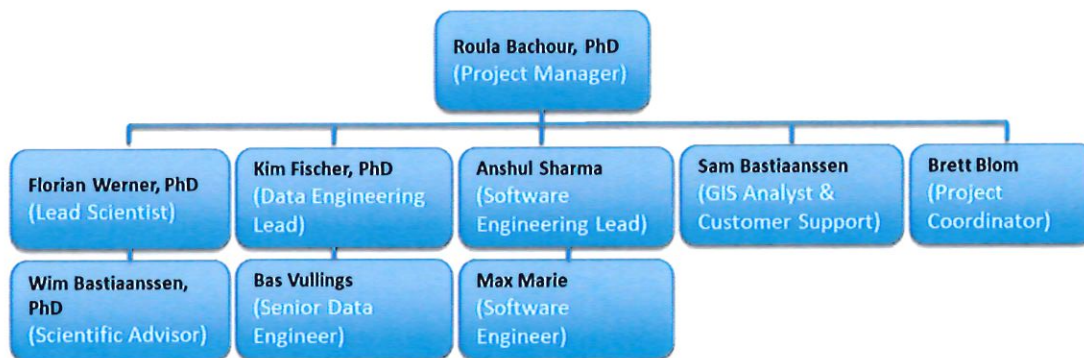


Organization Chart

Hydrosat is the proposed Primary Consultant to provide satellite measurement services.

Hydrosat will work under the administrative direction of Madera County GSA(s)' project manager. The team will be led by Roula Bachour, the Director of Customer Success at Hydrosat. Key tasks leaders include: Florian Werner (Lead Scientist), responsible for the science and modeling of ET and ETAW and water balances; Wim Bastiaanssen will be serving as a scientific advisor for the team; Kim Fischer and Bas Vullings will be ensuring data pipelines and processing of all output are delivered on time and water use estimates are generated both on daily and monthly basis; Anshul Sharma will be leading the portal development and any adjustments required including reporting and data at pixel level, API and graphs.

The proposed key personnel from Hydrosat and organization of the team for this project are presented on the organization chart below:



Qualifications

A short bio of the team members that will be involved in the project is presented below along with their involvement in the project.

Roula Bachour

Roula is the Director of Customer Success at Hydrosat, leading the clients' technical support including understanding of the remotely sensed data provided by the IrriWatch product. She is also coordinating Hydrosat's projects in the MENA region, Asia and USA. She has a PhD in Irrigation Engineering from Utah State University and has over 15 years of professional experience working in agriculture, irrigation and remote sensing. Roula has managed the Madera County GSA(s) project the last two years and she will be leading the project moving forward.

Florian Werner

Florian is Lead Scientist at Hydrosat, leading scientific research and development of Hydrosat's analytics. Florian has expertise in thermal infrared satellite data processing and crop stress detection. He will be leading the quality assessment of the data along with any related research activity at Hydrosat for the project ensuring alignment between the project's technical goals and overall strategy. Dr. Werner holds a Ph.D. in Physics from Leibniz University Hannover and Institute for Solar Energy Research Hamelin, Germany.

Wim Bastiaanssen

Wim is a globally renowned expert in remote sensing and water resource management, with an emphasis on water productivity. He developed remote sensing algorithms for water productivity with his PhD students and conducted over 20 studies for Asian Development Bank and World Bank to identify water productivity gaps in several countries. He helped UN-FAO with various remote sensing studies on water productivity at the global scale for wheat, rice and corn. The global standard framework on Water Productivity Score was developed jointly by Prof. Bastiaanssen and Prof Steduto from FAO. Among his most notable achievements is the development of the Surface Energy Balance Algorithm for Land (SEBAL), which revolutionized remote sensing by enabling the precise estimation of evapotranspiration and energy fluxes at field and regional scale. In addition to his role as Ambassador at Hydrosat, he is a Professor of Earth Observations for Water Resources Management at Delft University of Technology. He has also founded multiple remote sensing companies, including WaterWatch, eLEAF, CropZoomer, and IrriWatch. Dr. Bastiaanssen holds a Ph.D. in Agro-hydrology, Soil Physics, and Groundwater Management from Wageningen University. He has over 26,000 citations to internationally peer reviewed journal papers (as of January 2025). He will be serving as a scientific advisor for this project.

Kim Fischer

Kim is Data Engineering manager at Hydrosat. Kim has 8 years of experience in applied AI, data science, and data engineering. He has worked with Terabyte scale data processing (Real Impact Analytics), created classical and deep learning algorithms for yield forecast, and developed geospatial data pipelines. He has experience in AI and time-series classification, which aligns with project requirements for seasonal crop productivity monitoring. At Hydrosat, Kim is responsible for the architecture and implementation of the large-scale data processing pipelines. He will develop and maintain the large-scale data processing and model training pipelines. Before joining Hydrosat, Kim worked as a Lead Data Scientist at Ferrero, where he managed Ferrero's Agri Competence Center Data Science team. Before that, he held the position of Data Engineer at Ferrero, where he developed yield prediction using predictive analytics techniques as well as precision farming using satellite-, airborne- and UAV-data. Kim holds a double Master's degree in applied geoinformatics and environmental sciences by the University of Trier.

Bas Vullings

Bas is a data engineer at Hydrosat. Within Hydrosat, he mainly works with Python-based models that leverage satellite imagery for irrigation and crop growth management. His primary responsibilities revolve around the design, development, and test of highly scalable and automated data pipelines. He has been working on the pipelines for the Madera County GSA(s) project for the past two years and have made a lot of improvements to ensure stability and scalability of the IrriEngine. Bas holds a Master's degree in biosystems engineering and a Bachelor's degree in agrotechnology from Wageningen University.

Anshul Sharma

Anshul is Software Engineering Manager at Hydrosat, where he leads a team of software engineers developing web and mobile applications. Before joining Hydrosat, Anshul worked at Ankorstore where, as a Software Engineering Manager, he defined and executed the company's



API and integration strategy, enabling third-party partnerships that now drive over 25% of Ankorstore's annual revenue. He also recruited and built four remote engineering teams across Europe. Prior to this role, he held several Software Engineer positions. At Open Assessment Technologies, he developed a large-scale online assessment platform used by Education Ministries across Europe for nationwide school exams and led a team to build an open-source human marking system. At Docler Holding, he designed and implemented highly distributed systems for a live video streaming platform serving over 20 million monthly active users. Anshul holds a Bachelor of Technology in Computer Science from Amity University.

Max Marie

Max is a Software Engineer at Hydrosat, where he develops highly scalable backend and frontend services and designs and implements both customer-facing and internal applications. Before Hydrosat, Max worked at Devoteam where, as a Senior Software Engineer, he implemented and maintained multiple apps for global companies. Prior to this role he held positions at Finalcad as a backend developer, launching and running a cross-platform SaaS in the construction tech, and as a fullstack engineer at CoverGo, an InsurTech, a startup. Max holds a Masters of Engineering (specializing in IT and networking) from INSA Lyon (the National Institute of Applied Sciences of Lyon).

Sam Bastiaanssen

Sam is the Customer Success Manager at Hydrosat leading active user engagement, ensuring users utilize the full potential of Hydrosat's satellite data services by providing dedicated support and being on standby for users' needs with 5+ years' experience as a geospatial data analyst in the international agricultural sector. In this project Sam will support the on-boarding of field boundaries and field information, such as crop type, irrigation method, or soil type into the IrriWatch portal. Besides that, Sam will ensure the administrative parcels and personal privacy data are all safely separated by each individual user.

Brett Blom

Brett is the VP for Sales & Business development at Hydrosat, leading the go-to-market team and ensures coordination with all Hydrosat's client base as well as delivering feedback and recommendations to the company based on customer feedback. Brett has worked in the remote sensing space for almost 10 years and is based in Ripon, California where his family farms almonds. In this project, he will be coordinating the client interactions with the Madera County GSA(s) team.

Project Understanding and Approach

Hydrosat understands that the purpose of Madera County GSA(s) desired measurement program is to contribute to achieving reduction in groundwater water use by providing information to the GSA's, landowners, and growers on field level crop water use from irrigation. Additionally, measurement of crop water use will allow the GSAs to monitor groundwater use relative to sustainability targets. Beyond these two main purposes of the measurement program, Hydrosat envisions additional potential uses of the IrriWatch platform by growers for daily monitoring of water use via graphics and budget tables to compare their consumption to allocations. The

IrriWatch platform also helps growers with irrigation scheduling and crop monitoring throughout the season, which can provide an additional incentive for growers to use the portal and optimize their water use.

Hydrosat's technical approach is described below with more technical details attached in Annex 1.

Land use

Land use maps of the Madera County GSA(s) will be acquired from publicly available maps especially from the Department of Water Resources (DWR). These land use maps are updated every couple of years by LandIQ. Hydrosat's approach will be to update these maps on annual basis based on 1) fallow analysis that will be done during summer to detect fallowed land that has moved into cropping systems and cropped areas that have turned into fallow. This will affect the ETAW of these fields; and 2) throughout the season, growers also indicate the change of crop, by informing the County about these changes. We will coordinate with the County team to access the changelog from the data management system to implement the crop changes as well as ownership changes, parcel moves and measurement methods changes.

Actual Evapotranspiration and Actual Evapotranspiration from Applied Water

Hydrosat uses energy balance modeling, specifically its proprietary version of the SEBAL algorithm to calculate consumptive use based on thermal and VNIR satellite measurements. SEBAL (Surface Energy Balance Algorithm for Land) was developed by Dr. Wim Bastiaanssen of The Netherlands (Bastiaanssen et. al., 1998a, 1998b and 2005). SEBAL uses spectral radiances recorded by satellite-based sensors, plus ordinary meteorological data, to solve the energy balance at the Earth's surface. SEBAL computes actual evapotranspiration (ETa) for each pixel in a multispectral satellite image by applying radiative, aerodynamic and energy balance physics in 25 computational steps.

SEBAL offers distinct advantages compared to the generally accepted " $K_c \times ETo$ " method for computing ET including 1) computing actual evapotranspiration (ETa), inherently accounting for the effects of salinity, deficit irrigation, disease, poor plant stands, and other factors, on crop ET. These influences in the standard $K_c \times ETo$ computation requires considerable additional data (typically unavailable) as well as substantial time and effort; and 2) the acreage of water-using land is observed directly from the satellite image, so accurate irrigated area is implicit to the process. This feature avoids the typical difficulty of assembling accurate records of irrigated areas and cropping patterns; and 3) SEBAL does not need crop type to solve the energy balance, however, cropping patterns are important for the water balance and calculation of ETAW as the root depth plays an important role in the water storage computations.

The latest version of SEBAL includes an integration between the surface energy balance and soil water balance where actual ET is the common denominator for both. Because ET is a large component of the water balance, it provides great insights in the magnitude of the various terms. The soil water balance model has been employed to acquire a spatially distributed estimation of every term of the balance for every pixel. The soil water balance computes surface runoff R_s following a soil moisture deficit and presence of roots. This is a modified version of the Soil Conservation Service equation that has fixed infiltration capacities described by means of Curve Numbers. Water that percolates from the root zone is no longer available for ET and reduces soil water storage. In line with Darcian flow in unsaturated soil, the mathematical expression for



percolation is a non-linear function of the degree of soil moisture saturation. In California, it is common to allocate groundwater on the basis of ET from Applied Water or ETAW. Hydrological background studies have determined the maximum volume of ETAW to realize a new equilibrium situation with zero-overdraft for different sub-aquifers. To accommodate ETAW as a basis for allocation and compliances, the IDC model (<https://data.cnra.ca.gov/dataset/idc-version-2015-0-77/resource/238d3e2b-a985-4db7-9793-933ba6d525af>) is used for the assessment of ETAW from ET. More technical details about the SEBAL methodology, the water balance modelling and IDC model are presented in Annex 1.

It is important to note that Hydrosat will implement on annual basis, initialization of soil moisture and root depth based on previous years data (water years) to ensure the "rainfall and soil moisture storage buckets for each parcel-field is correctly set.

While the proposal indicates monthly timesteps of ET and ETAW, Hydrosat will be calculating the data on daily timesteps using daily thermal satellite measurements. This will improve the accuracy of ET calculations and avoids challenges of interpolating between two satellite imagery acquired every 8 days (from Landsat). Hydrosat has developed a fusion model to provide 10m resolution daily thermal imagery which has been validated in several countries over the past 4 years. Hydrosat's new constellation of thermal satellite will also be integrated into the modelling to improve the accuracy more.

Precipitation maps

One of the main components into the IDC model to get ETAW is the precipitation. Hydrosat uses global weather services to get the precipitation maps. For this project, the weather data including rainfall will be acquired from the National Weather Service (NWS). NWS precipitation maps do rely on data from a network of weather observation stations across the U.S., including in California. These stations include Automated Surface Observing Systems (ASOS), Cooperative Observer Program (COOP) stations, Remote Automated Weather Stations (RAWS), California Irrigation Management Information System (CIMIS), Airport weather stations, other specialized sensors and radar systems.

Precipitation maps will be acquired on an hourly basis, which are then integrated into daily timesteps and precented on our web portal. At the end of each month, Hydrosat will generate Monthly precipitation maps at 10m pixels to share with the Madera County GSA(s).

Deliverables

The project deliverables will include the following:

1. Annual update of the land use raster files which will be also aggregated to parcel-field level to determine the majority crop of each parcel-field.
2. Daily ET and ETAW raster files at 10-meter spatial resolution (real-time via portal and API).
3. Monthly ET and ETAW raster files at 10-meter spatial resolution (provided within 1 week of the end of each month).
4. Daily precipitation data provided at field level (real-time via portal and API).
5. Monthly precipitation maps at 10-meter spatial resolution (provided within 1 week of the end of each month).
6. Full implementation of a tailored version of the IrriWatch platform including the following:

- irriwatch.hydrosat.com platform with viewer access to all fields individually. The fields will be displayed at the County level to monitor all the fields as well as at farmers' level. Hierarchy structure will be created when needed for master accounts (See Annex 2 for more details on how the portal shows the data).
- Setting up the revised shapefiles and crop maps at the beginning of every year and setting the farmers accounts, farm units and master accounts.
- Delivery of all IrriWatch parameters, including irrigation performance and crop production indicators
- Daily monitoring actual evapotranspiration (ET) based on energy balance modelling and calculating actual evapotranspiration from applied water (ETAW)
- Updated IDC model for actual evapotranspiration from precipitation (ETPR) model
- Initialization of soil moisture and root depth based on previous years data (water years)
- Portal customization including farm unit zones layer, aggregation of field-parcels to parcels and farm units and master accounts.
- Customized portal tables for parcel water budgets and farm unit budgets updated monthly
- Customized reporting on monthly basis at parcel level and farm unit level downloadable from the portal
- Regularly updating the County database with changes at farmers level (e.g. change of crops) in coordination with the County
- In-season change of parcel ownerships in coordination with the county
- Mid-season check of fallow fields and assisting in defining the fields that needs on-ground verification
- Crop production and daily irrigation schedule advice for farmers
- IrriWatch trainings and outreach
- Assist the County during technical discussions with farmers

Project Experience and Success

Hydrosat services to Madera County GSA(s) providing water monitoring data from satellite based on surface energy balance modeling. From 2021 to 2025, Hydrosat is providing ET and ETAW daily data for the County along with access to its growers to its IrriWatch online platform to monitor their water use, monitor their fields and access data on soil moisture, irrigation scheduling and more parameters.

Hydrosat services to Madhya Pradesh Water Resources Department in India for the project "Operational Remote Sensing-based Information for Daily Irrigation Management" covering 130,000 ha of irrigated land. The accuracy of the models was measured by flowmeters and soil moisture sensors. The ET daily data and irrigation scheduling was used in SCADA systems to operate the irrigation systems. (2021-2024; a proposal for extension is now approved and the project will continue soon).

Hydrosat services to Water Resources Department in Kyzylorda, Kazakhstan to develop solutions that leverage remote sensing and geospatial analytics to improve water management, ensuring that available resources are used more effectively and sustainably. The project is in collaboration with Geobox and it covers over a 250,000 hectare of irrigated land. Hydrosat was monthly ET, ETAW, Applied Water and several more parameters on a monthly basis for the whole area. The

project continues now for the 3rd year. The accuracy of the models was measured with flowmeters.

Hydrosat services to the Punjab Irrigation Department (Pakistan) that is responsible for 22.5 million acres irrigated land. Diagnosing their irrigation performance in the Lower Bari Doab Canal including equity, adequacy, reliability and productivity for 2017 and 2018. The analysis is based on the spatio-temporal patterns of consumptive use. The project is funded by the Asian Development Bank for detecting whether modernized irrigation systems function better and discharge measurements are accurate. Building on this project, a new project was approved in June 2025 to reinstate the services to measure water use and water sustainability metrics from remote sensing in Balochistan.

Hydrosat service to Grupo Magdalena sugarcane plant in Guatemala with 75,000 acres of land and over 1,250 farmers on soil moisture monitoring, the need to irrigate and the amount of water to apply. In addition, to access to the IrriWatch platform, Hydrosat provides additional analytics to Grupo Magdalena including harvest planning, sugar content estimation, yield estimation and performance of crop compared to references. Model and data accuracy has been tested using soil moisture sensors, soil sampling for gravimetric moisture, yield and sugar data measurement. Grupo Magdalena is a current client of Hydrosat for the 4th year.

IrriWatch service to the Government of Kazakhstan for monthly reporting on consumptive use in an 82,000-ha irrigation scheme in Turkistan for a period of 4 years (2016 to 2019), and provision of suggestions to improve land and water management operations. Fields with low on-farm efficiencies and low crop water productivity are detected for provision of more governmental support. Best practices are copied from well performing fields.

Further to projects, IrriWatch provides operational information to farmers, commodity traders, investors and banks in more than 50 countries globally.

References

SEBAL has been widely tested in USA by various independent research organizations including University of California Davis, California State University Fresno and the USDA. In addition to that, validation experiments have been conducted by private companies including Jain Irrigation (currently Rivulis), Vinduino and Davids Engineering.

These validations have been focusing mainly on almonds, pistachios, grapes, alfalfa, lettuce among others that represent California's main irrigated crops. The validation experiments are described in research papers and reports that are peer reviewed:

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Costs

The financial proposal for IrriWatch data services is based on 220,000 ac.

Our goal with this proposal is to eliminate additional amendments and budget requests as we make necessary adjustments and enhancements to the product delivered. With this proposal, we have offered a discount on the standard IrriWatch subscription costs with a multi-year commitment.

Description	Price (\$/ac/yr)	Acreage	Total Price
IrriWatch Subscription / yr	\$ 0.83	220,000	\$ 182,600
	Total price / yr		\$ 182,600
	2 yr discount (5%)		-\$ 9,130
	3 yr discount (10%)		-\$ 18,260
	Total 2 yr price / yr		\$173,470
	Total 3 yr price / yr		\$164,340



Hydrosat

This subscription also includes professional services costs; we have built in the expected hours and time allotment needed to deliver exceptional custom service to Madera County GSA(s) along with its growers. There will be no additional bills or charges, and applicable insurance requirements are included in the cost as well.

Annex 1: Surface Energy Balance Algorithm for Land (SEBAL) Methodology

Land Surface Energy Balance Modelling

The Surface Energy Balance Algorithm for Land (SEBAL) computes the actual crop evapotranspiration, soil moisture of the rootzone and the crop dry matter production for every individual pixel (Bastiaanssen et al., 1994; 1998; 2005). Related water flows can be inferred from that, once rainfall is taken from other sources (that source can also be a satellite product). The determination of irrigation water flows will be described in following section "soil water balance modelling".

SEBAL accurately estimates the amount of water evaporated by water and soil, as well as transpired by plants, which is the **actual evapotranspiration** (ET). The principle of a simple residual energy balance is applied. The revolution comes from the fact that crop type, age of crop, soil type, irrigation applications and agronomic management information is no longer needed because ET is based on λE (see later) and λE is determined from other energy and heat fluxes, so not from soil and crop information:

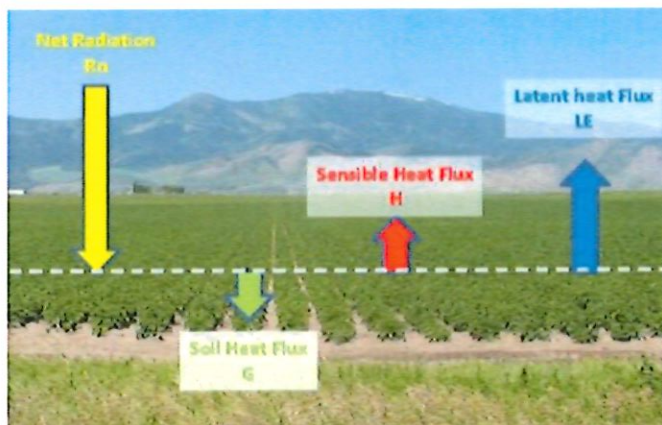
$$\lambda E = R_n - G_0 - H$$

(R_n): Net Radiation – The total incoming shortwave (solar and longwave radiation) minus the reflected and emitted radiation from the surface. It represents the energy available for processes like heating the air, soil, and evapotranspiration.

(G₀): Soil Heat Flux – The portion of energy used to heat or cool the soil.

(H): Sensible Heat Flux – The energy used to heat the air above the surface.

(λE): Latent Heat Flux – The energy used in the evapotranspiration process (water vapor flux from soil and plant surfaces)



SEBAL uses (geostationary) satellite measurements of solar radiation, Land Surface Temperature (LST), Normalized Difference Vegetation Index (NDVI) and Surface Albedo (see Figure 1) to determine R_n , G_0 and H . The source of satellite data is EcoStress, VIIRS, Landsat, Sentinel, MSG and Jacob Van Zyl-1. The data from these satellites is fused and used to generate daily

imagery with a spatial resolution of 10m x 10m. The absolute value of Land Surface Temperature (LST) depends on the magnitudes of R_n , G_0 , H and λE . Solar radiation for instance increases R_n and evaporative cooling increases λE . The latter on return depends on soil water potential in the root zone in combination with a certain canopy development.

A relative cold crop with LST being equal to air temperature will have an ideal soil water potential in the root zone and maximum sapflow leading to maximum evaporative cooling and high λE value. Colder fields in Figure 1 will have a LST of 298 K (25 °C). The fields in the Northern part of the image are in the 305 K range (32 °C) and are thus suffering from access to water. There might

be water stored in the root zone at 32°C, but this moisture is retained by soil minerals and not all water are easily available for uptake by roots. In such situation, part of the Rn energy will be converted into H.

The surface albedo has a large impact on the absorption of solar radiation. Darker surfaces absorb more radiation, which increases net radiation values (see Figure 3). Pondered water is a typical example of a surface having a low albedo. More net radiation implies that more energy is available for the phase transition of water from liquid to vapor. The NDVI is another essential crop input parameter to describe leaf development. Pixels with higher NDVI have a higher fractional vegetation cover, a higher Leaf Area Index (LAI) and a higher fraction of Photosynthetically Active Radiation fPAR.

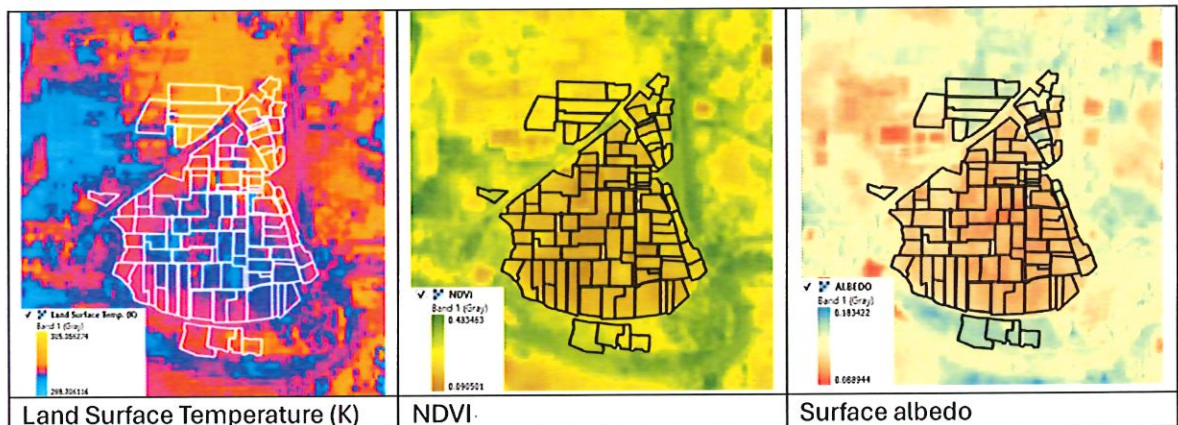


Figure 1: Example of satellite measurements used as input into SEBAL energy balance model. The data is from Odisha State acquired on 27 January (2024)

SEBAL computes the partitioning into sensible and latent heat for every pixel using anchor points for LST, representing groups of hot and cold pixels. Sensible heat H is very sensitive to LST and SEBAL has an internal calibration procedure with the anchor points to scale H between minimum (cold pixel) and maximum H values (hot pixel). These cold and hot pixels are selected in an automatic manner from the combination of input data demonstrated at Figure 2.

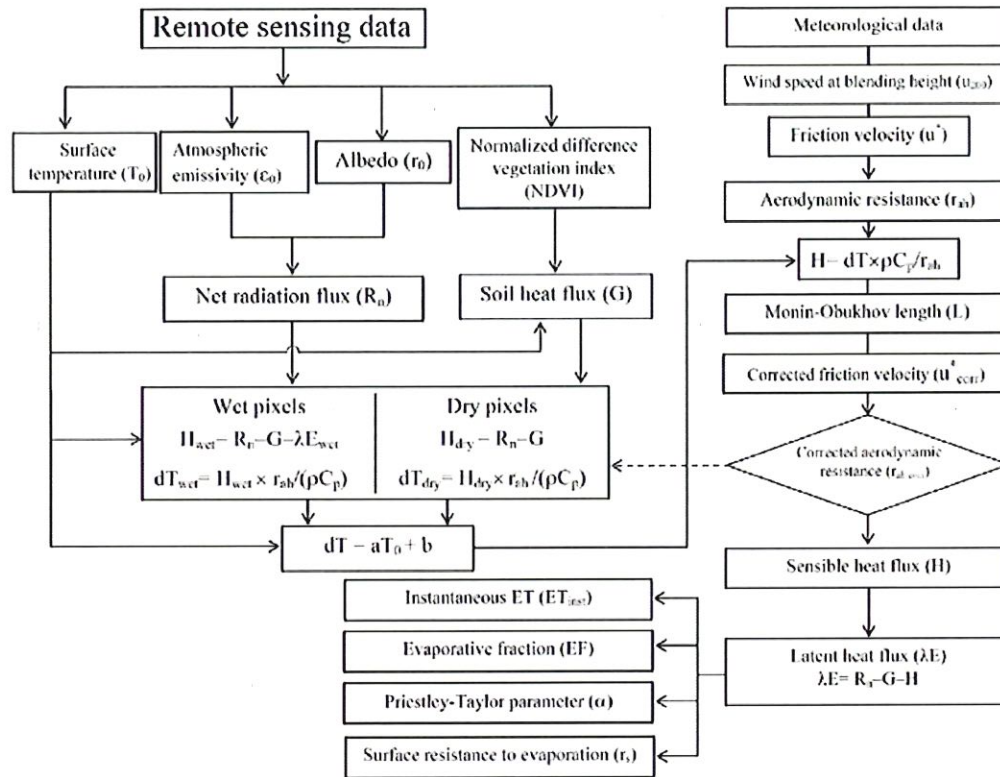


Figure 2: Flow chart of the SEBAL calculation scheme with extreme endpoints of hot (dry) and cold (wet) pixels that forms the basis of self-calibration. LST, surface albedo and NDVI are the major input parameters

This “self-calibration” of SEBAL eliminates propagation of errors on the energy balance partitioning. Simultaneously, the need for radiometric and atmospheric correction of surface temperature becomes less relevant because instantaneous ΔT and H values are forced to certain values at specific hot and cold pixels. The absolute values of thermal imagery LST (or T_0) do not matter. A systematic error of 2K or more in LST is thus not causing any problem. The relative value of LST is much more important. This aspect makes SEBAL very popular because the results are no longer dependent on accurate LST calibrations, atmospheric corrections and available air temperature records. Consumptive use of irrigated crops can be determined without information on the irrigation schedule.

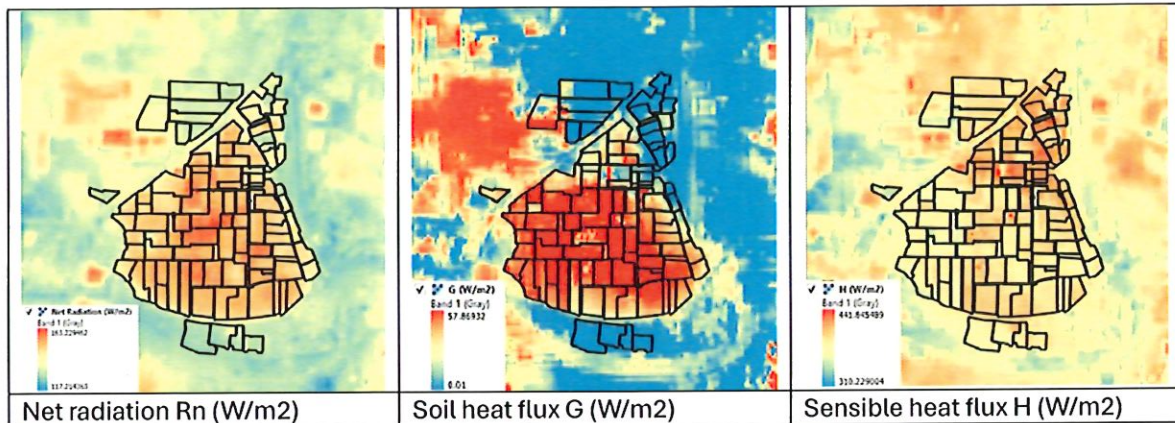


Figure 3: Example SEBAL energy balance outputs that create the basis for ET mapping. The data is from Odisha State acquired on 27 January (2024)

The **latent heat flux** (λE) forms the basis for determining actual evapotranspiration rate (ET) expressed in mm/d using the following conversion factors:

$$ET = 86.4 \cdot 10^6 \lambda E_{24} / (\lambda \rho_w)$$

Where λ is the latent heat of vaporization (approximately 2.45 MJ/kg for water at typical temperatures) and ρ_w is the density of water (approximately 1000 kg/m³). In case the 24-hour average value of λE is considered (λE_{24}), the factor 86.4 10^6 is used to convert λE_{24} directly into an ET rate expressed in mm/d.

The Surface Energy Balance Algorithm for Land (SEBAL) is developed by Prof. Wim Bastiaanssen from Hydrosat (www.hydrosat.com). Professor Bastiaanssen is also engaged to Delft University of Technology (Netherlands) for continuous updates and improvements of the model. The earlier work at the DLO Winand Staring Centre, Wageningen University, International Water Management Institute IWMI and UNESCO-IHE contributed significantly to the development of SEBAL versions 1.0 to 3.0. The most important co-workers are Prof. Massimo Menenti, Prof. Yasir Mohamed, Ir. Tim Hessels and Dr. Roula Bachour.

A model is never finished. IrriWatch and Hydrosat developed a propriety version (SEBAL4.0) that has several new features being introduced since 2019. They are related to new procedures for hot and cold pixel selection, separation of ET into T and E, soil moisture in the root zone, besides a new routine to describe the behaviour of stomates, being essential to determine the dry matter production

Crop growth modelling

Figure 4 demonstrates that the Transpiration rate T is proportional to daily crop production because T exhalation and CO₂ inhalation occurs via the same stomates. The stomatal aperture is the key regulator for the intake of CO₂. The CO₂ flow is mathematically defined by the stomatal resistance r_s and the difference of CO₂ concentration in air and inside the stomatal cavity. So, knowledge on the λE flux can be thankfully used to determine stomatal aperture and the assimilation of atmospheric carbon. Together with data on the Photosynthetically Active Radiation (PAR) - being also a SEBAL input - it becomes feasible to compute crop dry matter produce from photosynthesis (see Figure 4). More photosynthates are being produced if the crop

is relatively cool, being expressed as parameter T_s in Figure 4. Sensible heat flux H is small, and more CO_2 is taken by the crop for expansion of roots, stems, leaves and grains.

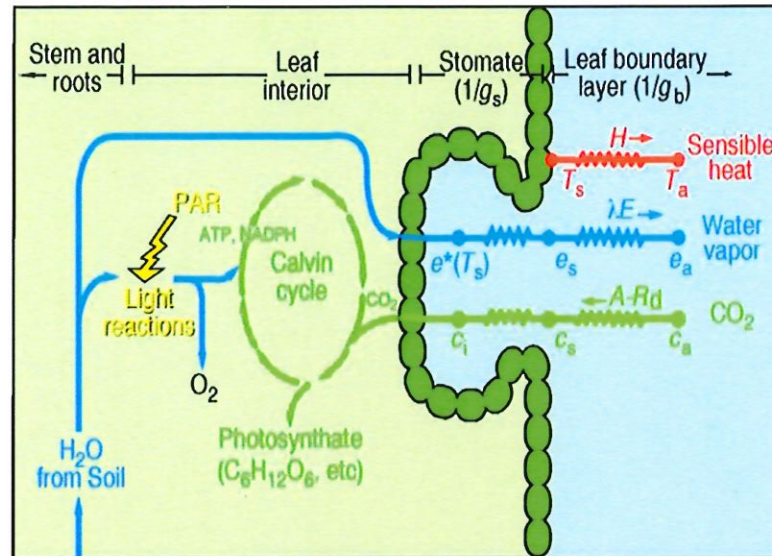


Figure 4: Schematic diagram of the exhalation of water vapour into the atmosphere (λE) as a function of sensible heat flux H and the Inhalation of CO_2 for the generation of photosynthates ($\text{C}_6\text{H}_{12}\text{O}_6$)

Soil Water Balance Modelling

The latest version of SEBAL includes an integration between the surface energy balance and soil water balance where actual ET is the common denominator for both. Because ET is a large component of the water balance, it provides great insights in the magnitude of the various terms. For instance, if ET is high and Precipitation P is low, then there must be another source of water, otherwise large ET rates cannot be explained. Another fact is that if λE is a large fraction of R_n , most available energy goes to ET so the root zone must be moist. This section describes how information on spatial ET can be utilized to infer irrigation water applications.

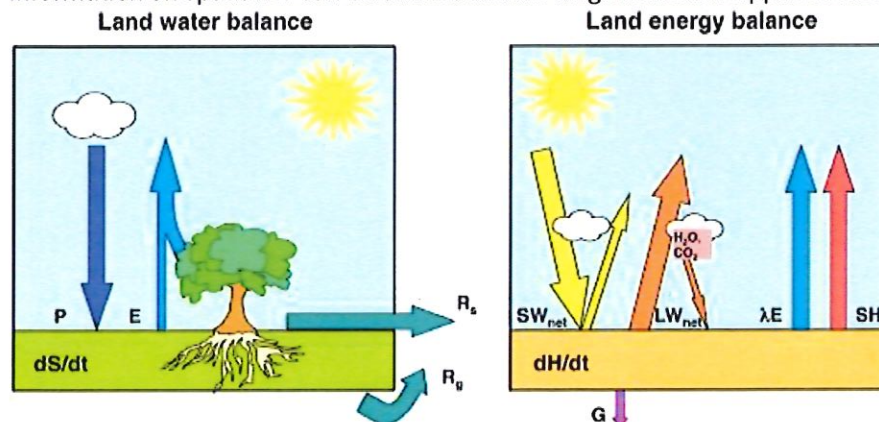


Figure 5: Integrated surface energy and soil water balance modelling. The evapotranspiration process λE and E is part of both balances.

The soil water balance model in Figure 5 has been employed to acquire a spatially distributed estimation of every term of the balance for every pixel. The soil water balance computes surface runoff R_s following a soil moisture deficit and presence of roots. This is a modified version of the Soil Conservation Service equation that has fixed infiltration capacities described by means of Curve Numbers. Water that percolates from the root zone is no longer available for ET and reduces soil water storage. In line with Darcian flow in unsaturated soil, the mathematical expression for percolation q_d is a non-linear function of the degree of soil moisture saturation. The monthly application of irrigation from the farm gate or pumping house express as Applied Water AW can be approximated as:

$$AW = ET + R + q_d + \Delta S - P$$

where P is precipitation, AW is Applied Water, ET is actual evapotranspiration, R is surface runoff, q_d is the percolation from root zone and ΔS is the change in storage of water in the root zone. The latter describes the difference between all inflows and all outflows. Applied Water can thus be approximated from remotely sensed ET and ΔS values, in combination with soil moisture (θ) dependent values of $R(\theta)$ and $q_d(\theta)$.

In California, it is common to allocate groundwater on the basis of ET from Applied Water or ETaw. Hydrological background studies have determined the maximum volume of ETaw to realize a new equilibrium situation with zero-overdraft for different sub-aquifers. To accommodate ETaw as a basis for allocation and compliances, the IDC model (<https://data.cnra.ca.gov/dataset/idc-version-2015-0-77/resource/238d3e2b-a985-4db7-9793-933ba6d525af>) is used for the assessment of ETaw from ET. In short this can be expressed as:

$$ETaw = ET - ETpr$$

Where ETpr is the ET that is related to precipitation values only. While SEBAL provides the storage in the root zone from real world conditions with a mixture of rainfall and irrigation i.e. storage S, IDC model is applied to any pixel of 10m x 10m to compute the storage in the root zone without irrigation Spr. Values for ETpr are approximated from the ratio of the two storages:

$$ETpr = \alpha ET$$

with

$$\alpha = Spr / S$$

When the storage from antecedent rainfall is getting negligible small, α reduces to zero and ETpr will fade away. Under that condition all the ET can be ascribed to ETaw. ETaw is a very appealing parameter for the calculation of on-farm irrigation efficiency ($ETaw/AW \times 100\%$), but a bit complicated to get to it. The schematic below provides an illustration of how ETpr from rainfall and ETaw from irrigation are computed in parallel. Basically 2 parallel soil moisture buckets for every pixel are parameterized.

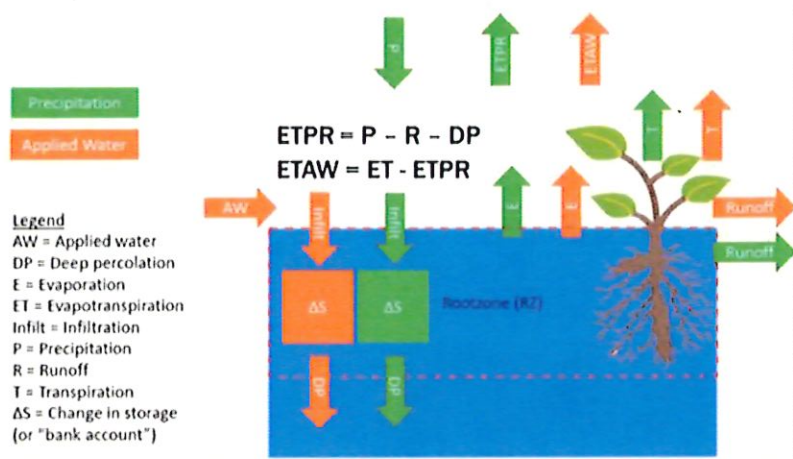


Figure 6: Illustration of how Precipitation P and Applied Water AW have their own impact on ETaw and ETpr calculations (courtesy: J.C. Davids)

Annex 2: IrriWatch Portal Overview

The IrriWatch portal (irriwatch.hydrosat.com) of Hydrosat provides daily monitoring of all the fields within the county. Our energy balance and water balance algorithms are run every day and provide data for every field at 10 m by 10 m spatial resolution.

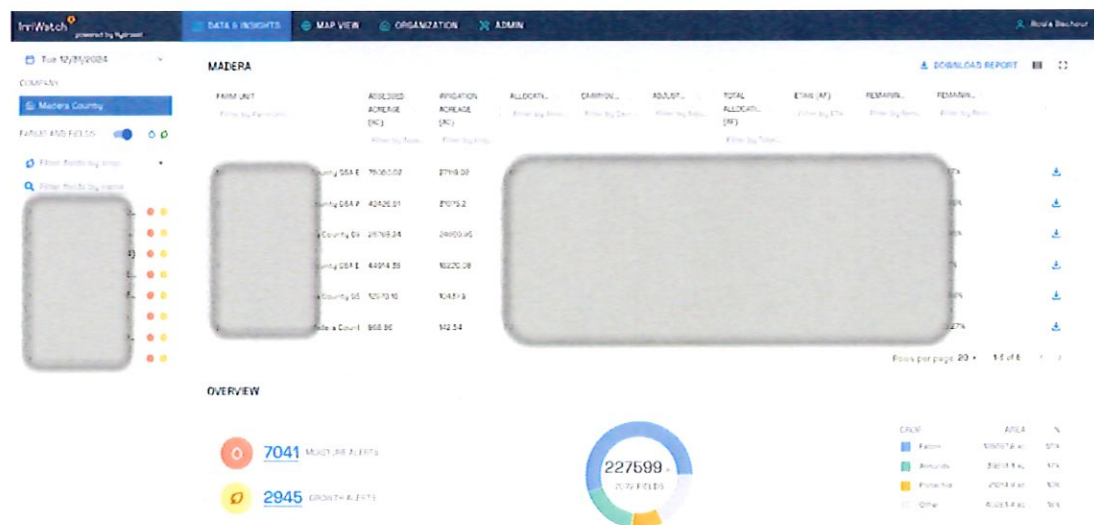
The portal allows data access for the Madera County GSA(s) to see and monitor all fields, while also allowing individual growers or companies to have access to their own parcels and fields.

The standard IrriWatch portal is tailored to farmers to be used for irrigation scheduling, soil moisture, and crop monitoring. However, for water allocation monitoring we have tailored our portal to provide more insights into the actual evapotranspiration from applied water (ETAW) vs Allocations and monitor the remaining allocations. For this budget tables are presented for each farm unit, each sub-basin etc. At the same time, monthly reports are generated at parcel level, farm unit level and master account level allowing maximum flexibility and visibility about data.

In addition to our web portal, data is also delivered via an API, excel downloads, PDF reports and Mobile App.

In the following screenshots we show examples from our web portal from Madera County (some names/values are blurred out for privacy).

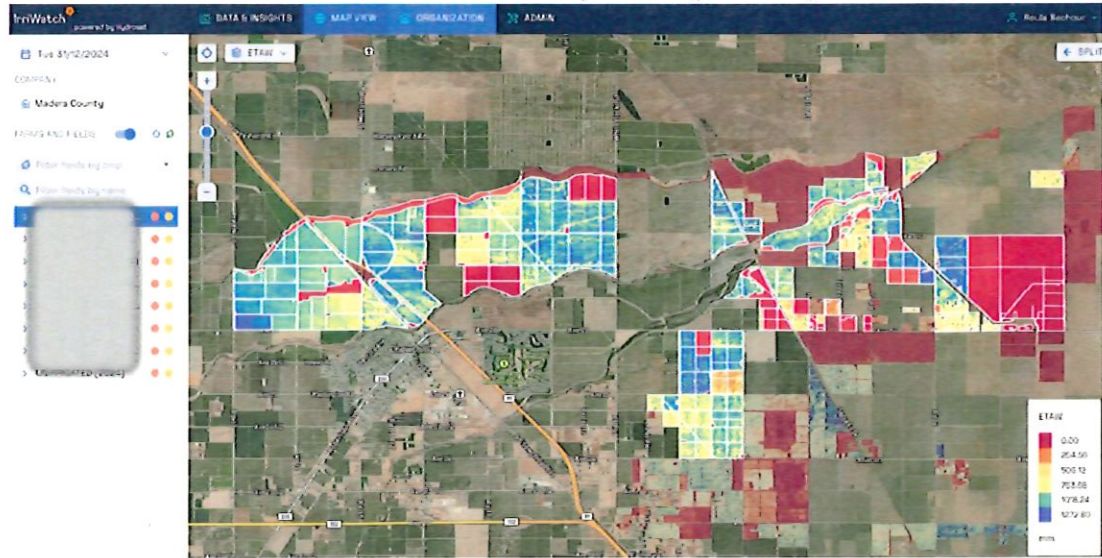
Overview of All County sub-basins and the budget tables





Hydrosat

Overview of one sub-basin from the County level (pixel maps showing the ETAW)



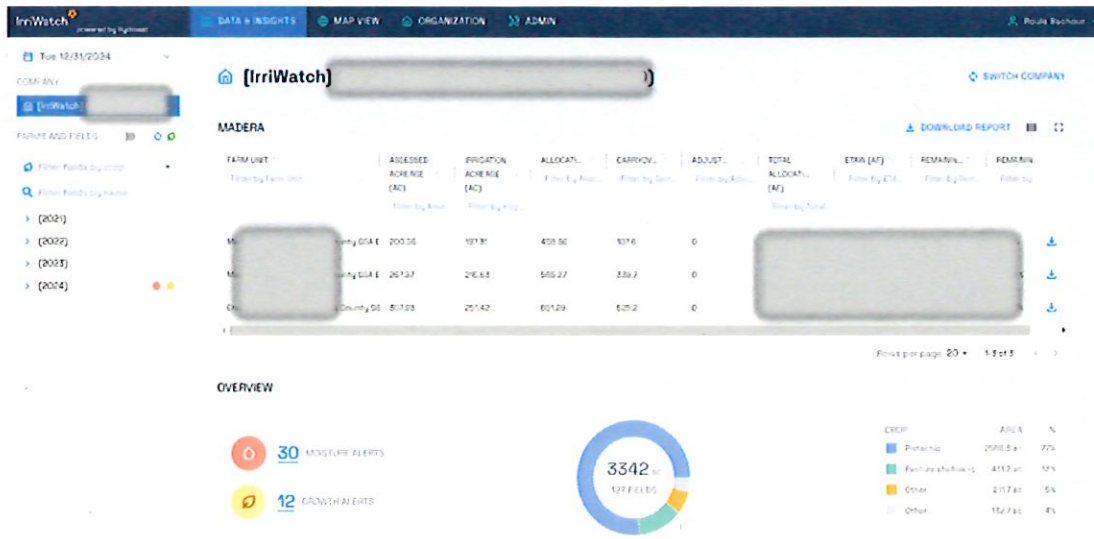
Overview of each sub-basin with Budget tables updated on daily basis (Downloadable PDF reports for each parcel generated at the end of each month)

East (2024)

MADERA

PARCEL ID	ASSESSED ACREAGE (AC)	IRRIGATION ACREAGE (AC)	ALLOCATION	CARRYOVER	ADJUSTED	TOTAL ALLOCATION (AF)	ETAW (AF)	REMAINDER	REMAINDER (AF)
001	80	04.30						11.2%	
002	64	01.85						10.12%	
003	14.07	0						75.10%	
004	28.38	25.49						8.60%	
005	16.28	14.77						-1.22%	
006	240.67	236.71						-29.62%	
007	0.35	0.35						-11.97%	
008	308	205.17						-24.92%	
009	104.29	102.14						100%	

Individual accounts for each grower including their farms units and parcels



Daily monitoring of ETAW vs. Allocation available for each parcel



Thank you!

Hydrosat Team



Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.f

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Well Driller Contract(s) for Domestic Well Mitigation Program in 2026

DISCUSSION:

The Madera County Groundwater Sustainability Agency (Madera County GSA) is implementing the Domestic Well Mitigation Program (DWMP) to assist residents whose domestic wells are impacted by declining groundwater levels within the Madera Subbasin. The program fulfills a key commitment outlined in the Joint Groundwater Sustainability Plan (GSP) and supports the County GSA's goal of maintaining access to safe and reliable drinking water for rural residents.

In March 2023, Madera County GSA and four other GSAs in the Madera Subbasin executed a Memorandum of Understanding establishing a cost-sharing framework for domestic well mitigation. However, as of August 2025, several GSAs elected to independently manage their mitigation efforts, leaving the Madera County GSA responsible for implementing and funding mitigation activities within its jurisdictional boundaries.

To ensure timely and compliant implementation, the County issued a Request for Qualifications (RFQ) on October 15, 2025. The RFQ closed on November 4, 2025, with a total of three well driller submissions received. Responses were evaluated based on five key criteria by a selection committee consisting of representatives from the Madera County GSA and external subject matter experts. Following the review, firms will be selected to enter into contracts with the County GSA for well drilling services. These contracts will likely be considered by the board of directors at the December 9, 2025 or January 6, 2026 meetings of the board of directors.





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.f

FISCAL IMPACT:

The fees collected through the GSP fee and penalties fully recover the cost of providing this service, ensuring that the implementation of the Domestic Well Mitigation Program remains cost-neutral to the County GSA.

ATTACHMENTS:

N/A

J.W





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.g

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Prop 68 funded contracts with landowners related to recharge

DISCUSSION:

The Sustainable Groundwater Management Act requires that each California groundwater basin be managed by a Groundwater Sustainability Agency, and that such management be implemented pursuant to an approved Groundwater Sustainability Plan. In accordance with The Sustainable Groundwater Management Act, the Chowchilla subbasin submitted a GSP in January of 2020, which showed a plan to achieve “sustainability” by the year 2040. A key component of the GSPs is the development of projects that enable groundwater recharge through in-lieu practices, Flood-MAR, and spreading basins.

Vlot Family Farms is willing to implement recharge activities on their land in accordance with the terms and conditions of the attached Landowners Agreement, to assist Madera County with implementation of the GSP for the Chowchilla Subbasin. The project site consists of an open parcel of land totaling 44.8± acres owned by Vlot Family Farms. The Project components include a portion of the backbone infrastructure necessary to convey and infiltrate water from the Eastside Bypass through direct recharge and will connect directly to a SGMA Grant funded project undertaken by the Madera County GSA which will construct a turnout off the Eastside Bypass. Specifically, this project consists of approximately 220 of conveyance pipeline, 24” diameter flow meter, one discharge structure, 116 acre-feet recharge basin with overflow spillway, and security fence gates. Earthen levees will be constructed to create the recharge basin cell.

The Haynes project site consists of an existing 90 acre-feet recharge basin (with a 30-acre footprint) owned by Haynes Family Trust located at 37.0416°N Latitude, -120.4755°W Longitude. The site lies approximately 12.7 miles southwest of Chowchilla, CA on the east side of the Eastside Bypass and 0.9 miles south of Avenue 21. The POD for this project is located on the east side of the Eastside Bypass.





Committee Members
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Robert Macaulay

ITEM 4.g

The Clayton Water District project site consists of five (5) landowner properties with the easement and construction on Menefee Hill Top Ranch owned by Scott Menefee. Clayton Water District is willing to implement recharge activities on their land in accordance with the terms and conditions of the Landowners Agreement, to assist Madera County with implementation of the GSP for the Chowchilla Subbasin. This will include one point of diversion from the Chowchilla Bypass with appropriate conveyance to divert flood flows to exiting farmland for recharge as flood-managed aquifer recharge (Flood-MAR). The project will be designed to have the capacity of recharging approximately 6,000 acre-feet per year, when water is available.

The construction of the Project will help the owner work towards addressing the local groundwater issues as well as provide for improved flood control, and water deliveries. The Project facilities are anticipated to be used into perpetuity by the owner with the ongoing and preventative maintenance work performed by staff or contractors as needed. The anticipated life of the Project is 50+ years.

FISCAL IMPACT:

There is no fiscal impact to the general fund; all costs are paid by a grant received from the Department of Water Resources.

ATTACHMENTS:

N/A

J.H





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.h

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Prop 68 Chowchilla 1 Construction

DISCUSSION:

Construction is required for three recharge construction projects on the Chowchilla/Eastside bypass. These projects are grant-funded through a Prop 68 grant. These project areas were chosen based on landowners having existing planning work already completed and were in the County Groundwater Sustainability Agencies (GSAs) survey of interested acres for recharge.

The bid process has multiple steps that will take one to two months to complete while bidding all three construction projects together. The steps include: Posting the project in the Newspaper; Posting the bid in BidExpress, holding a pre-bid meeting on site, answering questions one week before the bid closes, publicly opening the bids and a one week protest period of the lowest bid. This is all followed by having the Contract reviewed and signed off by the County Counsel, noticing the Contractor of the award and requesting all their pertinent paperwork, preparing the packet for the Board of Directors and taking this to the Board for signature. When all the paperwork and signatures are completed and received, there is a preconstruction conference to review the project.

After the formal bid process the contracts will be secured for the construction of a total of five points of diversion from the Chowchilla/Eastside Bypass as well as the construction of facilities to deliver water to approximately 900 acres of existing agricultural land for Flood-MAR. There will be construction of 2 grower turnouts and installation of approximately one dual completion monitoring well.





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.h

FISCAL IMPACT:

There is no fiscal impact to the general fund; all costs are paid by a grant received from the Department of Water Resources.

ATTACHMENTS:

N/A

J.H





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.i

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Demand Management Policy Options Moving Ahead

DISCUSSION:

Background

Madera County Groundwater Sustainability Agency (Madera County GSA) has a groundwater allocation program and associated penalties in place through 2040 for all three subbasins within which it has jurisdictional responsibility (Resolution 2025-085). The structure of these allocations was developed by the Madera County GSA Advisory Committee in 2019 and 2020 and resulted in Resolution No. 2020-166, which adopted key principles for a groundwater allocation approach. Allocations were further developed and defined in Resolution No. 2021-069 in which allocations per acre were determined. Additional questions relating to recharge credits and data regarding current water use were addressed in Resolution No. 2021-113, which included additional groundwater allocation program refinements. Penalties for exceeding allocations were adopted separately (Resolution No. 2022-143, 144, and 145) setting a stair step penalty, starting at \$100/AF in 2023 for use over an allocation, increasing by \$100/AF each year thereafter, capped at \$500/AF by 2027 in terms of penalties over the allocation.

REVISED OPTIONS FOR GROUNDWATER ALLOCATION PROGRAM REFINEMENTS

Based on the ETAW time series within each Subbasin, it appears that the groundwater allocation program is having some of the desired effect. However, the Board may want to consider refinements to the groundwater allocation program to assure the long-term





Committee Members
Leticia Gonzalez
Robert Macaulay

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objectives of the County GSA in each subbasin are achieved. Several options have been developed, including:

1. Increasing the penalty to \$500/AF – This seems consistent with other GSAs (see Attachment A) but was discussed on October 7, 2025 GSA Committee with no apparent interest.
2. Modifying the carryover policy – Introducing a limit on the time that water could be carried over or a decay factor for the water would mimic hydrologic realities and is consistent with other GSAs.
3. Adjust allocations for “repeat offenders” – Upon the second year of incurring penalties for overuse, a quantity equivalent to the second-year overage could also be subtracted from the Farm Unit’s upcoming allocation – in addition to incurring the penalty. This also is an approach adopted by other GSAs facing groundwater allocation challenges.
4. Shift to “surgical precision” with subsidence guidance from DWR. This might mean creating additional zones with additional restrictions, including lower restrictions and restrictions on deep aquifer pumping. This work is being developed with the Chowchilla GSP Advisory Committee as part of the requirements from the State Water Resources Control Board.

This item is for discussion and information only and will be brought back with refinements in 2026.

FISCAL IMPACT:

Each option has different fiscal impacts both to the County GSA and to individual growers.

ATTACHMENT:

1. Survey of Comparable Agencies

S.A



A Survey of Comparable Agencies related to Allocations, Penalties, and Carryover

	Madera County GSA	Merced Subbasin GSA	North Fork Kings GSA	Eastern Tule GSA	Eastern Kaweah GSA	Greater Kaweah GSA	Lower Tule River Irrigation District GSA
Penalties for Allocations	Starts at \$100/AF for 2023, increases to \$500/AF by 2027, with an additional \$1000/ farm unit penalty in Chowchilla Subbasin	\$500/AF + \$1000 + \$100/day; repeated violations may trigger additional restrictions	In process (allocation without penalties in 2026)	Penalties vary by year; \$392/AF in 2025 for Tier 1 (anything beyond SY) and \$500/AF for Tier 2	Yes; \$500/AF with a one-to-one loss in the following year allocations	Tier 3 is \$500/AF plus loss of that amount of water from the following years allocation	\$500/AF over an allocation, plus a consumption charge (buying an alternative supply)
Allocation Zones	Yes, 6 farm unit zones; allocations differ depending on subbasin	Yes, 8 zones; allocations are the same across all zones currently	In process	Land Subsidence Management Zone on Friant-Kern Canal (AF reduced depending on location)	No	No; may establish management areas soon to discourage lower aquifer pumping	No; may establish subsidence zones soon
Carryover Rules	No expiration; no decay	No decay; recharge credits decay after five years	In process, but discussed 2-year limit	Carryover expires in five years	Only native allocation can carryover; carryover expires in five years	Carryover expires in five years if paid for originally in the year it was allocated	No decay; order of water used by priority determined by GSA (Precipitation, SY, recharge, TW)
Number of Measurement Methods	Hydrosat, LandIQ, private meters with an option to appeal	OpenET, private party monthly satellite measurements; monthly meter data	Land IQ with ability to dispute with meter data (appeal)	Land IQ; meter data to appeal; special requirements in subsidence zone for metering	Land IQ; opt-in process for meters with substantial rules	Land IQ; opt-in process for meters with substantial rules	Land IQ; meter or other measurement for appeal

A Survey of Comparable Agencies related to Allocations, Penalties, and Carryover

Small Farm Rules	No	No	Potentially, in process	No	No	No	No



Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.j

Date: November 12, 2025

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Leticia Gonzalez, Robert Macaulay

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Joint Power Authority in the Madera County GSA Delta-Mendota Subbasin for overall governance

DISCUSSION:

Background: The Sustainable Groundwater Management Act (SGMA) was signed into law on September 16, 2014. SGMA requires local agencies to form Groundwater Sustainability Agencies (GSAs), with the intent to create local control of groundwater management for the Subbasins. Furthermore, through the implementation of Groundwater Sustainability Plans (GSPs), the GSAs are required to meet sustainability goals for groundwater.

On May 13, 2017, Madera County became the GSA for the portion of the Delta-Mendota Subbasin, within the County of Madera, not already covered by another agency. The County of Madera GSA-Delta-Mendota is one of 23 GSAs in the basin. Currently, the 23 GSAs make up seven GSA Groups. Out of the seven GSA Groups in the Delta-Mendota, the County of Madera GSA-Delta-Mendota is part of the San Joaquin River Exchange Contractors GSA Group (SJREC). The seven GSA Groups formed the Coordination Committee to develop and implement a subbasin wide, single GSP.

In 2024, the 23 GSAs in the Delta-Mendota Subbasin collaborated through the Coordination Committee and created the subbasin wide, single GSP (2024 GSP). The 2024 GSP has been submitted to the State Water Resource Control Board (SWRCB) and the Department of Water Resources (DWR). The Delta-Mendota Subbasin GSP is currently under review by SWRCB. SWRCB is actively giving direction on the 2024 GSP and the corresponding updates are being completed through the Coordination Committee.

Proposed Joint Powers Agreement: Currently, the San Luis & Delta-Mendota Water Authority (SLDMWA) provides fiscal, contracting, and administrative services for the Delta-





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.j

Mendota Subbasin Coordination Committee. However, SLDMWA is transitioning away from providing these services to the Coordination Committee by March 1, 2026. A Joint Powers Authority (JPA) will take the place of SLDMWA for the purpose of acting as a separate and independent public agency to coordinate administrative, financial, and technical management of the Delta-Mendota Subbasin activities for SGMA and the 2024 GSP. The JPA will replace the current Coordination Committee and create a Board of Directors. The 23 GSAs in the Delta-Mendota Subbasin have been asked by the current Coordination Committee to enter into the JPA. This will ensure continuity of necessary services and SGMA related activities.

The powers of the JPA will include:

- (a) To make and enter into contracts;
- (b) To employ consultants, agents and employees;
- (c) To acquire, lease, own, construct, manage, maintain, operate, and dispose of any building, works or improvements;
- (d) To acquire, hold or dispose of real or personal property;
- (e) To incur debts, liabilities, or obligations;
- (f) To sue and be sued in its own name;
- (g) To undertake, on behalf of the Members, administrative or ministerial actions required by DWR and the State Water Board under SGMA;
- (h) To conduct research and investigations and compile appropriate reports for implementing the single GSP for the Subbasin, as it may be amended or revised from time to time;
- (i) To cooperate, act in conjunction with, and contract with the United States, the State of California or any agency thereof, Counties, Cities, and other local agencies;
- (j) To enter into grant agreements consistent with the purposes of the Authority described herein;
- (k) To enter into Special Project Agreements with a Member or Members for the benefit of implementing the SGMA in the Subbasin;
- (l) To participate, on behalf of one or more GSAs, in groundwater sustainability projects and management actions related to SGMA; and
- (m) To create committees and sub-committees.

Link to the final Delta-Mendota Subbasin Groundwater Sustainability Plan:
<https://deltamendota.org/final-gsp-documents/>





Committee Members
Leticia Gonzalez
Robert Macaulay

ITEM 4.j

FISCAL IMPACT:

No fiscal impact on the general fund.

ATTACHMENTS:

DM Subbasin GSAs JPA (9-10-2025 FINAL)

J.C



**DELTA-MENDOTA SUBBASIN GSAS
JOINT POWERS AUTHORITY AGREEMENT**

This **DELTA-MENDOTA SUBBASIN GSAS JOINT POWERS AUTHORITY AGREEMENT** (this “Agreement”) is made and entered into on this 1st day of December, 2025 (the “Effective Date”) pursuant to Title 1, Division 7, Chapter 5 (Section 6500 *et seq.*) of the California Government Code relating to the joint exercise of powers, by and among the groundwater sustainability agencies within the Delta-Mendota Subbasin listed in Exhibit “A” (each a “Member” and in the plural or collectively, as the “Members”).

RECITALS

A. **WHEREAS**, in September 2014 the Governor of the State of California signed legislation creating the Sustainable Groundwater Management Act (or “SGMA,” as that term is defined in section 1.14, below) “to provide local groundwater agencies with the authority and technical and financial assistance necessary to sustainably manage groundwater.” (Wat. Code, § 10720.1(d)); and

B. **WHEREAS**, SGMA provides that each affected groundwater basin may be regulated separately by one or more groundwater sustainability agencies (a “GSA” or “GSAs”, respectively). Any local agency or combination of local agencies overlying a groundwater basin may decide to become a GSA for that basin within its boundaries. (Wat. Code, § 10723(a).); and

C. **WHEREAS**, groundwater sustainability under SGMA is to be achieved through groundwater sustainability plans (or “GSPs,” as the term “GSP” is defined in section 1.10, below), which can be a single plan developed by one or more GSAs, or multiple coordinated plans within a basin or subbasin (Wat. Code, § 10727); and

D. **WHEREAS**, the Members overlie portions of the Delta-Mendota Subbasin number 5-22.07 of the San Joaquin Valley Groundwater Basin identified in the California Department of Water Resources (“DWR”) Bulletin 118 (the “Subbasin”), as its boundaries may be modified from time to time as provided by law; and

E. **WHEREAS**, DWR has designated the entire Subbasin as critically overdrafted. Under SGMA, GSAs in critically overdrafted subbasins were required to assume their regulatory roles by June 30, 2017, and to submit one or more GSPs covering the basin to DWR by January 31, 2020; and

F. **WHEREAS**, the Members are all public agencies as defined by Government Code section 6500 and Water Code section 10723(a). All Members are authorized to contract with the State or Federal governments and agencies, and to exercise powers related to groundwater management, land use, or both, within their jurisdictional boundaries. Each Member qualifies individually to serve as a GSA under SGMA; and

G. **WHEREAS**, the Members initially managed the Subbasin pursuant to SGMA through the development and implementation of six different coordinated GSPs; and

H. **WHEREAS**, in 2024, the Members adopted a single GSP to cover the entire Subbasin to comply with SGMA; and

I. **WHEREAS**, the Members formed a “Coordination Committee” pursuant to that certain “Memorandum of Agreement Among the Delta-Mendota Subbasin Groundwater Sustainability Agencies” (the “MOA”) to, among other things, make recommendations, approve budgets and authorize entering into contracts on behalf of the Subbasin; and

J. **WHEREAS**, the Members previously contracted with San Luis & Delta-Mendota Water Authority (“SLDMWA”) to assist in coordinating administrative, financial and technical management of the multiple GSAs in the Subbasin; and

K. **WHEREAS**, the Members now desire to enter into this Agreement to form the Delta-Mendota Subbasin GSAs Joint Powers Authority (the “Authority”) for the purpose of coordinating the administrative, financial, and technical management of the multiple GSAs in the Subbasin and replace the previously existing Coordination Committee with the Board of Directors of the Authority.

NOW, THEREFORE, in consideration of the true and correct facts recited above, which are hereby incorporated herein, and of the covenants, terms and conditions set forth herein, the Members hereto agree as follows:

ARTICLE I DEFINITIONS

As used in this Agreement, unless the context requires otherwise, the meaning of the terms hereinafter set forth shall be as follows:

1.1 **“Act”** means the Joint Exercise of Powers Act codified at Government Code sections 6500, *et seq.*

1.2 **“Agreement”** means this Delta-Mendota Subbasin GSAs Joint Powers Authority Agreement.

1.3 **“Authority”** means the Delta-Mendota Subbasin GSAs Joint Powers Authority.

1.4 **“Coordinated Plan Expenses”** are those Subbasin-wide Activities expenses incurred by the Authority, the Secretary, and the Plan Manager, at the direction of the Board of Directors, within approved annual cost estimates for purposes described in this Agreement and in implementing the DM Subbasin MOA, including actual expenses incurred in executing obligations under the DM Subbasin MOA for intrabasin and interbasin coordination, which are shared equally amongst the seven representative seats of the Board of Directors, in accordance with the Participation Percentages.

1.5 “**Board of Directors**” means the governing body of the Authority established pursuant to Article 6 of this Agreement.

1.6 “**Director**” means a designated representative who holds a seat on the Authority’s seven-member Board of Directors.

1.7 “**GSA**” shall mean a groundwater sustainability agency established in accordance with SGMA and its associated regulations, and “GSAs” shall mean more than one such groundwater sustainability agency. Each Member is a GSA.

1.8 “**GSA Group Representative**” shall refer to the representative of a group of GSAs that share a single seat on the Board of Directors, as established in Article 6.1 of this Agreement.

1.9 “**GSA Representative**” shall refer to the representative of a single GSA who holds a single seat on the Board of Directors, as established in Article 6.1 of this Agreement.

1.10 “**GSP**” means a groundwater sustainability plan, as defined by section 10721(k) of the Water Code.

1.11 “**Fiscal Year**” means each period beginning on March 1 and ending on the last day in February the following year.

1.12 “**MOA**” shall mean the “Memorandum of Agreement Among the Delta-Mendota Subbasin Groundwater Sustainability Agencies,” as amended, describing the Members’ responsibilities for the Subbasin-wide monitoring network, coordinated data management system, and adaptive management framework.

1.13 “**Participation Percentages**” shall mean that percentage of Coordinated Plan Expenses allocated to each representative seat on the Board of Directors as described in Exhibit “B” to this Agreement, which is attached hereto and incorporated by reference herein, as updated from time to time by action of the Board of Directors, but not more frequently than annually.

1.14 “**Plan Manager**” shall mean an entity or individual appointed at the pleasure of the Board of Directors to perform the role of the Plan Manager for the Subbasin and to serve as the point of contact to DWR and/or the State Water Board.

1.15 “**SGMA**” means the California Sustainable Groundwater Management Act, which is codified in Part 2.74 (commencing with section 10720) of Division 6 of the Water Code, and all state regulations adopted under that Part, including but not limited to DWR’s SGMA regulations (commencing at 23 Cal. Code Regs., §§ 350, *et seq.*).

1.16 “**State Water Board**” shall mean the California State Water Resources Control Board.

1.17 “**Subbasin**” means the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin, subbasin number 5-22.07, as identified in Bulletin 118 prepared by the DWR, as may be amended and updated from time to time pursuant to law.

1.18 “**Subbasin-wide Activities**” shall mean those activities or actions that affect the Subbasin as a whole or are otherwise required by SGMA to be determined at the Subbasin level and as defined by a unanimous vote of the Board of Directors of the Authority.

1.19 “**Special Project Agreement**” means an agreement between the Authority and any of its Members, or multiple Members, for the purpose of facilitating a separate project or management action for which only those Member(s) who are a party to the agreement are obligated to pay or have liability.

1.20 “**Water Year**” shall mean the period from October 1 through the following September 30.

ARTICLE II CREATION OF THE JPA

2.1 Creation. Upon the Effective Date and pursuant to the Act, the Members hereby create a public entity separate and independent from the Members to be known as the “Delta-Mendota Subbasin GSAs Joint Powers Authority”.

2.2 Boundaries. The jurisdictional area of the Authority is intended to generally consist of all areas within the boundaries of the Subbasin, as identified by DWR.

2.3 Notices. The Authority shall timely file the notices required by Government Code sections 6503.5, 6503.6, and 53051.

ARTICLE III TERM

3.1 Term. This Agreement is effective as of the Effective Date and continues in full force and effect until terminated under Article 10.

ARTICLE IV PURPOSE OF THE JPA

4.1 Purpose of Agreement. The purpose of this Agreement is to create a joint powers authority separate from its Members to accomplish the purposes described below. The Members have worked together in mutual cooperation to develop a single GSP in compliance with SGMA, for the sustainable management of the Subbasin. Each Member hereto has adopted the GSP and will implement its terms and conditions within their respective GSA territories.

4.2 Purpose of Authority. The purpose of the Authority is to act as a separate and independent public agency to perform the tasks and functions articulated in Section 6.7.

4.3 Limitations.

- (a) Nothing in this Agreement is intended to confer upon the Authority, any Member, or upon any third party outside this Agreement the authority to limit or interfere with the other respective Member’s rights and authorities

over its own internal matters, including but not limited to, such Member's surface water supplies, groundwater supplies, facilities, billing and collection procedures, GSA powers and implementation or exercise of such powers, and operations and water management. Nothing in this Agreement is intended to modify or limit a Member's police powers, land use authorities, or any other authority, including the authority to pursue a comprehensive groundwater adjudication or other alternative SGMA compliance strategy, should the Member deem it to be in its best interest to do so.

- (b) The Authority shall not possess the authority to impose, levy, or collect fees, charges, assessments, or other impositions upon lands or landowners within its boundaries. The Authority's ability to collect, hold, and spend funds shall be limited by the budget procedures described here.
- (c) Nothing in this Agreement prevents the Members from entering into other joint powers agreements.

ARTICLE V POWERS OF THE JPA

5.1 Powers. The Authority is authorized, in its own name, to do all acts necessary for carrying out the purpose of this Agreement, including, but not limited to, any and all of the powers identified in this Article 5 and those powers identified in Government Code section 6508. Specifically, the Authority is authorized, in its own name and subject to the Board of Directors' approval as described herein, to do any or all of the following:

- (a) To make and enter into contracts;
- (b) To employ consultants, agents and employees;
- (c) To acquire, lease, own, construct, manage, maintain, operate, and dispose of any building, works or improvements;
- (d) To acquire, hold or dispose of real or personal property;
- (e) To incur debts, liabilities, or obligations;
- (f) To sue and be sued in its own name;
- (g) To undertake, on behalf of the Members, administrative or ministerial actions required by DWR and the State Water Board under SGMA;
- (h) To conduct research and investigations and compile appropriate reports for implementing the single GSP for the Subbasin, as it may be amended or revised from time to time;

- (i) To cooperate, act in conjunction with, and contract with the United States, the State of California or any agency thereof, Counties, Cities, and other local agencies;
- (j) To enter into grant agreements consistent with the purposes of the Authority described herein;
- (k) To enter into Special Project Agreements with a Member or Members for the benefit of implementing the SGMA in the Subbasin;
- (l) To participate, on behalf of one or more GSAs, in groundwater sustainability projects and management actions related to SGMA; and
- (m) To create committees and sub-committees.

5.2 Common Powers. The Authority may exercise the common powers of the Members.

5.3 Restrictions on the Exercise of Powers. Pursuant to Government Code section 6509, *et seq.*, the powers of the Authority shall be exercised and restricted in the same manner as those imposed upon Patterson Irrigation District, a California irrigation district. The Authority shall have the power of eminent domain. If Patterson Irrigation District withdraws as a Member, the remaining Members shall amend this Agreement pursuant to section 14.1.

5.4 Limitation on Authority Powers. The Authority is not a GSA and may not exercise certain powers granted to GSAs, including the authorities provided in Water Code section 10726.2 (groundwater extraction), and Chapter 8 (commencing with section 10730) (fee authorities) of SGMA. The individual Members of the Authority each hold GSA powers and each Member expressly reserves the right to (a) exercise all rights afforded to a GSA within their respective boundaries, and (b) defend, with legal counsel of its own choosing, any challenge to the adoption or implementation of the adopted GSP. When the terms of this Agreement or applicable law require the approval of a GSA (such as approval of the GSP), that approval shall be required and evidenced (as provided in Article 6.9) by the Members.

5.5 Obligations of the Authority. No debt, liability, or obligation of the Authority shall constitute a debt, liability or obligation of any of the Members, appointed representatives on the Board of Directors, or committee members. No debt, liability, or obligation of any Member shall constitute a debt, liability or obligation of the Authority.

5.6 Water Rights. Nothing contained in this Agreement grants to the Authority any power to alter any water right, contract right, or any similar right held by any of the Members, or to amend a Member's water delivery practice, course of dealing, or conduct without the express written consent of that Member.

ARTICLE VI BOARD OF DIRECTORS

6.1 Board of Directors. The Authority shall be administered by a seven (7)-member Board of Directors (the “Board of Directors”), composed of Directors and alternate Directors as described herein, to serve at the pleasure of their appointing governing body. All voting power of the Authority shall reside in the Board of Directors.

- (a) The Board of Directors will consist of a total of seven (7) voting members and shall be comprised of the representative of a Member GSA (“GSA Representative”) or a group of GSAs (a “GSA Group Representative”), as identified on Exhibit “B.” Each GSA Representative or GSA Group Representative shall have one Alternate Representative authorized to vote in the absence of the GSA Representative or GSA Group Representative, as applicable. Each GSA Representative, GSA Group Representative, and applicable Alternates, must be (i) an elected or appointed member of the governing body of a Member, or (ii) on the staff or a consultant of a Member.
- (b) Individuals serving on the Board of Directors as a GSA Representative or GSA Group Representative shall be selected by each respective GSA or GSA Group at the discretion of that particular GSA or GSA Group, and such appointments shall be effective upon providing written notice to the Authority’s Secretary.
- (c) Each Member understands its participation in actions of the Authority is based on representation on the Board of Directors. It is the responsibility and obligation of each Member to develop its manner of selecting its respective Representative and Alternate Representative. For purposes of this Agreement, it is assumed that each Director and Alternate Director has been authorized by the members in their respective GSA or GSA Group to participate as described herein.
- (d) The Board of Directors will recognize each GSA Representative or GSA Group Representative and their applicable Alternate Representatives until such time as the Authority’s Secretary is provided written notice of removal and replacement of said representative.

6.2 Removal. Directors and Alternate Directors may be removed or replaced as follows:

- (a) Directors and Alternate Directors may be removed or replaced at any time by the respective GSA or the GSA Group, as applicable, with reasonable written notice provided to the Authority’s Secretary of any such removal or replacement; and
- (b) A Director or Alternate Director shall be deemed automatically removed from the Board of Directors if that Director is no longer: (i) an elected or

appointed member of the governing body of the Member, or (ii) on the staff or a consultant of a Member entity that qualified such Director to serve on the Board of Directors.

6.3 Compensation. Directors shall not be compensated by the Authority for participation on the Board of Directors. The Authority shall develop a policy for reimbursement associated with direct expenses.

6.4 Legal Requirements. Each Director shall comply with all legal requirements, including disclosure and ethics requirements, applicable to directors of a California Joint Powers Authority.

6.5 Closed Session. Each Director and Alternate Director is eligible to participate in closed session of the Authority's Board of Directors.

6.6 Voting. Each Director on the Board of Directors shall be entitled to one (1) vote at the Board of Directors meetings. Except as expressly set forth in Article 6.8 below, the vote of a simple majority of Directors (i.e. at least four (4) Directors must vote in favor), at a regular or special meeting, of the Board of Directors shall be required for all other matters on which the Board of Directors is authorized to act.

6.7 Board of Directors Authorized Actions. The Board of Directors is authorized to act upon the following enumerated items:

- (a) By a simple majority vote of Directors (i.e. at least four (4) Directors must vote in favor), at a regular or special meeting, the Board of Directors shall review and approve:
 - (i) recommendation(s) to the GSAs for approving any technical analyses;
 - (ii) updating of technical analyses as needed;
 - (iii) developing budgets for Subbasin-wide Activities;
 - (iv) providing assistance with grants and with coordinated projects and programs;
 - (v) appointing ad hoc or standing committees and workgroups;
 - (vi) assigning work to committees and workgroups as needed, providing guidance and feedback, and ensuring that committees and workgroups prepare work products in a timely manner; and
 - (vii) providing direction to its officers concerning other administrative and ministerial issues necessary for the fulfillment of the above-enumerated tasks; and

- (viii) entering into Special Project Agreements with Members.
- (b) By a unanimous vote of all Directors (i.e. all seven (7) Directors must vote in favor), at a regular or special meeting, the Board of Directors shall review and approve:
 - (i) a determination of Subbasin-wide Activities, which may be modified by the Board of Directors from time to time;
 - (ii) submittal of annual reports;
 - (iii) a representative monitoring network;
 - (iv) final budgets and amendments to final budgets;
 - (v) submittal of five-year updates;
 - (vi) revisions to this Agreement;
 - (vii) adding new Members to this Agreement;
 - (viii) annual estimates of Coordinated Plan Expenses and any updates to such estimates, in accordance with the budgetary requirements of the respective Members; provided, that such estimates or updates with supporting documentation shall be circulated to all Members for comment at least thirty (30) days in advance of the meeting at which the Board of Directors will consider approval of the annual estimate;
 - (ix) directing the Plan Manager in the performance of its duties under SGMA; and
 - (x) the hiring of consultants for Subbasin-wide Activities, providing direction to and supervision over consultants engaged to assist in acquiring and processing technical data, conducting monitoring and reporting, and all other activities in support of Subbasin-wide Activities; and
 - (xi) exercising the powers of eminent domain.

6.8 Voting Procedures to Address Lack of Unanimity. When it appears likely that the Board of Directors will not be able to come to a unanimous decision on any matter for which a unanimous decision is required, upon a majority vote of a quorum of the Board of Directors, the matter may be subjected to any or all of the following additional procedures:

- (a) Straw Polls. Straw poll votes may be taken for the purpose of refining ideas and providing guidance to the Board of Directors, committees, or both.

- (b) Provisional Voting. Provisional votes may occur prior to final votes. This will be done when an initial vote is needed to refine a proposal, but the Directors wish to consult with their respective GSA or GSA Group(s) before making a final vote.
- (c) Alternative Actions. A vote shall be delayed if any Director declares his/her/their intention to propose an alternative or modified recommended action, to be proposed at the next meeting, or as soon thereafter as the Director can obtain any further information or clarifying direction from its GSA Group or governing body, or both, as needed to propose its alternative or modified recommended action.
- (d) Further Review. If the process outlined in Article 6.8(a)-(c) fails to result in a unanimous vote of the Directors, any GSA Representative or GSA Group Representative not voting in favor of the recommended action may request that the vote be delayed so that the Board of Directors can obtain further information on the recommended action (for example, by directing a committee established under this Agreement), so the Director(s) can obtain clarifying direction from its GSA Group or governing body, or both, as needed.
- (e) Good Faith. Each Member acknowledges that time is of the essence with respect to SGMA compliance and GSP implementation and agrees to make its best efforts to cooperate through the Board of Directors in coming to a unanimous vote of representatives at a regular or special meeting.

6.9 Approval by Individual Members. Where law or this Agreement require separate written approval by each of or a group of the Members, such approval shall be evidenced in writing by providing the adopted resolution or minutes of the respective Member's Board of Directors meeting to the Secretary of the Authority.

ARTICLE VII OFFICERS AND ADMINISTRATION

7.1 Officers. The Officers of the Board of Directors will include a Chair, Vice Chair, the Secretary, and the Treasurer. The Chair and Vice Chair shall be selected at the initial meeting of the Board of Directors or as soon thereafter as reasonably can be accomplished. The Secretary, and Treasurer may be the same person, persons, entity, or entities.

- (a) Chair and Vice Chair. Any Director may serve as the Chair. The Vice Chair, who shall also be a Director, shall serve in the absence of the Chair. In the absence of both the Chair and Vice Chair, a meeting may be led by an Acting Chair, selected on an ad hoc basis, who is a Director or Alternate Director of the Board of Directors.

The positions of Chair and Vice Chair shall rotate among the GSA Representative and GSA Group Representatives listed in Exhibit "B" on the Board of Directors on an annual basis according to alphabetical order,

by name of the GSA or GSA Group, with the first rotation beginning on the date the first Chair is selected. The schedule for annual rotation of Chair and Vice Chair will be set at the first meeting after the Chair is appointed and reviewed and rotated annually at the first meeting of the Fiscal Year. Any GSA Representative or GSA Group Representative may waive designation as Chair. In such a case, the office of Chair would rotate to the next designated GSA Representative or GSA Group Representative.

- (b) Secretary. Pursuant to Article 6.7(b) above, by unanimous vote of Board of Directors (i.e. all seven (7) Directors), the Board of Directors shall select a Secretary to carry out the functions described in this Article 7.1(b), to serve at the pleasure of the Board of Directors. The Secretary may, but need not, be a Member of the Authority.

With approval of the appointee through a simple majority vote of the Board of Directors (i.e. at least four (4) Directors), the Secretary may select an appointee (who may be staff or a consultant contracting with the Authority) to implement the Secretary's responsibilities under this Agreement, for example, to coordinate meetings; prepare agendas; circulate notices and agendas; provide written notice to all Members that the Board of Directors has made a recommendation requiring approval by the Members; prepare and maintain minutes of meetings of the Board of Directors; receive notices on behalf of the Board of Directors and call to the Board of Directors' attention the need for responding; and provide such other assistance in coordination as may be appropriate.

The Secretary shall assume primary responsibility for Ralph M. Brown Act compliance, including without limitation, the responsibility to prepare agendas and notices, publicly post and distribute agendas to all Directors and Alternate Directors, the Members, and any other person who requests, in writing, such notices. The agenda shall be of adequate detail to inform the public and the Members of the meeting and the matters to be transacted or discussed and shall be posted in a public location and distributed to each of the Members to this Agreement in compliance with the noticing requirements of the Ralph M. Brown Act.

- (c) Treasurer. Pursuant to Article 6.7(b) above, by unanimous vote of Board of Directors (i.e. all seven (7) Directors), the Board of Directors shall select a Treasurer to carry out the functions described in this Article 7.1(c), to serve at the pleasure of the Board of Directors. The Treasurer may, but need not, be a Member of the Authority. If the Treasurer is a Member of the Authority, said Member may be reimbursed for the cost services performed as Treasurer. The Treasurer shall have custody of all of the money of the Authority from whatever source, and shall have the duties and obligations of the Treasurer as set forth in Government Code sections 6505 and 6505.5. The Treasurer shall be authorized to expend funds upon authorization of the Board of Directors as described in this Agreement. The Treasurer shall be

responsible for receiving quarterly reports from the Secretary and verifying the balance of this report with respect to the balance as identified in the audited financial statements. The Treasurer shall be responsible for providing the financial report at each Board of Directors meeting.

In addition, the Treasurer shall be responsible for financial management services to the Authority, including but not limited to holding financial contributions made in accordance with the Participation Percentages, accounting for funds, reports as requested by the Board of Directors concerning funds held, and disbursing said funds for authorized purposes. The Treasurer shall bill the GSAs or GSA Groups, as applicable, for all Coordinated Plan Expenses based upon their respective Participation Percentages.

The Treasurer shall maintain a strict accountability of all funds contributed pursuant to this Agreement. The Treasurer shall establish and maintain such accounts to provide for segregation of funds as may be required by good accounting practices. The books and records of the Treasurer pertaining to funds held and expended pursuant to this Agreement shall be open to inspection at reasonable times by any Member that has made a contribution. The Treasurer shall provide an unaudited report of all financial activities for each Fiscal Year to each Member that has made a contribution during that Fiscal Year within sixty (60) days after the close of each Fiscal Year.

7.2 Officers in Charge of Records; Funds; and Accounts. Pursuant to Government Code section 6505.1, the Treasurer shall initially have charge of, handle and have access to all accounts, funds and money of the Authority and all records of the Authority related thereto; and the Secretary shall initially have charge, handle and have access to all other records of the Authority. The Board of Directors may designate a consultant or a Member, by unanimous vote pursuant to Article 6.7(b) above, to serve as the person or persons having access to property of the Authority, and shall require such person or persons to file an official bond in an amount to be fixed by the Board of Directors.

7.3 Plan Manager. Pursuant to a simple majority vote (i.e. at least four (4) Directors), the Board of Directors shall select a Plan Manager, who may be a consultant of the Authority or a representative of a Member, who shall serve as the point of contact for DWR and the State Water Board, as specified by SGMA.

The Plan Manager shall carry out the duties of a “plan manager” as provided in Title 23, division 2, Chapter 1.5, Subchapter 2, California Code of Regulations. The Plan Manager has no authority to make policy decisions or represent the Board of Directors without the specific direction of the Board of Directors. The Plan Manager is obligated to disclose all substantive communications he/she transmits and receives in his/her capacity as Plan Manager to the Board of Directors.

7.4 Employees and Consultants. The Authority may hire employees and consultants, including an executive director, engineers, hydrogeologists, accountants, public relations firms, and attorneys, to provide services to the Authority to accomplish the purposes of the Authority.

7.5 Management. In addition to, or in lieu of, hiring employees, the Authority may engage one or more third parties to manage any or all of the business of the Authority on terms and conditions acceptable to the Board of Directors. A third party so engaged may, but need not, be a Member of this Agreement. Any third party so engaged shall have such responsibilities as are set forth in the contract for such third party's services.

ARTICLE VIII MEETINGS

8.1 Timing and Notice. The Chair of the Board of Directors, any two GSA Representatives or GSA Group Representatives, or the Secretary may call meetings of the Board of Directors as needed to carry out the activities described in this Agreement. The Board of Directors may, but is not required to, set a date for regular meetings for the purposes described in this Agreement. All Board of Directors meetings shall be held in compliance with the Ralph M. Brown Act (Gov. Code § 54950, *et seq.*).

8.2 Quorum. A majority of the seven (7)-member Board of Directors shall constitute a quorum of the Board of Directors for purposes of holding a meeting. The Alternate Director of each GSA or GSA Group shall be counted towards a quorum and as the voting representative(s) in absence of the Director for that GSA Representative or GSA Group Representative for which the Alternate Director was appointed. If less than a quorum of the Board of Directors is present, no action may be taken.

8.3 Open Attendance. Members of the public, stakeholders, and representatives of the Members who are not appointed as a GSA Representative or GSA Group Representative on the Authority's Board of Directors may attend all Board of Directors meetings and shall be provided with an opportunity to comment on matters on the meeting agenda, but shall have no vote.

8.4 Committees. The Board of Directors may appoint ad hoc or standing committees, workgroups, or otherwise direct staff made available by the Members as provided for in Section 6.7. Such committees or workgroups may include qualified individuals possessing the knowledge and expertise to advance the goals of the GSP on the topics being addressed by the committee, whether or not such individuals are Directors or Members.

8.5 Minutes. The Secretary or its appointee shall keep and prepare minutes of all Board of Directors meetings. Minutes of standing committee meetings shall be kept by the Secretary or its appointee. All minutes shall be maintained by the Secretary as Subbasin records and shall be available to the Members and the public upon request.

8.6 Bylaws. The Board of Directors may adopt bylaws and governing regulations consistent with this Agreement, which may be amended from time to time, for the conduct of its meetings as are necessary for the purposes hereof.

ARTICLE IX

FISCAL YEAR, BUDGET, AND FINANCIAL RESPONSIBILITIES

9.1 Fiscal Year. The Fiscal Year of the Authority shall be from March 1 through the last day in February the following year.

9.2 Budget. The Board of Directors shall establish an annual budget for the activities authorized by this Agreement. The budget must describe the amounts that the Board of Directors anticipates are required for purposes of the Agreement during each Fiscal Year.

- (a) The Authority shall not make expenditures or incur liabilities exceeding the amount of the appropriations allowed by the Authority's budget.
- (b) The Authority may amend the annual budget as needed subject to the provisions in Article 6 of this Agreement.

9.3 Participation Percentages. The Members will share the Coordinated Plan Expenses for Subbasin-wide Activities pursuant to the Participation Percentages described in Exhibit "B". Each GSA or GSA Group, as applicable, shall pay their share of the Participation Percentage as reflected in Exhibit "B", and make Participation Percentage contributions required pursuant to this Agreement directly to the Treasurer or his/her designee. Payment is due from each GSA thirty (30) days following receipt of the invoice. Amounts in arrears for more than thirty (30) days shall earn interest at the applicable legal rate.

9.4 Member Obligations and GSP Implementation. It is the responsibility and obligation of each Member of the Authority to manage its own GSA and implement the GSP within its GSA's boundaries. It is further the responsibility and obligation of each GSA or GSA Group, as applicable, to pay its share of the Participation Percentage as reflected in Exhibit "B", and other payments required as part of implementation of SGMA Subbasin-wide Activities, as may arise from time to time. Each of the Members shall bear its own separate costs of implementing SGMA within its jurisdiction.

9.5 Special Project Agreements. Upon approval of a majority of the Board of Directors, the Authority may enter into an agreement with any of its Members, or multiple Members, for the purpose of implementing SGMA within the Subbasin. However, any such Special Project Agreement shall require those Members entering into said agreement with the Authority be solely responsible for the costs and liabilities therein. Members who are not a party to a Special Project Agreement shall have no financial obligations or liabilities associated with the implementation of said agreement.

ARTICLE X

ADDITION AND WITHDRAWAL OF MEMBER; TERMINATION OF AUTHORITY

10.1 Addition of a Member. A Member may be added to this Agreement only upon the unanimous vote of the Board of Directors at a regular or special meeting, the prospective Member's execution of a counterpart of this Agreement, and its provision of any additional documentation required by this Agreement. No Member may be added that is not a GSA within the Subbasin or that fails to share in the Coordinated Plan Expenses.

10.2 Withdrawal. A Member may unilaterally withdraw from this Agreement without causing or requiring termination of this Agreement, effective upon one (1) year written notice to the Secretary and all other Members.

10.3 Effect of Withdrawal. Any Member who withdraws shall remain obligated for Coordinated Plan Expenses. If no separate Cost Sharing Agreement is then in effect or enforceable against the withdrawing Member, the Member is obligated to pay its share of all debts, liabilities, and obligations the Member incurred or accrued under this Agreement prior to the effective date of such withdrawal, within one (1) year after providing written notice to the Secretary and all other Members of the date of withdrawal. Upon withdrawal, a Member agrees that it has a continuing obligation to comply with SGMA and any coordination guidelines and regulations issued by DWR, which require a coordination agreement if there are multiple groundwater sustainability plans in the Subbasin. This obligation shall survive the withdrawal from this Agreement and is for the express benefit of the remaining Members.

10.4 Termination of the Authority. The Authority shall be formed and come into existence on the Effective Date and shall continue in existence unless terminated by a vote of the governing body of each of the Members then a party to this Agreement or at any point in time at which there ceases to be at least two (2) Members to this Agreement, at which time this Agreement shall be automatically terminated; provided however, that the Authority and this Agreement shall continue to exist for the purpose of disposing of liabilities (“Authority Liabilities”) and distributing funds, property, and other assets (“Authority Assets”), and all other functions necessary to conclude the business of the Authority.

- (a) Except as provided in this Article 10.4, this Agreement shall remain in effect and be binding upon the Members hereto and upon all subsequent Members joining herein for such a period as the Authority desires to engage in any activities under this Agreement. Except as noted in Article 10.4 above, the foregoing provision shall not apply, however, to any Member that withdraws from its participation in the Authority in accordance with this Agreement.
- (b) Upon termination of this Agreement, after payment of all Authority Liabilities, any Authority Assets remaining shall be distributed to the Members of the Authority at the time of dissolution in accordance with applicable contributions. The Authority shall cease to exist when the Authority’s Liabilities are paid and Authority Assets have been distributed according to the provisions contained in this Section, this Agreement generally, and the Act.

ARTICLE XI

EXCHANGE OF DATA AND INFORMATION

11.1 Exchange of Data and Information. The Members acknowledge and recognize pursuant to this Agreement that the Members will need to exchange data and information among and between the Members.

11.2 Procedure for Exchange of Data and Information.

- (a) The Members shall exchange public and non-privileged information through collaboration and/or informal requests made at the Board of Directors level or through committees designated by the Board of Directors. However, to the extent it is necessary to make a written request for information to another Member, each Member shall designate a representative to respond to information requests and provide the name and contact information of the designee to the Board of Directors. Requests may be communicated in writing and transmitted in person or by mail, facsimile, or other electronic means to the appropriate representative as named in this Agreement. The designated representative shall respond in a reasonably timely manner.
- (b) Nothing in this Agreement shall be construed to prohibit any Member from voluntarily exchanging information with any other Member by any other mechanism separate from the Board of Directors.
- (c) The Members agree that each GSA shall provide the data required to develop the Subbasin-wide coordinated monitoring network, data management system, and water budget, as more particularly described in the MOA and GSP.
- (d) To the extent that a court order, subpoena, or the California Public Records Act is applicable to a Member, such Member in responding to a request made pursuant to the California Public Records Act for release of information exchanged from another Member shall timely notify the Board of Directors in writing of its proposed release of information in order to provide the other Members with the opportunity to seek a court order preventing such release of information.

ARTICLE XII SEPARATE ENTITY; INDEMNIFICATION

12.1 Separate Entity. In accordance with the Act, the Authority is a public entity separate from the Members. To the greatest extent permitted by law, unless otherwise specifically agreed to herein by all the Members as to a specific debt, liability or obligation, the debts, liabilities and obligations of the Authority shall not be the debts, liabilities or obligations of the Members under Government Code section 6508.1. The Authority shall own and hold title to all funds, property and works acquired by it during the term of this Agreement.

12.2 Indemnification. No Member has the power to obligate any other Member hereto and no Member's debt, liability or obligation due any third party may be asserted or collected against the Authority or any individual Member as a result of membership in the Authority through this Agreement. The Authority shall indemnify, defend, and hold harmless the Members, their officers, agents, directors, and employees, from and against any and all claims and losses

whatsoever, occurring or resulting to persons, firms, or entities furnishing or supplying work, services, labor, materials or supplies to the Authority in connection with the performance of this Agreement and, except as expressly provided for by law, from any and all claims and losses accruing or resulting to any persons, firm or entity for damage, injury, or death arising out of or in connection with the Authority's performance of its obligations pursuant to this Agreement. The Authority may also acquire such policies of insurance, including without limitation, directors and officers liability insurance, in such amounts as the Board of Directors shall deem prudent. The Board of Directors, officers, agents, and employees of the Authority shall use ordinary care and reasonable diligence in the exercise of their powers, and in the performance of their duties pursuant to this Agreement. The Board of Directors shall not be liable to the Members of this Agreement for any mistake of judgment or any other action made, taken, or omitted by any agent, employee, or independent contractor selected with reasonable care, nor for loss incurred through the investment of Authority funds or failure to invest same. To the extent authorized by California law, no Director, officer or employee of the Authority shall be responsible for any action made, taken, or omitted by any other Director, officer or employee. Furthermore, each Member shall indemnify, defend, and save harmless the other Members, their officers, agents, directors, and employees, from and against any and all claims of negligence and/or willful misconduct by the indemnifying Member in performance of this Agreement.

ARTICLE XIII PROCEDURES FOR RESOLVING CONFLICTS

In the event of any dispute arising from or relating to this Agreement, except for disputes arising from the inability of the Board of Directors to reach a unanimous decision, the disputing Member shall, within thirty (30) calendar days of discovery of the events giving rise to the dispute, notify all Members of this Agreement in writing of the basis for the dispute. Within thirty (30) calendar days of receipt of said notice, all interested Members shall meet and confer in a good-faith attempt to informally resolve the dispute. All disputes that are not resolved informally shall be submitted to arbitration. Within ten (10) days following the failed informal proceedings, each interested Member shall nominate and circulate to all other interested Members the name of one arbitrator. Within ten (10) days following the nominations, the interested Members shall rank their top three (3) among all nominated arbitrators, awarding three points to the top choice, two points to the second choice, one point to the third choice and zero points to all others. Each interested Member shall forward its tally to the Secretary, who shall tabulate the points and notify the interested Members of the arbitrator with the highest cumulative score, who shall be the selected arbitrator. The Secretary may also develop procedures for approval by the Members, for selection in the case of tie votes or in order to replace the selected arbitrator in the event such arbitrator declines to act. The arbitration shall be administered in accordance with the procedures set forth in the California Code of Civil Procedure, section 1280, *et seq.*, and of any state or local rules then in effect for arbitration pursuant to said section. Upon completion of arbitration, if the controversy has not been resolved, any Member may exercise all rights to bring a legal action relating to the controversy.

ARTICLE XIV MISCELLANEOUS

14.1 Amendments. This Agreement may not be amended except by a written amendment signed by all of the Members.

14.2 Entire Agreement. This Agreement (including the Recitals) constitutes the entire Agreement between the Members and supersedes prior agreements or discussions relating to the matters set forth herein, if any, both written and oral.

14.3 Assignment; Binding on Successors. Except as otherwise provided in this Agreement, the rights and duties of the Members may not be assigned or delegated without the express written consent of the other Members. Any attempt to assign or delegate such rights or duties in contravention of this Agreement is null and void. Any approved assignment or delegation must be consistent with the terms of any contracts, resolutions, indemnities and other obligations of the Members under this Agreement then in effect. This Agreement inures to the benefit of, and shall be binding upon, the successors and permitted assigns of the Members.

14.4 Counterparts. This Agreement may be executed by the Members in separate counterparts, each of which when so executed and delivered is an original, but all such counterparts together constitute the same instrument.

14.5 Governing Law and Venue. This Agreement is governed by the laws of the State of California. Venue for the purposes of filing any action regarding the enforcement or interpretation of this Agreement and any rights and duties hereunder shall be Merced County, California.

14.6 Severability. If any part of this Agreement is held by a court of competent jurisdiction to be unlawful, invalid, or unenforceable, the remainder of the Agreement remains in effect and the Members shall make best efforts to replace the unlawful, invalid, or unenforceable part of the Agreement with terms to accomplish the Members' original intent.

14.7 Headings. The titles of sections of this Agreement are for convenience only and no presumption or implication of the intent of the Members as to the construction of this Agreement shall be drawn from them.

14.8 Construction. The final form of this Agreement is the result of the Members' combined efforts. If anything in this Agreement is found by a court of competent jurisdiction to be ambiguous, that ambiguity is not to be resolved by construing the terms of this Agreement against the drafter.

14.9 Notices. Notices authorized or required to be given pursuant to this Agreement shall be in writing and shall be deemed to have been given when mailed, postage prepaid, or delivered during working hours to the addresses submitted by each Member to the Authority's Secretary, or to such other changed addresses communicated to the Authority's Secretary and the Members in writing. For all claims arising from or related to this agreement, nothing in this agreement establishes, waives, or modifies any claims presentation requirements or procedures

provided by law, including the Government Claims Act (Division 3.6 or Title 1 of the Government Code, beginning with section 810).

14.10 Signature Authorization. Each Member represents that the representative executing this Agreement on its behalf has been duly authorized to execute the Agreement on behalf of the Member.

IN WITNESS WHEREOF, the Members have executed this Agreement on the dates indicated next to the signatures attached to this Agreement to be made effective as of the Effective Date.

Dated: _____ ALISO WATER DISTRICT GSA

Print Name: _____
Print Title: _____

Dated: _____ CENTRAL DELTA-MENDOTA GSA

Print Name: _____
Print Title: _____

Dated: _____ CITY OF DOS PALOS GSA

Print Name: _____
Print Title: _____

Dated: _____ CITY OF FIREBAUGH GSA

Print Name: _____
Print Title: _____

Dated: _____ CITY OF GUSTINE GSA

Print Name: _____
Print Title: _____

Dated: _____ CITY OF LOS BANOS GSA

Print Name: _____
Print Title: _____

Dated: _____

CITY OF MENDOTA GSA

Print Name: _____

Print Title: _____

Dated: _____

CITY OF NEWMAN GSA

Print Name: _____

Print Title: _____

Dated: _____

CITY OF PATTERSON GSA

Print Name: _____

Print Title: _____

Dated: _____

COUNTY OF MADERA GSA – DELTA-MENDOTA

Print Name: _____

Print Title: _____

Dated: _____

COUNTY OF MERCED DELTA-MENDOTA GSA

Print Name: _____

Print Title: _____

Dated: _____

DM II GSA

Print Name: _____

Print Title: _____

Dated: _____

FARMERS WATER DISTRICT GSA

Print Name: _____

Print Title: _____

Dated: _____

FRESNO COUNTY MANAGEMENT AREA A
GSA

Print Name: _____

Print Title: _____

Dated: _____

FRESNO COUNTY MANAGEMENT AREA B
GSA

Print Name: _____

Print Title: _____

Dated: _____

GRASSLAND GSA

Print Name: _____

Print Title: _____

Dated: _____

NORTHWESTERN DELTA-MENDOTA GSA

STANISLAUS COUNTY

Print Name: _____

Print Title: _____

APPROVED AS TO FORM

By: _____

MERCED COUNTY

Print Name: _____

Print Title: _____

APPROVED AS TO FORM

By: _____

Dated: _____

ORO LOMA WATER DISTRICT GSA

Print Name: _____

Print Title: _____

Dated: _____

PATTERSON IRRIGATION DISTRICT GSA

Print Name: _____

Print Title: _____

Dated: _____

SAN JOAQUIN RIVER EXCHANGE
CONTRACTORS WATER AUTHORITY GSA

Print Name: _____

Print Title: _____

Dated: _____

TURNER ISLAND WATER DISTRICT-2 GSA

Print Name: _____

Print Title: _____

Dated: _____

WEST STANISLAUS IRRIGATION DISTRICT
GSA 1

Print Name: _____

Print Title: _____

Dated: _____

WIDREN WATER DISTRICT GSA

Print Name: _____

Print Title: _____

EXHIBIT A

LIST OF MEMBERS

1. Aliso Water District GSA
2. Central Delta-Mendota GSA
(Includes: San Luis Water District, Panoche Water District, Tranquillity Irrigation District, Fresno Slough Water District, Eagle Field Water District, Pacheco Water District, Santa Nella County Water District, Mercy Springs Water District, County of Merced, and County of Fresno)
3. City of Dos Palos GSA
4. City of Firebaugh GSA
5. City of Gustine GSA
6. City of Los Banos GSA
7. City of Mendota GSA
8. City of Newman GSA
9. City of Patterson GSA
10. County of Madera GSA – Delta-Mendota
11. County of Merced Delta-Mendota GSA
12. DM II GSA
13. Farmers Water District GSA
14. Fresno County Management Area A GSA
15. Fresno County Management Area B GSA
16. Grassland GSA
17. Northwestern Delta-Mendota GSA
18. Oro Loma Water District GSA
19. Patterson Irrigation District GSA
20. San Joaquin River Exchange Contractors GSA
(Includes: Central California Irrigation District, San Luis Canal Company, Firebaugh Canal Water District, and Columbia Canal Company)
21. Turner Island Water District–2 GSA
22. West Stanislaus Irrigation District GSA 1
23. Widren Water District GSA

EXHIBIT B

BOARD OF DIRECTORS REPRESENTATIVES & PARTICIPATION PERCENTAGES

Board of Directors Representatives (alphabetically)		Group Contact Agency	Participation Percentage
1	Aliso Water District GSA Aliso Water District GSA	Aliso Water District GSA	1/7
2	Central Delta-Mendota GSAs Group Central Delta-Mendota GSA Oro Loma Water District GSA Widren Water District GSA	Central Delta-Mendota GSA	1/7
3	Farmers Water District GSA Farmers Water District GSA	Farmers Water District GSA	1/7
4	Fresno County Management Area A and B GSAs Group Fresno County Management Area A GSA Fresno County Management Area B GSA	Fresno County	1/7
5	Grassland GSAs Group Grassland GSA Merced County Delta-Mendota GSA	Grassland Water District	1/7
6	Northern Delta-Mendota GSAs Group City of Patterson GSA DM-II GSA Northwestern Delta-Mendota GSA Patterson Irrigation District GSA West Stanislaus Irrigation District GSA	West Stanislaus Irrigation District	1/7
7	San Joaquin River Exchange Contractors GSAs Group City of Dos Palos GSA City of Firebaugh GSA City of Gustine GSA City of Los Banos GSA City of Mendota GSA City of Newman GSA County of Madera GSA – Delta-Mendota Merced County Delta-Mendota GSA San Joaquin River Exchange Contractors GSA Turner Island Water District-2 GSA	San Joaquin River Exchange Contractors GSA	1/7