Committee Members
Robert Macaulay
Jordan Wamhoff

ITEM 4.a

MINUTES
Madera County Groundwater Sustainability Agency
(in the Madera, Chowchilla, and Delta-Mendota Subbasins)
Committee Meeting: March 3, 2026, 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/87594364987

Attendance:
County GSA Directors: Robert Macaulay, Jordan Wamhoff

County GSA Staff: Stephanie Anagnoson, Jeannie Habben, Tukta Phetasa, Aleta Allen, Jacinta Cabral, Jerod Weeks, Mayumi Ploszaj, John Davids (Consultant – Davids Engineering)

County staff attending on behalf of the GSA: Regina Garza, Melisa DaSilva, Sarah Anderson

5 members of the public in person; 29 members of the public on-line

1. Call to Order: 1:32 p.m.
   Meeting was called to order by Director Macaulay

2. Flag Salute
   This was led by Director Wamhoff

3. Public Comment – Two comment letters received prior to the meeting. No in-person public comments were made.

4. New Business

   a. Action Item: Approval of the Madera County Groundwater Sustainability Agency Committee Meeting Minutes from February 3, 2025

Result: Motion passed
Moved: Director Wamhoff
Second: Director Macauley
Ayes: Director Macaulay; Director Wamhoff
Vote passes: 2-0

b. Informational Item: Semi-Annual Budget Update for the Madera County GSA
This was presented by Jerod Weeks. There were three public comments.

c. Informational Item: Discussion of potential refinements to Domestic Well Mitigation Program
This was presented by Jerod Weeks. There was one public comment.

d. Informational Item: Summary of informational Interviews with growers who expressed disinterest in a groundwater accounting platform
This was presented by Aleta Allen. There was one public comment.

e. Informational Item: Review of Fallow Fields Data
This was presented by Ms. Anagnoson. There was one public comment.

f. Informational Item: Review of draft Chowchilla Subbasin Groundwater Demand Management Programs and Subsidence Mitigation Measures Report to receive feedback
This was presented by John Davids. There were two public comments.

g. Action Item: Consideration and recommendation of entering into an Agreement among the Delta-Mendota Subbasin Groundwater Sustainability Agencies listed in Exhibit "A"
This was presented by Jacinta Cabral. There were zero public comments.

Result: Motion passed
Moved: Director Wamhoff
Second: Director Macauley
Ayes: Director Macaulay; Director Wamhoff
Vote passes: 2-0

5. Directors' Report
This was presented by Ms. Anagnoson. There were zero public comments.

6. Adjourn – 2:43 p.m.

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.b

Date: April 7, 2026

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Robert Macaulay, Jordan Wamhoff

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Transfer of Appropriations No. 25-098 to allocate appropriations to the Refunds and Reimbursements Account in the GSA Administration Fee Budget

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DISCUSSION:

Transfer of Appropriations No. 25-098 moves $122,565 within the GSA Administration Fee budget from the Contingency account to the Refunds and Reimbursements account. This action does not increase the overall budget.

The transfer is needed to support two payment actions related to 2024 groundwater overuse penalties under the Madera County GSA allocation program in the Madera and Chowchilla Subbasins.

Under Resolution 2022-143 and Madera County Contract No. 12652-13, the Madera County GSAs are responsible for collecting groundwater allocation exceedance penalty payments. Penalty payments received from properties within the Chowchilla subbasin are transferred to Chowchilla Water District to support the Chowchilla Subbasin Domestic Well Mitigation Program.

The total amount to be moved into the Refunds and Reimbursements account is $122,565, consisting of:

- $107,665 for 2024 penalties collected through the December 2025 tax roll that are pending transfer to Chowchilla Water District
- $14,900 for a refund to one master account after approved surface water credits determined that a 2024 groundwater overuse penalty no longer applied

FISCAL IMPACT:

$122,565 will be allocated to the Refunds and Reimbursements Account in the GSA Administration Fee Budget. There is no impact to the County General Fund.

ATTACHMENTS:

1. Budget Adjustment Authorization TOA No. 25-098
2. RES NO. 2022-143
3. MCC NO. 12652-23

EG

Budget Adjustment Authorization

Submittal Date *

3/13/2026

For Fiscal Years *

2025-2026

Contact First Name *

Emily

Contact Last Name *

Garcia

Department *

WNR

Department/Org #

15020

Department Head Name *

Stephanie Anagnoson

Will this Budget Adjustment be Board Approved? *

- (●) Yes
- ( ) No

Draft Board Letter

If Board Approved, indicate the target Board date: *

4/14/2026

Please Select *

- [x] Transfer of Appropriations
- [ ] Receipt of Unanticipated Revenue

Please select the document type(s) from the check boxes above. Your selection will remove unneeded fields from the form. Transfer of Appropriations Transfer From.

Transfer of Appropriations

Transfer From

Org # *	Org Description *	Account # *	Account Description *	Amount *
15020	GSA Fee Revenue	780100	Appropriation for Contingency	122,565

Total

$ 122,565.00

Transfer To

Org # *	Org Description *	Account # *	Account Description *	Amount *
15020	GSA Fee Revenue	721210	Refunds and Reimbursements	122,565

Total

$ 122,565.00

Explanation of Transfer *

A transfer of Appropriations to the Refunds and Reimbursements account is needed to support two payment actions related to 2024 groundwater overuse penalties under the Madera County GSA allocation program in the Madera and Chowchilla Subbasins.

Describe the reason for Transfer

Totals In "Transfer From" and "Transfer To" must match

Note: Transfers from Contingencies require a 4/5 vote.

Section

Name *

Emily Garcia

Title *

Senior Administrative Analyst

Auditor to Complete

TO AUDITOR-CONTROLLER: This request is deemed necessary by this department. Please report as to the accounting and available balances and forward to the Administrative Officer for his recommendation or action.

Approved as to Availability of Funds: *

(•) Yes ( ) No ( ) N/A

Auditor Controller's # *

25-098

Signature

Victoria Cantu

Auditor Name *

Victoria Cantu

Date *

3/24/2026

The County Auditor-Controller is authorized to make such budgetary adjustments as will carry out the intent and purpose of this budget adjustment.

Administrative Officer to Complete

Administrative Officer's Report

County Administration has reviewed this request, and it is recommended for approval.

Please Select *

(•) Recommended ( ) Approve as Requested ( ) Approve as Revised

Signature *

Admin Officer Name *

Jessica Leon

Date *

3/24/2026

Attached for Board Approval

*

[x] Completed

MADERA COUNTY CONTRACT NO. 12652-23

MEMORANDUM OF UNDERSTANDING ESTABLISHING A DOMESTIC WELL MITIGATION PROGRAM FOR A PORTION OF THE CHOWCHILLA SUBBASIN OF THE SAN JOAQUIN VALLEY GROUNDWATER BASIN AND TO DEVELOP A WORKING RELATIONSHIP BETWEEN MADERA COUNTY GSA AND THE CHOWCHILLA SUBBASIN GROWERS

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is entered into this 12TH day of DECEMBER, 2023 (the "Effective Date"), by and between the Madera County GSA – Chowchilla (Madera County), and the Chowchilla Subbasin Growers (CSG), a mutual benefit corporation, collectively hereinafter referred to as the "Parties," or individually as the "Party."

RECITALS

A. **WHEREAS**, in 2014 the California Legislature passed a statewide framework for sustainable groundwater management, known as the Sustainable Groundwater Management Act, California Water Code§ 10720-10737.8 (SGMA), pursuant to Senate Bill 1168, Senate Bill 1319, and Assembly Bill 1739, which was approved by the Governor on September 16, 2014. and went into effect on January 1, 2015; and

B. **WHEREAS**, the Subbasin has been designated by the California Department of Water Resources (DWR) as a high-priority subbasin in a condition of critical groundwater overdraft and is subject to the requirements of SGMA; and

C. **WHEREAS**, SGMA requires that all medium and high priority groundwater basins in California be managed by a Groundwater Sustainability Agency (GSA), or multiple GSAs, and that such management be implemented pursuant to an approved Groundwater Sustainability Plan (GSP), or multiple GSPs; and

D. **WHEREAS**, in accordance with Resolution No. 2017-014, the County of Madera elected to become the exclusive GSA for those portions of the Subbasin as shown in Exhibit A; and

E. **WHEREAS**, CSG represents a service area listed in Exhibit B and intends to become a California special district by seeking formal LAFCO approval in order to become a GSA, and Madera County intends to support CSG's efforts to become a water district and GSA which are intended to manage groundwater consistent with the Chowchilla GSP within the Exhibit B service area; and

F. **WHEREAS**, on January 29, 2020, the County submitted a GSP to DWR; and

G. **WHEREAS**, the Parties agree that for the purposes of this MOU, "Domestic Wells" shall be limited to individual private domestic wells and to develop a working relationship between Madera County GSA and the Chowchilla Subbasin Growers; and

H. **WHEREAS**, the Parties agree that as a result of the continued decline in groundwater levels anticipated to occur over the GSP Implementation Period, there may be adverse impacts to some domestic wells in the Subbasin; and

I. **NOW, THEREFORE**, in consideration of the mutual promises, covenants and conditions contained herein and these Recitals, which are hereby incorporated herein by this reference, the Parties agree to mitigate for domestic well impacts resulting from declining groundwater levels that occur from groundwater management activities outlined in the GSP in a Domestic Well Mitigation Program (Program) and work collaboratively to implement SGMA and achieve groundwater sustainability.

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AGREEMENT

1. **PROPORTIONATE SHARE**. The CSG agree to fund the Program annually on a per acre basis, at the rate of $16.89/acre, consistent with the list of APNs of members of the CSG set forth in Exhibit B. The CSG shall not be responsible for other SGMA-costs pertaining to properties not listed in Exhibit B. Other parties in the County GSA will contribute the Program using the same rate and MOU process. Any penalties collected by the GSA from non-CSG members within the Exhibit B area will be allocated to well mitigation.

2. **ACCOUNTING**. Annual funding for the Program shall be placed in an interest-bearing account managed by one of the GSAs, currently Chowchilla Water District or another party identified by the GSAs.

3. **BUDGET CYCLE**. The budget cycle of the Program shall be on a calendar year basis.

4. **COLLABORATION AND REVIEW**. Not less than twice per year, the Parties shall meet at a location convenient to both. Each party to this MOU will select 2 representatives to attend the meetings. Scheduling of the meetings will be subject to the Parties availability. This meeting is the primary method for the County GSA to provide input and for the Parties to collectively achieve the goals of the GSP in Madera County. Meeting topics and goals include:

- Domestic Well Mitigation Program;
- Recharge Projects;
- Land fallowing or land repurposing;
- Purchases of water;
- Other implementation of sustainable groundwater management;

- LAFCO options, status and progress;
- Collection of funds; changes in acres represented;
- Penalties; and
- Potential grants.

5. **IN-KIND SERVICES**. Each Party is likely to provide in-kind services and subsequently incur in-kind costs as part of continued program development and management. Said costs shall be the responsibility of each Party unless otherwise agreed to by the Parties.

6. **FAILURE TO PAY**. Recognizing the importance of this Program, the Parties agree to the following potential actions should any Party fail to pay consistent with Section 1:

a. Failure to pay shall be explicitly noted in the Annual Report for the Subbasin.

b. Within 10 days after such failure to pay, the Parties shall attempt in good faith to resolve the dispute through informal means for a period of 30 days. If the Parties, through informal means, cannot agree upon a resolution of the failure to pay within 30 days, the Parties shall submit the dispute to mediation prior to commencement of legal action. The cost of mediation shall be split equally between the Parties. Upon completion of mediation and if the dispute has not been resolved, any Party may exercise any and all rights to bring a legal action relating to the dispute.

c. The Parties agree that penalties collected within the Chowchilla Subbasin of the County GSA shall be used to fund Domestic Well Mitigation within the Chowchilla Subbasin.

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7. **TERM**. The Program shall begin no later than January 1, 2024, shall cover eligible mitigation as of January 31, 2020, and shall continue for the duration of the GSP Implementation Period or until groundwater sustainability is achieved or until CSG becomes a GSA and adopts its own GSP, whichever comes first.

8. **NOTICES**. All notices required or permitted by the MOU shall be made in writing, and may be delivered in person (by hand or by courier) or may be sent regular, certified, or registered mail or U.S. Postal Service Express Mail, with postage prepaid, or by facsimile transmission, or by electronic transmission (email) and shall be deemed sufficiently given if served in a manner specified in this Section 16. The addresses and addressees noted below are the Party's designated address and addressee for deliver or mailing notices.

COUNTY

Stephanie Anagnoson
County of Madera
200 West 4th Street
Madera, CA 93637

CHOWCHILLA SUBBASIN GROWERS (CSG)

C/O Laurie Ringeisen
216 Chowchilla Blvd, Suite B
Chowchilla, CA 93610

With Copy to

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

Any Party may, by written notice to each of the other Parties, specify a different address for notice. Any notice sent by registered or certified mail, return receipt requested, shall be deemed given on the date of delivery shown on the receipt card, or if no delivery date is shown, three days after the postmark date. If sent by regular mail, the notice shall be deemed given 48 hours after it is addressed as required in this section and mailed with postage prepaid. Notices delivered by United States Express Mail or

overnight courier that guarantee next day delivery shall be deemed given 24 hours after delivery to the Postal Service or overnight courier. Notices transmitted by facsimile transmission or similar means (including email) shall be deemed delivered upon telephone or similar confirmation of delivery (confirmation report from fax machine is sufficient), provided a copy is also delivered via personal delivery or mail. If notice is received after 4:00 p.m. or on a Saturday, Sunday or legal holiday, it shall be deemed received on the next business day.

9. **TERMINATION**. Either Party to this MOU may terminate it by giving the other party 30 days written notice.

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

COUNTY OF MADERA

Chairman, Board of Supervisors

ATTEST:

Clerk, Board of Supervisors

CHOWCHILLA SUBBASIN GROWERS (CSG)

By: _____
(Signature)

Jay Mahil
(Print Name)

Title: Chairman

Approved as to Legal Form:
COUNTY COUNSEL

By: Dale E. Bacigalupi

Digitally signed by: Dale E. Bacigalupi
DN: CN = Dale E. Bacigalupi email = dbacigalupi@lozanosmith.com C = US O = Lozano Smith
Date: 2023.12.05 11:23:18 -08'00'

ACCOUNT NUMBER(S)

_____

_____

Exhibit B

APN	ACRES	OWNER
026-010-003	350.09	1000 CHOWCHILLA INC
026-020-001	71.87	1000 CHOWCHILLA INC
026-080-001	321.06	1000 CHOWCHILLA INC
026-120-016	116.74	1000 CHOWCHILLA INC
026-140-001	160	1000 CHOWCHILLA INC
030-021-003	38.61	AGRILAND HOLDING
030-061-002	46.59	AGRILAND HOLDING
022-200-006	75	AHLEM FAMILY LTD
022-210-003	69.14	AHLEM FAMILY LTD
043-023-006	5	AHLEM FAMILY LTD
043-025-003	89.66	AHLEM FAMILY LTD
020-100-030	37.19	ALLAN CLARK TRUST
020-100-036	81.21	ALLAN CLARK TRUST
022-130-004	63.85	AMERICAN UNITED FARMS CHOWCHILLA
022-140-003	541.46	AMERICAN UNITED FARMS CHOWCHILLA
020-120-012	181.67	DUANE & ANDREA BLECH TRUST
020-090-002	101.32	BOUWDEWYN & DARCY VLOT
020-090-003	160	BOUWDEWYN & DARCY VLOT
020-110-001	0.31	BOUWDEWYN & DARCY VLOT
020-110-009	0.5	BOUWDEWYN & DARCY VLOT
020-120-003	657.19	BOUWDEWYN & DARCY VLOT
020-120-004	118.16	BOUWDEWYN & DARCY VLOT
020-120-011	292.47	BOUWDEWYN & DARCY VLOT
020-150-006	21.81	BOUWDEWYN & DARCY VLOT
020-150-010	297.08	BOUWDEWYN & DARCY VLOT
020-160-015	153.59	BOUWDEWYN & DARCY VLOT
030-070-005	186.7	CALIFORNIA FIG CO
030-120-008	113.46	CALIFORNIA FIG CO
030-112-005	119.98	CAMERON RANCH ASSOCIATES LLC
026-030-001	42.69	CAMPOS FERMIN M TRUSTEE ETAL
026-020-002	34.00	CAMPOS FERMIN M TRUSTEE ETAL
030-062-015	4.37	CHADWICK & LAILA BURGDORFF
030-112-010	70.73	CHADWICK & LAILA BURGDORFF
021-140-016	37.72	CLAYTON G & PAULETTE R HAYNES TRUSTEE
022-150-002	231.42	COSTA VIEW FARMS #2

022-150-006	128.62	COSTA VIEW FARMS #2
022-150-007	82.95	COSTA VIEW FARMS #2
022-150-016	172.05	COSTA VIEW FARMS #2
022-220-008	126.92	COSTA VIEW FARMS #2
023-190-001	78.49	COSTA VIEW FARMS #2
023-190-002	231.31	COSTA VIEW FARMS #2
023-200-002	314.56	COSTA VIEW FARMS #2
023-250-006	29.72	COSTA VIEW FARMS #2
023-250-007	225.06	COSTA VIEW FARMS #2
023-260-001	288.7	COSTA VIEW FARMS #2
043-030-026	181.68	COSTA VIEW FARMS #2
043-041-003	306.11	COSTA VIEW FARMS #2
026-020-003	103.28	CREEKSIDE LAND CO LLC
026-030-002	239.65	CREEKSIDE LAND CO LLC
026-080-002	321.05	CREEKSIDE LAND CO LLC
026-090-001	636.97	CREEKSIDE LAND CO LLC
026-140-002	134.3	CREEKSIDE LAND CO LLC
026-150-001	120.84	CREEKSIDE LAND CO LLC
030-032-019	89.60	DENISE MARTIN TRUSTEE-HIDDEN RIVER RANCH
030-112-012	39.39	DURHAM GROVES LP
030-080-003	320.81	FAGUNDES
030-090-003	318.17	FAGUNDES
030-130-006	2.5	FAGUNDES
030-130-007	2.5	FAGUNDES
030-130-019	2.76	FAGUNDES
030-130-026	2.76	FAGUNDES
030-130-029	10.79	FAGUNDES
030-130-031	19.6	FAGUNDES
030-130-032	16.04	FAGUNDES
030-130-033	18.8	FAGUNDES
030-130-035	38.9	FAGUNDES
030-130-036	30.55	FAGUNDES
030-130-037	2.76	FAGUNDES
030-130-038	4.84	FAGUNDES
030-130-039	11.1	FAGUNDES
030-130-040	323.45	FAGUNDES
030-140-003	2.5	FAGUNDES

030-140-004	5	FAGUNDES
030-140-007	38.8	FAGUNDES
030-140-008	38.77	FAGUNDES
030-140-011	41	FAGUNDES
030-140-012	39.8	FAGUNDES
030-140-013	40.1	FAGUNDES
030-140-014	375.9	FAGUNDES
022-130-006	166.29	FARMERS INTERNATIONAL INC
022-140-005	15.27	FARMERS INTERNATIONAL INC
022-200-005	160	FARMERS INTERNATIONAL INC
022-210-006	81.6	FARMERS INTERNATIONAL INC
022-210-009	151.08	FARMERS INTERNATIONAL INC
020-032-015	104.6	FRANK COELHO & SONS
030-161-001	318.48	GARY & MARCIA SCHUH
030-031-017	199.51	GERALD CEDERQUIST & KATHLEEN SUDA TRUST
030-032-011	96	GERALD CEDERQUIST & KATHLEEN SUDA TRUST
030-032-015	12.42	GERALD CEDERQUIST & KATHLEEN SUDA TRUST
030-112-006	36.56	GREENWORK FARMS LLC
022-060-002	6.29	GREGORY & JENNIFER HOOKER
022-070-005	170.53	GREGORY & JENNIFER HOOKER
022-070-006	181.67	GREGORY & JENNIFER HOOKER
020-100-015	7.88	HARRIS FARMS LP
020-100-031	65.68	HARRIS FARMS LP
020-100-037	352.84	HARRIS FARMS LP
020-100-038	50.34	HARRIS FARMS LP
020-100-039	11.77	HARRIS FARMS LP
030-120-023	9.75	HERITAGE ORCHARDS LLC
021-140-017	86.28	HOOKER RANCH LP
021-140-042	40.27	HOOKER RANCH LP
021-140-044	89.71	HOOKER RANCH LP
022-050-005	81.01	HOOKER RANCH LP
022-050-007	278.8	HOOKER RANCH LP
022-060-004	4.4	HOOKER RANCH LP
022-060-006	595.65	HOOKER RANCH LP
022-070-001	269.32	HOOKER RANCH LP
022-070-008	24.17	HOOKER RANCH LP
022-080-002	282.89	HOOKER RANCH LP

043-030-020	255.49	IEST FAMILY FARMS
043-042-001	632.92	IEST FAMILY FARMS
043-083-005	13.3	IEST FAMILY FARMS
043-091-006	589.94	IEST FAMILY FARMS
026-010-002	222	JENNIFER BLISS ETAL
022-200-007	25	KARUN SAMRAN
043-023-005	55	KARUN SAMRAN
043-024-005	160	KARUN SAMRAN
043-024-006	158.79	KARUN SAMRAN
043-030-015	13.52	KARUN SAMRAN
043-030-029	79.02	KARUN SAMRAN
043-030-030	85.79	KARUN SAMRAN
043-073-003	158.79	KARUN SAMRAN
043-073-011	99.07	KARUN SAMRAN
043-073-012	58.61	KARUN SAMRAN
030-062-018	24	KILLADA PISTACHIO GROVES
030-042-010	76.4	LAURIE KUBICEK TRUSTEE
023-190-005	291.9	MICHAEL & ANDREA MCREE TRUSTEE
023-200-001	305.71	MICHAEL & ANDREA MCREE TRUSTEE
020-031-004	334.88	MICHAEL & WENDY VANDER DUSSEN
020-130-008	76.37	N&W LAND CO LLC
020-130-012	561.28	N&W LAND CO LLC
027-040-014	38.6	PACIFIC ORCHARDS LLC
027-040-017	478.02	PACIFIC ORCHARDS LLC
030-161-003	79.75	PACIFIC ORCHARDS LLC
030-062-017	20	PERALTA PISTACHIO GROVES
030-070-029	331.08	RICHARD & JANIS DE BENEDETTO TRUSTEE
030-120-017	38.87	RICHARD & JANIS DE BENEDETTO TRUSTEE
030-120-033	38.2	RICHARD & JANIS DE BENEDETTO TRUSTEE
030-161-004	79.75	RICHARD JURA TRUSTEE
030-161-005	79.75	RICHARD JURA TRUSTEE
030-161-006	79.75	RICHARD JURA TRUSTEE
043-075-006	238.8	SAMAR PISTACHIO RANCH
020-160-002	110.96	SAMARA RANCHES MADERA LLC
021-070-017	211.04	SAMARA RANCHES MADERA LLC
021-070-031	19.73	SAMARA RANCHES MADERA LLC
030-010-006	106.87	SAN JOAQUIN FIGS INC

030-050-007	140.00	SAN JOAQUIN FIGS INC
030-112-011	39.39	SANTA FE GROVES LP
030-112-013	47.99	SANTA FE GROVES LP
020-160-014	234.82	SCOTT WICKSTROM
021-070-011	7.38	SCOTT WICKSTROM
021-070-026	3.14	SCOTT WICKSTROM
030-061-003	36.66	SEQUOIA HOLDING INC
021-140-005	36.93	SHAWN & MIRANDA DILL TRUSTEE
021-140-006	61.44	SHAWN & MIRANDA DILL TRUSTEE
030-061-016	37.2	SHAWN COBURN TRUSTEE
030-061-017	38.21	SHAWN COBURN TRUSTEE
043-025-002	160.08	SOHAN & MANDEEP SAMRAN TRUST
043-026-002	320.16	SOHAN & MANDEEP SAMRAN TRUST
043-092-006	414.2	TRI IEST DAIRY
043-073-006	80	VERWEY INV LP
043-074-003	120	VERWEY INV LP
043-075-005	158.8	VERWEY INV LP
043-076-003	238.2	VERWEY INV LP
043-083-001	539.75	VERWEY INV LP
043-083-002	19.2	VERWEY INV LP
043-091-004	1.84	VERWEY INV LP
043-091-005	6.89	VERWEY INV LP
043-074-004	200	WILLIAM LITTLETON JR
043-076-005	397	WILLIAM LITTLETON JR
	23,971.38	Total Acreage

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

In the Matter of	)	Resolution No.: 2022 - 143
	)	
THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT	)	**RESOLUTION ESTABLISHING THE AUTHORITY FOR THE IMPOSITION OF PENALTIES ON THOSE WHO EXTRACT GROUNDWATER IN EXCESS OF AN ALLOCATION**
	)	
Chowchilla 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 Chowchilla Subbasin (Basin No. 5-22.05) in the San Joaquin Valley Groundwater basin, as defined by Bulletin 118 from California's Department of Water and Natural Resources ("DWR"), that are in unincorporated areas of Madera County and not otherwise covered by another public agency (hereinafter "County GSA").

WHEREAS, the County Board of Supervisors is the ex officio Board of Directors (hereinafter "Board") for the County GSA.

WHEREAS, the consumptive use of groundwater within the County GSA boundaries exceeds the available sustainable yield, and the GSP for the Chowchilla Subbasin identified demand reduction as a critical management action to achieve SGMA objectives.

WHEREAS, under SGMA a GSA has the authority to limit extractions from groundwater wells, establish groundwater extraction allocations, authorize temporary and permanent transfers of groundwater extraction allocations, and a GSA may adopt rules, regulations, ordinances, and resolutions to further these ends.

WHEREAS, on December 15, 2020, at a duly noticed public meeting, the Board adopted the Allocation Approach in the subbasins by resolution, adopted a resolution for an approach to allocating groundwater (the "Allocation Approach") in the subbasins.

WHEREAS, the Allocation Approach includes access to groundwater categorized classified using two designations:

a. A "sustainable yield" of native groundwater, that is, water that naturally exists in the subbasins from seepage and percolation; and

b. "Transitional water" that is continued overdraft of the subbasins but will incrementally decrease during the GSP implementation period.

WHEREAS, the Allocation Approach is a process whereby sustainable yield access is offered to overlying groundwater rights users every five years, and whereby participation will include (a) the opportunity to pump a designated quantity of sustainable yield within each year, (b) the opportunity to pump a designated quantity of transitional water within each year, and (c) the requirement to pay for the consumptive use of sustainable yield and transition water based upon a rate structure that is to be established.

WHEREAS, the Allocation Approach allows the County GSA's per-acre (parcel-based) allocations of sustainable yield and transition water to be shared within designated "farm units," so as to allow flexibility and reflect real-world farming conditions in which resources are shared among commonly operated or managed lands.

WHEREAS, the allocation approach includes monitoring of evapotranspiration ("ET") and the ET of applied water ("ETAW") for designated "farm units" and the comparison of ETAW to assigned allocations, where such services will be provided through a contract between the County and third party experts with multiple parties performing quality assurance and quality control.

WHEREAS, in furtherance of the Allocation Approach, on June 8, 2021, the County GSA Board of Directors adopted Resolution 2021-069, providing for a per-acre allocations 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 (the "Allocations").

WHEREAS, pursuant to Resolution 2021-069, an eligible parcel includes agricultural lands that are (1) currently irrigated as of June 8, 2021, (2) were last irrigated as recently as January 1, 2015, but now may otherwise be non-irrigated (e.g. fallowed or idle), (3) are part of active irrigated agricultural operations or permitted confined animal operations (e.g. equipment storage area or milking parlors), or (4) can demonstrate to the satisfaction of the County GSA that irrigation will occur in the following calendar year, and whereby in determining what constitutes an eligible parcel, the County GSA may rely upon (1) Madera County Assessor records, (2) satellite or aerial imagery, (3)

evapotranspiration analysis performed by a remote sensing service, (4) County GSA staff inspection, and (5) the submittal by parcel owner or representative of pertinent documentation when enrolling the eligible parcel into the GSA Allocation Approach and acceptance of associated requirements imposed therein, any and all of which must be to the satisfaction of the County GSA.

WHEREAS, on August 17, 2021, the County GSA Board of Directors adopted Resolution 2021-113, making refinements to the Allocations (the "Allocation Refinements"). The refinements included a provision (No. 12) whereby if a participant in the Allocation Approach intends to appeal the County GSA-determined ETAW, such appeal shall be based upon use of a flow meter, and the participant shall (1) demonstrate that the flow meter was installed and maintained per the manufacturer's specifications, and (2) provide an engineer-certified calibration report where such calibration occurred within the last two calendar years of the appeal. The flow meter volume shall be recorded at least monthly, and a photograph of each meter reading shall be taken and submitted to the County GSA for verification purposes. An independent third party will evaluate the flow meter installation and records to determine if the flowmeter records will be accepted as measurement for determining if a grower exceeded the allocation.

WHEREAS, Water Code section 10725.2, part of SGMA, authorizes a GSA to "perform any act necessary or proper to carry out the purposes of this part," including the adoption of "rules, regulations, ordinances, and resolutions for the purpose of this part, in compliance with any procedural requirements applicable to the adoption of a rule, regulation, ordinance, or resolution by the groundwater sustainability agency."

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WHEREAS, pursuant to Water Code section 10725.4(a)(4) "a groundwater sustainability agency may conduct an investigation...to monitor compliance and enforcement," and pursuant to Water Code section 10731, following such an investigation the County GSA "...may make a determination fixing the amount of groundwater production from the groundwater extraction facility at an amount not to exceed the maximum production capacity of the facility for purposes of levying a groundwater charge," and if "a water-measuring device is permanently attached to the groundwater extraction facility, the record of production as disclosed by the water-measuring device shall be presumed to be accurate unless the contrary is established by the groundwater sustainability agency after investigation."

WHEREAS, subdivision (a)(1) of Water Code section 10732, part of SGMA, provides that "(a) person who extracts groundwater in excess of the amount that person is authorized to extract under a rule, regulation, ordinance, or resolution adopted pursuant to Section 10725.2, shall be subject to a civil penalty not to exceed five hundred dollars ($500) per acre-foot extracted in excess of the amount that person is authorized to extract." Also, "(l)iability under this subdivision is in addition to any liability imposed under paragraph (2) and any fee imposed for the extraction."

WHEREAS, subdivision (a)(2) of Water Code section 10732 provides that "(a) person who violates any rule, regulation, ordinance, or resolution adopted pursuant to Section 10725.2 shall be liable for a civil penalty not to exceed one thousand dollars ($1,000) plus one hundred dollars ($100) for each additional day on which the violation continues if the person fails to comply within 30 days after the local agency has notified the person of the violation."

WHEREAS, subdivision (b)(1) of Water Code section 10732 provides that a GSA "may bring an action in the superior court to determine whether a violation occurred and to impose a civil penalty described in subdivision (a)." Subdivision (b)(2) of this section provides that a GSA "may administratively impose a civil penalty described in subdivision (a) after providing notice and an opportunity for a hearing." Subdivision (b)(3) states that "(i)n determining the amount of the penalty, the superior court or the groundwater sustainability agency shall take into consideration all relevant circumstances, including, but not limited to, the nature and persistence of the violation, the extent of the harm caused by the violation, the length of time over which the violation occurs, and any corrective action taken by the violator."

WHEREAS, subdivision (c) of Water Code section 10732 provides that "(a) penalty imposed pursuant to this section shall be paid to the groundwater sustainability agency and shall be expended solely for purposes of this part."

WHEREAS, subdivision (d) of Water Code section 10732 provides that "(p)enalties imposed pursuant to this section are in addition to any civil penalty or criminal fine under any other law."

WHEREAS, pursuant Water Code sections 10725.2 and 10732, as set forth above, the Board desires through the passage of this Resolution to provide the GSA with the authority and discretion to impose civil penalties on those persons or entities, including farm units, who extract groundwater in excess of the amount that a person or entity is authorized to extract under the Allocation Approach, and to provide a system for the administration of such penalties.

RESOLUTION

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the County of Madera, State of California, sitting as Board of Directors for the County of Madera GSA for the Chowchilla Subbasin, as follows:

1. The recitals set forth above are found to be true and correct and are incorporated herein by reference. Furthermore, the Board has duly considered the full record before it, which may include but is not limited to such things as the staff report, testimony by staff and the public, and other materials and evidence submitted or provided to the Board.

2. As an alternative to appealing the County GSA's determination of ETAW as defined in Resolution 2021-113, a grower may request to be pre-approved for use of a groundwater flow meter data for determining ETAW. To be eligible for such approval, a grower must first have all irrigated parcels registered within IrriWatch. For all registered parcels that a grower intends to have ETAW determined using a groundwater flow meter, the grower must provide the County GSA with the following, which will be reviewed by the County GSA and any County-designated third party as determined necessary by the County GSA:

   a. A map depicting the exact location of groundwater well(s) and parcel(s) and field(s) served by the well(s);
   b. Photographs and a meter installation report for the well(s) serving the parcel(s);
   c. A compliant meter calibration report or results of a field flow test conducted by a County GSA approved vendor for each well;

d. An estimate of efficiency for the irrigation system on the field(s);

e. An attestation that that the designated well(s) only serve the identified parcel(s) or field(s); and

f. An attestation of the validity that all submitted information represents current conditions for the well(s).

3. For any person or entity subject to the jurisdiction of any County GSA, including any "farm unit," that extracts groundwater in excess of the amount that person or entity is authorized to extract, as that amount is determined pursuant to Resolution 2021-113 for the Allocation Refinements, the County GSA is authorized to impose one or both of the following penalties:

A. A civil penalty not to exceed $100 per acre-foot in calendar year 2023, increasing by $100 per acre-foot per calendar year to a maximum of $500 per acre-foot for the total acre-feet extracted in excess of the amount that person or entity is authorized to extract for the subject parcel or farm unit.

B. A civil penalty not to exceed one thousand dollars ($1,000) per farm unit. However, the Board of Directors shall take action to remove this $1,000 civil penalty per farm unit at such time when the entity known as the Chowchilla Subbasin Growers ("CSG"), adequately funds an escrow account or funds projects identified in the Chowchilla Subbasin Groundwater Sustainability Plan.

C. In determining the amount of the penalty, the County GSA shall take into consideration circumstances including, but not limited to, the nature and persistence of the violation, the extent of the harm caused by the violation, the length of time over which the violation occurs, and any corrective action taken by

the violator.

4. The penalties to be imposed pursuant to Section 3 of this Resolution shall be imposed after the provision of notice to the affected property owner, and shall become due within thirty (30) days of the date of the notice, with an opportunity for the violator to be heard as set forth herein:

A. Any dispute regarding the imposition of a civil penalty under Section 3 shall be presented in writing by the affected property owner to the Director of the Department of Water and Natural Resources for the County of Madera ("Director") within thirty (30) days of having been provided notice by regular mail or electronic mail of the violation. All appeals and data submitted to support an appeal will be maintained by the County GSA and are public information. An independent consultant with expertise in agricultural irrigation will review the matter as presented and issue a written determination ("Determination") within a reasonable time period. Unless otherwise provided for, the Determination shall be issued to the affected property owner by electronic means.

B. The affected property owner may, within 20 days of the date of the mailing of the Panel's Decision on the Application, file an appeal ("Appeal") of the Decision to the Board through written or electronic communication to the Chief Clerk to the County Board of Supervisors. Unless otherwise stipulated between the Board and the affected property owner, the Appeal hearing shall take place within 45 days of the date that the Appeal was filed. The formal rules of evidence shall not apply to the Appeal hearing. The Board shall rule on the Appeal by roll call vote, and a majority vote of the entire Board is required to either grant or deny

the appeal. The Board's hearing shall be recorded electronically, and such recording, along with the Board's written minutes and any materials presented to the Board either in favor or in opposition to the Appeal, shall constitute the record of proceedings for the Appeal.

5. A penalty imposed pursuant under this Resolution shall be paid to the County GSA and shall be expended solely for the purposes of SGMA. If the responsible party made a written dispute to the County GSA regarding the penalty, as set forth in Section 4, such party shall have 30 days from the date of mailing of the Determination, Decision, or the Board's determination of an Appeal, to pay the penalties determined by the County GSA. In the event the responsible party fails to pay the penalty when due, the County GSA may take any actions permitted by law to collect the unpaid penalty, which shall accrue interest at a rate of six percent per year, commencing thirty days after the penalty becomes due and continuing until paid.

6. The amount of any unpaid penalty, plus any other costs as provided in this Resolution or by law, may be declared a lien on the real property owned by the responsible party within the County GSA that is the subject of the penalty, as follows:

A. Notice shall be given to the responsible party prior to the recordation of the lien, and shall be mailed by first class mail, postage prepaid, to the last known address; and

B. When a public official representing the County GSA records a lien listing delinquent unpaid penalties with the County Clerk-Recorder's office, the lien shall specify the amount of the lien, the date of the code violations, the date of the final administrative decision, the street address, legal description, and assessor's

parcel number of the parcel on which the lien is imposed, and the name of the owner of the parcel according to the last equalized assessment roll; and

C. In the event that the lien is discharged, released, or satisfied, either through payment or foreclosure, notice of the discharge and release of the lien shall be prepared by the public official.

7. The amount of an unpaid penalty, plus any other costs as provided by this Resolution or by law, may be declared a special assessment against the real property owned by the responsible party within the County GSA that is the subject of the penalty. The amount of the assessment shall not exceed the amount of penalty imposed for the violation, plus any cost authorized this Resolution or by law. A representative of the County GSA may present a resolution to the Board to declare a special assessment, and, upon passage and adoption thereof, shall cause a certified copy to be recorded with the County Clerk-Recorder's office. The assessment may then be collected at the same time and in the same manner as ordinary taxes are collected and shall be subjected to the same penalties and the same procedure and sale in the case of delinquency as provided for ordinary property taxes.

8. Penalties imposed pursuant to this Resolution are non-exclusive, and therefore are in addition to any civil penalty or criminal fine that may be imposed under any other law.

9. The Director is hereby authorized and directed to take further actions as may be necessary to implement the intent and purposes of this Resolution.

10. The provisions of this Resolution shall become effective on January 1, 2023.

* * * * * * * * * * * * * * * * *

The foregoing Resolution was adopted this 27TH day of SEPTEMBER, 2022, by the following vote.

Director Frazier voted: Yes

Director Rogers voted: No

Director Poythress voted: Yes

Director Gonzalez voted: Yes

Director Wheeler voted: Yes

Chairman, Board of Directors

ATTEST:

Clerk, Board of Directors

Approved as to Legal form:
COUNTY COUNSEL

By

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Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.c

Date: April 7, 2026

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Robert Macaulay, Jordan Wamhoff

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Review Madera and Chowchilla Annual Report Highlights

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DISCUSSION:

The Madera and Chowchilla Subbasins are considered critically overdrafted and are subjected to the requirements of the Sustainable Groundwater Management Act of 2014 (SGMA). The California Code of Regulations Title 23 (23 CCR) §356.2 requires that Annual Reports be submitted to DWR by April 1st of each year following Groundwater Sustainability Plan (GSP) adoption. This Annual Report is for water year 2025 (October 2024 through September 2025). Content covered in the Annual Report includes the following:

- Groundwater elevation data from monitoring wells
- Contour maps and hydrographs of groundwater elevations
- Total groundwater extractions for the prior water year
- Surface water supply used or available for use in the prior water year
- Total water use
- Change in groundwater storage
- Progress towards implementing the GSP, specifically related to projects and management actions (PMAs) and groundwater conditions in relation to the sustainable management criteria (SMC) for all applicable sustainability indicators.

Madera Subbasin Annual Report Highlights:

For the Madera Subbasin, the hydrographs for representative monitoring wells (RMS) show generally stable water levels from 2020 through 2025, with slightly declining trends observed in some wells. During water year 2025, approximately 591,500 acre-feet (AF) of groundwater was extracted for use within the Subbasin while total estimated groundwater

recharge from all sources was approximately 261,900 AF. From Spring 2024 to 2025 the volume of groundwater storage in the entire Subbasin decreased by -73,400 AF.

New in 2025 was a water budget approach using MCSim model to quantify groundwater extraction, surface water supply availability, and total water use in the Madera Subbasin. The Madera Subbasin GSAs improved MCSim by updating, refining, and re-calibrating the model using the best available data sources and approaches.

All surface water supplies used or available for use within the Madera Subbasin by water source type are described in the report. In total, there were 189,000 AF of surface water supplies from local and CVP sources combined.

Annual changes in groundwater storage across the Madera Subbasin was calculated from the groundwater level contour maps for each of the principal aquifers (Upper and Lower Aquifers). The combined change in groundwater storage for the entire Madera Subbasin area was an estimated decrease of about -73,400 AF from Spring 2024 to Spring 2025, indicating a net depletion of groundwater storage.

Chowchilla Subbasin Annual Report Highlights:

In June 2025, following the State Water Resources Control Board (SWRCB) staff's review of the January 2025 Revised GSP, the SWRCB determined that a probationary designation for the Chowchilla Subbasin was not necessary and that it would return the Chowchilla Subbasin to DWR's jurisdiction. The January 2025 Revised GSP remains under review by DWR staff as of early 2026.

For the Chowchilla Subbasin, the Spring 2025 and Fall 2025 groundwater elevation contour maps are similar to patterns observed in previous spring and fall time periods. The hydrographs show generally stable trends with slightly increasing or declining levels depending on the specific RMS well from 2015 through 2025.

In total, an estimated amount of 305,800 AF of groundwater was extracted for use within the Chowchilla Subbasin during water year 2025 with a total of approximately 299,000 AF for agricultural use and 6,800 AF for urban use.

Total groundwater recharge from the surface water system (combined infiltration of applied water, precipitation, and surface water) was estimated to be approximately 144,000 AF.

Approximately 59,000 AF of recharge came from applied water, 16,000 AF from precipitation, and 69,000 AF from surface water.

This report shows that surface water supplies are the volume of water delivered or diverted to agencies and water- right users in the Chowchilla Subbasin. This is a refinement from previous annual reports, which calculated surface water supplies as the net difference between inflows and outflows. During water year 2025, approximately 152,100 AF of surface water supplies were used or available for use (combined diversions, irrigation deliveries, recharge, and infiltration of diversions). Approximately 4,600 AF of surface water came from local supplies, 141,200 AF came from CVP supplies, and 6,300 AF came from local imported supplies.

Total water use in the Chowchilla Subbasin is estimated to be approximately 457,900 AF. Approximately one-third is from surface water, and the remaining use is from groundwater. This report shows that the total water use is the total combined groundwater extraction and surface water used or available for use. This is a refinement from previous annual reports, which estimated total water use by adding up all applied water and precipitation, including both consumptive uses and non-consumptive uses.

The change in groundwater storage was approximately -62,100 AF from Spring 2024 to Spring 2025. With a loss of -40,600 AF in the upper aquifer and -21,400 AF in the lower aquifer. A negative storage value represents a depletion of groundwater storage.

The Chowchilla Subbasin GSAs have continued to implement the Domestic Well Mitigation Program that was launched in January 2023. It has since awarded mitigation funding for 15 applicants.

As part of the 2025 Revised Chowchilla Subbasin GSP, the Chowchilla GSAs signed the Demand Management Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU) to outline the GSAs commitment to developing groundwater demand management (GDM) programs and subsidence mitigation measures as a backstop to other project management actions (PMAs). These mitigation measures include voluntary and mandatory measures with specific triggers for action to implement as necessary. In 2025-2026, the Chowchilla GSAs developed a Chowchilla GDM and Subsidence Mitigation Measures Report to show the GSAs' programmatic approach to prepare for implementation beginning in 2026, consistent with the MOU.

For chronic lowering of groundwater levels, review of the Fall 2025 groundwater level measurements that are available for 28 RMS wells indicate that groundwater levels remain generally above the MTs, and all Fall 2025 RMS groundwater levels, with the exception of one well, were above the 2030 IMs.

Land subsidence data was not available for evaluation at the time of the submittal of this annual report. The U.S. Bureau of Reclamation (USBR) is no longer monitoring the San Joaquin River Restoration Program (SJRRP) subsidence benchmarks and the California Department of Water Resources (DWR) Interferometric synthetic aperture radar (InSAR) data was not available at this time. A future amendment of the annual report will be submitted when InSAR data is available.

Groundwater quality data to establish a baseline are still being collected, so SMC comparisons are not available at this time.

For depletion of Interconnected Surface Water (ISW), percent of time connected at all wells are below the SMC, except for one well with limited data. Several RMS wells also lack sufficient data to fully assess ISW conditions.

For reference all materials are available on the Maderacountywater.com on the appropriate subbasin page.

ATTACHMENTS:

The Madera Subbasin Annual Report WY 2025 and the Chowchilla GSP Annual Report WY2025 are available on Maderacountywater.com.

AA, LT, TP

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.d

Date: April 7, 2026

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Robert Macaulay, Jordan Wamhoff

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Domestic Well Mitigation Rule Refinements

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DISCUSSION:

The Domestic Well Mitigation Program (Program) was developed as part of the implementation of the Groundwater Sustainability Plan for the Madera Subbasin. The Program is intended to provide assistance to domestic well owners whose wells have been impacted by declining groundwater levels attributable to basin overdraft. The Board previously adopted Program rules and eligibility criteria to establish a transparent and consistent framework for determining eligibility, processing applications, and coordinating mitigation activities for affected domestic well users.

As part of Program implementation, the Board authorized the Director to approve mitigation projects that meet the Program criteria with individual project costs not to exceed $35,000. The $35,000 cap was originally intended to reflect the estimated cost of installing a replacement domestic well and was used as a planning-level estimate for Program budgeting and fee development. The financial cap originally covered only the drilling and casing installation.

During early Program outreach and engagement with potential applicants, staff received feedback from residents indicating that several necessary items associated with installing and operating a replacement domestic well were not covered under the original $35,000 cap. In many cases, applicants expressed concern that they would not be able to afford the additional costs required to fully restore domestic water service if those items remained outside the Program funding limit. This feedback highlighted that, while the drilling and installation of the well itself may fall within the estimated cost range, additional components necessary to bring water to the home could create a financial barrier for affected residents.

In response to this feedback, staff is recommending an adjustment to the Program approach so that the $35,000 project cap includes all reasonable components necessary to restore domestic water service to the residence. Under the original approach, the estimated $35,000 cost largely reflected the drilling of the well and installation of the casing, with several other necessary components excluded from the project cost. Through discussions with potential applicants, it became clear that limiting the Program to those items alone would leave many households responsible for additional costs required to make the well operational.

Under the revised approach, the $35,000 cap will remain in place; however, the cap will now include the reasonable components necessary to complete and operate a new replacement domestic well. Program costs will continue to be managed carefully to ensure that funds are used only for items directly related to restoring domestic water service to the residence. When appropriate, parts from the existing well will be reused on the new well installed under this Program. Additionally, any item that serves a purpose other than delivering water to the home for domestic use, or that is upgraded or equipped to serve a non-domestic use (i.e., a dual-purpose system), will not be eligible for Program funding. All work will be coordinated and performed by contractors authorized by the Program. If a homeowner independently performs, hires a contractor, or subcontractor not authorized by the County GSA to perform any portion of the well installation or related services, those costs will not be covered under the Program.

This revised approach maintains the fiscal discipline of the existing project cap while ensuring that the Program can realistically restore domestic water service for eligible households. The recommendation reflects feedback received from potential applicants and is intended to remove financial barriers that could otherwise prevent residents from accessing the Program, while continuing to focus Program resources on the core objective of restoring a reliable domestic water supply.

FISCAL IMPACT:

This item is paid for by the Groundwater Sustainability Project fees and Groundwater over extraction penalties; there is no impact on the General Fund.

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.d

ATTACHMENTS:

1. DWM Resolution Amendment
2. Resolution 2026-017
3. Resolution 2025-141
4. Summary of Activity

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

In the Matter of GROUNDWATER SUSTAINABILITY AGENCY	Resolution No._____ RESOLUTION AMENDING DOMESTIC WELL MITIGATION PROGRAM FOR THE MADERA SUBBASIN

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 "Sustainable Yield" (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, on December 9, 2025, the County GSA Board of Directors adopted Resolution No. 2025-141, which established the Domestic Well Mitigation Program including eligibility, funding, and procedures for domestic well mitigation in the Madera Subbasin;

WHEREAS, on February 10, 2026, the County GSA Board of Directors adopted Resolution No. 2026-017, which amended the Domestic Well Mitigation Program including eligibility, funding, and procedures for domestic well mitigation in the Madera Subbasin;

WHEREAS, the County GSA desires to further amend the Domestic Well Mitigation Program to revise procedures to improve implementation of the Domestic Well Mitigation Program as specified in Exhibit "A" attached hereto and incorporated herein by reference; 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 amendment 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. That the Director of Water and Natural Resources is hereby authorized and directed to act on behalf of County GSA in connection with the County GSA's Madera Subbasin Domestic Well Mitigation Program, and to enter into, execute, and deliver any and all documents required or deemed necessary for the implementation of the Madera Subbasin Domestic Well Mitigation Program as amended herein including but not limited to execution of a grant agreement between the County GSA and the landowner in a form approved by County Counsel.

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

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The foregoing Resolution was adopted this _____ day of _____,

2026, by the following vote.

Director Wamhoff 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

Nick Clair

Digitally signed by: Nick Clair
DN: CN = Nick Clair email = nclair@lozanosmith.com C = US O = Lozano Smith
Date: 2026.03.20 16:38:21 -07'00'

By_____

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 within the Madera County Groundwater Sustainability Agency. This program helps fund the drilling of new domestic wells or connecting to an existing community water system to replace domestic wells that have gone dry or been damaged by subsidence.

Program Rules

Eligibility
Must be a landowner with a domestic well located within the Madera Subbasin and within the Madera County GSA boundaries. The property must have a well that went dry after 1/1/2026 or is on the Self-Help Enterprises interim water assistance list (with a dry well due to declining groundwater levels that occurred after 1/1/2020 cutoff). The property owner must have owned the property for a minimum of one year. The dwelling unit must be considered "habitable."

Qualifications
The domestic well must have gone dry due to declining groundwater levels and have not exceeded 30 years of age. Domestic wells impacted by subsidence (collapsed casing) may also qualify. The residence must be considered "habitable." A qualified professional will conduct an assessment after application to confirm eligibility.

Funding
Program funding shall be managed to ensure that funds are used only for items directly related to restoring domestic water service to an eligible residence. Funding may be used for the installation of a new replacement domestic well or connection to a community water system. Funding shall be used for all reasonable components necessary to establish a new functioning domestic well system that delivers water to the residence for domestic use as approved by the County GSA.

Examples of Authorized and Unauthorized well components include but are not limited to:

Authorized
- Well drilling and installation of casing and sanitary seals
- Installation of a submersible pump (new or existing, if in good working order)
- Electrical wiring, conduit, and pump control components necessary to operate the domestic well
- Pitless adapter and wellhead fittings
- Pressure tank and pressure switch necessary to regulate household water pressure
- Trenching and installation of the water service line connecting the well to the residence
- Basic plumbing connections, valves, and appurtenances necessary to deliver water into the home
- Well completion activities, including system testing, startup, and disinfection
- Other reasonable and necessary components required to establish a functional domestic water supply system for the residence (e.g., minor fittings, connectors, or appurtenances integral to system operation)

Unauthorized
- Lowering pump, deepening, or modifying an existing well in lieu of replacement
- Installation of a well with capacity exceeding that necessary for domestic household use ("oversized well")

- Storage tanks not necessary for basic domestic service
- Electrical upgrades beyond those required to operate the domestic well
- Water lines or plumbing systems serving non-residential structures (e.g., barns, shops, or agricultural uses)
- Backup, standby, or redundant water supply systems
- Irrigation, landscaping, or other non-domestic water system components (including sprinkler system connections)
- Landscaping, site improvements, or aesthetic enhancements (e.g. decorative enclosures, concrete pads beyond functional necessity, fencing for non-operational purposes) around the well site
- Any costs, components, or improvements that are not directly and solely necessary to restore basic domestic water service to the residence (e.g., system upgrades for increased capacity, convenience features, or non-essential improvements)

Funding will also be available for the destruction of the existing well. Existing well components will be reused when appropriate. Program funding shall not be used for any item that serves a purpose other than delivering water to the home for domestic use, or that is upgraded or equipped to serve a non-domestic use (i.e., a dual-purpose system).

All work performed under the Program shall be coordinated and completed by contractors authorized by the County GSA. Costs associated with work performed independently by the homeowner or by contractors or subcontractors not authorized by the County GSA shall not be eligible for Program funding.

The Program provides funding of up to $35,000 per eligible property. Any costs exceeding this amount shall be the responsibility of the landowner.

If the home is sold within one year, 100% of Program costs up to $35,000 must be repaid; if sold within one to two years, 50% of costs up to $17,500 must be repaid.

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 deposit that will be credited towards payment if qualified. The deposit is non-refundable for applicants that do not qualify.
2. Assessment: The Madera County GSA or its agents will conduct a well assessment.
3. Approval: If the well qualifies, the landowner will solicit and provide the GSA with three (3) bids from well drillers. Two (2) bids must be from the Madera County GSA qualified well driller list. The County GSA will approve one of the bids and authorize work to begin.
4. Payment: The GSA will advance the landowner up to $35,000 in eligible costs on a schedule deemed appropriate by the GSA. At completion the landowner must provide sufficient documentation to support the amount advanced by the GSA.
5. Record: After completion, the mitigation record will be filed on the property deed with agreement terms.

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

In the Matter of	)	Resolution No.: 2025 - 141
	)	
GROUNDWATER SUSTAINABILITY AGENCY	)	RESOLUTION ADOPTING 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.

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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 9TH day of DECEMBER, 2025, by the following vote.

Director Warmhoff voted: Yes

Director Rogers voted: Yes

Director Poythress voted: Yes

Director Gonzalez voted: Yes

Director Macaulay voted: Yes

Chair, Board of Directors

ATTEST:

Clerk, Board of Directors

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: 2025.11.07 09:13:03 -08'00'

4909-7875-6472, v.1

EXHIBIT A

10b. with correction

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 within the Madera County Groundwater Sustainability Agency. 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

Must be a landowner with a domestic well located within the Madera Subbasin and within the Madera County GSA boundaries. The property must have a well that went dry after 1/1/2026 or is on the Self-Help Enterprises interim water assistance list (with a dry well due to declining groundwater levels that occurred after 1/1/2020 cutoff). The property owner must have owned the property for a minimum of one year. The dwelling unit must be considered "habitable."

Qualifications

The domestic well must have gone dry due to declining groundwater levels and have not exceeded 30 years of age. Domestic wells impacted by subsidence (collapsed casing) may also qualify. The residence must be considered "habitable." A qualified professional will conduct an assessment after application 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. Any cost over $35,000 is the landowner's responsibility. Not covered: water quality testing or alternative sources, pump work, electrical repairs, landscaping, or lowering pumps. If the home is sold within one year, 100% of the costs up to $35,000 must be repaid; if the home is sold within one to two years, 50% of the costs up to $17,500 must be repaid.

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 conduct a well assessment.
3. Approval: If the well qualifies, a qualified well driller will be selected using a selection method approved by the GSA.
4. Payment: The GSA will issue payment consistent with the contract or agreement governing the mitigation work, which may involve direct payment to the driller or the landowner.
5. Record: After completion, the mitigation record is filed on the property deed with repayment terms.

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.: 2026 - 017
	)	
GROUNDWATER SUSTAINABILITY AGENCY	)	RESOLUTION AMENDING 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, on December 9, 2025, the County GSA Board of Directors adopted Resolution No. 2025-141, which established the Domestic Well Mitigation Program including eligibility, funding, and procedures for domestic well mitigation in the Madera Subbasin;

WHEREAS, the County GSA desires to amend the Domestic Well Mitigation Program to revise procedures to improve implementation of the Domestic Well Mitigation Program as specified in Exhibit "A" attached hereto and incorporated herein by reference; 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 amendment 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. That the Director of Water and Natural Resources is hereby authorized and directed to act on behalf of County GSA in connection with the County GSA's Madera Subbasin Domestic Well Mitigation Program, and to enter into, execute, and deliver any and all documents required or deemed necessary for the implementation of the Madera Subbasin Domestic Well Mitigation Program as amended herein including but not limited to execution of a grant agreement between the County GSA and the landowner in a form approved by County Counsel.

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

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The foregoing Resolution was adopted this 10TH day of FEBRUARY, 2026, by the following vote.

Director Warmhoff voted: Yes

Director Rogers voted: Yes

Director Poythress voted: Yes

Director Gonzalez voted: Yes

Director Macaulay voted: Yes

Chair, Board of Directors

ATTEST:

Karen Scrivner

Clerk, Board of Directors

Approved as to Legal form:
COUNTY COUNSEL

By Rebecca Wilson

Digitally signed by: Rebecca Wilson
DN: CN = Rebecca Wilson email = rwilson@lozanosmith.com C = US O = LOZANO SMITH
Date: 2026.01.30 16:08:21 -08'00'

4927-4468-3404, v. 1

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 within the Madera County Groundwater Sustainability Agency. This program helps fund the drilling of new domestic wells or connecting to an existing community water system to replace domestic wells that have gone dry or been damaged by subsidence.

Program Rules

Eligibility

Must be a landowner with a domestic well located within the Madera Subbasin and within the Madera County GSA boundaries. The property must have a well that went dry after 1/1/2026 or is on the Self-Help Enterprises interim water assistance list (with a dry well due to declining groundwater levels that occurred after 1/1/2020 cutoff). The property owner must have owned the property for a minimum of one year. The dwelling unit must be considered "habitable."

Qualifications

The domestic well must have gone dry due to declining groundwater levels and have not exceeded 30 years of age. Domestic wells impacted by subsidence (collapsed casing) may also qualify. The residence must be considered "habitable." A qualified professional will conduct an assessment after application 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. Any cost over $35,000 is the landowner's responsibility. Not covered: water quality testing or alternative sources, pump work, electrical repairs, landscaping, or lowering pumps. If the home is sold within one year, 100% of the costs up to $35,000 must be repaid; if the home is sold within one to two years, 50% of the costs up to $17,500 must be repaid.

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 application and assessment fee. If the well qualifies for mitigation, the application and assessment fee will be reimbursed as an eligible mitigation cost. If the well does not qualify for mitigation, the application and assessment fee is non-refundable. .
2. Assessment: The Madera County GSA or its agents will conduct a well assessment.
3. Approval: If the well qualifies, the landowner will solicit and provide the GSA with three (3) bids from well drillers. at least two (2) bids must be from the Madera County GSA qualified well driller list. The County GSA will approve one of the bids and authorize work to begin.
4. Payment: The GSA will advance the landowner up to $35,000 in eligible mitigation costs on a schedule deemed appropriate by the GSA. At completion the landowner must provide sufficient documentation to support the amount advanced by the GSA for eligible mitigation costs. Landowner must return any funds

advanced by the GSA in excess of the eligible mitigation costs as specified in the agreement between the GSA and the Landowner.
5. Record: After completion, the notice of the mitigation will be record on the property deed including a copy of the agreement between the GSA and Landowner.

MADERA DRY WELL PROGRAM

Domestic Well Mitigation

April 7, 2026

Summary of Activity

January 1, 2026 to March 31, 2026

Applicant Inquires

Number of Inquiries (via dedicated phoneline/website):	15
Passed Initial Screening:	3
Failed Initial Screening:	7
In Review (Pending):	5
Well Assessments Completed:	2

Public Outreach

Postcard mailed to 90% of residential wells in service area on March 20, 2026

Financials

Cash Balance (first half of property tax assessments):	$2,748,872
*Madera Penalty Balance as of 3-31-2026:	$527,562
*Expenses as of 3-31-26:	$25,453

*Financial books have not closed for March 2026

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.e

Date: April 7, 2026

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Robert Macaulay, Jordan Wamhoff

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Informational Item: Review Penalty Data

DISCUSSION:

Penalties in the Madera County Groundwater Sustainability Agency (GSA) in the Madera, Chowchilla, and Delta-Mendota Subbasins have been calculated for calendar year 2025. For the Madera County GSA in the Madera Subbasin the total is $1,113,061. For the Madera County GSA in the Chowchilla Subbasin, the total is $649,710. These funds, under separate resolutions, are designated for use with domestic well mitigation programs. There are no farm units in penalty in the Delta-Mendota Subbasin.

Growers were notified of penalties in their year-end reports. Invoices were sent March 13, 2026 and payments are collected via direct payment (check) through April 27, 2026. Payments not made in that time frame are collected on property tax bills as a penalty.

Additional surface water has been reported in 2025 and graphs of evapotranspiration of applied groundwater (ETAGW) have been updated and enclosed in Exhibit A.

FISCAL IMPACT:

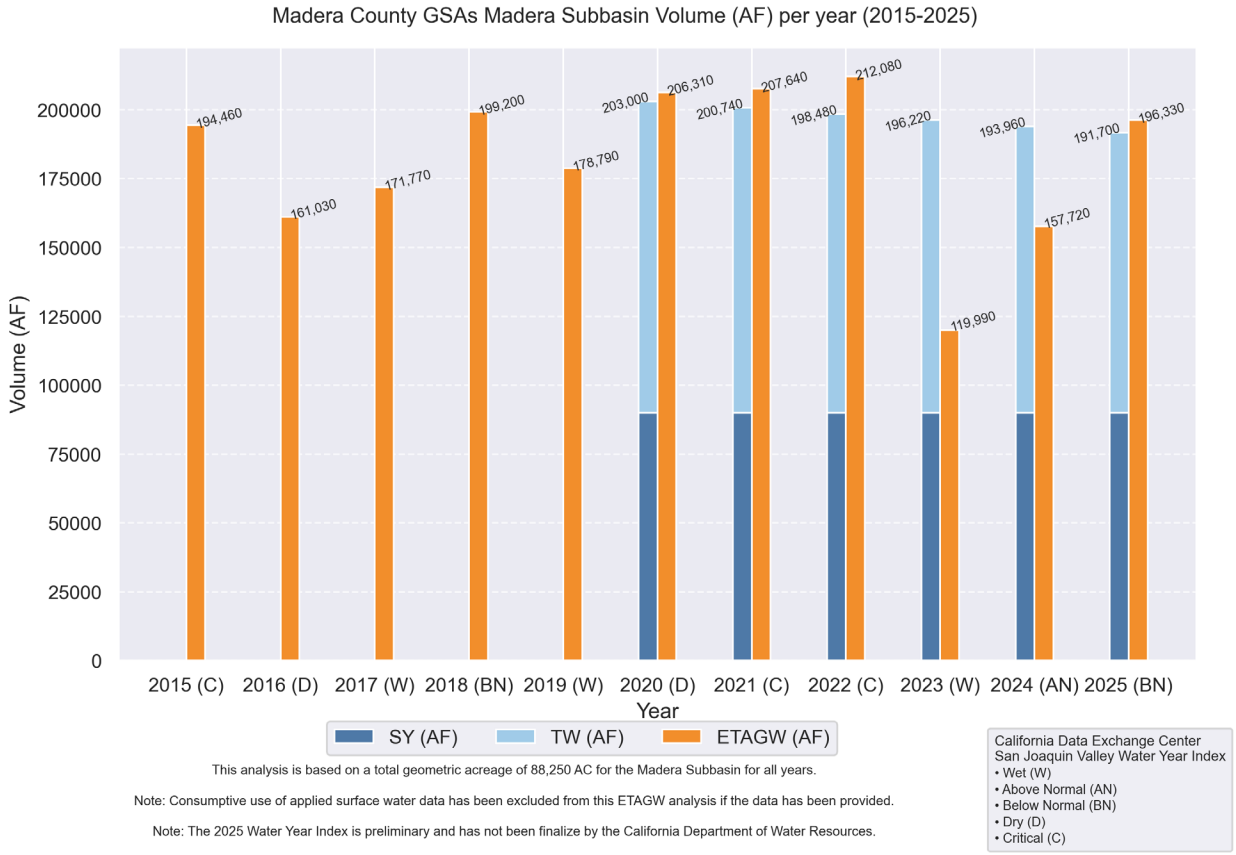
Penalty revenues offset the cost of domestic well mitigation.

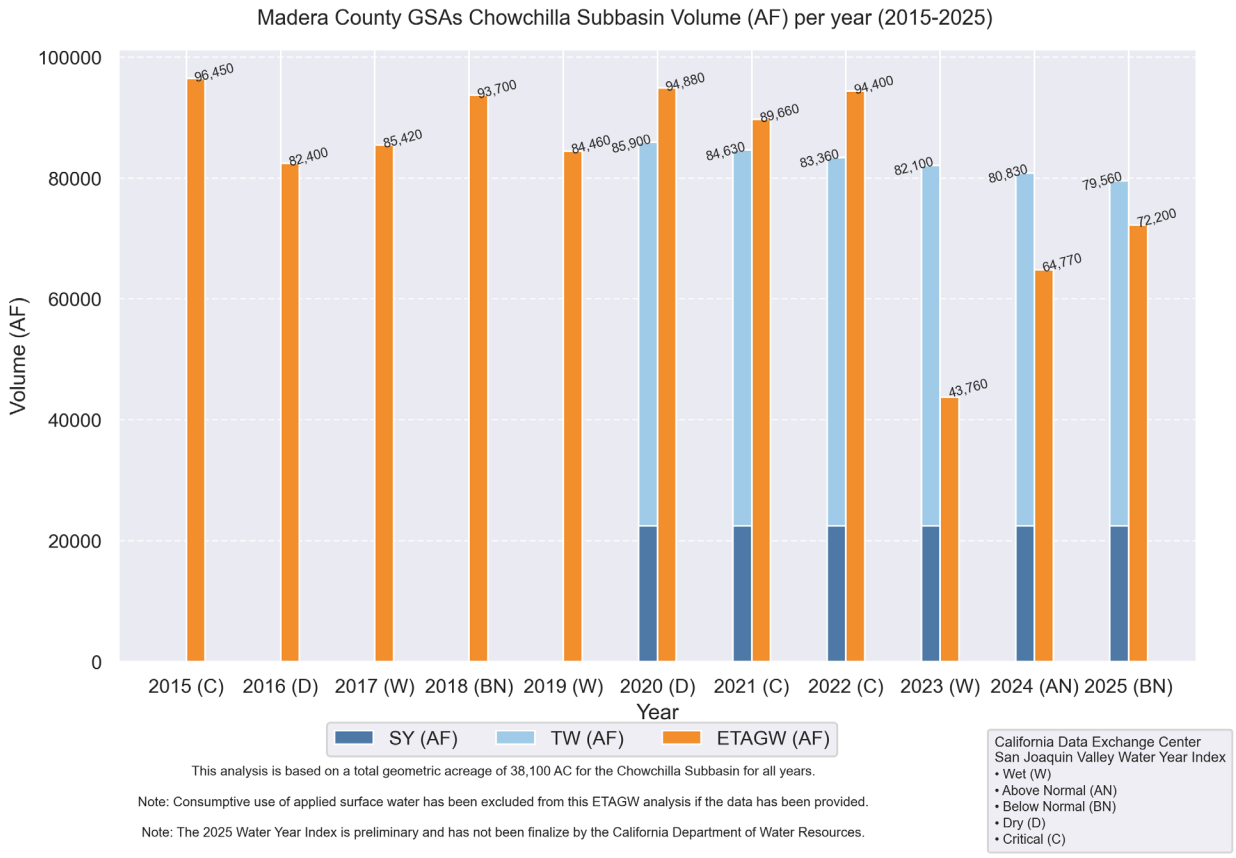
ATTACHMENTS:

Exhibit A – Updated Madera and Chowchilla ETAGW graphs

SA

Exhibit A – Updated Madera and Chowchilla ETAGW graphs





This analysis is based on a total geometric acreage of 38,100 AC for the Chowchilla Subbasin for all years.

Note: Consumptive use of applied surface water has been excluded from this ETAGW analysis if the data has been provided.

Note: The 2025 Water Year Index is preliminary and has not been finalize by the California Department of Water Resources.

California Data Exchange Center
San Joaquin Valley Water Year Index
- Wet (W)
- Above Normal (AN)
- Below Normal (BN)
- Dry (D)
- Critical (C)

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.f

Date: April 7, 2026

To: Madera County Groundwater Sustainability Agency (GSA) Committee
Robert Macaulay, Jordan Wamhoff

From: Stephanie Anagnoson, Director of Water and Natural Resources

Subject: Action Item: Consideration and recommendation to adopt Chowchilla Subbasin Groundwater Demand Management Programs and Subsidence Mitigation Measures Report

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DISCUSSION:

Following a 2023 Inadequate Determination from the California Department of Water Resources (DWR) and amidst subsequent revisions to the Chowchilla Subbasin (Subbasin) Groundwater Sustainability Plan (GSP), the four Groundwater Sustainability Agencies (GSAs) representing the Chowchilla Subbasin (Chowchilla Water District, County of Madera - Chowchilla, County of Merced - Chowchilla, and Triangle T Water District) had several meetings with the State Water Resources Control Board (SWRCB) staff during which the SWRCB staff indicated that the GSAs must prepare demand management programs and subsidence mitigation measures with specific triggers, as a “backstop” to their existing Projects and Management Actions (PMAs).

Given SWRCB guidance and as part of the 2025 Revised Subbasin GSP, the GSAs signed the Demand Management Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU) to outline the GSAs commitment to developing groundwater demand management (GDM) programs and subsidence mitigation measures as the “backstop” to other PMAs.

The mitigation measures outlined in the MOU include both voluntary and mandatory measures with specific triggers for action to implement as necessary. Mandatory measures are enforceable actions that directly regulate groundwater use, such as groundwater allocations, groundwater extraction fees, or lower-aquifer extraction limits. Voluntary measures are incentive-based or cooperative efforts, such as recharge projects, multi-benefit land repurposing programs, and in-lieu surface water use, that achieve groundwater demand reductions through participation and collaboration.

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.f

Over the course of the last several months, the GSAs have worked to develop an actionable and implementable GDM Report (Report). The purpose of this Report is to document the GSAs' programmatic approach to prepare for implementation of GDM programs and subsidence mitigation measures beginning in 2026, consistent with the MOU, and to the extent conditions warrant.

The GSAs' programmatic, actionable approach is outlined in this Report as follows:

- **Section 2** describes the specific GDM programs and subsidence mitigation measures, both mandatory and voluntary, that the GSAs are implementing, or are preparing to implement as necessary.
- **Section 3** describes the trigger conditions, with specific spatial and time considerations, that the GSAs will monitor to determine when and where actions are necessary to avoid potential impacts.
- **Section 4** describes the monitoring approach for evaluating whether and where implementation trigger conditions have occurred.
- **Section 5** describes the public outreach and engagement process, including noticing to adjacent Subbasins.
- **Section 6** describes other program implementation and management decisions, including GSA roles and responsibilities, GSA feedback and periodic review to ensure that actions under this approach are effective, and potential GSA funding and financing approaches.

Section 2 of the Report outlines the existing programs and measures that are implemented or are being prepared for implementation if necessary.

For example, Madera County GSA has implemented a demand management program with allocation, penalties, and a recharge policy.

Madera County GSA also has existing voluntary measures such as participating in the Multi-Benefit Land Repurposing Program (MLRP), voluntary land fallowing, Chowchilla Bypass Flood Flow Recharge Projects, Water Purchase Programs, Water Imports Purchase, and Millerton Flood Release Imports.

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ITEM 4.f

Since 2022, Madera County GSA has had an established groundwater allocation program for measuring and monitoring consumptive use for each irrigated parcel or farm unit. This allocation program is supporting sustainable groundwater management by gradually limiting groundwater extraction within the Madera County GSA areas to the sustainable yield of the Subbasin, accomplished by gradually reducing the transitional water to 0 AF per acre by 2040. In total, this is estimated to reduce demand to approximately 22,500 AF by 2040 for the Madera County GSA in the Subbasin.

Since 2023, penalties have been in place for exceeding the farm unit allocation. Penalties started out at $100 per AF in 2023 and have increased by $100 per AF per calendar year, up to a maximum of $500 per AF for water use over the farm unit allocation. This includes an additional $1000 per farm unit. The penalties collected go towards funding Madera County GSAs portion of the Domestic Well Mitigation Program in the Subbasin.

Madera County GSA has also developed and implemented a recharge policy that would credit recharge benefits to the allocation of areas where recharge occurred. There are two components to the recharge policy, one related to storing surface water derived from a water right or contract and the other from an approved diversion during a flood event.

Section 2 of the Report also outlines potential mandatory measures that the GSAs have identified that could be initiated or expanded if trigger conditions occur and indicate a need for additional or more aggressive response(s).

For example, Madera County GSA could potentially look into adjusting the transitional water to reduce groundwater extraction within focused areas, and/or set lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated. This could also include potentially requiring measurements of wells used for Concentrated Animal Feeding Operations (CAFOs).

These potential refinements can be considered and implemented according to trigger responses and focused in areas where trigger conditions occur. Refinements are expected to be determined on a case-by-case basis, depending on the location and extent of trigger conditions. Any refinements to the demand management program will require a robust and transparent public outreach and engagement process.

Section 3 of the Report outlines implementation triggers, extent, and timeline.

Trigger thresholds have been set relative to subsidence, as subsidence is considered by the GSAs to be the most restrictive sustainability indicator in the Subbasin. A series of trigger thresholds have been developed to evaluate subsidence conditions in the Subbasin leading toward implementation of mandatory measures.

The condition for action to be taken requires subsidence triggers thresholds at two representative monitoring sites (RMS) to have been exceeded in the same year. These triggers follow a modified stoplight approach (green-yellow-orange-red light). Green means no action is necessary, yellow is to maximize the use of voluntary measures, orange will need to prepare for implementation of mandatory measures within one year and red will need to immediately implement mandatory measures.

The timeline for an evaluation will be presented each year as part of the Annual Report for the subbasin. At this time, if any trigger conditions have been met then subsequent action will be initiated related to the trigger exceeded.

Section 4 of the Report outlines the monitoring approach that will utilize the monitoring network and protocols established in the 2025 Revised Subbasin GSP.

Section 5 of the Report details public outreach and engagement approaches such as a combination of public meetings and advisory committee discussions, website postings, email lists, translated materials, and targeted outreach.

The GSAs also plan to work with adjacent subbasins toward a regional approach to subsidence mitigation. Collaboration with neighboring subbasins is necessary to adequately address subsidence concerns.

Section 6 of the Report outlines the roles and responsibilities of implementing the GDM programs and subsidence mitigation measures. Each GSA will be responsible for initiating the measures described above and in the Report within its jurisdiction.

Each GSA is responsible for funding and financing each individual GSAs effort.

This item was reviewed at the Chowchilla Subbasin Advisory Committee on February 18, 2026. Action was taken to recommended approval to each of the GSA's governing board. This item was reviewed at the Madera County GSA Committee meeting on March 03, 2026, as an informational item.

Committee Members
Jordan Wamhoff
Robert Macaulay

ITEM 4.f

ATTACHMENTS:

1. Chowchilla GDM Subsidence Mitigation Report – 20260218
2. Resolution Adopting the Chowchilla Subbasin Groundwater Demand Management Programs and Subsidence Mitigation Measures

TP

Chowchilla Subbasin

Groundwater Demand Management Programs and Subsidence Mitigation Measures Report

April 2026






Chowchilla Subbasin
Groundwater Demand Management Programs and Subsidence Mitigation Measures Report

Prepared for

Chowchilla Water District GSA
County of Madera GSA – Chowchilla
County of Merced GSA – Chowchilla
Triangle T Water District GSA

Prepared by

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April 2026

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- Appendix A.2. Madera County GSA Demand Management Program
- Appendix A.3. Triangle T Water District GSA Subsidence Control Measures Agreement

1 Introduction

The Chowchilla Subbasin (Subbasin) is designated by the California Department of Water Resources (DWR) as a critically overdrafted subbasin that forms part of the San Joaquin Valley Groundwater Basin (DWR Bulletin 118 No. 5-022.05). The Subbasin has experienced long-term groundwater overdraft and subsidence in recent decades, prompting the need for measures that reduce groundwater extraction, mitigate subsidence, and support the Subbasin's Sustainable Groundwater Management Act (SGMA) compliance objectives.

The Subbasin is managed by four groundwater sustainability agencies (GSAs): Chowchilla Water District (CWD) GSA, Madera County GSA – Chowchilla (Madera County GSA), Merced County GSA – Chowchilla (Merced County GSA), and Triangle T Water District (TTWD) GSA. The locations and areas managed by each of the GSAs are summarized in **Table 1-1** and **Figure 1-1**. The four GSAs have collectively developed, adopted, and are now implementing one unified Groundwater Sustainability Plan (GSP) for the Subbasin. Under the GSP, the GSAs are collectively monitoring and managing groundwater conditions in the Subbasin to achieve sustainability by 2040, with each GSA responsible for implementing projects and management actions (PMAs) to achieve the Subbasin sustainability goal.

The initial GSP was first adopted in January 2020, and as of January 2025, the Subbasin GSAs have revised the GSP on three occasions. The first revisions were completed in 2022, when the GSP was revised to resolve deficiencies identified by DWR in their January 2022 consultation letter. The second revisions were completed in 2023, when the Subbasin GSAs revised certain sections of the GSP to address remaining deficiencies identified by DWR in their March 2023 inadequate determination. The third revisions were completed in January 2025, when the Subbasin GSAs revised certain sections of the GSP to address comments, and guidance provided by State Water Resources Control Board (SWRCB) staff. In June 2025, following SWRCB staff's review of the 2025 Revised Subbasin GSP[1], the SWRCB determined that a probationary designation for the Subbasin was not necessary and that it would return the Subbasin to DWR's jurisdiction. The 2025 Revised Subbasin GSP remains under review by DWR staff as of early 2026. Coordinated implementation of the 2025 Revised Subbasin GSP is currently underway to achieve sustainable management of the Subbasin by 2040, in compliance with SGMA.

As part of the 2025 Revised Subbasin GSP, the GSAs signed the Demand Management Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU), included in Appendix 3.N. of the 2025 Revised Subbasin GSP. The MOU outlines the GSAs' commitment to developing groundwater demand management (GDM) programs and subsidence mitigation measures as a backstop to other PMAs. These measures, with specific triggers and financial mechanisms, aim to address and mitigate overdraft, groundwater level decline, subsidence, and potential impacts stemming from subsidence during GSP implementation. While these measures are expected to broadly benefit groundwater conditions in the Subbasin across all sustainability indicators, subsidence and potential impacts of subsidence are anticipated to be the most limiting factors in achieving the Subbasin's sustainability goal. The GSAs recognize that the sustainability indicator with the most restrictive sustainable management criteria will govern the determination of whether the Subbasin is on track to achieve sustainability, or whether undesirable results have occurred or are likely to occur. Given the historical rates and extent of subsidence in the Subbasin, the GSAs have prioritized the development and implementation of GDM and subsidence

[1] The January 2025 Revised GSP is available on the Madera County website: https://www.maderacountywater.com/chowchilla-subbasin/.

mitigation measures to proactively monitor and promptly address subsidence conditions before undesirable results are experienced.

The purpose of this report is to document the GSAs' programmatic approach to prepare for implementation of GDM programs and subsidence mitigation measures beginning in 2026, consistent with the MOU. In this approach, the GSAs are currently implementing certain existing GDM and subsidence mitigation measures to avoid potential undesirable results and impacts stemming from subsidence. These include "mandatory measures" (i.e., enforceable actions that directly regulate groundwater use) and "voluntary measures" (i.e., incentive-based or cooperative efforts). The GSAs are also preparing to implement other potential measures – both mandatory and voluntary – if conditions in the Subbasin require targeted actions to address impacts stemming from subsidence. To determine if, when, and where targeted actions are needed, the GSAs have developed a programmatic, actionable approach to evaluate and track subsidence conditions in the Subbasin against specific, measurable "trigger conditions" that demand increasing levels of action with increasing severity of subsidence. The trigger conditions are within the subsidence interim milestones established in the January 2025 Revised GSP, ensuring that actions taken under this approach support achievement of the Subbasin sustainability goal.

The GSAs' programmatic, actionable approach is outlined in this report as follows:

- **Section 2** describes the specific GDM programs and subsidence mitigation measures, both mandatory and voluntary, that the GSAs are implementing, or are preparing to implement as necessary.
- **Section 3** describes the trigger conditions, with specific spatial and time considerations, that the GSAs will monitor to determine when and where actions are necessary to avoid potential impacts.
- **Section 4** describes the monitoring approach for evaluating whether and where implementation trigger conditions have occurred.
- **Section 5** describes the public outreach and engagement process, including noticing to adjacent Subbasins.
- **Section 6** describes other program implementation and management decisions, including GSA roles and responsibilities, GSA feedback and periodic review to ensure that actions under this approach are effective, and potential GSA funding and financing approaches.

Table 1-1. Chowchilla Subbasin GSAs.

GSA	GSA Abbreviation	GSA Area, Acres[1]	GSA Area, % of Total
Chowchilla Water District GSA	CWD GSA	85,500	59%
County of Madera GSA - Chowchilla	Madera County GSA	43,000	29%
County of Merced GSA - Chowchilla	Merced County GSA	1,300	1%
Triangle T Water District GSA	TTWD GSA	16,500	11%
	Total	**146,300**	**100%**

[1] Areas include CWD annexations, TTWD annexations, and associated GSA boundary changes since the initial GSP.

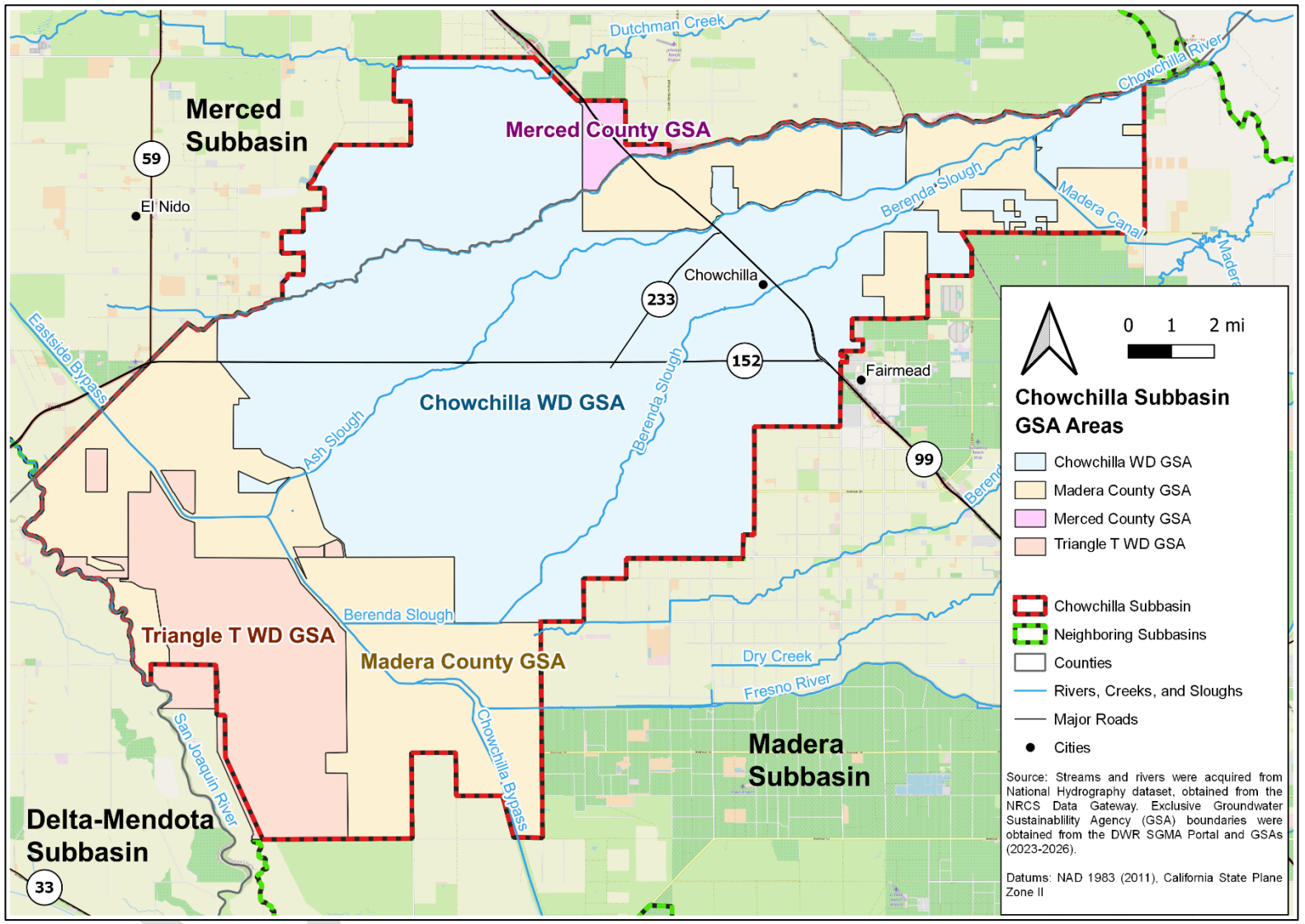

Figure 1-1. Chowchilla Subbasin GSAs Map.[1]

[1] *Areas include CWD annexations, TTWD annexations, and associated GSA boundary changes since the initial GSP.*

2 GDM Programs and Subsidence Mitigation Measures

This section describes the specific programs and measures that the GSAs are implementing, or are preparing to implement as necessary, for demand reduction and subsidence mitigation.

These measures represent specific actions:

- The GSAs have already taken or will be prepared to implement in 2026 (**Section 2.1**), or that
- The GSAs are prepared to initiate if conditions in the Subbasin exceed defined triggers (described in **Section 3**), indicating a need for further action (**Section 2.2**).

This report is intended to serve as a living reference and summary of the GSAs' initial efforts to develop and implement a coordinated framework of GDM and subsidence mitigation measures within the Subbasin. As new PMAs and measures are initiated, refined, or retired, the GSAs will document updates through Annual Reports, Periodic Evaluations, and future GSP revisions (Plan Amendments, as required), and will also review and revise this report, as necessary, to ensure that the Subbasin's GDM and subsidence mitigation framework remains current, clear, responsive to changing conditions, implementable, and an effective means of avoiding impacts to beneficial uses and users within the Subbasin.

2.1 Existing Programs and Measures

Since adoption of the 2020 GSP, the Subbasin GSAs have continued to develop and implement a wide range of PMAs that advance the Subbasin's sustainability objectives. Many of these efforts directly or indirectly contribute to achieving the goals of the MOU by reducing groundwater extraction, encouraging conjunctive use practices, and minimizing land subsidence.

In the 2025 Revised Subbasin GSP and GSP Annual Reports, each GSA has identified PMAs and management strategies suited to its unique water supply conditions and operational authorities. These PMAs and strategies include groundwater allocations and groundwater extraction fees, recharge and surface water use initiatives, and multi-benefit land repurposing efforts. As GSP implementation has progressed, several of these PMAs have matured into active programs and measures, or are currently planned and are in the process of being implemented in 2026. Together, they form the foundation of the Subbasin's adaptive management framework and provide a strong foundation for coordinated response actions under the MOU.

This section describes the existing programs and measures that the GSAs are currently implementing – or are preparing to implement – as of 2026, and how the GSAs will integrate these existing programs and measures into a coordinated framework of GDM and subsidence mitigation measures that can be maintained during GSP implementation, or intensified if monitoring indicates that triggers have been exceeded (i.e., trigger conditions occur) and further action is necessary. Within this framework, programs and measures are grouped according to their implementation approach:

- **Mandatory measures** are enforceable actions that directly regulate groundwater use, such as groundwater allocations, groundwater extraction fees, or lower-aquifer extraction limits.
- **Voluntary measures** are incentive-based or cooperative efforts, such as recharge projects, multi-benefit land repurposing programs, and in-lieu surface water use, that achieve groundwater demand reductions through participation and collaboration.

The following sections summarize the existing measures that each GSA is implementing or preparing to implement. **Table 2-1** and **2-2** identify the existing mandatory and voluntary measures, respectively, that are associated with each GSA, including implementation status. Detailed descriptions of each measure follow in the subsequent subsections.

In addition to these measures, the GSAs are also in the process of establishing a Subbasin Critical Infrastructure Operator Group, consistent with the 2025 Revised Subbasin GSP (2025 Revised Subbasin GSP Section 3.4.3). The Critical Infrastructure Operator Group was proposed by the GSAs – with strong support from critical infrastructure operators and agencies interviewed by the GSAs – as a means to keep up to date on impacts to critical infrastructure within the Subbasin. The Critical Infrastructure Operator Group is planning to meet annually to provide updates on any potential critical infrastructure impacts related to subsidence, coordinate ongoing PMA implementation, and to discuss any potential critical infrastructure mitigation concerns.

2.1.1 Existing Mandatory Measures

The GSAs' existing mandatory measures are summarized in **Table 2-1**, and include enforceable programs that directly regulate groundwater use, such as groundwater allocations, groundwater extraction fee structures, or lower-aquifer extraction limits. The GSAs are currently implementing – or are preparing to implement – each of these measures as of 2026. Further details are provided below for each GSA.

Table 2-1. Existing Mandatory Measures for GDM and Subsidence Mitigation.

GSA	Existing Mandatory Measure Name	Status
CWD GSA	Groundwater Extraction Fee Program	Planned (2026)
Madera County GSA	Demand Management Program (with associated allocation, penalties, recharge policies, and land fallowing as a byproduct of other policies)	Implemented
Merced County GSA	Demand Management Program (consistent with Madera County GSA)	Planned (2026)
Triangle T Water District GSA	Subsidence Control Measures Agreement (with associated lower aquifer groundwater extraction limits) and forthcoming operating agreement	Implemented (2017), with an Operating Agreement Planned (2026)

2.1.1.1 Chowchilla Water District GSA

CWD GSA is the largest GSA within the Subbasin by area (85,500 acres, 59% of the Subbasin), and includes land within the CWD service area. When available, irrigators within CWD use surface water supplies delivered by CWD and groundwater extracted from privately-owned wells to meet irrigation demand. As part of its sustainability strategy under SGMA, CWD GSA has focused on efforts that encourage greater use of surface water when it is available and discourage groundwater use.

CWD GSA is currently developing its Groundwater Extraction Fee Program as an enforceable measure for discouraging groundwater use within the CWD GSA area. The Groundwater Extraction Fee Program, described below, represents the GSA's existing mandatory measure (beginning in 2026) and establishes an administrative and legal framework for further enforceable actions if required in the future.

2.1.1.1.1 Groundwater Extraction Fee Program

CWD GSA is in the process of developing the Groundwater Extraction Fee Program (program) that establishes a tiered fee structure for groundwater extraction for irrigation within the CWD GSA area, with higher fees incurred for higher groundwater extraction above defined groundwater extraction thresholds. CWD GSA has committed to developing the administrative, legal, and measurement components necessary to initiate the program in 2026.

The Groundwater Extraction Fee Program is being developed as a strategy to discourage groundwater extraction and to encourage in-lieu recharge by making surface water a more financially attractive source of supply, particularly in years when ample surface water supply is available. The program's structure, based on fee tiers that increase with greater levels of groundwater extraction, is intended to influence irrigator behavior in a flexible but enforceable manner. Additional information about CWD GSA's development of the Groundwater Extraction Fee Program is provided in **Appendix A.1**. Opportunities for refining the Groundwater Extraction Fee Program in the future to respond to trigger conditions are described in **Section 2.2.1**.

2.1.1.2 Madera County GSA

Madera County GSA is the second-largest GSA within the Subbasin by area (43,000 acres, 29% of the Subbasin), and includes lands outside the jurisdictional areas of other GSAs within Madera County. Madera County GSA currently administers a demand management program – with associated allocation, penalties, recharge policies, and land fallowing as a byproduct of other policies – that serves as a central component of its groundwater management strategy within the Subbasin. The Madera County GSA's demand management program, described below, represents the GSA's existing mandatory measure and establishes an administrative and legal framework for further enforceable actions if required in the future.

2.1.1.2.1 Demand Management Program

Madera County GSA currently administers a comprehensive demand management program (program) – with associated allocation, penalties, recharge policies, and land fallowing as a byproduct of other policies – that will oversee a managed reduction in the volume of groundwater consumed by irrigated agriculture within the Madera County GSA area over the 20-year GSP implementation period. Since adoption of the groundwater allocation approach in 2020, Madera County GSA has proceeded with program development and implementation to incrementally reduce groundwater consumption across the Madera County GSA-managed portion of the Subbasin (and the Madera and Delta-Mendota Subbasins).

The demand management program currently establishes an enforceable "allocation" for consumptive groundwater use, expressed as evapotranspiration of applied water (ETAW), for each irrigated parcel or farm unit. The allocation each year is defined by Madera County GSA by combining the sustainable yield and a transitional water component that reduces in volume through 2040. Information on the allocation is provided on Madera County GSA's website: https://www.maderacountywater.com/allocations/.

This program is expected to support sustainable groundwater management by gradually limiting groundwater extraction within the Madera County GSA areas to the sustainable yield of the Subbasin, accomplished by gradually reducing the transitional water to 0 AF per acre by 2040. In total, this is estimated to reduce demand to approximately 22,500 AF by 2040 for the Madera County GSA in the Chowchilla Subbasin. The targeted volume of demand reduction was determined through an analysis of the basin setting and water budget, consistent with the Subbasin GSP, with the goal of mitigating overdraft

within the Madera County GSA area and achieving the sustainable yield by 2040. Program implementation is currently being supported by a structured monitoring and reporting system that enables accurate tracking of groundwater consumption and compliance across the Madera County GSA-managed areas.

Madera County GSA has been enforcing the approved allocations since 2022. In 2025, allocations were in place and were being tracked and enforced with associated penalties in the Madera County GSA (within the Chowchilla, Madera, and Delta-Mendota Subbasins) through measurements of groundwater use by approved measurement methods. Madera County GSA has also developed and is implementing a recharge policy that credits recharge benefits to the allocation of areas where recharge occurred.

Development and implementation of the demand management program has also been complemented by other projects and efforts by the Madera County GSA, including the Multibenefit Land Repurposing Program (MLRP) and the demand measurement program and verification project. Additional information about Madera County GSA's demand management program and associated policies is provided in **Appendix A.2**.

The demand management program applies to all lands within the Madera County GSA area, and is already implemented as of 2026. By setting and enforcing an allocation for consumptive groundwater use to mitigate overdraft and achieve the sustainable yield, the program is directly aligned with the goals of the MOU and will help mitigate impacts to aquifer depletion and subsidence. Opportunities for refining the demand management program in the future to respond to trigger conditions are described in **Section 2.2.1**.

2.1.1.3 Merced County GSA

Merced County GSA represents the smallest area of the Subbasin (1,300 acres, <1% of the Subbasin area), and includes lands in the Sierra Vista Mutual Water Company (SVMWC) that are within Merced County. Merced County GSA is currently in discussions with Madera County GSA and SVMWC with the intention of adopting a MOU that applies the Madera County GSA's demand management program (described in the previous section) to the Merced County GSA's area. The planned MOU, described below, represents the GSA's existing mandatory measure (beginning in 2026) and establishes an administrative and legal framework for further enforceable actions if required in the future.

2.1.1.3.1 Demand Management Program

Merced County GSA is currently in discussions with Madera County GSA and SVMWC with the intention of entering into an MOU where Merced County GSA and SVMWC would allow Madera County to apply and enforce the Madera County GSA's demand management program over the SVMWC lands in Merced County. Consistency in the demand management program will allow SVMWC to manage all lands within its service area according to the same allocation and associated policies. Consistency also supports the Subbasin's coordinated MOU framework.

Discussions are expected to result in an agreement between the parties that will apply all required components of the demand management program in the Merced County GSA consistent with the Madera County GSA program, including:

- Allocation and penalty policies
- Measurement and monitoring policies
- Recharge policies

As of early 2026, the Merced County GSA and the Madera County GSA are in the process of negotiating an agreement that is expected to be signed in 2026. The agreement is expected to result in an enforceable "allocation" for consumptive groundwater use in the Merced County GSA area that is based on the same sustainable yield and transitional water components as the Madera County GSA program, designed to gradually reduce groundwater use and achieve the sustainable yield by 2040. Likewise, the agreement will support immediate program implementation through the same structured monitoring and reporting system used in Madera County GSA to ensure accurate tracking of groundwater consumption and compliance across the Merced County GSA area. As currently planned, key components of the agreement will allow Madera County GSA to measure allocations for SVMWC, and Merced County GSA to continue fulfilling applicable reporting requirements.

By joining the demand management program that is already being implemented in Madera County GSA, Merced County GSA will have in place the administrative, legal, and measurement components necessary to implement these mandatory measures in 2026. Opportunities for refining the demand management program in the future to respond to trigger conditions are described in **Section 2.2.1**.

2.1.1.4 Triangle T Water District GSA

Triangle T Water District (TTWD) GSA covers approximately 16,500 acres (11% of the Subbasin) along the western edge of the Subbasin, in one of the Subbasin's historically subsidence-prone regions. In efforts to mitigate subsidence and avoid undesirable results to beneficial uses and users and critical infrastructure, landowners in TTWD GSA signed the Subsidence Control Measures Agreement in 2017 together with other agencies in the Delta-Mendota Subbasin. The Subsidence Control Measures Agreement and a forthcoming operating agreement between the parties, described below, represents the GSA's existing mandatory measures and establishes an administrative and legal framework for further enforceable actions if required in the future.

2.1.1.4.1 Subsidence Control Measures Agreement and Operating Agreement

In 2017, the initial Subsidence Control Measures Agreement was executed between certain landowners in the Subbasin's western management area (including all of TTWD GSA and some neighboring landowners), and the Central California Irrigation District (CCID), San Luis Canal Company, and Henry Miller Reclamation District #2131. Landowners that entered into the initial Agreement collectively manage more than 14,000 acres in, or adjacent to, TTWD GSA. A copy of the initial agreement is provided in Appendix 3.F of the 2025 Revised Subbasin GSP, and was in effect from 2017-2021. The parties have worked under short term extensions in the time since the initial agreement, and are now in the process of negotiating an operating agreement consistent with the overall approach to groundwater extraction limits and subsidence mitigation as described in the initial agreement and this report, which define the specific pumping limitations and any further restrictions as necessary. The operating agreement covers issues including commitments through 2040 related to surface supply, facility operations and expansion, and operations in compliance with the MOU. While specific pumping limitations will not be explicitly defined in the operating agreement, the limitations in the initial agreement will remain in force and effect, with additional actions stemming from implementation of the triggers set forth in this report, as necessary.

The Subsidence Control Measures Agreement and the forthcoming operating agreement between the parties serves as TTWD's existing mandatory measure related to subsidence mitigation. The initial agreement and forthcoming operating agreement have been developed for the purposes of (1) reducing

groundwater extraction from the lower aquifer in areas where subsidence has historically occurred, and (2) facilitating the distribution and use of surface water in areas of the Subbasin managed by participating landowners to reduce groundwater extraction. Under the initial Agreement, parties in the Subbasin have been required, among other provisions, to restrict the amount of groundwater they pump from the lower aquifer and to report, under penalty of perjury, the amounts of groundwater pumped, the source of that groundwater (upper versus lower aquifer), the amounts recharged, the amounts of surface water used for irrigation, and other information about their irrigated acreage and crops. Parties in the Subbasin are also required to implement projects that increase use of surface water for irrigation and increase use of surface water for direct recharge. These requirements are designed to reduce the potential for additional subsidence, protect nearby water conveyance and other critical infrastructure, and contribute to the Subbasin's overall groundwater management objectives. The forthcoming operating agreement – expected to be signed in 2026 – will establish requirements to provide similar benefits to the Subbasin. Additional information about the Subsidence Control Measures Agreement and the forthcoming operating agreement is provided in **Appendix A.3**.

Like the Subsidence Control Measures Agreement, the forthcoming operating agreement will apply to lands within the TTWD GSA area, and is expected to be signed in early 2026. By setting and enforcing groundwater extraction limits, particularly from the lower aquifer, and requiring recharge and utilization of the upper aquifer, the operating agreement will be directly aligned with the goals of the MOU and will address actual impacts to aquifer depletion and subsidence. Such measures are already in place and are among the longest-standing enforceable subsidence mitigation measures in the Subbasin.

2.1.2 Existing Voluntary Measures

The GSAs' existing voluntary measures are summarized in **Table 2-2** and include other PMAs that the GSAs are implementing – or are planning to implement – to reduce groundwater use, increase surface water use, and support the Subbasin sustainability goal. The GSAs are currently implementing – or are preparing to implement – each of these measures as of 2026. Further details are provided below for each GSA.

Table 2-2. Existing Voluntary Measures for GDM and Subsidence Mitigation.

GSA	Existing Voluntary Measure Name	Implementation Status
CWD GSA	Groundwater Recharge Basins	Implemented/ In Progress
CWD GSA	Flood-MAR	Implemented
CWD GSA	Enhanced Management of Flood Releases for Recharge	Implemented
CWD GSA	Land Fallowing Program	In Progress
Madera County GSA	Multi-Benefit Land Repurposing Program	In Progress
Madera County GSA	Water Purchase Program, Water Imports Purchase, and Millerton Flood Release Imports	In Progress
Madera County GSA	Chowchilla Bypass Flood Flow Recharge Projects	Implemented/ In Progress
Merced County GSA	SVMWC Recharge Basins to Capture Floodwater	In Progress
TTWD GSA	Utilize Existing Recharge Basin	Implemented
TTWD GSA	Additional Recharge Basins to Capture Floodwater	Implemented
TTWD GSA	Poso Canal Pipeline and Columbia Canal Company Pipeline Projects	Implemented

2.1.2.1 Chowchilla Water District GSA Existing Voluntary Measures

CWD GSA supports several voluntary efforts that encourage reduced groundwater pumping, increased recharge, and increased use of surface water when supplies are available. These include including direct recharge through constructed recharge basins, Flood-MAR, and strategic operation of CWD's distribution system as well as programs designed to improve in-lieu recharge, expand access to surface water, and promote land use changes that lower consumptive groundwater demand. Together, these voluntary measures offer growers flexible participation opportunities and complement the GSA's mandatory groundwater management tools.

2.1.2.1.1 Groundwater Recharge Basins and Flood-MAR

As described in the GSP, CWD GSA is in the process of developing groundwater recharge basins totaling about 1,000 acres, distributed throughout its service area (2025 Revised GSP Section 4.1.1), and is also supporting Flood-MAR by delivering surface water to customers for recharge during winter months when surface water is available (2025 Revised GSP Section 4.1.2). Already, as of early 2025, CWD GSA has developed and is operating recharge basins with capacity in excess of 700 AF, and is in the process of developing an additional 300 acres of parcels acquired by CWD GSA for additional recharge basins. CWD GSA is taking extensive action to achieve recharge benefits with available surface water supplies.

Since GSP adoption, the CWD GSA has proceeded with multiple recharge projects, including development and operation of groundwater recharge basins. CWD has also begun implementing the Flood-MAR program. CWD GSA has invested substantial resources into developing recharge basins and supplies surface water for recharge whenever possible. Benefits of each project are reported annually in the GSP Annual Report.

2.1.2.1.2 Enhanced Management of Flood Releases for Recharge

CWD utilizes its existing distribution system – including district canals and sloughs – to supply recharge during periods when flood flows are available and when the distribution system is not at its operational capacity. Diverted water is spread throughout unlined portions of the distribution system, allowing for increased groundwater recharge. CWD initiated this strategic management of its distribution system through focused efforts in 2017. CWD most recently conducted these efforts in 2024. Average annual benefits are estimated to be approximately 9,400 AF across all years, including drier years when flood flows are unavailable. More information about this project can be found in Appendix E of the GSP Annual Report submitted in 2020.

2.1.2.1.3 Land Fallowing Program

CWD is developing a voluntary land fallowing program as part of its broader effort to reduce groundwater demand while supporting sustainable water conditions within the Subbasin. Under the proposed program, landowners may voluntarily fallow all or a portion of their irrigated acreage and receive compensation or incentives based on the anticipated groundwater savings. Estimated reductions associated with the program currently range from 5,000 to 10,000 AF per year, depending on participation levels.

CWD initiated design and outreach efforts for this program in Water Year 2022, including identification of interested landowners and evaluation of pilot scale proposals. Participation is voluntary and structured through annual, multi-year, or permanent fallowing agreements, with proposals evaluated individually to account for parcel specific conditions and anticipated water savings. This program provides a flexible,

grower-driven pathway for reducing consumptive groundwater use, complementing CWD's in-lieu recharge and surface water incentive efforts.

2.1.2.2 Madera County GSA Existing Voluntary Measures

Madera County GSA implements voluntary programs that provide landowners with opportunities to reduce groundwater use through surface water substitutions and long-term land repurposing efforts. These measures include acquiring supplemental water supplies for in-lieu recharge and participating in the State's Multi-Benefit Land Repurposing Program, which incentivizes transitions to lower water use land uses. These voluntary efforts complement the GSA's allocation program by offering flexible pathways to achieve groundwater use reductions.

2.1.2.2.1 Multi-Benefit Land Repurposing Program

Madera County GSA participates in the Multi-Benefit Land Repurposing Program (MLRP), a California Department of Conservation grant-funded initiative that supports voluntary transitions of irrigated agricultural lands to alternative uses that require substantially less water. The program provides financial incentives and technical assistance to willing landowners to rest, retire, restore, or repurpose agricultural fields, reducing consumptive groundwater use while creating additional co-benefits such as habitat, flood management, community spaces, and renewable energy.

Since 2023, the Madera County GSA has worked closely with the County, Resource Conservation Districts, and local partners to design and implement program criteria, conduct public workshops, and solicit project applications. The current MLRP portfolio includes a variety of land-use transition projects that collectively provide measurable reductions in groundwater demand across participating parcels. These projects include but are not limited to: drought resistant crop conversions, habitat establishment, recharge basins, and community spaces.

MLRP contributes directly to groundwater sustainability by converting previously irrigated lands to lower water use alternatives, reducing annual groundwater consumption across a significant acreage. The program is particularly useful in areas where groundwater declines or subsidence risks are more pronounced, allowing voluntary participation to complement mandatory allocation reductions. Because participation is incentive-based, the program provides flexibility for growers while still achieving meaningful reductions in consumptive use.

2.1.2.2.2 Water Purchase Program, Water Imports Purchase, and Millerton Flood Release Imports

The Madera County GSA is also in the process of developing partnerships to import additional water into Madera County and to acquire CVP Section 215 flood water when it is available for recharge. Madera County GSA requested a change in place of use in 2019 and has since had multiple meetings with USBR. Madera County GSA has written a separate letter requesting Section 215 water to be available. Discussions are ongoing.

These supplemental supplies are intended to offset groundwater pumping during years when recharge opportunities or market conditions allow, thereby increasing in-lieu recharge and reducing consumptive groundwater use within the GSA. Water purchases are opportunistic and depend on hydrologic conditions, availability of surplus supplies, and negotiated agreements with external entities. When in use, such efforts could help reduce groundwater demand in areas where wells are more vulnerable to declining water levels or where subsidence risks may be elevated.

2.1.2.2.3 Chowchilla Bypass Flood Flow Recharge Projects

Since GSP adoption, Madera County has continued work on a recharge planning study to refine the costs, benefits, and schedule for recharge projects described in the GSP. The recharge planning study has refined the costs and schedule for constructing additional basins and to conduct additional Flood-MAR of winter floodwater diverted from the Chowchilla Bypass. This study has resulted in the development of the Chowchilla Bypass Flood Flow Recharge Program. A description of the recharge study and planned recharge efforts is available at: https://www.maderacountywater.com/recharge/. In 2023, substantial recharge occurred under the provisions of Executive Order (EO) N-4-23 and Senate Bill 122, which opened the door to implementing recharge of flood waters in certain circumstances. Madera County GSA-reported diversions and recharge under these provisions totaled approximately 26,500 AF in water year 2023. In 2024, the Madera County GSA continued public outreach and engagement for the recharge program, including outreach related to the Madera County GSA recharge policies and solicitation of stakeholders' interest in consideration for involvement in ongoing recharge project planning or future projects, as they arise. In response to that outreach 2-100 acre-feet private recharge basins were constructed in late 2024 adjacent to the Chowchilla Bypass.

Since 2020, Madera County GSA has also continued design efforts, permitting, and construction for portions of the Chowchilla Bypass Flood Flow Recharge Program. These efforts are being funded by two Proposition 68 grants from DWR, which were based on work developed through the recharge planning study. Recharge projects are in various stages of design, permitting, and construction. Construction of diversion facilities will be completed in 2026 which will provide access to flood water within the Chowchilla Bypass for direct recharge in existing private recharge basins and Flood-MAR. Updates are provided in each GSP Annual Report.

2.1.2.3 Merced County GSA Existing Voluntary Measures

Merced County GSA does not currently administer voluntary groundwater reduction or land repurposing programs within its portion of the Subbasin. However, opportunities for voluntary groundwater use reduction or surface water substitution may be available to landowners through broader county programs or individual operational decisions. A recharge program being implemented by SVMWC, which covers the Merced County GSA area, is described below.

2.1.2.3.1 SVMWC Recharge Basins to Capture Floodwater

SVMWC, located in the Merced County GSA and Madera County GSA, is in the process of developing up to 300 acres of dedicated recharge basins.

In 2022, SVMWC applied for and was awarded Proposition 68 funding to support further development and construction of this project. As of early 2025, SVMWC has completed the 100% design documents, plans, and specifications, as well as a topographic survey of the project site. A construction bid package was completed, and the bid was awarded to Avid Water. Pre-construction photos are being completed, after which construction is anticipated to begin in 2025. Capital costs reported in 2024 total approximately $64,000. Ongoing development and updates are provided in each GSP Annual Report.

2.1.2.4 Triangle T Water District GSA Existing Voluntary Measures

TTWD has implemented voluntary measures that expand access to imported surface water and support in-lieu recharge as a means of reducing groundwater pumping. TTWD GSA's long-term investments in conveyance infrastructure, including the Poso Canal Pipeline and the Columbia Canal Company Pipeline,

provide growers with access to supplemental water supplies when available, helping to reduce reliance on deep aquifer pumping in an area sensitive to subsidence. These voluntary measures complement TTWD's mandatory lower aquifer pumping limits and enhance the GSA's overall groundwater management strategy.

2.1.2.4.1 Utilize Existing Recharge Basin, and Additional Recharge Basins to Capture Floodwater

Since 2017, TTWD has implemented a program to divert surplus flows into existing recharge basins within the GSA. TTWD has continued to use the recharge basins during periods when flood water is available.

Since 2019, TTWD has also initiated work to develop additional dedicated recharge basins. In 2020-2021, TTWD GSA collaborated with the Madera County GSA on the DWR Proposition 68 grant to support recharge basin development. TTWD also successfully annexed 3,062 acres into its boundary. Following annexation, construction was completed for two recharge basins on the properties of two landowners in the annexed areas (Vlot and Haynes). Construction of the Vlot and Haynes recharge basins was completed using grant money from the Natural Resource Conservation Service, and Proposition 68 grant funds are being used to support construction of diversion infrastructure. Both basins can be served through conveyance infrastructure owned and operated by TTWD and provide for recharge when water is available.

TTWD is also continuing efforts to secure a permanent water right permit from the San Joaquin River system on the Chowchilla Bypass. When water is available, TTWD plans to divert water for direct irrigation and recharge into available recharge basins. Since GSP adoption, a temporary water rights permit has been granted and additional information in support of the permanent water right has been submitted to the SWRCB. However, following the issuance of EO N-4-23 in March 2023 (subsequently codified through California Water Code Section 1242.1), certain restrictions for diverting flood flows were waived, which opened the door to implementing recharge of flood waters in certain circumstances in absence of an approved water right. TTWD will continue to seek and exercise opportunities for diversion of surface water for groundwater recharge through available pathways.

2.1.2.4.2 Poso Canal Pipeline and Columbia Canal Company Pipeline Projects

TTWD has invested in long term surface water importation infrastructure to reduce groundwater pumping and support subsidence mitigation. Through construction of the Poso Canal Pipeline and the Columbia Canal Company (CCC) Pipeline, TTWD has expanded its ability to deliver surface water to landowners within their jurisdiction during years when external supplies are available. These projects focus on increasing in-lieu recharge and reducing reliance on deep groundwater pumping, particularly in areas where extraction from beneath the Corcoran Clay has historically contributed to subsidence.

The Poso Canal Pipeline has been operational since 2018 and has delivered substantial volumes of imported surface water. These water imports have reduced the need for groundwater pumping during the irrigation season, resulting in direct groundwater demand reductions across TTWD's agricultural lands. The CCC pipeline was constructed concurrently, providing water in the years since construction with the exception of critically dry years.

2.2 Potential Programs and Measures

In addition to the existing measures already being implemented throughout the Subbasin, the GSAs have identified a range of measures that may be initiated or expanded if trigger conditions occur and indicate

a need for additional, more aggressive response(s). These potential measures draw from the framework established in the MOU, which outlines both voluntary and mandatory measures that can be implemented by the GSAs in response to the occurrence of subsidence relative to triggers as Subbasin conditions evolve. Potential measures would be adaptively implemented or refined according to the location and extent of subsidence in the Subbasin.

2.2.1 Potential Mandatory Measures

As described in **Section 2.1.1,** the GSAs are already implementing an array of mandatory measures that can be strategically refined to provide increasing levels of response and mitigation within focused areas if triggers conditions occur and additional action is necessary. These potential refinements constitute the GSAs' potential mandatory measures and are summarized in **Table 2-3**. The mandatory measures described in this section represent actions that are not currently in effect, but are feasible, consistent with GSA authority, and ready to be implemented if and where trigger conditions occur.

Table 2-3. Potential Mandatory Measures for GDM and Subsidence Mitigation.

GSA	Existing Mandatory Measure Name	Potential Mandatory Measure (Potential Refinements Within Focused Areas if Triggers Conditions Occur)
CWD GSA	Groundwater Extraction Fee Program	Potentially adjust fee tiers, increase fee rates, modify extraction thresholds, and/or link fee tiers and rates to the severity or spatial extent of trigger occurrences. Potentially implement together with a Surface Water Incentive Program.
Madera County GSA	Demand Management Program (with associated allocation, penalties, and recharge policies)	Potentially adjust transitional water to reduce groundwater extraction within focused areas, and/or set lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated. Potentially require measurement of wells used for Concentrated Animal Feeding Operations (CAFOs).
Merced County GSA	Demand Management Program (consistent with Madera County GSA)	Program implementation and refinements consistent with Madera County GSA
Triangle T Water District GSA	Subsidence Control Measures Agreement (with associated lower aquifer groundwater extraction limits) and forthcoming operating agreement	Potentially adjust lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated, refine the geographic extent of lower aquifer pumping restrictions, and/or strengthen monitoring requirements to ensure continued compliance

2.2.1.1 Chowchilla Water District GSA

2.2.1.1.1 Groundwater Extraction Fee Program

CWD GSA is in the process of developing the Groundwater Extraction Fee Program (program). As described in **Section 2.1.1**, CWD is preparing to implement the program regardless of whether future trigger conditions occur. However, if future trigger conditions occur, the program also provides a scalable mechanism for CWD GSA to quickly, efficiently, and adaptively implement further enforceable mandatory measures. Potential refinements may include:

- Adjusting fee tiers (e.g., escalating fees more quickly to discourage groundwater extraction),
- Increasing fee rates (e.g., increasing the cost of groundwater extraction),
- Modifying extraction thresholds (e.g., reducing the threshold at which fees begin), and/or
- Potentially linking fee tiers and rates to the severity or spatial extent of trigger occurrences.

CWD has also evaluated a Surface Water Incentive Program framework that would encourage growers to maximize the use of available surface water and reduce reliance on groundwater pumping. The Surface Water Incentive Program could also be implemented as a counterpart to the Groundwater Extraction Fee Program (**Section 2.1.1**).

CWD GSA will consider these potential refinements and others, as warranted, as further mandatory measures that can be taken if and when trigger conditions occur. It is anticipated that potential refinements would be implemented in a targeted approach focused in areas where trigger conditions occur. Potential refinements will be considered and implemented according to the trigger response process described in **Sections 3 and 4** of this report. The specific refinements to be implemented will be determined by CWD GSA through governing body consideration and action. Refinements are expected to be determined on a case-by-case basis, depending on the location and extent of trigger conditions.

Regardless of whether trigger conditions occur, CWD GSA is planning to implement the Groundwater Extraction Fee Program across the entire CWD GSA area beginning in 2026. Together, CWD GSA's planned program and these refinements will allow CWD GSA to adapt to evolving Subbasin conditions while maintaining consistency with the Subbasin's coordinated MOU framework.

2.2.1.2 Madera County GSA

2.2.1.2.1 Demand Management Program

Madera County GSA currently administers a comprehensive demand management program (program) – with associated allocation, penalties, and recharge policies – that will oversee a managed reduction in the volume of groundwater consumed by irrigated agriculture within the Madera County GSA area over the 20-year GSP implementation period. The program is described further in **Section 2.1.1**.

If future trigger conditions occur, the program provides two primary avenues for Madera County GSA to adaptively refine program implementation to address trigger conditions in locally focused areas. Potential refinements may include:

- Adjusting transitional water to accelerate reductions in consumptive groundwater use, and/or
- Setting lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated.
- Requiring measurement and reporting of wells used for Concentrated Animal Feeding Operations (CAFOs) using approved measurement methods (e.g., based on the approach and considerations described in **Section 2.2.2.7**).

Madera County GSA will consider these potential refinements and others, as warranted, as further mandatory measures that can be taken when trigger conditions occur. It is anticipated that potential refinements would be implemented in a targeted approach focused in areas where trigger conditions occur. Potential refinements will be considered and implemented according to the trigger response process described in **Sections 3 and 4** of this report. The specific refinements to be implemented will be determined by Madera County GSA through governing body consideration and action. Refinements are expected to be determined on a case-by-case basis, depending on the location and extent of trigger conditions. Any refinements to the demand management program will require a robust and transparent public outreach and engagement process (**Section 5**).

Regardless of whether trigger conditions occur, Madera County GSA is continuing to implement the demand management program. Together, Madera County GSA's ongoing program and any targeted refinements will allow Madera County GSA to adapt to evolving Subbasin conditions while maintaining consistency with the Subbasin's coordinated MOU framework.

2.2.1.3 Merced County GSA

2.2.1.3.1 Demand Management Program

Merced County GSA is currently in discussions with Madera County GSA and SVMWC with the intention of joining the demand management program already being implemented in Madera County GSA. These discussions and the planned program are described further in **Section 2.1.1**.

If future trigger conditions occur, the same considerations for adaptive refinements to program implementation apply in both Madera and Merced Counties. Consistent with the Madera County GSA program, potential refinements may include:

- Adjusting transitional water to accelerate reductions in consumptive groundwater use, and/or
- Setting lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated.
- Requiring measurement and reporting of wells used for CAFOs using approved measurement methods (e.g., based on the approach and considerations described in **Section 2.2.2.7**).

As in Madera County GSA, these potential refinements and others, as warranted, can be taken when trigger conditions occur. It is anticipated that potential refinements would be implemented in a targeted approach focused in areas where trigger conditions occur. Potential refinements will be considered and implemented according to the trigger response process described in **Sections 3 and 4** of this report. The specific refinements will be determined through governing body consideration and action. Refinements are expected to be determined on a case-by-case basis, depending on the location and extent of trigger conditions. Any refinements to the demand management program will require a robust and transparent public outreach and engagement process (**Section 5**).

Regardless of whether trigger conditions occur, Merced County GSA is intending to adopt an MOU that implements the Madera County GSA's demand management program in 2026. Together, the adopted program and any targeted refinements will allow Merced County GSA to adapt to evolving Subbasin conditions while maintaining consistency with the Subbasin's coordinated MOU framework.

2.2.1.4 Triangle T Water District GSA

2.2.1.4.1 Subsidence Control Measures Agreement and Operating Agreement

As described in **Section 2.1.1**, TTWD GSA has been managing groundwater with respect to the Subsidence Control Measures Agreement since it was signed in 2017, and will continue such management through the forthcoming operating agreement. While specific pumping limitations will not be explicitly defined in the operating agreement, the limitations in the initial agreement will remain in force and effect, with additional actions stemming from implementation of the triggers set forth in this report, as necessary.

If future trigger conditions occur, the agreement provides a mechanism for adaptive management. Possible refinements to address trigger conditions in locally focused areas include:

- Defining or adjusting lower aquifer groundwater extraction limits within focused areas where subsidence risks are elevated (e.g., tightening limits within focused areas),
- Refining the geographic extent of lower aquifer pumping restrictions (e.g., focusing on areas where trigger conditions occur), and/or
- Strengthen monitoring requirements to ensure continued compliance.

TTWD GSA (via TTWD and landowners who have signed the agreement) will consider these potential refinements and others, as warranted, as further mandatory measures that can be taken when trigger conditions occur. It is anticipated that potential refinements would be implemented in a targeted approach focused in areas where trigger conditions occur. Potential refinements will be considered and implemented according to the trigger response process described in **Sections 3 and 4** of this report. The specific refinements to be implemented will be determined by TTWD GSA landowners and governing body consideration and action. Refinements are expected to be determined on a case-by-case basis, depending on the location and extent of trigger conditions.

Regardless of whether trigger conditions occur, landowners in TTWD GSA are planning to sign the operating agreement in 2026. Together, ongoing efforts and these refinements, will allow TTWD GSA to adapt to evolving Subbasin conditions while maintaining consistency with the Subbasin's coordinated GDM and Subsidence Mitigation MOU framework.

2.2.2 Proposed Voluntary Measures

The MOU identifies a range of voluntary measures that can reduce groundwater demand or mitigate subsidence, including multi-benefit land repurposing programs, increased in-lieu use of available surface water, and voluntary water conservation and efficiency practices. Proposed voluntary measures that the GSAs may implement as necessary are described in the subsections below.

2.2.2.1 Water Conservation and On-Farm Efficiency

Water conservation and irrigation efficiency improvement practices provide growers throughout the Subbasin with flexible options to reduce consumptive groundwater use. These practices may include soil-moisture monitoring, improved irrigation scheduling, regulated deficit irrigation, agronomic soil-management techniques, runoff capture, and other best management practices implemented voluntarily by growers and are not administered as formal GSA programs, broad adoption can produce meaningful groundwater use reductions.

If trigger conditions occur, efficiency related voluntary efforts may be suggested to growers through expanded outreach, especially in areas with declining groundwater levels or increased subsidence, or by offering technical assistance to growers in implementation.

2.2.2.2 Dryland Farming and Crop-Shift Practices

Growers may voluntarily transition their irrigated lands to lower water-use alternatives through dryland farming, crop rotations, or shifts to more drought-tolerant crops. These voluntary transitions allow landowners to adjust irrigation demand based on operational needs, resource availability, or market conditions. When adopted across multiple parcels or in targeted areas, dryland farming and crops shift decisions can provide measurable reductions in consumptive groundwater use and support subsidence mitigation goals.

If trigger conditions occur, voluntary adoption of these practices may be encouraged in areas where groundwater level declines or subsidence risks warrant additional reductions in pumping.

2.2.2.3 Land-Use Change and Multibenefit Repurposing

Land use transitions, such as conversions to rangeland, habitat restoration, renewable energy installations, or other multibenefit land repurposing uses, offer growers long-term alternatives to irrigated agriculture. These transitions may be supported through conservation partnerships, cost share programs, technical assistance providers, or state and federal grant programs such as the MLRP described in **Section 2.1.1.2**. Voluntary land use changes reduce long term consumptive groundwater use and complement Subbasin wide efforts to manage demand and mitigate subsidence.

If trigger conditions occur, repurposing efforts may be expanded or targeted toward areas where additional groundwater use reductions would be most beneficial. Additional refinements may include prioritizing project funding (if available) to landowners in high-risk areas, increasing incentive levels (if applicable) to expand participation, or coordinating repurposing efforts with allocation reductions to further mitigate groundwater demand.

2.2.2.4 Fallowing

Voluntary fallowing, provides a flexible means of achieving near term groundwater use reductions. Growers may participate in this measure through conservation programs, land repurposing efforts, or individual operational decisions. Fallowing of agricultural lands could be seasonal, annual or multi year. This measure can reduce groundwater demand rapidly, making it especially useful in areas with declining groundwater levels or elevated subsidence rates.

If trigger conditions occur, voluntary fallowing may be strengthened through targeted participation incentives and compensation, expanded outreach, and/or prioritization in areas experiencing the most severe effects of groundwater depletion or subsidence risk.

2.2.2.5 In-Lieu Recharge

In years when surface water supplies are available, growers may voluntarily increase their use of delivered surface water to reduce reliance on groundwater pumping through in-lieu recharge. Participation may involve utilizing existing surface water delivery systems, taking advantage of water purchase opportunities, or coordinating delivery schedules to maximize substitution of groundwater with surface

water. Although participation depends on hydrology and supply conditions, increased in lieu recharge can significantly reduce groundwater extraction, particularly during wet years.

If trigger conditions occur, in-lieu recharge efforts may be refined by prioritizing surface water deliveries and surface water use in areas experiencing greater subsidence impacts, by increasing the scale or frequency of purchases during wet years, or by securing additional partnerships to receive supplemental surface water supplies if available.

2.2.2.6 Direct Recharge

Direct recharge efforts will also complement the benefits of other proposed voluntary measures. The GSAs are already engaged in substantial direct recharge projects, as described in **Section 2.1.2**, although these may be further refined during GSP implementation where and as needed.

If trigger conditions occur, direct recharge efforts may be refined by prioritizing deliveries to recharge basins or fields for Flood-MAR in areas facing subsidence impacts or risks, by improving surface water delivery infrastructure, or by making operational enhancements to increase recharge.

2.2.2.7 Groundwater Extraction Management for Concentrated Animal Feeding Operations

The Chowchilla Subbasin GSAs may consider implementing targeted groundwater extraction management measures for CAFOs if future groundwater-level or land subsidence conditions indicate a need for additional management response. Groundwater use associated with CAFO operations, including livestock drinking water, wash water, and other facility related uses, represents a category of agricultural groundwater extraction that is not directly tied to irrigated acreage and may warrant separate consideration where impacts to groundwater conditions are identified.

Madera County GSA is considering requiring measurement of wells used for CAFOs as one potential refinement to its demand management program (**Section 2.2.1.2**). More broadly, implementation of this measure by other GSAs in the Subbasin would require all groundwater extractions associated with CAFO operations to be quantified and reported using approved measurement methods, such as flowmeters. This information would allow groundwater use associated with CAFO operations to be evaluated independently and in relation to observed groundwater level trends or subsidence patterns within the Subbasin.

If monitoring indicates that groundwater extractions associated with CAFO operations contribute to localized groundwater level declines or subsidence, the GSAs could implement additional management actions. Potential actions may include limits on extraction volumes, restrictions on pumping from deeper aquifer zones, seasonal operational constraints, or other targeted measures designed to reduce impacts on groundwater conditions from CAFO operations. Any such actions would be applied in a manner proportional to the observed impacts and tailored to the areas where management is warranted.

3 Implementation Triggers, Extent, and Timeline

Subbasin GDM programs and subsidence mitigation measures will be implemented based on the exceedance of a series of triggers. Trigger thresholds have been set relative to subsidence, as subsidence is considered by the GSAs to be the most restrictive sustainable management criteria (SMC) in the Subbasin.

3.1 Triggers

A series of trigger thresholds have been developed to evaluate subsidence conditions in the Subbasin leading toward implementation of mandatory measures. These trigger thresholds follow a modified stoplight approach (green-yellow-orange-red light) to categorize conditions leading toward increasing action. Trigger thresholds are based on the subsidence SMC presented in the 2025 Revised Subbasin GSP (**Table 3-1**). Each Representative Monitoring Site (RMS) in the Subbasin will be evaluated using these trigger thresholds (more detail on monitoring is presented in **Section 4**).

The condition for action to be taken requires subsidence trigger thresholds at two RMS to have been exceeded in the same year. However, nothing precludes the GSAs from taking action earlier, at their discretion.

Table 3-1. Subsidence SMC (Interim Milestones) for the Subbasin Eastern and Western Management Areas, from 2025 Revised Subbasin GSP (Table 3-5).

Interval Ending at Year	Maximum Average Annual Rate of Subsidence (feet)	Maximum 5-Year Cumulative Subsidence (feet)
2025		2.25
2030	0.20	1.00
2035	0.10	0.50
2040	0.05	0.25

The No Action, or Green Light, trigger threshold is below the one-year annual rate interim milestone (IM) for each 5-year interval over the implementation period. Being within this threshold indicates that the Subbasin (as indicated by conditions each RMS station) is on track toward sustainability and no action is required.

The Maximize Use of Voluntary Measures, or Yellow Light, trigger threshold is an exceedance of the one-year annual rate IM. This threshold is evaluated compared to cumulative observed subsidence and does not initiate mandatory action. When a station or stations are within this threshold, efforts within the Subbasin to maximize use of voluntary measures are encouraged.

The Imminent Mandatory Measures, or Orange Light, trigger threshold is an exceedance of a percentage of the 5-year cumulative IM cap. The percentage of the 5-year cumulative cap is most conservative in the first year of each 5-year interval over the implementation period and increases as the interval progresses. This threshold is evaluated compared to cumulative observed subsidence. If the condition for action within this threshold has been met, the Subbasin will need to prepare to implement mandatory measures within one year.

The Mandatory Measures, or Red Light, trigger threshold is an exceedance of the 5-year cumulative IM cap. This threshold is evaluated compared to cumulative observed subsidence. If the condition for action within this threshold has been met, the Subbasin will need to immediately take action to implement mandatory measures.

An example of the template to be used to evaluate an RMS station during the 2025 to 2029 interval showing the four trigger thresholds is shown in **Figure 3-1**.

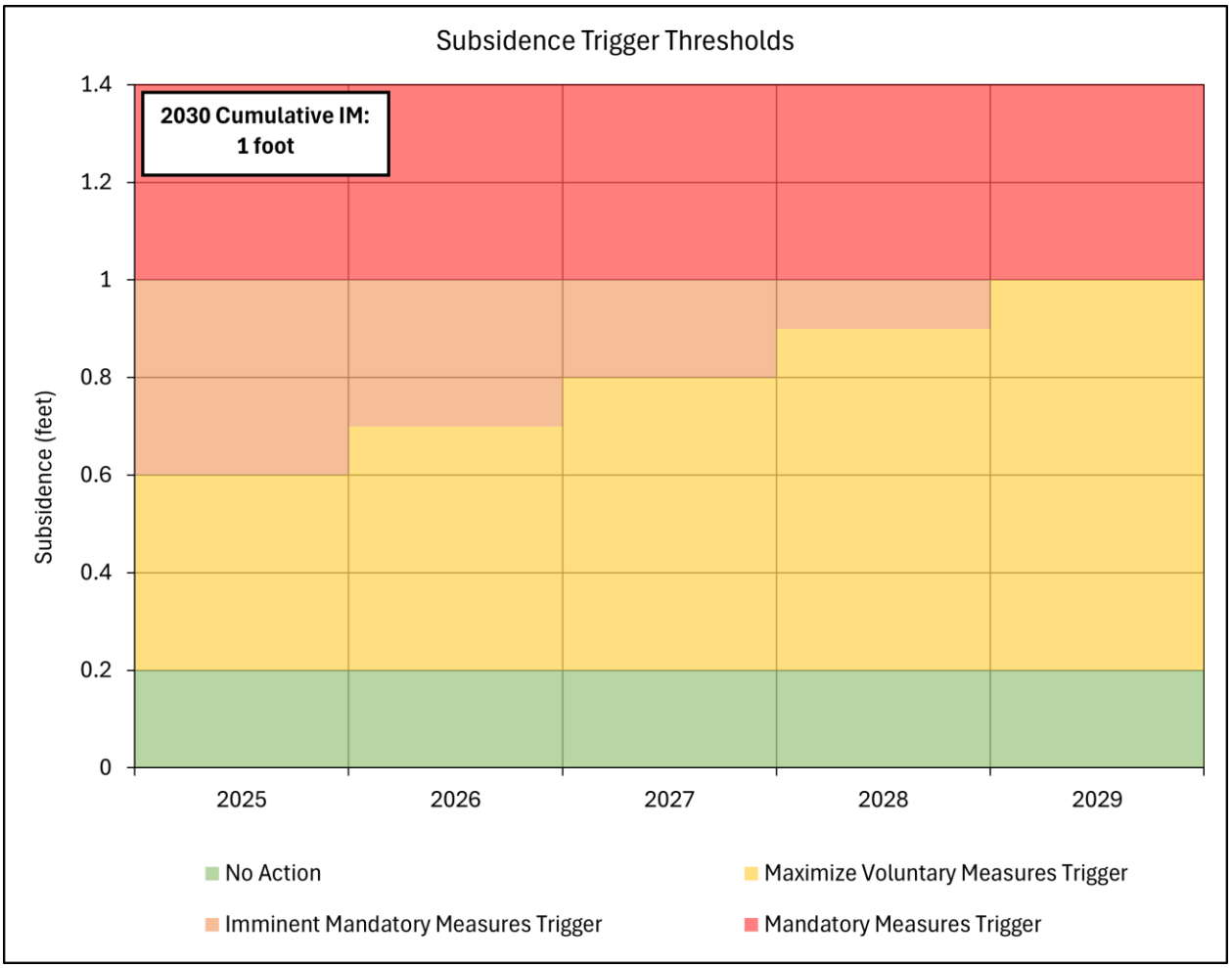

Figure 3-1. Template for Evaluation of Subsidence Trigger Thresholds for the 2025 to 2029 Interval.

3.2 Extent

Once the conditions for action have been met, the spatial extent of triggered action needs to be determined. **Figure 3-2** shows a generalized approach to identifying the Zone of Implementation (ZOI) following a trigger exceedance.

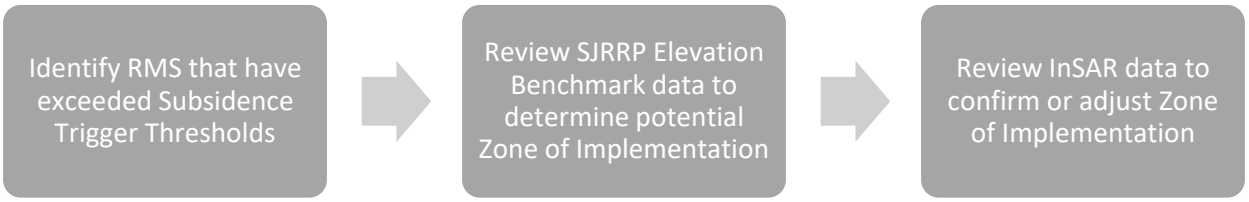

Figure 3-2. Generalized Process to Determine the Spatial Extent of Triggered Action.

The first step is to identify the RMS stations that have exceeded subsidence trigger thresholds. The RMS stations to be evaluated are shown in **Figure 3-3**.

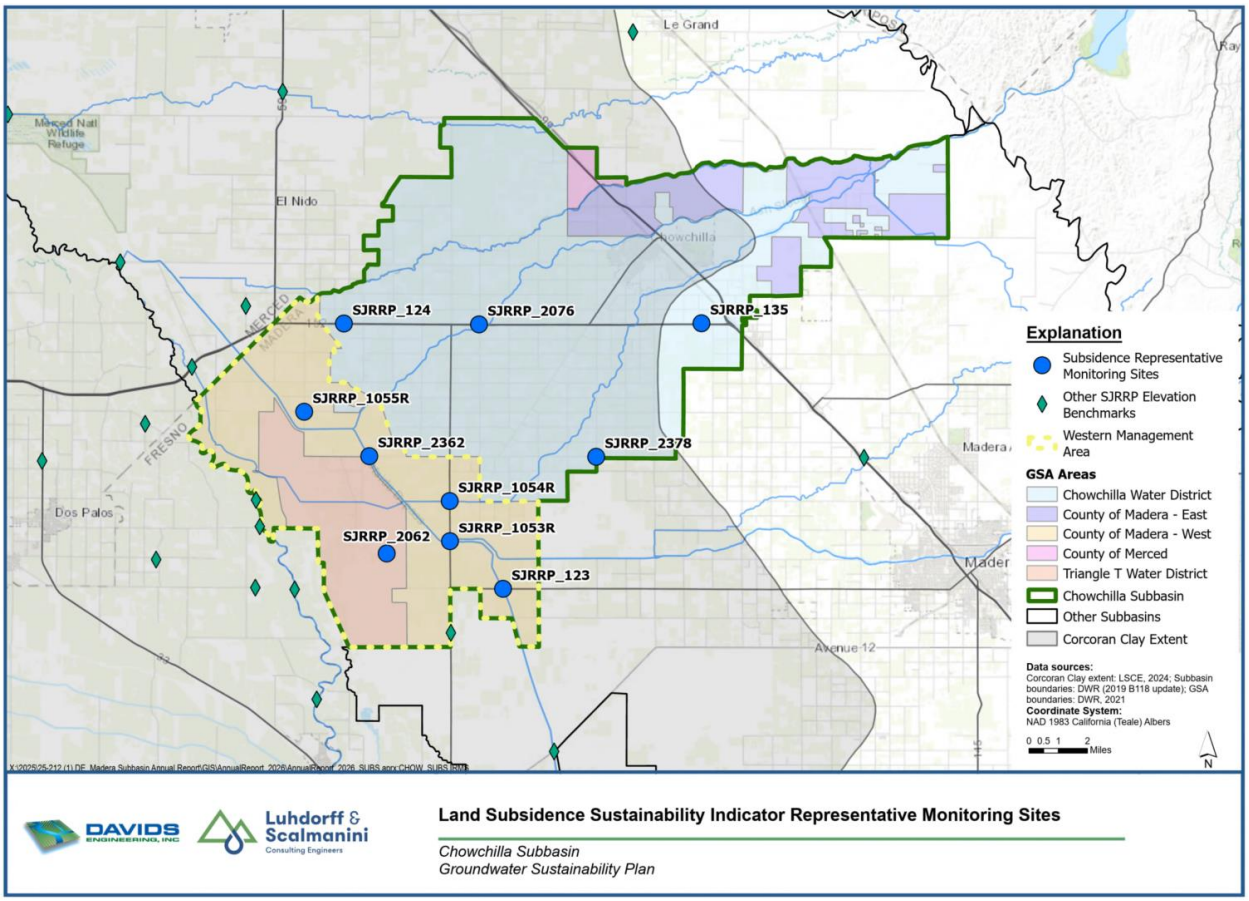

Figure 3-3. Land Subsidence Representative Monitoring Sites.

The next step is to evaluate the spatial extent of subsidence within the Subbasin. To best understand the extent of subsidence trigger exceedances and to appropriately address elevated subsidence with mandatory measures, cumulative subsidence for each 5-year interval will be used to determine the potential ZOI for mandatory measures. Two sets of data will be evaluated to best determine where to target mandatory measures. First, the SJRRP Elevation Benchmark data used to evaluate Subbasin RMS stations. When this data is contoured, it provides a continuous, if generalized due to limited data points, surface to evaluate the spatial extent of subsidence in the Subbasin. From this dataset, a potential ZOI can be drawn. This ZOI can then be adjusted as necessary based on InSAR data. The InSAR data provides a more detailed look at the extent of subsidence in the Subbasin. However, due to different monitoring challenges, the InSAR data often has spatial gaps in the dataset.

A primary boundary will be drawn along the contour line of the mandatory measures trigger threshold. Within this boundary, mandatory measures will be implemented according to the timeline laid out in **Section 3.3**. A secondary boundary will be drawn along the contour line of the imminent mandatory measures trigger threshold. Within this boundary, notice should be provided to landowners according to the timeline for the Imminent Mandatory Measures trigger threshold as laid out in **Section 3.3**. Any parcel with 50% or greater of area within a given boundary will be subjected to triggered action(s).

3.3 Timeline

An evaluation of subsidence RMS stations compared to trigger thresholds will be presented each year as part of the Annual Report for the Subbasin. At this time, if any trigger conditions have been met, subsequent action will be initiated related to the trigger exceeded. **Figure 3-4** shows a generalized approach to actions necessary within each trigger threshold.

If RMS stations are within the No Action trigger threshold and/or no trigger conditions have been met, there is no action required and the RMS stations will be reevaluated during the next Annual Report cycle.

If RMS stations are within the Maximize Use of Voluntary Measures trigger threshold, no action is required but is encouraged. GSAs should continue to pursue voluntary measures and utilize the noticing methods laid out in **Section 5** to encourage and provide resources for voluntary measures by groundwater extractors throughout the Subbasin.

If conditions are met within the Imminent Mandatory Measures trigger threshold, phased actions will be taken throughout the year. First, within a month of the publication of the Annual Report (by May), GSAs should provide written notice of a trigger exceedance to stakeholders along with an explanation of next steps and continue to encourage voluntary measures. Within three months (by July), GSAs should identify which specific mandatory measures will be implemented if necessary and provide an implementation plan and timeline for implementation. This implementation plan should include any necessary board action to approve potential mandatory measures and potential implementation zone. Conditions will be reevaluated during the next Annual Report cycle to determine whether implementation is necessary.

If conditions are met within the Mandatory Measures trigger threshold, immediate action is required. Within one month of the publication of the Annual Report (by May), GSAs should provide written notice of a trigger exceedance to stakeholders along with an explanation of mandatory measures and explanation of penalties for exceedances. Within one to two months (by May-June), mandatory measures will need to be implemented following the implementation plan developed under the Imminent

Mandatory Measures trigger. In the unlikely event that the Mandatory Measures trigger threshold is exceeded without an implementation plan having been developed, mandatory measures will need to be implemented within one to two months, or as soon as possible. Conditions will continue to be reevaluated during each Annual Report cycle. Two consecutive years of conditions below this threshold are necessary before mandatory measures can be terminated.

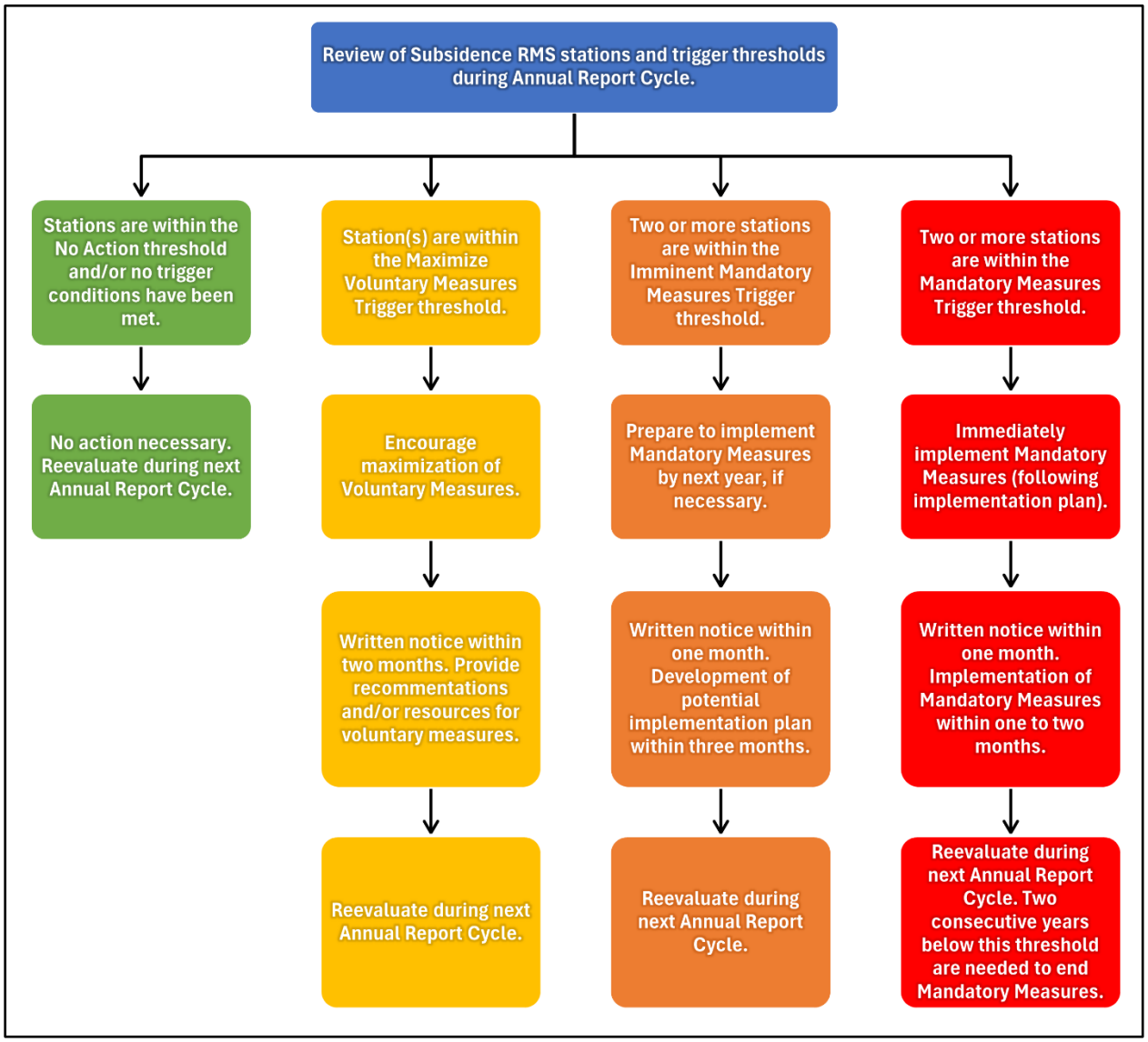

Figure 3-4. Approach for Annual Evaluation of Subsidence Triggers.

4 Monitoring Approach

Monitoring will utilize the monitoring network and protocols established in the 2025 Revised Subbasin GSP. The Subbasin Annual Report includes a discussion of subsidence conditions based on review of SJRRP Elevation Benchmark and InSAR data. Further evaluation of these data related to the Subsidence Triggers will be included as an appendix to the Annual Report. Charts and tables for each RMS station comparing observed subsidence to trigger thresholds will be presented. If no triggers are exceeded, the RMS stations will be reevaluated during the next Annual Report cycle. If triggers are exceeded, a list of next steps will be provided as well as a timeline for action. The monitoring approach will be coordinated with program outreach and engagement activities (**Section 5**), including noticing to adjacent subbasins as appropriate.

5 Public Outreach and Engagement

5.1 Outreach and Engagement Approach

The GSAs will continue to use the coordinated communication and engagement framework established in the 2025 Revised Subbasin GSP, which outlines stakeholder categories, communication methods, and participation pathways across the Subbasin. This existing framework provides the basis for informing the public about GDM and subsidence conditions, collecting input on potential management actions, and supporting transparent decision making should additional measures become necessary.

Consistent with the GSP's outreach plans, the GSAs will rely on a combination of public meetings and advisory committee discussions (including public GSP advisory committee meetings), website postings, email lists, translated materials, and targeted outreach to agricultural, domestic, environmental, disadvantaged community stakeholders, and critical infrastructure operators (described below). Examples of these methods include, but are not limited to, bilingual notifications, publicly noticed GSA board meetings, and direct engagement with stakeholder groups.

Outreach related to GDM and subsidence mitigation will occur at several key stages, with a focus on outreach and communication targeted to stakeholders within the ZOI. Initial communication will focus on raising awareness when monitoring results indicate groundwater conditions are approaching trigger thresholds. As potential measures are developed, the GSAs will discuss those measures though public meetings or advisory committee workshops, as appropriate, allowing stakeholders – particularly those in the ZOI – to understand what actions are under consideration and provide early feedback. Draft versions of potential measures or implementation plans will also be made available for public review, as appropriate. After comments are received and considered, as applicable, final recommendations for potential measures would be brought to the applicable GSA Board(s) in open session, with documentation explaining how input influenced the final decision.

Stakeholder feedback will play a meaningful role throughout this process. Comments may help refine program design, identify potential operational challenges, or highlight opportunities for collaboration with local landowners, community groups, or resource management organizations. The GSAs may maintain comment logs or response summaries, consistent with GSP public engagement practices, to document how feedback has been addressed and how it informed program development.

Following adoption of any new or modified GDM or subsidence mitigation measures, the GSAs will continue to provide updates through public meetings, Annual Reports, and GSP updates. These ongoing communication efforts are intended to keep stakeholders informed about program implementation, monitoring results, and any subsequent refinements. In this way, the Subbasin's public outreach framework remains integrated, transparent, and responsive as conditions change and the GSAs implement the measures described in this report.

As part of the GSAs' outreach efforts, the GSAs are also in the process of establishing a Subbasin Critical Infrastructure Operator Group, consistent with the 2025 Revised Subbasin GSP (2025 Revised Subbasin GSP Section 3.4.3). The Critical Infrastructure Operator Group was proposed by the GSAs – with strong support from critical infrastructure operators and agencies interviewed by the GSAs – as a means to keep up to date on impacts to critical infrastructure within the Subbasin. The Critical Infrastructure Operator Group is planning to meet annually to provide updates on any potential critical infrastructure impacts

related to subsidence, coordinate ongoing PMA implementation, and to discuss any potential critical infrastructure mitigation concerns.

5.2 Noticing to Adjacent Subbasins

The Subbasin GSAs plan to work with adjacent subbasins toward a regional approach to subsidence mitigation. Actions in adjacent subbasins can affect conditions in the Subbasin and collaboration is necessary to adequately address subsidence concerns. The GSAs may also consider incorporating the Critical Infrastructure Operator Group into broader coordination efforts with adjacent Subbasins, as critical infrastructure may be impacted by regional conditions across multiple subbasins.

As part of the noticing process following a threshold exceedance, a written notice will be sent to adjacent subbasins. This notice will include the subsidence conditions being observed, what the Subbasin is doing to address these conditions, and the extent of the issue. The notice is proposed to include regional maps of subsidence conditions in the Subbasin and adjacent subbasins. The written notice will also solicit input from neighboring subbasins, fostering bi-directional discussion and coordination toward a regional approach to subsidence mitigation.

6 Program Implementation and Management

Effective implementation of groundwater demand management and subsidence mitigation measures requires clear coordination among the Subbasin GSAs, a transparent approach to evaluating changing groundwater conditions, and a process for determining when new or expanded measures should be activated. This section describes the roles and responsibilities of the GSAs, the review and feedback process that will support decision making and the general framework for funding and financing program actions.

6.1 Roles and Responsibilities

Implementation of the GDM and subsidence mitigation measures described in this report will be carried out by each GSA within its respective jurisdiction. However, the GSAs remain committed to coordinating with the broader group of GSAs in the Subbasin through regular monitoring and evaluation of conditions relative to the trigger conditions outlined in this report, and to implementing their existing and potential programs and measures in accordance with the processes described herein. While the GSAs coordinate at the Subbasin level to assess monitoring results and identify when trigger conditions have been met, the execution of any required actions will occur at the GSA level according to each agency's governing authorities, infrastructure, and regulatory tools. Each GSA is ultimately responsible for developing, funding, and administering the specific programs and measures, mandatory or voluntary, that are applicable to its service area.

When trigger conditions are reached, each GSA will be responsible for initiating the measures described in this report within its jurisdictional area. Responsibilities include: determining which measures must be activated, notifying affected growers or stakeholders, implementing administrative or regulatory procedures, and monitoring the effectiveness of selected measures. Cross-GSA coordination will continue throughout this process to ensure that actions taken in one area support overall Subbasin objectives and are consistent with the response of neighboring GSAs.

6.2 Feedback and Review

Program implementation will be guided by a recurring review process that evaluates current groundwater level and subsidence conditions and determines whether activation or adjustment of measures is warranted. At a minimum, the GSAs will collectively review conditions during the preparation of each GSP Annual Report, coinciding with the annual Subbasin Advisory Committee meeting. These recurring reviews allow the GSAs and stakeholders to assess the status of trigger conditions, evaluate the performance of existing measures, and identify whether additional actions may be required.

The feedback and review process will be coordinated with program outreach and engagement activities (**Section 5**), including targeted communication with stakeholders in the ZOI, ongoing communication with critical infrastructure operators through the Critical Infrastructure Operator Group, and noticing to adjacent subbasins as appropriate. The GSAs may convene additional meetings or technical reviews outside the annual cycle if monitoring data indicate that conditions are changing rapidly or if stakeholder input suggests that need for further evaluation. This adaptive process parallels the broader GSP implementation framework, in which monitoring results, PMA performance, and sustainability indicators are assessed annually and every five years through the GSP Periodic Evaluation. Decisions made under the GDM and subsidence framework will be integrated into these existing reporting processes to ensure continuity between demand management efforts and the Subbasin's overall sustainability strategy.

6.3 Funding and Financing

The GSAs are responsible for developing and implementing programs and measures within their respective jurisdictions. Funding and financing of individual GSA efforts is the responsibility of the individual GSAs. GSA funding and financing is expected to come from one, or a combination, of the following sources:

- Reserve fund
- GSA fees and assessment
- Funds generated through implementation of other projects and management actions (e.g., fines and/or penalties)
- County/state/federal funding, as available
- Other sources, as identified

If future programs or measures will be carried out through coordinated efforts among more than one GSA – including any potential future mitigation of infrastructure impacts – the participating GSAs will cooperate in good faith and share responsibility for associated costs in a proportionate manner. Cost sharing between GSAs is anticipated to be based on the location of the actions, and/or each GSA's relative contribution to the Subbasin-wide overdraft.

Appendix A. Existing Mandatory Measures Supporting Documentation

Appendix A.1. Chowchilla Water District GSA Groundwater Extraction Fee Program

TECHNICAL MEMORANDUM

To: Brandon Tomlinson, General Manager
Doug Welch, Water Resource Manager
Chowchilla Water District Groundwater Sustainability Agency
From: Davids Engineering, Inc.
Date: September 9, 2025
Subject: **Chowchilla Water District Surface Water Incentive Program**

1 Executive Summary

Chowchilla Water District (CWD or District) lies within the Chowchilla Subbasin (Subbasin) of the San Joaquin Valley and plays a critical role in delivering surface water to its growers for irrigation and recharge. Water supplies used for irrigation within CWD are a combination of surface water delivered by CWD from Buchanan Dam and the Madera Canal, supplemented by groundwater extracted by privately-owned wells. A nominal amount (up to 1,000 AF) of surface water is purchased in wet years from LeGrand-Athlone Water District. The Subbasin has experienced long-term groundwater overdraft, prompting the need for measures that encourage greater use of available surface water to offset groundwater extraction and support the Subbasin's Sustainable Groundwater Management Act (SGMA) compliance objectives. CWD is a Groundwater Sustainability Agency (GSA) in the Subbasin, responsible for implementing projects and management actions outlined in the Subbasin's Groundwater Sustainability Plan (GSP) to ensure long-term sustainability.

This Technical Memorandum (TM) presents three alternatives and three supporting strategies for CWD to consider in incentivizing surface water use and reducing groundwater extraction for irrigation.

The three alternatives are:

- Alternative 1 – Surface Water Allocation Program, which sets a minimum surface water use requirement per irrigated acre (annual surface water allocation), with penalties for use under the annual surface water allocation.
- Alternative 2 – Groundwater Extraction Fee, which applies a tiered fee structure to groundwater extraction above defined thresholds.
- Alternative 3 – Combined Surface Water Allocation Program and Groundwater Extraction Fee, which integrates Alternatives 1 and 2 to maximize incentives for surface water use and disincentives for groundwater extraction.

The three supporting strategies are:

- Supporting Strategy 1 – Surface Water Access Expansion, which extends conveyance infrastructure to parcels currently unserved by CWD.
- Supporting Strategy 2 – Surface Water Quality Improvements, which address grower concerns over debris and particulates in delivered surface water.
- Supporting Strategy 3 – Dual-Source Irrigation Systems, which enable growers to switch between surface water and groundwater as needed and as available.

A comparative evaluation of these alternatives and supporting strategies considered implementation cost, staff effort, infrastructure improvements, potential groundwater extraction reduction, and potential revenue generation. Alternatives 2 and 3 offer the greatest potential for reducing groundwater use, with Alternative 3 providing the most comprehensive approach by addressing both the incentive to use available surface water and the disincentive to extract groundwater. Supporting strategies do not directly increase surface water use but can enhance the effectiveness of any alternative by removing barriers to surface water use.

Based on this analysis, Alternative 3 is the most effective long-term option, as it offers the greatest potential for increasing surface water use by combining incentives to use available surface water with disincentives to extract groundwater. Alternative 3 also supports the District in fulfilling commitments made in the Subbasin GSP, and initiates development of a formal groundwater demand management (GDM) program as a backstop to other PMAs. However, a phased approach is recommended. In a phased approach, Alternative 1 would serve as a near-term starting point, since it can be readily implemented with the District's existing tools and would allow CWD to begin shaping grower behavior while building administrative capacity. Over time, and if additional measures become necessary, the District could transition to Alternative 3, which will require coordinated policy development, robust measurement of both surface water and groundwater use, and careful stakeholder engagement to ensure equity and program success.

1 Introduction

Chowchilla Water District (CWD or District) is located in the San Joaquin Valley, in portions of Madera and Merced Counties, and overlies the Chowchilla Subbasin (Subbasin). The District delivers surface water to its growers for irrigation and recharge, who rely on both contracted surface water supplies as well as privately extracted groundwater to meet their consumptive use demands. CWD's surface water supplies are sourced from two primary systems:

- **Buchanan Dam / Chowchilla River**, which stores flows from the Chowchilla River. While owned and operated by the U.S. Army Corps of Engineers (USACE), Buchanan Dam is incorporated into the Central Valley Project (CVP), and CWD contracts with the U.S. Bureau of Reclamation (USBR) for surface water deliveries.
- **Friant Dam / Madera Canal**, which conveys San Joaquin River water stored in Millerton Lake. CWD holds USBR contracts for both Class 1 and Class 2 Friant Division water.
- **LeGrand-Athlone Water District,** which conveys Merced Irrigation District water to CWD by way of Dutchman Creek.

Groundwater extracted within the District comes from the Subbasin's unconfined upper aquifer located above the Corcoran Clay and a confined lower aquifer below the Corcoran Clay, as well as from undifferentiated areas where the Corcoran Clay layer is absent. While CWD does not operate groundwater wells for its own deliveries, groundwater is heavily relied upon by municipal systems, rural domestic wells, and agricultural producers through privately owned and operated wells.

The Subbasin is designated by the California Department of Water Resources (DWR) as a "critically overdrafted" subbasin and has experienced long-term groundwater overdraft, with groundwater levels declining in both aquifer zones over time. Under the Sustainable Groundwater Management Act (SGMA), the Subbasin's Groundwater Sustainability Agencies (GSAs) are required to halt overdraft and achieve groundwater sustainability by 2040. The Subbasin's 2025 Groundwater Sustainability Plan (GSP) outlines multiple projects and management actions (PMAs) to reach these goals, including efforts to maximize surface water use to offset groundwater extraction—a strategy known as in-lieu recharge. The 2025 GSP also includes the Demand Management Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU), which outlines the Subbasin GSAs' commitment to develop demand management programs and subsidence mitigation measures as a backstop to other PMAs (with specific triggers and financial mechanisms) as a means to mitigate potential impacts stemming from subsidence.

Despite the availability of surface water in many years, growers within CWD continue to rely on groundwater during periods when surface water is available, limiting the volume of in-lieu recharge. Increasing surface water use when supplies are available would reduce pressure on the Subbasin and improve long-term sustainability outcomes. This TM presents a set of alternatives and supporting strategies for CWD to consider for incentivizing surface water use and reducing groundwater extraction for irrigation. The alternatives are aimed at either directly discouraging groundwater use or enabling greater use of surface water within the District. These alternatives and supporting strategies are intended to support CWD GSA in supporting groundwater sustainability in the Subbasin and may also serve a role in fulfilling CWD GSA's commitments made in the MOU.

2 Alternatives for Surface Water Incentives

The following three alternatives were developed for CWD to address ongoing groundwater overdraft by encouraging the use of available surface water supplies in lieu of groundwater extraction. Each alternative represents a policy or program that could be implemented by the District to influence grower water use, either through establishing incentives for surface water use, increasing the cost of groundwater extraction, or a combination of both. The intent of these alternatives is to support CWD's SGMA objectives by reducing groundwater use by way of increasing in-lieu recharge. In addition, the alternatives are consistent with and could serve as early steps toward implementation of CWD's groundwater demand management (GDM) program and related subsidence mitigation measures identified in the Subbasin's 2025 GSP and memorialized in the MOU. For each alternative, a description is provided along with potential advantages and disadvantages of the alternative to assist CWD in evaluating the alternative for further study and potential implementation.

2.1 Alternative 1 – Surface Water Allocation Program

Under a surface water allocation program, CWD would establish a minimum volume of surface water per irrigated acre, per year, for each grower (i.e., a surface water allocation). The surface water allocation could be adjusted by CWD throughout the irrigation season based on available surface water supply or other conditions. For example, an early-season allocation may be set conservatively at 18 inches based on initial DWR forecasts, but later increased to 24 inches as forecasts are updated and supplies are confirmed. At the end of each irrigation season or calendar year, CWD would evaluate surface water usage by each grower. If surface water usage falls below the surface water allocation, the grower would be issued a penalty. Exemptions to penalties could be made under certain circumstances, such as allowances for fallowed land, orchard removal, or situations where no surface water was available at a given turnout during the irrigation season.

An example schematic of how the surface water allocation program could function is shown in **Figure 1**. This figure illustrates two scenarios: one in which a grower's annual surface water use falls below the surface water allocation threshold, resulting in a penalty, and another in which usage meets or exceeds the surface water allocation threshold, avoiding a penalty.

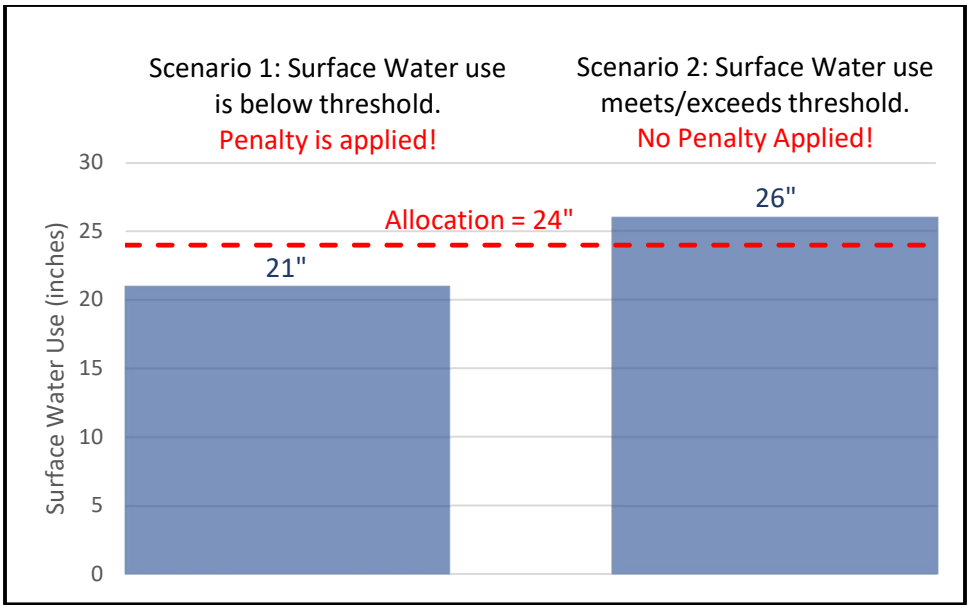

Figure 1: Example application of Alternative 1, comparing surface water use below and above the allocation threshold and the resulting penalty outcomes.

Revenues collected from penalties could be reinvested into groundwater recharge projects, infrastructure improvements, or other PMAs. To be effective, the penalty associated with the surface water allocation threshold should be set at a level that makes surface water usage financially competitive with groundwater extraction. As an example, the penalty should be set at a price higher than the current cost to pump within the District, estimated to be approximately $200 per acre-foot. Implementation of this alternative may require policy adoption and possibly some upgrades to turnout measurements to verify surface water delivery volumes.

This alternative offers several advantages in that it is relatively low cost to implement using current CWD infrastructure, surface water delivery data, staffing availability, and may be implemented quickly, potentially as soon as the following irrigation season. The alternative provides direct financial motivation for growers to use available surface water and has the added benefit of generating funds for other PMAs identified in the GSP. Grower resistance may arise if water quality concerns are not resolved or if conveyance infrastructure is lacking to deliver surface water to certain parcels, and successful implementation of the allocation program would also depend on the District's ability to track deliveries accurately and in a timely manner.

2.2 Alternative 2 – Groundwater Extraction Fee

An alternative to implementing a surface water allocation program is to implement a fee for groundwater extraction within the District. A groundwater extraction fee would establish a charge associated with private pumping above a maximum groundwater extraction threshold. The groundwater extraction fee could incorporate a tiered fee structure, for example: no fee for the first 24 inches of groundwater use, $400 per acre-foot for 24-36 inches, and $500 per acre-foot for 36-48 inches. Annual groundwater extraction volumes would be calculated in arrears and could be determined using flow meters installed on private pumps or estimated based on crop evapotranspiration using a remote sensing approach.

By establishing a cost of groundwater extraction, especially at higher usage levels, this alternative would encourage growers to use surface water when available and to shift toward less water intensive crops where feasible. It would also generate revenue that could be invested in recharge projects, system improvements, or other PMAs identified in the GSP. Implementation would require accurate and consistent measurement or estimation methods and administrative systems for billing and enforcement. In addition, legal counsel should be consulted regarding legal mechanisms and requirements associated with imposing a groundwater extraction fee.

The primary strength of this alternative is that it directly discourages excessive groundwater use and provides a sizeable and legitimate funding source for other PMAs identified in the GSP. A tiered fee structure allows for flexibility and a degree of fairness by not penalizing modest groundwater users. However, the administrative requirements for Alternative 2 are higher than that of Alternative 1, as accurate measurement or estimation of groundwater use is essential. The fee could also be perceived as punitive, which may reduce stakeholder support and make adoption more challenging.

Figure 2 provides an example of how the proposed tiered groundwater extraction fee structure could be applied under four different groundwater use scenarios. In this example, groundwater use is divided into three tiers: 0-24 inches ($0/AF), 24-36 inches ($400/AF), and 36-48 inches ($500/AF). In scenario 1, total groundwater use is below the Tier 1 threshold, resulting in no groundwater extraction fee. In scenarios 2 and 3, groundwater use exceeds the Tier 1 threshold, and the portion of use above 24 inches is subject to the Tier 1 fee. In scenario 4, groundwater use exceeds both the Tier 1 and Tier 2 thresholds, resulting in Tier 1 fees for use between 24 and 36 inches and Tier 2 fees for use above 36 inches.

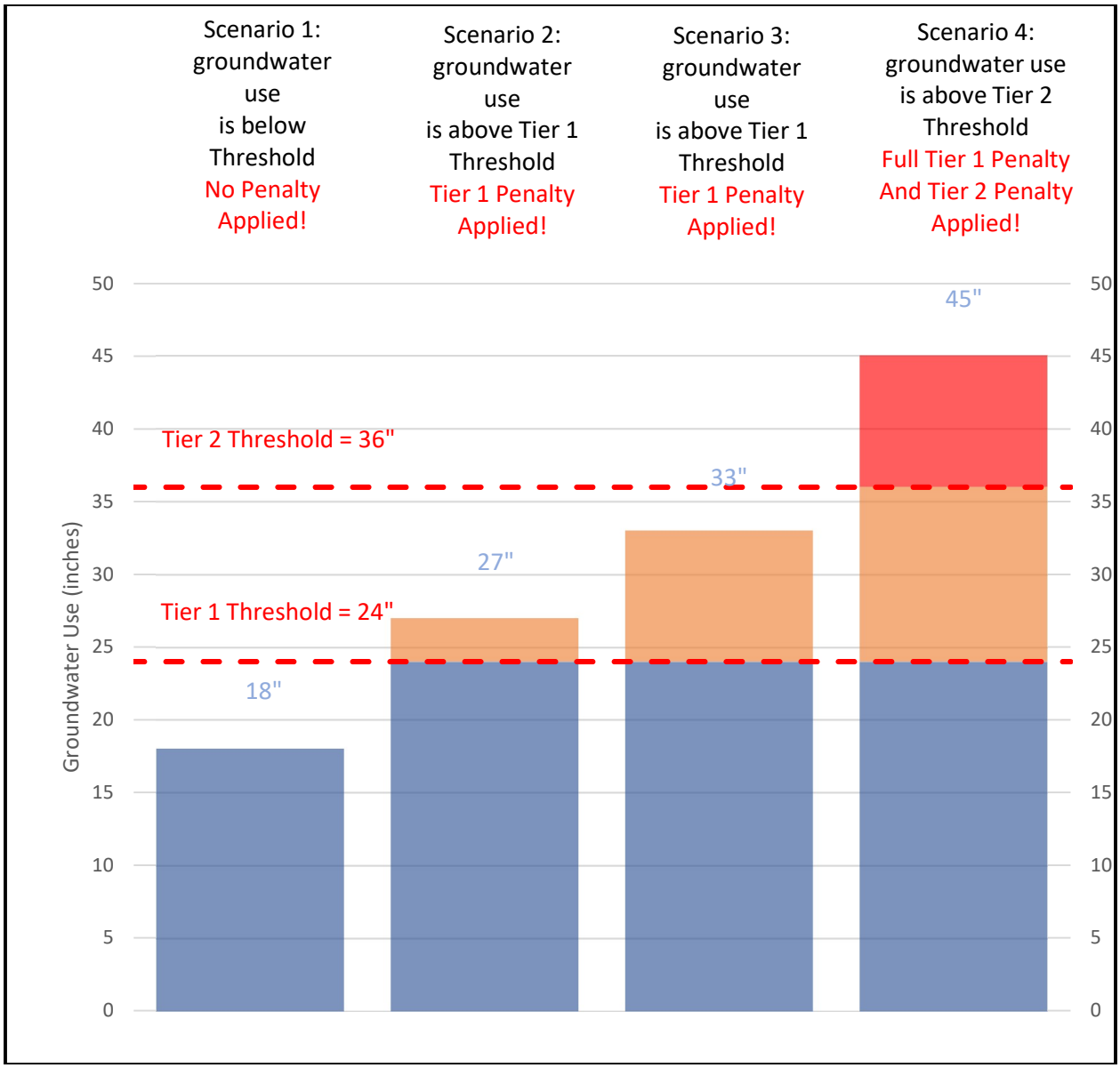

Figure 2: Example application of Alternative 2, comparing four scenarios where groundwater use is below and above the Tier 1 and Tier 2 Penalty Thresholds.

2.3 Alternative 3 – Combined Surface Water Allocation Program and Groundwater Extraction Fee

This alternative combines the fundamental principles of both the surface water allocation program (Alternative 1) and groundwater extraction fee (Alternative 2). Through this alternative, CWD would set a minimum surface water allocation per irrigated acre, per year, and a tiered groundwater extraction fee program, each with associated penalties or fees. For example, growers might be required to use a minimum of 12 inches of surface water annually and could extract up to 24 inches of groundwater without incurring a fee. Surface water usage below the surface water allocation would trigger a penalty, and groundwater use above the groundwater extraction threshold would be charged according to a tiered fee schedule.

This combined approach applies both a financial incentive to use available surface water and a disincentive to use groundwater (above a defined threshold), offering the greatest potential to increase surface water use when available and maximize revenue generation. Implementation would require tracking both surface water deliveries and groundwater extraction at the field level, which would likely increase administrative effort compared to either approach implemented individually.

The advantage of this alternative is its ability to address both components of the water supply equation—encouraging surface water use and discouraging groundwater extraction—at the same time. It also has flexibility, as the District could adaptively manage allocations, thresholds, and fee rates over time to respond to changing environmental conditions and surface water supplies. However, this option is also the most complex to administer and has the greatest potential for grower resistance, since growers could face penalties on both fronts. It would require careful policy design, reliable measurement systems for both surface and groundwater, legal counsel input, and likely a phased implementation timeline to ensure grower buy-in and, thus, successful implementation.

3 Supporting Strategies for Surface Water Incentivizes

In addition to the alternatives described in the previous section, CWD could pursue a set of supporting strategies aimed at enabling and encouraging greater surface water use within the District. While these strategies do not directly impose requirements or penalties, they address physical, operational, and logistical barriers that may currently limit surface water use by some growers. By expanding access, improving water quality, and increasing flexibility through dual-source irrigation systems, these measures could enhance the effectiveness of any chosen alternative and contribute to long-term groundwater sustainability. Importantly, these supporting strategies also align with and help advance CWD's commitments under the Subbasin Groundwater Sustainability Plan (GSP), including implementation of groundwater demand management (GDM) measures and subsidence mitigation actions outlined in the MOU.

3.1 Supporting Strategy 1 – Surface Water Access Expansion

Expanding surface water access within CWD would involve extending delivery infrastructure to parcels that are not currently served by the District's conveyance system but are within the District's irrigation service area. This may require constructing new turnouts, lateral extensions, or other distribution system improvements. Potential candidate parcels could be prioritized based on their proximity to existing conveyance facilities, the crop types grown (prioritizing higher consumptive use crops), and the hydraulic capacity of the canals serving those areas.

This supporting strategy could be implemented in phases. Initial efforts might target parcels already adjacent to existing infrastructure, while later phases could consider properties within 50 or 1,500 feet, where modest extensions could enable service.

The primary advantage of this supporting strategy is that it directly increases the number of growers who have the option to use available surface water, thereby raising the potential for in-lieu recharge and reduced groundwater extraction. However, the cost of infrastructure improvements could be significant, and the timeline for implementation may be prolonged by permitting and environmental requirements.

3.2 Supporting Strategy 2 – Surface Water Quality Improvements

Some growers in CWD have expressed reluctance to use available surface water in micro-irrigation systems due to the presence of debris, algae, and other organic material. These particulates can increase clogging, require more frequent backflushing of filters, and raise on-farm maintenance costs. While many growers already have sand media filtration systems in place, these challenges are particularly pronounced early in the irrigation season when debris loads are higher.

This supporting strategy could address those concerns through installation of centralized screening systems at main bifurcation points in the conveyance system. These screens would remove larger debris before water enters downstream laterals, reducing particulate loads at the grower level. While such improvements would require ongoing maintenance and periodic cleaning, they are relatively low-cost compared to system expansion and could substantially improve grower confidence in surface water quality.

Enhancing water quality could increase surface water use, especially among growers with high-efficiency irrigation systems, and could complement other alternatives and supporting strategies by removing a key barrier to participation.

3.3 Supporting Strategy 3 – Dual-Source Irrigation Systems

Dual-source irrigation systems allow growers to switch between surface water and groundwater depending on availability, quality, or crop needs. These systems typically involve separate pump and turnout connections tied into a common on-farm distribution network, along with controls to switch between sources as needed.

CWD could support adoption of dual-source irrigation systems through a phased incentive or rebate program, low-interest loans, or partnerships with other agencies. A program timeline could include initial outreach and education, application periods for cost-share funding, and installation deadlines. The District could target outreach to areas where surface water is intermittently available but not consistently relied upon, as these locations offer the greatest potential for increased surface water use.

The main benefit of this supporting strategy is flexibility. Growers can maximize surface water use when available, but still maintain the ability to meet crop water demands from groundwater if necessary. Over time, this flexibility could help normalize surface water use and facilitate grower participation in allocation or penalty programs. The primary drawbacks are the higher upfront cost for growers and the potential complexity of on-farm integration.

4 Comparison of Alternatives

The three alternatives and three supporting strategies vary considerably in their implementation requirements, administrative demands, infrastructure needs, annual implementation costs, and potential to increase surface water use and, conversely, reduce groundwater extraction. **Table 1** summarizes these parameters side-by-side for ease of comparison.

Among the alternatives, Alternative 1, the Surface Water Allocation Program, is the least expensive to implement, relying mainly on administrative setup, delivery tracking, and a policy framework for penalties. It has low ongoing staff effort and only minor potential infrastructure needs, such as improved turnout measurement. Alternative 2, the Groundwater Extraction Fee, has moderate implementation costs and requires moderate-to-high staff effort for groundwater usage monitoring, billing, and enforcement. While it does not require infrastructure improvements, it relies on groundwater extraction measurement or estimation methods such as remote sensing. Alternative 3, the Combined Surface Water Allocation Program and Groundwater Extraction Fee, has a cost profile similar to Alternative 2 and demands a comparable level of administrative oversight, but also requires the same potential infrastructure upgrades as Alternative 1.

Among the supporting strategies, Supporting Strategy 1, Surface Water Access Expansion, would require the most substantial capital investment due to the construction of new turnouts, laterals, or other conveyance extensions. It would also require moderate staff time for project planning and coordination. Supporting Strategy 2, Surface Water Quality Improvements, is relatively inexpensive to implement (by comparison) and involves only minor infrastructure additions, such as centralized screening equipment, with minimal ongoing staffing needs. Supporting Strategy 3, Dual-Source Irrigation Systems, represents a high-cost option on the grower side, but limited direct cost to the District beyond program administration and outreach, resulting in a low-to-moderate staff commitment.

When comparing the potential for increased surface water use, all three alternatives are expected to deliver significant benefits. Alternatives 2 and 3 have the greatest potential due to the strong disincentives they create for groundwater extraction, while Alternative 1 also offers meaningful reductions through direct encouragement of available surface water use. The supporting strategies generally provide moderate surface water use impacts by enabling or enhancing its use rather than directly mandating it.

Potential revenue generation further differentiates the options. Alternatives 2 and 3 provide the highest revenue potential through tiered groundwater extraction fees, while Alternative 1 offers more modest revenue from penalties associated with surface water use below the surface water allocation. The supporting strategies do not generate direct revenue but could amplify the effectiveness of whichever alternative is selected by reducing barriers to surface water use and expanding the number of growers who can participate.

Table 1: Qualitative Comparison of Alternatives and Supporting Strategies.

Alternative	Implementation Cost	Staff Effort	Infrastructure Improvements	Increased Surface Water Use	Potential Revenue Generation
Alternative 1 (Surface Water Allocation Program)	$	Low	Minor	💧💧	$$
Alternative 2 (Groundwater Extraction Fee)	$$	Moderate-High	None	💧💧💧💧	$$$
Alternative 3 (Combined Surface Water Allocation Program and Groundwater Extraction Fee)	$$	Moderate-High	Minor	💧💧💧💧💧	$$$
Supporting Strategy	**Implementation Cost**	**Staff Effort**	**Infrastructure Improvements**	**Potential Surface Water Use Increase**	**Potential Revenue Generation**
Supporting Strategy 1 (Surface Water Access Expansion)	$$$$	Moderate	Major	💧💧💧	N/A
Supporting Strategy 2 (Surface Water Quality Improvements)	$$	Low	Minor	💧💧	N/A
Supporting Strategy 3 (Dual-Source Irrigation Systems)	$$$$	Low-Moderate	None (Only the Private Side)	💧💧💧	N/A

5 Discussion and Recommendations

The evaluation of three alternatives and three supporting strategies highlights a range of potential pathways for the District to encourage greater use of surface water and reduce groundwater extraction for irrigation. Alternative 1, the Surface Water Allocation Program, focuses on requiring a minimum level of surface water use, providing a relatively low-cost and quickly implementable mechanism to incentivize surface water use. Alternative 2, the Groundwater Extraction Fee, imposes a tiered fee structure on groundwater extraction above defined thresholds, directly discouraging groundwater extraction and generating significant potential revenue for reinvestment in PMAs identified in the GSP. Alternative 3 combines these two approaches, applying both a minimum surface water allocation and groundwater extraction fees, creating the greatest incentives and disincentives to shift behavior.

If the District elects to pursue Alternative 1, the next steps would include determining an appropriate surface water allocation threshold that balances grower flexibility with program effectiveness, adopting policies to authorize the program and to allow flexibility for a changing surface water allocation throughout the irrigation season, and ensuring accurate surface water delivery tracking. For Alternative 2, the District would need to establish the groundwater extraction fee structure and tier thresholds, seek legal counsel direction in doing so, determine the method for measuring or estimating groundwater use, and develop billing and enforcement procedures. Implementation would also require outreach to growers to explain the program and its purpose. For Alternative 3, the next steps would combine those for Alternatives 1 and 2, including concurrent policy development for both surface water allocation and groundwater extraction fee components, seeking legal counsel direction for doing so, establishing accurate measurement systems for both surface water and groundwater, and designing an integrated administrative process for tracking, billing, and enforcement.

Supporting strategies could be advanced alongside any of the alternatives to improve overall program effectiveness. Expanding surface water access would involve engineering, permitting, and environmental analysis for new conveyance infrastructure, while surface water quality improvements could be addressed through the installation of centralized screening systems. A dual-source irrigation system program would require program design and cost-share or incentive mechanisms to encourage on-farm adoption.

Based on the evaluation of each alternative detailed in this TM, DE recommends the District ultimately pursue Alternative 3. This alternative offers the greatest potential for increasing surface water use by combining incentives to use available surface water with disincentives to extract groundwater, thereby addressing both sides of the water balance. However, implementation would be best approached in phases. In the near term, Alternative 1 could be adopted using the District's existing tools to begin influencing grower behavior and build administrative capacity. A pilot version of Alternative 2 could then be tested to evaluate groundwater measurement and fee collection methods. These efforts would provide valuable experience and stakeholder feedback, laying the groundwork for full-scale implementation of Alternative 3. This phased approach would allow CWD to make immediate progress while preparing for implementation of a comprehensive GDM program as a backstop to other PMAs, positioning the District to meet both near-term sustainability goals and long-term SGMA compliance requirements.

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TECHNICAL MEMORANDUM

To: Brandon Tomlinson, General Manager
Doug Welch, Water Resource Manager
Chowchilla Water District Groundwater Sustainability Agency

From: Davids Engineering, Inc.

Date: February 20, 2026

Subject: **Chowchilla Water District Surface Water Incentive Program – Potential Revenue Estimates**

1 Executive Summary

Chowchilla Water District (CWD) lies within the Chowchilla Subbasin (Subbasin) and relies on a combination of available Central Valley Project (CVP) surface water supplies and privately pumped groundwater to meet irrigation demands. While surface water is available in many years, growers have historically relied on groundwater extractions to meet consumptive use needs, contributing to long-term declines in groundwater levels within the Subbasin. To address the declining groundwater levels and meet its commitments under the Chowchilla Subbasin Groundwater Sustainability Plan (GSP) and the Groundwater Demand Management and Subsidence Mitigation Memorandum of Understanding (MOU), CWD is evaluating policy options that promote greater use of available surface water and reduced groundwater extractions.

The analysis set forth herein was conducted to estimate the potential revenue CWD could hypothetically generate under three alternative policy frameworks designed to encourage the use of available surface water supplies and discourage groundwater extraction. The three alternatives evaluated include:

1. **Alternative 1 – Surface Water Allocation Program:** Establishes a minimum surface water use requirement (i.e., surface water allocation) per irrigated acre, with penalties assessed when actual surface water use falls below the surface water allocation.
2. **Alternative 2 – Groundwater Extraction Fee:** Implements a tiered fee structure for groundwater extraction above defined thresholds to discourage excessive groundwater extraction.
3. **Alternative 3 – Surface Water Allocation and Groundwater Extraction Fee**: Integrates both a surface water allocation and groundwater extraction fee to provide complementary incentives and disincentives.

Water Year (WY) 2023 provides a recent and accurate portrayal of CWD operations. Accordingly, all revenue estimates included in this Technical Memorandum (TM) are based on WYWY 2023 deliveries and hydrologic conditions, which reflect a year with ample surface water availability across CWD.

The analysis used parcel-level data on irrigated acreage, surface water use, and estimated groundwater extractions derived from remote-sensing and local operational datasets. Results show that each alternative could generate meaningful revenue while supporting groundwater sustainability objectives. As seen in Figure ES1, under WY 2023 conditions, the Surface Water Allocation Program could hypothetically have generated approximately $6.8 million, the Groundwater Extraction Fee

approximately $6.4 million, and the Surface Water Allocation and Groundwater Extraction Fee Program up to approximately $13.2 million annually. While the Surface Water Allocation and Groundwater Extraction Fee Program alternative offers the strongest potential for groundwater reduction and revenue generation, it would also require the greatest administrative effort and stakeholder coordination.

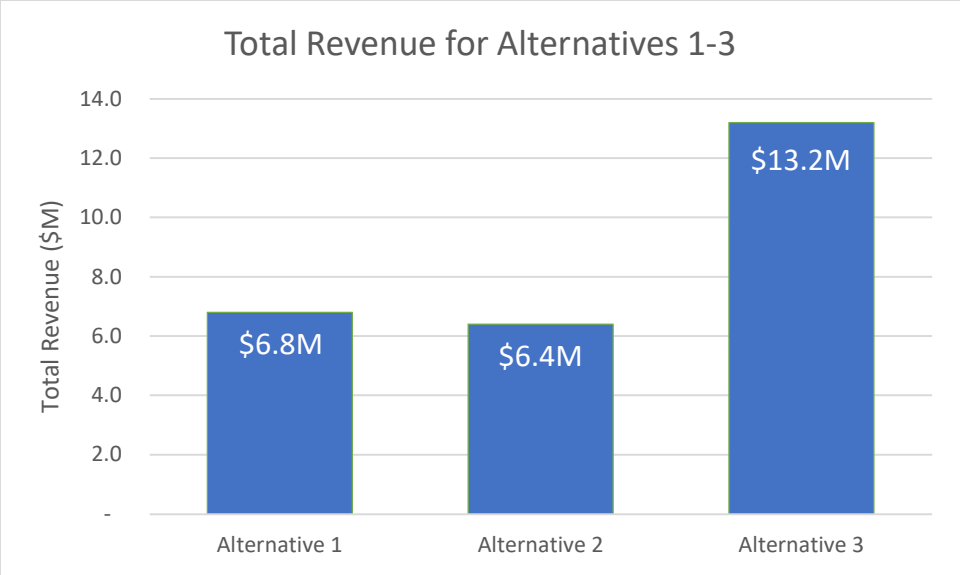

Figure ES1: Hypothetical revenue generated for Alternatives 1-3 under water year 2023 conditions.

Based on these findings, Davids Engineering, Inc. (DE) recommends a phased implementation strategy beginning with either the Surface Water Allocation Program or the Groundwater Extraction Fee, followed by a transition to the Combined Surface Water Allocation and Groundwater Extraction Fee Program as administrative capacity and data management systems mature. CWD is currently moving forward with implementation of the Groundwater Extraction Fee as the initial phase of this approach. This phased implementation strategy allows CWD, should they choose, to take immediate action toward meeting its GSP commitments while establishing a foundation for long-term groundwater sustainability and financial resilience.

1 Introduction

Chowchilla Water District (CWD) relies on a combination of contracted surface water supplies and privately extracted groundwater to meet irrigation demands within its service area. While surface water supplies from the Chowchilla River (via Buchanan Dam/Eastman Lake) and the San Joaquin River (via Friant Dam/Madera Canal) form the backbone of CWD's supply, groundwater remains a predominant source of irrigation water in many years. Long-term groundwater overdraft in the Chowchilla Subbasin (Subbasin) has resulted in declining groundwater levels, reduced groundwater storage, and localized subsidence, prompting the need for management consistent with the requirements of the Sustainable Groundwater Management Act (SGMA).

The Subbasin Groundwater Sustainability Plan (GSP) identifies several projects and management actions (PMAs) designed to reduce groundwater extraction and increase the use of surface water supplies for recharge, particularly through in-lieu recharge, in which growers apply available surface water instead of extracting groundwater. As a Groundwater Sustainability Agency (GSA) in the Subbasin, CWD has an important role in implementing PMAs and collaborating with the other Subbasin GSAs to meet sustainability targets and fulfill commitments related to the Groundwater Demand Management (GDM) Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU). CWD is fulfilling its commitment to the MOU by considering management actions that promote greater use of surface water when available and reduce groundwater extraction during normal and wet periods.

This Technical Memorandum (TM) documents an analysis conducted by Davids Engineering, Inc. (DE) to estimate potential annual revenue generation for CWD under three alternative policy alternatives specifically tailored to increase surface water use and reduce groundwater extraction. These alternatives represent a range of approaches that could be implemented individually or in combination to fulfill CWD's commitment in the MOU:

1. **Alternative 1 – Surface Water Allocation Program:** Establishes a minimum surface water use requirement (i.e., surface water allocation) per irrigated acre, with penalties assessed when actual surface water use falls below the surface water allocation.
2. **Alternative 2 – Groundwater Extraction Fee:** Implements a tiered fee structure for groundwater extraction above defined thresholds to discourage excessive groundwater extraction.
3. **Alternative 3 – Surface Water Allocation and Groundwater Extraction Fee**: Integrates both a surface water allocation and groundwater extraction fee to provide complementary incentives and disincentives.

The primary objective of this analysis is to provide a quantitative basis for comparing the revenue potential of each alternative, supporting future program design and implementation decisions by CWD. All potential revenue estimates presented herein are based on Water Year (WY) 2023 deliveries and hydrologic conditions, which were selected because they are recent and reflect a year with ample surface water availability across CWD.

2 Data Sources

The revenue analysis set forth herein relied on a combination of data provided directly by CWD and datasets obtained from publicly available online sources. Data provided by CWD was used to describe physical and operational conditions within the service area, including irrigated acreage, surface water deliveries, and ownership groupings. Publicly available datasets were used to characterize field-level evapotranspiration (ET), land use, precipitation, and other agronomic conditions that influence irrigation demand and groundwater extraction estimates. Each of these data sources and its use in this analysis is described below.

2.1 Data Provided by CWD

The following datasets were supplied by CWD and represent operational information for CWD in WY 2023:

- **Parcel-Level Irrigated Acreage:**
  CWD maintains records of irrigated parcels within CWD's service area. These data were used to define the spatial locations of each parcel and to calculate the total acreage over which surface and groundwater volumes were applied.
- **Surface Water Deliveries:**
  Annual surface water delivery records, summarized by turnout and parcel, were provided by CWD. These data were used to quantify measured surface water deliveries to each parcel during WY 2023 and to identify parcels that used partial or full surface water allocations (in the analysis of Alternatives 1 and 3).
- **Ownership Groupings:**
  CWD's customer and ownership database was used to associate parcels with individual water users or management entities. This linkage allowed aggregation of parcel-level water use data to the grower level where appropriate for evaluating potential surface water allocation penalties or groundwater extraction fees (in the analysis of Alternatives 1-3).

2.2 Publicly Available Data

The following datasets were obtained from various publicly available sources.

2.2.1 Evapotranspiration

ET represents consumptive water use, the water lost to evaporation and plant transpiration. ET was estimated from OpenET, a multi-agency satellite-based platform that provides monthly 30-meter (m) resolution ET estimates. OpenET integrates multiple well-established remote-sensing models to produce ensemble ET estimates that are spatially and temporally consistent across the Subbasin. The WY 2023 ET estimates were used to calculate total consumptive water use for irrigated parcels within CWD's service area and to estimate groundwater extractions where surface water deliveries were insufficient to meet irrigation demand.

2.2.2 Land Use

Land use classifications for 2023 were obtained from a combination of statewide and regional mapping efforts, including the California Department of Water Resources (DWR) statewide land use surveys, and the United States Department of Agriculture (USDA) CropScape Cropland Data Layer.

These sources were combined to generate a 30 m grid coverage describing crop type and irrigation status for all agricultural lands within CWD's service area for WY 2023. Land use data were used to identify irrigated versus non-irrigated portions of parcels and to support estimation of irrigation demand by crop type.

2.2.3 Precipitation

Precipitation estimates were obtained from the Parameter-elevation Regressions on Independent Slopes Model (PRISM), developed by the PRISM Climate Group at Oregon State University.

Monthly precipitation rasters at 4-kilometer (km) spatial resolution were downscaled to match the 30 m grid used for ET and land use data, allowing field-scale estimates of total precipitation. These data were used to calculate effective precipitation and to separate the portion of ET contributed by precipitation versus irrigation, thus supporting estimation of irrigation demand.

2.2.4 Other Agronomic Data

Additional agronomic parameters were applied to characterize typical irrigation system performance and soil conditions in CWD's service area. These included:

- Representative consumptive use fractions and rooting depths by crop type,
- Conveyance and reuse efficiencies for CWD, and
- Soil properties (e.g., available water-holding capacity, rooting depth, and infiltration characteristics) derived from the USDA Soil Survey Geographic (SSURGO) database.

These parameters were used to refine estimates of effective precipitation, irrigation demand, and groundwater extraction (after accounting for parcel-level surface water deliveries data), ensuring the analysis reflects realistic parcel-level conditions within CWD's service area.

3 Methodology

The purpose of this analysis was to estimate potential annual revenue generation under each of the three policy alternatives, each representing a different mechanism for encouraging surface water use and discouraging groundwater extraction. Calculations were performed using parcel-level data on irrigated acreage, surface water deliveries, and estimated groundwater extraction for WY 2023, representing a year in which surface water was ample across CWD. Parcel-level results were then aggregated by ownership into parcel groups to determine whether potential surface water allocation penalties or groundwater extraction fees should apply and to calculate total potential annual revenues under each alternative.

All potential penalties, allocations, and fees used in this analysis fall within the range of typical historical water use patterns and cost structures for CWD. However, it is emphasized that the specific fees and thresholds used in this analysis are examples; actual revenues will vary depending on the final program design and fee schedule adopted by CWD.

3.1 Alternative 1: Surface Water Allocation

Under Alternative 1, the Surface Water Allocation Program, a minimum surface water use requirement (i.e., surface water allocation) of 2 acre-feet per acre (AF/AC) was assumed for each irrigated parcel group. This surface water allocation was selected to represent a reasonable proportion of typical irrigation demands for crops within CWD and to align with years when surface water supplies are sufficient to meet a large portion of total irrigation demands.

For each parcel, the volume of unused surface water allocation (i.e., the penalty volume) was determined as:

$$\text{Penalty Volume (AF)} = \max(0, \text{Surface Water Allocation} - \text{Surface Water Deliveries})$$

This difference was multiplied by the parcel irrigated acreage and a penalty fee of $200 per acre-foot (AF). The total surface water allocation penalty for each parcel was then calculated as:

$$\text{Surface Water Allocation Penalty (\$)} = \text{Penalty Volume (AF)} \times \text{Penalty Fee (\$/AF)}$$

Summing the results across all parcel groups provided an estimate of the total potential annual revenue generated under this alternative.

3.2 Alternative 2: Groundwater Extraction Fee

Under Alternative 2, the Groundwater Extraction Fee, a tiered fee structure was applied to groundwater extraction estimates exceeding defined thresholds.

Parcel-level groundwater extraction was first estimated based on an analysis of parcel-level irrigation demand. Total parcel-level irrigation demand was calculated using a spatial water accounting approach that integrates publicly available satellite-based ET, precipitation, and land use data (described in Section 2). For each 30 m grid cell within CWD, total irrigation demand was determined as the sum of consumptive use (ET), adjusted for effective precipitation. Effective precipitation was estimated using PRISM precipitation data, soil characteristics from the USDA SSURGO database, and crop-specific rooting depths, consistent with methods outlined in the U.S. Bureau of Reclamation and USDA National Engineering Handbook procedures. Available surface water deliveries were then distributed across irrigated parcels, and any remaining unmet irrigation demand was assumed to be met by groundwater extraction.

This spatial water accounting approach allows irrigation demand, surface water deliveries, and groundwater extraction to be quantified across CWD at a 30 m spatial resolution, providing parcel-level estimates suitable for use in the revenue and fee calculations described in this analysis.

Each parcel's estimated groundwater use was then categorized into three tiers, with incremental fees applied for groundwater extraction within each tier, as shown in **Table 1**.

Table 1: Penalty Fee Structure for Alternative 2: Groundwater Extraction Fee

Groundwater Extraction Tier	Groundwater Extraction (IN)	Groundwater Extraction (AF/AC)	Groundwater Extraction Tier Fee ($/AF)
Tier 1	0-24	0-2	No Fee
Tier 2	24-36	2-3	$200
Tier 3	36-48	3-4	$400

For each parcel group, the total groundwater use within each tier was calculated, and the applicable tier fee was applied. The total groundwater fee per parcel was computed as:

$$\text{Groundwater Extraction Fee (\$)} = \sum_{i} (\text{Groundwater Volume within Tier}_i) \times \text{Tier Fee}_i$$

Summing all parcel-level fees provided a total estimate of the potential annual revenue generated under this alternative.

3.3 Alternative 3: Surface Water Allocation and Groundwater Extraction Fee

Under Alternative 3, the Surface Water Allocation and Groundwater Extraction Fee Program, the two previous approaches are integrated, applying both a surface water allocation and a tiered groundwater extraction fee simultaneously. For each parcel, both the surface water penalty and groundwater fee were calculated as described above, and the total charge was determined as:

$$\text{Total Charge (\$)} = \text{Surface Water Allocation Penalty (\$)} + \text{Groundwater Extraction Fee (\$)}$$

Summing the results across all parcel groups provided an estimate of the total potential annual revenue generated under this alternative.

4 Results

The results of the revenue analysis quantify the total potential annual revenue that could be generated by CWD under each of the three policy alternatives based on the assumptions and methods given in Section 3. Results are summarized for WY 2023, representing a year with ample surface water supplies across CWD.

4.1 Alternative 1 – Surface Water Allocation Program

Out of a total of 383 parcel groups analyzed, 200 (approximately 52%) would have incurred a surface water allocation penalty based on the assumptions and methods in Section 3.1. The average delivery volume among penalized parcel groups was 1.46 AF/AC, resulting in a total penalty volume of

approximately 34,000 AF. Applying the $200 per acre-foot penalty fee, the total potential annual revenue generated from penalties under this alternative was approximately $6.8 million.

The results of Alternative 1 are summarized in **Table 2**, which presents the total penalty volume, penalty fee, and total potential annual revenue generated from parcels falling below the surface water allocation (i.e., the surface water allocation penalty) in WY 2023.

Table 2: Summary of Alternative 1 Total Penalty Volume, Penalty Fee, and Total Potential Annual Revenue (WY 2023).

Total Penalty Volume (AF)	Penalty Fee ($/AF)	Total Potential Annual Revenue ($)
34,000	200	6,800,000

4.2 Alternative 2 – Groundwater Extraction Fee

Out of the 383 total parcel groups analyzed, 155 (approximately 40%) would incur groundwater extraction fees based on the assumptions and methods in Section 3.2. Based on assumptions and conditions in WY 2023, a total of approximately 73,000 AF of groundwater extraction occurred within Tier 1 (no fee), while approximately 17,000 AF and 7,000 AF occurred in Tiers 2 and 3, respectively. This resulted in a total of approximately 24,000 AF of groundwater extractions that are subject to fees, resulting in an estimated total potential annual revenue of approximately $6.3 million under this alternative.

The results of Alternative 2 are summarized in **Table 3**, showing the applied tier fees, groundwater volumes within each tier, and the total potential annual revenue hypothetically generated in WY 2023.

Table 3: Summary of Alternative 2 Tier Fees, Groundwater Volumes, and Total Potential Annual Revenue (WY 2023).

	Groundwater Volume within Tier (AF)	Tier Fee ($/AF)	Total Potential Annual Revenue ($)
Tier 1	73,000	0	0
Tier 2	17,000	200	3,400,000
Tier 3	7,000	400	3,000,000
Total	97,000	-	6,400,000

4.3 Alternative 3 – Combined Surface Water Allocation and Groundwater Extraction Fee

The Combined Surface Water Allocation and Groundwater Extraction Fee Program applies both the surface water allocation and the groundwater extraction fee simultaneously. Under these assumptions, the total potential annual revenue equals the sum of the penalties and fees applied under Alternatives 1 and 2.

Using the same fees and thresholds described previously, the combined total potential annual revenue is estimated at $13.1 million in WY 2023, representing the maximum potential financial return of the

alternatives evaluated. This approach provides the strongest combined incentive to increase surface water use and decrease groundwater extractions but would also require the greatest administrative complexity.

A comparison of the total revenues generated under each alternative is provided in **Table 4**. These results show the cumulative effect of implementing both a surface water allocation and a groundwater extraction fee.

Table 4: Summary of Total Potential Annual Revenue Under Each Alternative (WY 2023).

Alternative 1 Revenue ($)	Alternative 2 Revenue ($)	Alternative 3 Revenue ($)
6,800,000	6,400,000	13,200,000

5 Discussion and Recommendations

The results of this analysis indicate that each of the three proposed policy alternatives could provide meaningful benefits toward increasing surface water use, reducing groundwater dependence, and generating additional revenue to support long-term sustainability efforts. The Surface Water Allocation Program (Alternative 1) offers a straightforward and low-cost mechanism for incentivizing growers to use surface water when it is available. Its relative simplicity makes it well-suited for near-term implementation using existing delivery records and administrative procedures. Additionally, the results of this analysis demonstrate that a relatively modest surface water allocation threshold and penalty fee could generate meaningful revenue while strongly incentivizing increased use of available surface water. In contrast, the Groundwater Extraction Fee (Alternative 2) provides a more direct tool for managing groundwater demand and generating consistent revenue but would require methods to estimate groundwater extractions in order to implement. The Surface Water Allocation and Groundwater Extraction Fee (Alternative 3) achieves the greatest potential impact by applying both incentives and disincentives simultaneously, reinforcing behavioral change on both the surface and groundwater sides of the balance, though at a higher level of administrative complexity. This alternative also represents the maximum potential annual revenue generation scenario, combining both incentives to utilize available surface water and disincentives to rely heavily on groundwater extractions.

While each alternative provides distinct advantages, their implementation difficulty varies considerably. Alternative 1 could be initiated with minimal policy changes and limited new data infrastructure, allowing CWD to begin influencing water use behavior quickly. Alternative 2 would require either field-level metering or robust groundwater use estimation methods but would produce stronger behavioral and financial outcomes. Alternative 3 would require integration of both datasets and policies, making it the most comprehensive but also the most demanding to administer. Importantly, all three approaches are compatible with CWD's commitments under the GSP, including the groundwater demand management and subsidence MOU, by promoting in-lieu recharge and reducing groundwater extraction during years of surface water availability.

Based on these findings, DE recommends a phased implementation strategy that builds toward the combined program over time. CWD is currently moving forward with implementation of the Groundwater Extraction Fee (Alternative 2) as the initial phase, which allows CWD to establish the billing, compliance review, and demand accounting processes needed for a long-term program while immediately advancing GSP objectives. As data systems mature and stakeholder familiarity increases,

CWD can add a Surface Water Allocation component and transition toward Alternative 3. This approach enables near-term action while positioning CWD for long-term success in achieving groundwater sustainability.

Based on these findings, it is recommended that the CWD adopt a phased implementation strategy. CWD could begin by implementing either the Surface Water Allocation Program or the Groundwater Extraction Fee, depending on data readiness and administrative capacity. This would allow for early progress toward GSP objectives while building experience and stakeholder confidence. Over time, as data systems and policy frameworks mature, CWD could transition to a combined Surface Water Allocation and Groundwater Extraction Fee program that applies both allocation and extraction components. This phased approach offers a practical and flexible path forward, ensuring near-term action while positioning CWD for long-term success in achieving groundwater sustainability.

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TECHNICAL MEMORANDUM

To: Brandon Tomlinson, General Manager
Doug Welch, Water Resource Manager
Chowchilla Water District Groundwater Sustainability Agency

From: Davids Engineering, Inc.
Date: February 20, 2026
Subject: **Chowchilla Water District Surface Water Incentive Program Implementation Guidance**

1 Executive Summary

Chowchilla Water District (CWD) lies within the Chowchilla Subbasin (Subbasin) and relies on a combination of available Central Valley Project (CVP) surface water supplies and privately pumped groundwater to meet irrigation demands. Persistent groundwater overdraft within the Chowchilla Subbasin (Subbasin) has contributed to declining groundwater levels, reduced storage, and localized land subsidence, requiring proactive management actions to comply with the Sustainable Groundwater Management Act (SGMA). As a Groundwater Sustainability Agency (GSA), CWD has committed, through the Subbasin's Groundwater Sustainability Plan (GSP) and the Subsidence Mitigation Measures Memorandum of Understanding (MOU), to implement groundwater demand management strategies that reduce groundwater extraction and promote increased use of available surface water, particularly during normal and wet years.

To support these objectives, CWD has evaluated three policy alternatives designed to encourage surface water use and reduce groundwater extractions:

1. **Alternative 1 – Surface Water Allocation Program:** Establishes a minimum surface water use requirement (i.e., surface water allocation) per irrigated acre, with penalties assessed when actual surface water use falls below the surface water allocation.
2. **Alternative 2 – Groundwater Extraction Fee:** Implements a tiered fee structure for groundwater extraction above defined thresholds to discourage excessive groundwater extraction.
3. **Alternative 3 – Surface Water Allocation and Groundwater Extraction Fee:** Integrates both a surface water allocation and groundwater extraction fee to provide complementary incentives and disincentives.

Companion technical memoranda (provided in Appendices A and B) established the policy framework and estimated potential revenues associated with each alternative. The purpose of this Technical Memorandum (TM) is to provide clear, actionable implementation guidance to transition these alternatives into operational programs.

This document presents a step-by-step framework for administering each alternative, including required data inputs, administrative procedures, and calculation methodologies. The guidance emphasizes the use of existing CWD datasets and operational practices wherever possible, with all compliance determinations, penalties, and fees calculated in arrears using verified end-of-year data. This approach is intended to ensure transparency, fairness, and administrative feasibility while minimizing operational disruption.

The Surface Water Allocation Program offers a low-cost, near-term option that directly incentivizes surface water use by establishing a minimum surface water requirement per irrigated acre, with penalties assessed for unused allocations. The Groundwater Extraction Fee provides a more direct disincentive to excessive groundwater extractions through a tiered fee structure based on estimated applied groundwater use, supported by spatial water accounting methods and evapotranspiration data. The Combined Surface Water Allocation Program and Groundwater Extraction Fee alternative applies both mechanisms simultaneously, offering the strongest alignment with groundwater demand management and subsidence mitigation objectives, albeit with greater administrative complexity.

Recognizing the operational and stakeholder considerations associated with new water management programs, this TM recommends a phased implementation approach. CWD is moving forward with implementation of the Groundwater Extraction Fee (Alternative 2) to establish the necessary data workflows, billing procedures, and compliance review processes. Then, should they choose to, CWD will transition to the combined alternative once administrative systems and stakeholder familiarity are in place. This incremental strategy reduces implementation risk, allows for program refinement based on experience and feedback, and provides growers with a clear and predictable adjustment pathway.

Overall, the implementation guidance presented herein provides CWD with a flexible, locally controlled toolkit to advance groundwater sustainability, fulfill SGMA and MOU commitments, and adaptively manage water resources under evolving hydrologic conditions.

2 Introduction

Chowchilla Water District (CWD) relies on a combination of contracted surface water supplies and privately extracted groundwater to meet irrigation demands within its service area. While surface water supplies from the Chowchilla River (via Buchanan Dam/Eastman Lake) and the San Joaquin River (via Friant Dam/Madera Canal) form the backbone of CWD's supply, groundwater remains a predominant source of irrigation water in many years. Long-term groundwater overdraft in the Chowchilla Subbasin has resulted in declining groundwater levels, reduced groundwater storage, and localized subsidence, prompting the need for management consistent with the requirements of the Sustainable Groundwater Management Act (SGMA).

The Chowchilla Subbasin (Subbasin) Groundwater Sustainability Plan (GSP) identifies several projects and management actions (PMAs) designed to reduce groundwater extraction and increase the use of surface water supplies for recharge, particularly through in-lieu recharge, in which growers apply available surface water instead of extracting groundwater. As a Groundwater Sustainability Agency (GSA) in the Subabsin, CWD has an important role in implementing PMAs and collaborating with the other Subbasin GSAs to meet sustainability targets and fulfill commitments related to the Groundwater Demand Management (GDM) Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU). CWD is fulfilling its commitment to the MOU by considering management actions that promote greater use of surface water when available and reduce groundwater extraction during normal and wet periods.

To support these efforts, a Technical Memorandum (TM) was prepared for CWD proposing and evaluating three policy alternatives designed to increase surface water use and reduce groundwater extraction (See **Appendix A**):

1. **Alternative 1** – Surface Water Allocation Program, requiring a minimum level of surface water use (i.e., surface water allocation) with penalties for underuse;
2. **Alternative 2** – Groundwater Extraction Fee, establishing a tiered fee structure for groundwater use exceeding defined thresholds; and
3. **Alternative 3** – Combined Surface Water Allocation Program and Groundwater Extraction Fee, applying both allocation and extraction components simultaneously.

A Revenue Analysis TM was also developed to estimate the potential annual revenue that could be generated under each alternative based on an analysis of parcel-level surface water deliveries and estimated groundwater extraction from Water Year 2023 (See **Appendix B**). Together, these documents established the policy framework and financial implications associated with each alternative.

The purpose of this TM is to provide the implementation guidance needed to operationalize these alternatives. A clear, step-by-step framework is provided as a means of establishing the steps necessary for CWD to administer each alternative. While this TM references findings from earlier TMs, it is written as a standalone resource to support Board consideration, stakeholder engagement, and future program development.

The implementation processes described herein are designed to:

- Align with CWD's operational capabilities and data resources;
- Support commitments made in the GSP to develop GDM and subsidence mitigation measures, consistent with the MOU;
- Provide flexibility for phased adoption and adjustment over time; and
- Ensure transparency, fairness, and administrative feasibility.

Ultimately, the guidance in this TM is intended to help CWD move from conceptual alternative design to actionable implementation, enabling CWD to continue to advance groundwater sustainability through a consistent, transparent, and operationally feasible approach.

3 Surface Water Incentive Alternatives

This TM presents three policy alternatives that CWD could implement to encourage increased use of available surface water and/or reduce groundwater extraction for irrigation. Each alternative represents a distinct approach for influencing grower behavior through incentives, disincentives, or a combination of both, and each could be implemented independently or as part of a phased program over time.

The alternatives are intended to support CWD's groundwater sustainability objectives under SGMA, including commitments outlined in the GSP and the MOU. In particular, the alternatives are designed to increase in-lieu recharge by encouraging surface water use during periods when supplies are available and reducing discretionary groundwater extractions.

Table 1 shows a qualitative comparison of these alternatives, including implementation complexity, administrative effort, infrastructure needs, and relative effectiveness.

Table 1: Qualitative Comparison of Alternatives.

Alternative	Implementation Cost	Staff Effort	Infrastructure Improvements	Increased Surface Water Use	Potential Revenue Generation
Alternative 1 (**Surface Water Allocation Program**)	$	Low	Minor	💧 💧	$$
Alternative 2 (**Groundwater Extraction Fee**)	$$	Moderate-High	None	💧 💧 💧 💧	$$$
Alternative 3 (**Combined Surface Water Allocation Program and Groundwater Extraction Fee**)	$$	Moderate-High	Minor	💧 💧 💧 💧 💧	$$$

3.1 Alternative 1: Surface Water Allocation Program

The Surface Water Allocation Program establishes a minimum annual surface water use requirement (i.e., surface water allocation) per irrigated acre for growers within CWD. Growers whose actual surface water use falls below the allocation would incur a penalty on the unused portion of the allocation. For administration and billing, surface water deliveries are summarized att he parcel level using turnout delivery records and then aggregated to parcel groups based on common ownership or customer account groupings. The allocation level and associated penalty fee could be adjusted by CWD over the course of the irrigation season to reflect updated supply forecasts, operational conditions, or policy objectives. Limited exemptions or adjustments could also be incorporated to account for fallowing, orchard removal, or localized delivery constraints.

This alternative directly incentivizes surface water use while remaining relatively simple to administer, relying primarily on CWD's existing surface water delivery records. It offers a near-term, low-cost mechanism for influencing grower behavior and generating revenue that could be reinvested in additional groundwater sustainability projects or other management actions.

3.2 Alternative 2: Groundwater Extraction Fee

The Groundwater Extraction Fee program applies a fee to groundwater extraction above defined thresholds, using a tiered structure to discourage higher levels of groundwater extraction while preserving flexibility for baseline irrigation needs.

Under this approach, groundwater extractions would be estimated or measured at the parcel level and aggregated to parcel groups. Groundwater extraction below a baseline threshold would not be subject to a fee, while groundwater extraction exceeding higher tier thresholds would be charged increasing fees per acre-foot of groundwater extraction. This tier structure would allow CWD to target excessive groundwater extractions while avoiding penalties for modest or limited groundwater extractions.

This alternative directly disincentivizes groundwater extraction and provides a consistent revenue source that could be used to fund recharge projects, monitoring programs, or other GSP related actions. However, implementation would require a reliable method for estimating or measuring groundwater extraction and a more robust administrative framework for data processing.

3.3 Alternative 3: Combined Surface Water Allocation and Groundwater Extraction Fee

The Combined Surface Water Allocation and Groundwater Extraction Fee Alternative integrates both a surface water allocation and a tiered groundwater extraction fee into a single, comprehensive framework. Under this alternative, growers would be required to meet a minimum level of surface water use while also being subject to fees for groundwater extraction above defined thresholds.

By applying both an incentive to use surface water and a disincentive to extract groundwater, this alternative provides the strongest mechanism for shifting irrigation practices and reducing long-term groundwater extraction. This approach reinforces desired behavior from both sides of the water balance and offers the greatest potential for achieving groundwater sustainability objectives.

4 Alternative Implementation

This section provides practical guidance for implementing each of the three alternatives described in the preceding section. The intent is to translate the conceptual alternative designs (detailed in **Appendix A**) into actionable steps that CWD could follow to administer each alternative through a consistent, transparent, and operationally feasible approach.

For each alternative, implementation considerations are organized around three core components: (1) data and technical infrastructure requirements, (2) administrative setup and policy considerations, and (3) a high-level overview of the calculation framework used to determine compliance, fees, and penalties. Emphasis is placed on leveraging CWD's existing datasets, operational practices, and analytical tools to the greatest extent possible, with all calculations performed in arrears using verified end-of-year data.

While each alternative differs in complexity and administrative effort, the implementation approaches described herein are designed to be modular and adaptable. CWD is currently moving forward with implementation of the Groundwater Extraction Fee program (Alternative 2); however, the remaining alternatives are included to provide a complete implementation framework should CWD elect to incorporate additional program elements in the future. The guidance in this section is intended to support near-term decision making while allowing flexibility to refine program elements in response to hydrologic conditions, stakeholder feedback, and evolving groundwater sustainability objectives.

4.1 Alternative 1 Implementation

Compared to the other alternatives evaluated, Alternative 1 relies almost entirely on existing datasets and operational processes and can be implemented with minimal additional technical infrastructure. All calculations under this alternative are performed in arrears, based on actual deliveries measured during the irrigation season, which reduces operational complexity and avoids the need for real-time tracking or forecasting tools.

The primary implementation tasks for this alternative involve defining policy thresholds (i.e., the allocations and penalty fees), confirming data quality and consistency across existing systems, and establishing clear administrative procedures for exemptions, review, and billing. Because the alternative is based on surface water delivery records already maintained by CWD, it can be deployed incrementally and adjusted over time as operational experience is gained.

4.1.1 Data and Technical Infrastructure

Implementation of Alternative 1 does not require new data sources, modeling tools, or metering infrastructure beyond what is currently maintained by CWD, so long as current data collection methods are adequate to support surface water delivery measurements. The alternative can be implemented using existing operational and geospatial datasets, provided those datasets are reviewed for completeness and consistency.

Key datasets required for implementation include:

1. **Surface Water Delivery Records:** Parcel level delivery records are used to quantify the total volume of surface water delivered to each parcel group during the irrigation season. These records form the basis for determining whether a parcel group met or fell short of the defined surface water allocation.
2. **GIS Parcel and Irrigated Acreage Data:** Parcel boundaries and irrigated acreage are used to calculate the required surface water allocation for each parcel group (expressed as acre-feet per acre). Accurate and up to date irrigated acreage data are essential to ensure allocations are applied consistently across users.

While no new tools are required, it is recommended that CWD conduct a review of existing datasets prior to implementation to confirm that delivery records and parcel boundaries are aligned and can be reliably linked for end of year calculations. Any identified data gaps or inconsistencies should be addressed as part of routine data management practices.

4.1.2 Administrative Setup

Implementation of Alternative 1 requires CWD to establish clear administrative policies governing allocation thresholds, penalty fees, and compliance procedures. A minimum surface water allocation, expressed on an acre-feet per acre basis, must be defined for each irrigation season. An associated penalty fee for any unused allocation must also be established, expressed as dollars per acre-foot. Both the allocation threshold and penalty fee can be set or adjusted annually, prior to the start of the irrigation season, to reflect prevailing hydrologic conditions, surface water availability, operational considerations, and policy objectives.

An exemption or adjustment process should be developed to address circumstances in which parcels or parcel groups are unable to meet allocation requirements due to factors such as fallowing, crop removal, or local delivery constraints. Establishing clear eligibility criteria and documentation requirements for exemptions will help ensure that penalties are applied consistently and transparently.

All compliance determinations and penalty calculations under Alternative 1 should be performed at the end of the irrigation season, based on actual surface water delivery records. This approach simplifies administration effort by avoiding real-time tracking or mid-season adjustments and allows charges to be based on verified delivery data. To support successful implementation, advance communication with growers regarding allocation requirements, penalty structures, and exemption procedures is recommended prior to the start of each irrigation season.

4.1.3 Calculation Overview

Under Alternative 1, compliance and revenue calculations are based on a comparison between a defined minimum surface water allocation and actual surface water deliveries recorded during the irrigation season. Calculations are performed at the parcel level and then aggregated to parcel groups for billing and reporting purposes.

For each parcel group, the required surface water allocation is calculated as the product of irrigated acreage and the defined allocation threshold (expressed in acre-feet per acre). Actual surface water use can be determined from CWD's delivery records. The difference between the required allocation and delivered volume defines the unused allocation volume, or penalty volume, which is subject to penalty if positive. This relationship is expressed as:

$$Penalty\ Volume\ (AF) = max\ (0, Allocation\ (AF) - Delivered\ Surface\ Water\ (AF))$$

The unused allocation volume should then be multiplied by the adopted penalty fee to determine the total penalty for each parcel group:

$$Penalty\ (\$) = Penalty\ Volume\ (AF) \times Penalty\ Fee\ (\$/AF)$$

Parcel-level results can be aggregated to parcel groups prior to final billing to align with CWD's accounting and customer records. Exempt parcels or acreage approved through the administrative review process are excluded from penalty calculations.

4.2 Alternative 2 Implementation

Alternative 2 relies on a more detailed accounting of on-field water demand and groundwater extraction than Alternative 1. Due to this, additional datasets and analytical tools will be required for implementation. Like the other alternatives, all calculations under this alternative are performed in arrears, based on observed conditions during the irrigation season, which allows fees to be assessed using verified data rather than forecasts or real-time estimates.

The primary implementation tasks for Alternative 2 involve annually establishing groundwater extraction thresholds and tiered fee fees, confirming the quality of surface water supply datasets, obtaining a method for on-field demand estimation, and defining administrative procedures for review, reporting, and billing. While more data intensive than Alternative 1, this approach provides a direct linkage between groundwater extraction and associated fees and aligns closely with GDM objectives.

4.2.1 Data and Technical Infrastructure

Implementation of Alternative 2 requires integration of existing datasets collected by CWD as well as field-scale applied water demand estimates, which are expected to be derived from remote sensing and agronomic datasets. While no new metering infrastructure is expected to be required, this alternative depends on CWD's ability to estimate applied groundwater at the parcel level using a water accounting methodology.

Key datasets required for implementation include:

- **Surface Water Delivery Records:** Turnout or parcel-level delivery records are used to quantify the volume of surface water supplied to each parcel group and to offset total applied water demand prior to estimating groundwater extractions.
- **GIS Parcel and Irrigated Acreage Data:** Parcel boundaries and irrigated acreage are used to spatially distribute applied water demand estimates and to aggregate results to parcel groups for reporting and billing.
- **Applied Water Demand Estimates:** Field-level applied water demand is estimated using a spatial water accounting methodology that integrates evapotranspiration (ET), precipitation, and land use. These estimates provide the basis for calculating total applied water and residual groundwater use.

To support estimation of total applied water demand, CWD will need access to spatially-explicit ET and supporting agronomic datasets. Several data products are available to meet this need, with differing levels of cost, processing effort, and analytical support. Two of these options are listed below:

- **OpenET**: One option for this data is OpenET[1], a publicly available, no-cost platform that provides satellite-based ET estimates at a 30-meter spatial resolution. OpenET offers monthly and annual ET datasets derived from an ensemble of well-established remote-sensing models. While OpenET does not directly provide total applied water demand or applied groundwater volumes, OpenET datasets can be used by CWD to estimate field-level applied water demand through a water accounting approach that incorporates precipitation, land use, and agronomic assumptions. Use of OpenET would require extensive in house processing and integration with CWD's delivery and parcel datasets.
- **ETAW Products**: An additional option for estimating applied water demand is the use of commercial ET of applied water (ETAW) products, such as those provided by Hydrosat[2], which are currently being used by the Madera County GSA in their Groundwater Demand Management Program. Under this approach, ETAW estimates are delivered directly at the field or parcel scale, substantially reducing the need for data processing by CWD. Because ETAW products already incorporate satellite-based ET, precipitation, crop conditions, and water balance assumptions, they can be used for estimating total applied water demand without the need for CWD to process the data themselves. Residual groundwater extractions can then be estimated by subtracting verified surface water deliveries from the ETAW volume.

Prior to implementation, it is recommended that CWD review data linkages between parcel geometry and delivery records to ensure consistent parcel group aggregation. Routine validation of inputs and assumptions will help maintain confidence in the resulting groundwater fee calculations.

4.2.2 Administrative Setup

Implementation of Alternative 2 requires CWD to define groundwater use thresholds and corresponding tiered fees. Thresholds are typically expressed in terms of applied groundwater volume (i.e., acre-feet per acre) and are intended to distinguish between baseline irrigation needs and higher levels of

[1] More information on OpenET can be found at their website: https://etdata.org/.
[2] More information on Hydrosat can be found at their website: https://hydrosat.com/.

groundwater reliance. Tier fees may be adjusted annually to reflect groundwater conditions, management priorities, and policy objectives.

Administrative procedures should be established to define how groundwater use estimates are reviewed, how tiered volumes are calculated, and how disputes or data corrections are handled. Because groundwater extractions are estimated rather than directly measured at the parcel level, transparency regarding assumptions and calculation methods is particularly important.

As with Alternative 1, all compliance determinations and fee calculations for Alternative 2 can be performed in arrears using verified delivery records and finalized applied water demand estimates. This approach simplifies administration efforts and ensures that charges reflect actual field conditions rather than projections. Advance communication with growers regarding tier thresholds, fees, and calculation methods is recommended prior to implementation.

4.2.3 Calculation Overview

Under Alternative 2, groundwater extraction fees are based on estimated applied groundwater volumes exceeding defined tier thresholds. Total on-field applied water demand is either calculated using a spatial water accounting approach that integrates ET, effective precipitation (ETPR), land use, and other agronomic parameters, or provided by a paid service such as Hydrosat. In this framework, ETAW (representing the portion of crop consumptive use attributed to irrigation rather than rainfall) can be calculated as:

$$ETAW\ (AF) = ET(AF) - ETPR\ (AF)$$

Total applied water required to meet demand (AW) can then be determined from ETAW and associated losses consistent with the adopted water accounting assumptions, such as irrigation efficiency. Verified surface water deliveries (ASW) are applied to meet this demand, and the remaining applied water requirement is attributed to applied groundwater extractions (AGW):

$$AGW\ (AF) = AW\ (AF) - ASW\ (AF)$$

For each parcel group, estimated applied groundwater use can be expressed as a depth (acre-feet per acre) and categorized into predefined tiers. An example tier structure is shown in **Table 2**.

Table 2: Example Groundwater Extraction Fee Tier Structure

Groundwater Extraction Tier	Groundwater Extraction (IN)	Groundwater Extraction (AF/AC)	Groundwater Extraction Tier Fee ($/AF)
Tier 1	0-24	0-2	No Fee
Tier 2	24-36	2-3	$200
Tier 3	36-48	3-4	$400

The volume of groundwater use within each tier can be calculated and multiplied by the applicable tier fee. The total groundwater fee for each parcel group is computed as:

$$Groundwater\ Fee\ (\$) = \sum_i [\ Groundwater\ Volume\ within\ Tier_i\ (AF) \times Tier\ Fee_i\ (\$/AF)]$$

Parcel level results are then aggregated to parcel groups prior to billing to align with CWD's accounting and customer records. Any approved adjustments or exclusions are applied prior to final fee calculation.

4.3 Alternative 3 Implementation

Alternative 3 combines the Surface Water Allocation Program and the Groundwater Extraction Fee into a single, integrated alternative. This alternative applies both a minimum surface water allocation requirement and a tiered groundwater extraction fee simultaneously, creating complementary incentives to maximize surface water use while discouraging excessive reliance on groundwater extractions.

Because Alternative 3 incorporates the implementation elements of both prior alternatives, it is the most comprehensive (and most administratively complex) option evaluated. However, it also provides the strongest alignment with groundwater demand management objectives and subsidence mitigation goals. As with the other alternatives, all calculations are performed in arrears using verified end of year data, allowing charges to be based on observed deliveries and estimated groundwater extraction rather than forecasts or real-time monitoring.

Implementation of this alternative requires coordinated application of the policy thresholds, datasets, and administrative procedures described under Alternatives 1 and 2. While more resource intensive initially, this approach allows CWD to apply surface water incentives and groundwater disincentives in a consistent and integrated manner.

4.3.1 Data and Technical Infrastructure

Implementation of the Combined Surface Water Allocation and Groundwater Extraction Fee Alternative requires the full suite of datasets and analytical tools used under Alternatives 1 and 2, as described in **Sections 3.1.1 and 3.2.1**. No new metering or monitoring infrastructure is expected to be required; however, successful implementation of the Groundwater Extraction Fee will require the tools described in **Section 3.2**.

Key datasets required for implementation include:

- **Surface Water Delivery Records:** Parcel level delivery records are used to quantify actual surface water use for each parcel group and to determine compliance with the minimum surface water allocation requirement.
- **GIS Parcel and Irrigated Acreage Data:** Parcel boundaries and irrigated acreage are used to calculate required surface water allocations and to spatially distribute demand and groundwater extraction estimates.
- **On-Field Demand and Groundwater Estimates:** A spatial water accounting approach is used to estimate total irrigation demand and residual groundwater extractions after accounting for surface water deliveries and effective precipitation.

Because Alternative 3 integrates multiple calculation pathways, it is recommended that CWD conduct a comprehensive review of data linkages and aggregation procedures prior to implementation. Ensuring

consistency between parcel geometry, delivery records, and demand estimates is critical to avoiding double counting or misapplication of charges.

4.3.2 Administrative Setup

Administrative implementation of Alternative 3 requires CWD to establish and maintain both surface water allocation policies and groundwater extraction fee structures, as described in **Sections 3.1.2 and 3.2.2**. This includes defining minimum surface water allocation thresholds, associated penalty rates for unused allocations, groundwater tier thresholds, and tier specific fees. As with the other alternatives, these values can be adjusted annually to reflect hydrologic conditions, surface water availability, groundwater management objectives, CWD's policy priorities.

Clear administrative procedures should be established to govern how surface water penalties and groundwater fees are calculated, reviewed, and billed. Because a parcel group may incur charges under one or both program components in a given year, communication regarding how charges are calculated and combined is particularly important.

An exemption or adjustment process should be maintained to address situations such as fallowing, crop removal, or documented delivery constraints. Approved exemptions should be applied consistently across both surface water and groundwater components prior to final billing.

All charge calculations can be performed at the end of the irrigation season using verified delivery records and finalized demand estimates. As with the other alternatives, advance outreach to growers regarding program requirements, thresholds, and calculation methods is recommended prior to each irrigation season.

4.3.3 Calculation Overveiw

Under Alternative 3, total charges for each parcel group are calculated as the sum of surface water allocation penalties and groundwater extraction fees. Each component is calculated independently using the methods described in **Sections 3.1.3 and 3.2.3**.

The total charge for each parcel group is then calculated as:

$$\textit{Total Charge (\$)} = \textit{Surface Water Penalty (\$)} + \textit{Groundwater Extraction Fee (\$)}$$

Parcel-level results are aggregated to parcel groups prior to billing to align CWD's accounting and customer records. Approved exemptions or adjustments are applied before final charges are assessed.

4.4 Stakeholder Engagement

Successful implementation of any alternative will depend on clear, proactive, and sustained engagement with CWD stakeholders. Because the alternatives would introduce new allocation requirements, fees, and/or penalties, early and transparent communication is essential to build understanding, minimize confusion, and support for compliance.

Outreach efforts should include a combination of workshops, informational mailers, and web-based resources, such as frequently asked questions (FAQs), to reach a broad range of stakeholders. Workshops or informational meetings provide an opportunity to explain program objectives, walk through example calculations, and answer questions directly, while written and online materials allow users to reference key information throughout the irrigation season. Outreach materials should be written in clear, accessible language and updated as program details evolve.

A central component of stakeholder engagement should be explaining how data are used within program implementation. This includes describing what information is collected (e.g., surface water deliveries, irrigated acreage, and groundwater estimates), how those data are used to determine compliance, and when and how calculations are performed. Emphasizing that calculations are completed in arrears using verified records can help address concerns about uncertainty.

Transparency around program fees and the use of generated revenue is also critical. Growers should be informed not only of the allocation thresholds, fee tiers, or penalty rates, but also of the purpose behind them and how revenues may be reinvested to support CWD and Subbasin objectives. Examples may include funding groundwater recharge projects, improving conveyance infrastructure, supporting monitoring programs, or advancing other sustainability related investments. Clearly linking revenues to tangible local benefits can improve program acceptance and reinforce alignment with GSP objectives.

Ongoing engagement (beyond initial rollout) should be maintained to incorporate feedback, clarify procedures, and adjust program elements as needed. Establishing a clear point of contact within CWD for questions or appeals will further support transparency and help ensure that the program is administered consistently and equitably.

4.5 Example Phased Implementation Approach

Given the operational, administrative, and stakeholder considerations associated with implementing new water management programs, a phased implementation approach is recommended. As CWD plans to move forward with implementation of the Groundwater Extraction Fee Program (Alternative 2), that alternative will be used in this example implementation approach. Phasing would allow CWD to introduce alternative elements to the public, gain operational experience, and refine procedures before transitioning to a more comprehensive structure.

To reduce implementation risk and improve stakeholder transparency, CWD could begin implementation of Alternative 2 with a pilot or “beta test” group of participating growers for one or more irrigation seasons. During this pilot period, CWD could generate mock invoices that show estimated applied groundwater depth, tier placement, and associated fees, along with a structured process for grower review and correction of inputs (e.g., parcel groupings, irrigated acreage, surface water deliveries, or exemption status). This pilot structure would allow CWD to validate the selected estimation product, test internal workflows, and refine tier structures, fee rates, and exemption procedures before full implementation.

After one or more seasons of pilot testing, CWD could scale Alternative 2 to include all irrigated fields within CWD’s jurisdiction by applying the refined calculation, review, and billing processes developed during the pilot testing, and begin issuing invoices for accrued groundwater extraction fees. Following a period of full implementation of Alternative 2, CWD could then consider transitioning to Alternative 3,

the Combined Surface Water Allocation and Groundwater Extraction Fee program. At this stage, CWD may initiate a second, targeted pilot with a representative group of growers to introduce the surface water allocation component, including allocation thresholds, exemption procedures, and associated penalty calculations. This additional pilot would provide an opportunity to familiarize stakeholders with the surface water requirements, confirm data linkages between deliveries and parcel groupings, and refine administrative processes prior to full implementation of the combined program.

5 Conclusions

Implementation of the alternatives described in this TM represents a practical, locally controlled pathway for CWD to advance its long-term groundwater sustainability objectives. Each alternative provides a mechanism to encourage more efficient use of available surface water supplies and reduce reliance on groundwater extractions, while remaining grounded in data and operational tools already available to CWD. Taken together, these approaches offer CWD flexibility to select and tailor a program that aligns with local conditions, CWD's policy priorities, and evolving hydrologic realities.

A phased implementation strategy allows CWD to make near-term progress toward demand management and subsidence mitigation goals while minimizing administrative complexity and potential stakeholder impacts. Under the example approach described in this TM, CWD would begin by piloting the Groundwater Extraction Fee Program (Alternative 2) with a representative "beta test group of growers, including use of mock invoices and a structured review process to validate data linkages and refine procedures. Following one or more pilot seasons, CWD could scale Alternative 2 to cover all irrigated fields within its jurisdiction, using the finalized calculation and biling workflows. After a period of full implementation, CWD could then consider expanding to the Combined Surface Water Allocation and Groundwater Extraction Fee Program (Alternative 3) by introducing a second targeted pilot to familiarize growers with the surface water allocation component and associated exemptions and penalties prior to full implementation.

Continued coordination with other Subbasin GSAs will remain critical as these alternatives are implemented. Alignment with commitments in the GSP and MOU will also help ensure that actions taken by CWD will contribute effectively to the greater Subbasin's sustainability objectives and regulatory compliance under SGMA.

Appendix A. Chowchilla Water District Surface Water Incentive Program

TECHNICAL MEMORANDUM

To: Brandon Tomlinson, General Manager
Doug Welch, Water Resource Manager
Chowchilla Water District Groundwater Sustainability Agency
From: Davids Engineering, Inc.
Date: September 9, 2025
Subject: **Chowchilla Water District Surface Water Incentive Program**

Executive Summary

Chowchilla Water District (CWD or District) lies within the Chowchilla Subbasin (Subbasin) of the San Joaquin Valley and plays a critical role in delivering surface water to its growers for irrigation and recharge. Water supplies used for irrigation within CWD are a combination of surface water delivered by CWD from Buchanan Dam and the Madera Canal, supplemented by groundwater extracted by privately-owned wells. A nominal amount (up to 1,000 AF) of surface water is purchased in wet years from LeGrand-Athlone Water District. The Subbasin has experienced long-term groundwater overdraft, prompting the need for measures that encourage greater use of available surface water to offset groundwater extraction and support the Subbasin's Sustainable Groundwater Management Act (SGMA) compliance objectives. CWD is a Groundwater Sustainability Agency (GSA) in the Subbasin, responsible for implementing projects and management actions outlined in the Subbasin's Groundwater Sustainability Plan (GSP) to ensure long-term sustainability.

This Technical Memorandum (TM) presents three alternatives and three supporting strategies for CWD to consider in incentivizing surface water use and reducing groundwater extraction for irrigation.

The three **alternatives** are:

- **Alternative 1 – Surface Water Allocation Program**, which sets a minimum surface water use requirement per irrigated acre (annual surface water allocation), with penalties for use under the annual surface water allocation.
- **Alternative 2 – Groundwater Extraction Fee**, which applies a tiered fee structure to groundwater extraction above defined thresholds.
- **Alternative 3 – Combined Surface Water Allocation Program and Groundwater Extraction Fee**, which integrates Alternatives 1 and 2 to maximize incentives for surface water use and disincentives for groundwater extraction.

The three **supporting strategies** are:

- **Supporting Strategy 1 – Surface Water Access Expansion**, which extends conveyance infrastructure to parcels currently unserved by CWD.
- **Supporting Strategy 2 – Surface Water Quality Improvements**, which address grower concerns over debris and particulates in delivered surface water.

- **<u>Supporting Strategy 3</u> – Dual-Source Irrigation Systems**, which enable growers to switch between surface water and groundwater as needed and as available.

A comparative evaluation of these alternatives and supporting strategies considered implementation cost, staff effort, infrastructure improvements, potential groundwater extraction reduction, and potential revenue generation. Alternatives 2 and 3 offer the greatest potential for reducing groundwater use, with Alternative 3 providing the most comprehensive approach by addressing both the incentive to use available surface water and the disincentive to extract groundwater. Supporting strategies do not directly increase surface water use but can enhance the effectiveness of any alternative by removing barriers to surface water use.

Based on this analysis, Alternative 3 is the most effective long-term option, as it offers the greatest potential for increasing surface water use by combining incentives to use available surface water with disincentives to extract groundwater. Alternative 3 also supports the District in fulfilling commitments made in the Subbasin GSP, and initiates development of a formal groundwater demand management (GDM) program as a backstop to other PMAs. However, a phased approach is recommended. In a phased approach, Alternative 1 would serve as a near-term starting point, since it can be readily implemented with the District's existing tools and would allow CWD to begin shaping grower behavior while building administrative capacity. Over time, and if additional measures become necessary, the District could transition to Alternative 3, which will require coordinated policy development, robust measurement of both surface water and groundwater use, and careful stakeholder engagement to ensure equity and program success.

1 Introduction

Chowchilla Water District (CWD or District) is located in the San Joaquin Valley, in portions of Madera and Merced Counties, and overlies the Chowchilla Subbasin (Subbasin). The District delivers surface water to its growers for irrigation and recharge, who rely on both contracted surface water supplies as well as privately extracted groundwater to meet their consumptive use demands. CWD's surface water supplies are sourced from two primary systems:

- **Buchanan Dam / Chowchilla River**, which stores flows from the Chowchilla River. While owned and operated by the U.S. Army Corps of Engineers (USACE), Buchanan Dam is incorporated into the Central Valley Project (CVP), and CWD contracts with the U.S. Bureau of Reclamation (USBR) for surface water deliveries.
- **Friant Dam / Madera Canal**, which conveys San Joaquin River water stored in Millerton Lake. CWD holds USBR contracts for both Class 1 and Class 2 Friant Division water.
- **LeGrand-Athlone Water District,** which conveys Merced Irrigation District water to CWD by way of Dutchman Creek.

Groundwater extracted within the District comes from the Subbasin's unconfined upper aquifer located above the Corcoran Clay and a confined lower aquifer below the Corcoran Clay, as well as from undifferentiated areas where the Corcoran Clay layer is absent. While CWD does not operate groundwater wells for its own deliveries, groundwater is heavily relied upon by municipal systems, rural domestic wells, and agricultural producers through privately owned and operated wells.

The Subbasin is designated by the California Department of Water Resources (DWR) as a "critically overdrafted" subbasin and has experienced long-term groundwater overdraft, with groundwater levels declining in both aquifer zones over time. Under the Sustainable Groundwater Management Act (SGMA), the Subbasin's Groundwater Sustainability Agencies (GSAs) are required to halt overdraft and achieve groundwater sustainability by 2040. The Subbasin's 2025 Groundwater Sustainability Plan (GSP) outlines multiple projects and management actions (PMAs) to reach these goals, including efforts to maximize surface water use to offset groundwater extraction—a strategy known as in-lieu recharge. The 2025 GSP also includes the Demand Management Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU), which outlines the Subbasin GSAs' commitment to develop demand management programs and subsidence mitigation measures as a backstop to other PMAs (with specific triggers and financial mechanisms) as a means to mitigate potential impacts stemming from subsidence.

Despite the availability of surface water in many years, growers within CWD continue to rely on groundwater during periods when surface water is available, limiting the volume of in-lieu recharge. Increasing surface water use when supplies are available would reduce pressure on the Subbasin and improve long-term sustainability outcomes. This TM presents a set of alternatives and supporting strategies for CWD to consider for incentivizing surface water use and reducing groundwater extraction for irrigation. The alternatives are aimed at either directly discouraging groundwater use or enabling greater use of surface water within the District. These alternatives and supporting strategies are intended to support CWD GSA in supporting groundwater sustainability in the Subbasin and may also serve a role in fulfilling CWD GSA's commitments made in the MOU.

2 Alternatives for Surface Water Incentives

The following three alternatives were developed for CWD to address ongoing groundwater overdraft by encouraging the use of available surface water supplies in lieu of groundwater extraction. Each alternative represents a policy or program that could be implemented by the District to influence grower water use, either through establishing incentives for surface water use, increasing the cost of groundwater extraction, or a combination of both. The intent of these alternatives is to support CWD's SGMA objectives by reducing groundwater use by way of increasing in-lieu recharge. In addition, the alternatives are consistent with and could serve as early steps toward implementation of CWD's groundwater demand management (GDM) program and related subsidence mitigation measures identified in the Subbasin's 2025 GSP and memorialized in the MOU. For each alternative, a description is provided along with potential advantages and disadvantages of the alternative to assist CWD in evaluating the alternative for further study and potential implementation.

2.1 Alternative 1 – Surface Water Allocation Program

Under a surface water allocation program, CWD would establish a minimum volume of surface water per irrigated acre, per year, for each grower (i.e., a surface water allocation). The surface water allocation could be adjusted by CWD throughout the irrigation season based on available surface water supply or other conditions. For example, an early-season allocation may be set conservatively at 18 inches based on initial DWR forecasts, but later increased to 24 inches as forecasts are updated and supplies are confirmed. At the end of each irrigation season or calendar year, CWD would evaluate surface water usage by each grower. If surface water usage falls below the surface water allocation, the grower would be issued a penalty. Exemptions to penalties could be made under certain circumstances, such as allowances for fallowed land, orchard removal, or situations where no surface water was available at a given turnout during the irrigation season.

An example schematic of how the surface water allocation program could function is shown in **Figure 1**. This figure illustrates two scenarios: one in which a grower's annual surface water use falls below the surface water allocation threshold, resulting in a penalty, and another in which usage meets or exceeds the surface water allocation threshold, avoiding a penalty.

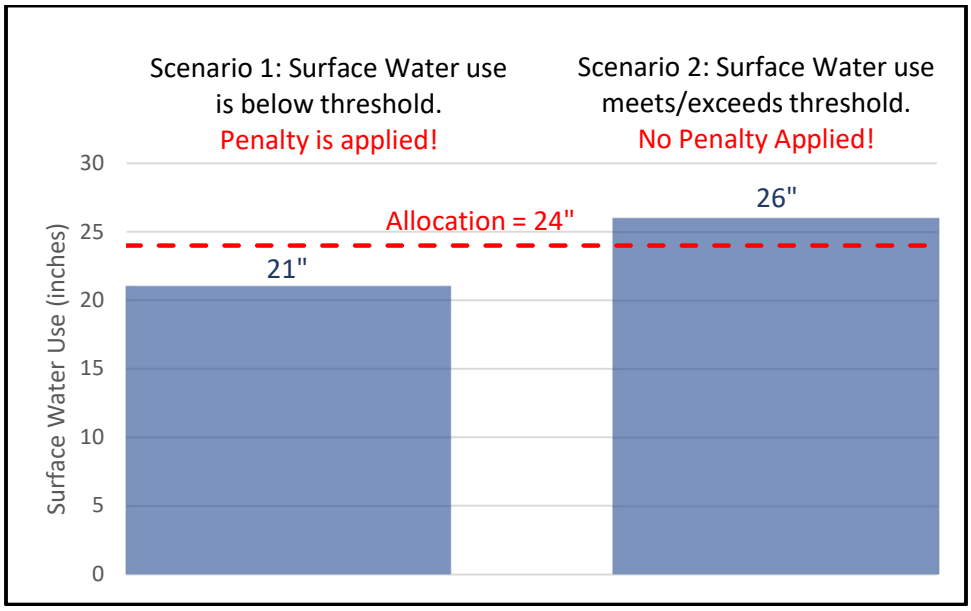

Figure 1: Example application of Alternative 1, comparing surface water use below and above the allocation threshold and the resulting penalty outcomes.

Revenues collected from penalties could be reinvested into groundwater recharge projects, infrastructure improvements, or other PMAs. To be effective, the penalty associated with the surface water allocation threshold should be set at a level that makes surface water usage financially competitive with groundwater extraction. As an example, the penalty should be set at a price higher than the current cost to pump within the District, estimated to be approximately $200 per acre-foot. Implementation of this alternative may require policy adoption and possibly some upgrades to turnout measurements to verify surface water delivery volumes.

This alternative offers several advantages in that it is relatively low cost to implement using current CWD infrastructure, surface water delivery data, staffing availability, and may be implemented quickly, potentially as soon as the following irrigation season. The alternative provides direct financial motivation for growers to use available surface water and has the added benefit of generating funds for other PMAs identified in the GSP. Grower resistance may arise if water quality concerns are not resolved or if conveyance infrastructure is lacking to deliver surface water to certain parcels, and successful implementation of the allocation program would also depend on the District's ability to track deliveries accurately and in a timely manner.

2.2 Alternative 2 – Groundwater Extraction Fee

An alternative to implementing a surface water allocation program is to implement a fee for groundwater extraction within the District. A groundwater extraction fee would establish a charge associated with private pumping above a maximum groundwater extraction threshold. The groundwater extraction fee could incorporate a tiered fee structure, for example: no fee for the first 24 inches of groundwater use, $400 per acre-foot for 24-36 inches, and $500 per acre-foot for 36-48 inches. Annual groundwater extraction volumes would be calculated in arrears and could be determined using flow meters installed on private pumps or estimated based on crop evapotranspiration using a remote sensing approach.

By establishing a cost of groundwater extraction, especially at higher usage levels, this alternative would encourage growers to use surface water when available and to shift toward less water intensive crops where feasible. It would also generate revenue that could be invested in recharge projects, system improvements, or other PMAs identified in the GSP. Implementation would require accurate and consistent measurement or estimation methods and administrative systems for billing and enforcement. In addition, legal counsel should be consulted regarding legal mechanisms and requirements associated with imposing a groundwater extraction fee.

The primary strength of this alternative is that it directly discourages excessive groundwater use and provides a sizeable and legitimate funding source for other PMAs identified in the GSP. A tiered fee structure allows for flexibility and a degree of fairness by not penalizing modest groundwater users. However, the administrative requirements for Alternative 2 are higher than that of Alternative 1, as accurate measurement or estimation of groundwater use is essential. The fee could also be perceived as punitive, which may reduce stakeholder support and make adoption more challenging.

Figure 2 provides an example of how the proposed tiered groundwater extraction fee structure could be applied under four different groundwater use scenarios. In this example, groundwater use is divided into three tiers: 0-24 inches ($0/AF), 24-36 inches ($400/AF), and 36-48 inches ($500/AF). In scenario 1, total groundwater use is below the Tier 1 threshold, resulting in no groundwater extraction fee. In scenarios 2 and 3, groundwater use exceeds the Tier 1 threshold, and the portion of use above 24 inches is subject to the Tier 1 fee. In scenario 4, groundwater use exceeds both the Tier 1 and Tier 2 thresholds, resulting in Tier 1 fees for use between 24 and 36 inches and Tier 2 fees for use above 36 inches.

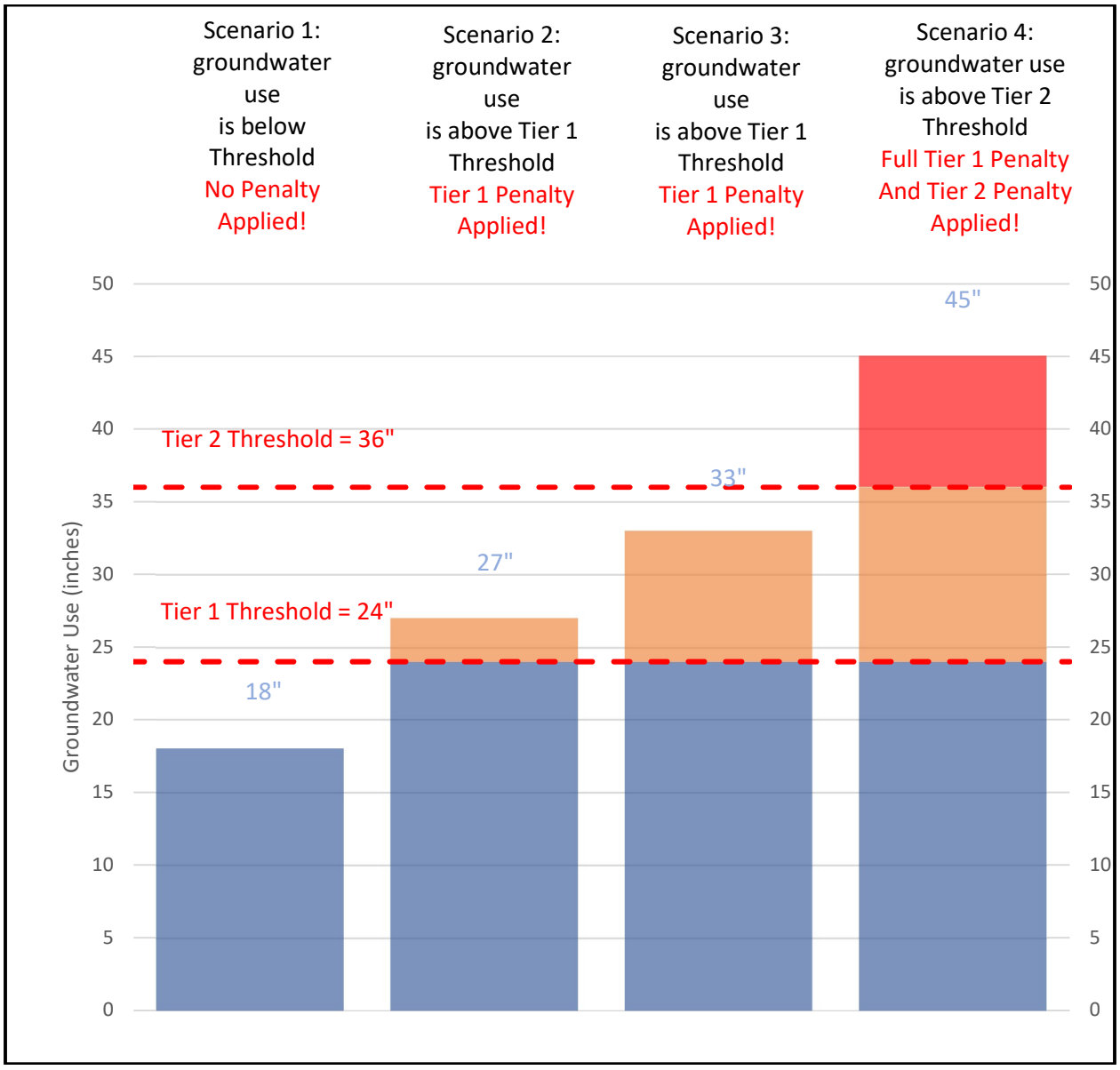

Figure 2: Example application of Alternative 2, comparing four scenarios where groundwater use is below and above the Tier 1 and Tier 2 Penalty Thresholds.

2.3 Alternative 3 – Combined Surface Water Allocation Program and Groundwater Extraction Fee

This alternative combines the fundamental principles of both the surface water allocation program (Alternative 1) and groundwater extraction fee (Alternative 2). Through this alternative, CWD would set a minimum surface water allocation per irrigated acre, per year, and a tiered groundwater extraction fee program, each with associated penalties or fees. For example, growers might be required to use a minimum of 12 inches of surface water annually and could extract up to 24 inches of groundwater without incurring a fee. Surface water usage below the surface water allocation would trigger a penalty, and groundwater use above the groundwater extraction threshold would be charged according to a tiered fee schedule.

This combined approach applies both a financial incentive to use available surface water and a disincentive to use groundwater (above a defined threshold), offering the greatest potential to increase surface water use when available and maximize revenue generation. Implementation would require tracking both surface water deliveries and groundwater extraction at the field level, which would likely increase administrative effort compared to either approach implemented individually.

The advantage of this alternative is its ability to address both components of the water supply equation—encouraging surface water use and discouraging groundwater extraction—at the same time. It also has flexibility, as the District could adaptively manage allocations, thresholds, and fee rates over time to respond to changing environmental conditions and surface water supplies. However, this option is also the most complex to administer and has the greatest potential for grower resistance, since growers could face penalties on both fronts. It would require careful policy design, reliable measurement systems for both surface and groundwater, legal counsel input, and likely a phased implementation timeline to ensure grower buy-in and, thus, successful implementation.

3 Supporting Strategies for Surface Water Incentivizes

In addition to the alternatives described in the previous section, CWD could pursue a set of supporting strategies aimed at enabling and encouraging greater surface water use within the District. While these strategies do not directly impose requirements or penalties, they address physical, operational, and logistical barriers that may currently limit surface water use by some growers. By expanding access, improving water quality, and increasing flexibility through dual-source irrigation systems, these measures could enhance the effectiveness of any chosen alternative and contribute to long-term groundwater sustainability. Importantly, these supporting strategies also align with and help advance CWD's commitments under the Subbasin Groundwater Sustainability Plan (GSP), including implementation of groundwater demand management (GDM) measures and subsidence mitigation actions outlined in the MOU.

3.1 Supporting Strategy 1 – Surface Water Access Expansion

Expanding surface water access within CWD would involve extending delivery infrastructure to parcels that are not currently served by the District's conveyance system but are within the District's irrigation service area. This may require constructing new turnouts, lateral extensions, or other distribution system improvements. Potential candidate parcels could be prioritized based on their proximity to existing conveyance facilities, the crop types grown (prioritizing higher consumptive use crops), and the hydraulic capacity of the canals serving those areas.

This supporting strategy could be implemented in phases. Initial efforts might target parcels already adjacent to existing infrastructure, while later phases could consider properties within 50 or 1,500 feet, where modest extensions could enable service.

The primary advantage of this supporting strategy is that it directly increases the number of growers who have the option to use available surface water, thereby raising the potential for in-lieu recharge and reduced groundwater extraction. However, the cost of infrastructure improvements could be significant, and the timeline for implementation may be prolonged by permitting and environmental requirements.

3.2 Supporting Strategy 2 – Surface Water Quality Improvements

Some growers in CWD have expressed reluctance to use available surface water in micro-irrigation systems due to the presence of debris, algae, and other organic material. These particulates can increase clogging, require more frequent backflushing of filters, and raise on-farm maintenance costs. While many growers already have sand media filtration systems in place, these challenges are particularly pronounced early in the irrigation season when debris loads are higher.

This supporting strategy could address those concerns through installation of centralized screening systems at main bifurcation points in the conveyance system. These screens would remove larger debris before water enters downstream laterals, reducing particulate loads at the grower level. While such improvements would require ongoing maintenance and periodic cleaning, they are relatively low-cost compared to system expansion and could substantially improve grower confidence in surface water quality.

Enhancing water quality could increase surface water use, especially among growers with high-efficiency irrigation systems, and could complement other alternatives and supporting strategies by removing a key barrier to participation.

3.3 Supporting Strategy 3 – Dual-Source Irrigation Systems

Dual-source irrigation systems allow growers to switch between surface water and groundwater depending on availability, quality, or crop needs. These systems typically involve separate pump and turnout connections tied into a common on-farm distribution network, along with controls to switch between sources as needed.

CWD could support adoption of dual-source irrigation systems through a phased incentive or rebate program, low-interest loans, or partnerships with other agencies. A program timeline could include initial outreach and education, application periods for cost-share funding, and installation deadlines. The District could target outreach to areas where surface water is intermittently available but not consistently relied upon, as these locations offer the greatest potential for increased surface water use.

The main benefit of this supporting strategy is flexibility. Growers can maximize surface water use when available, but still maintain the ability to meet crop water demands from groundwater if necessary. Over time, this flexibility could help normalize surface water use and facilitate grower participation in allocation or penalty programs. The primary drawbacks are the higher upfront cost for growers and the potential complexity of on-farm integration.

4 Comparison of Alternatives

The three alternatives and three supporting strategies vary considerably in their implementation requirements, administrative demands, infrastructure needs, annual implementation costs, and potential to increase surface water use and, conversely, reduce groundwater extraction. **Table 1** summarizes these parameters side-by-side for ease of comparison.

Among the alternatives, Alternative 1, the Surface Water Allocation Program, is the least expensive to implement, relying mainly on administrative setup, delivery tracking, and a policy framework for penalties. It has low ongoing staff effort and only minor potential infrastructure needs, such as improved turnout measurement. Alternative 2, the Groundwater Extraction Fee, has moderate implementation costs and requires moderate-to-high staff effort for groundwater usage monitoring, billing, and enforcement. While it does not require infrastructure improvements, it relies on groundwater extraction measurement or estimation methods such as remote sensing. Alternative 3, the Combined Surface Water Allocation Program and Groundwater Extraction Fee, has a cost profile similar to Alternative 2 and demands a comparable level of administrative oversight, but also requires the same potential infrastructure upgrades as Alternative 1.

Among the supporting strategies, Supporting Strategy 1, Surface Water Access Expansion, would require the most substantial capital investment due to the construction of new turnouts, laterals, or other conveyance extensions. It would also require moderate staff time for project planning and coordination. Supporting Strategy 2, Surface Water Quality Improvements, is relatively inexpensive to implement (by comparison) and involves only minor infrastructure additions, such as centralized screening equipment, with minimal ongoing staffing needs. Supporting Strategy 3, Dual-Source Irrigation Systems, represents a high-cost option on the grower side, but limited direct cost to the District beyond program administration and outreach, resulting in a low-to-moderate staff commitment.

When comparing the potential for increased surface water use, all three alternatives are expected to deliver significant benefits. Alternatives 2 and 3 have the greatest potential due to the strong disincentives they create for groundwater extraction, while Alternative 1 also offers meaningful reductions through direct encouragement of available surface water use. The supporting strategies generally provide moderate surface water use impacts by enabling or enhancing its use rather than directly mandating it.

Potential revenue generation further differentiates the options. Alternatives 2 and 3 provide the highest revenue potential through tiered groundwater extraction fees, while Alternative 1 offers more modest revenue from penalties associated with surface water use below the surface water allocation. The supporting strategies do not generate direct revenue but could amplify the effectiveness of whichever alternative is selected by reducing barriers to surface water use and expanding the number of growers who can participate.

Table 3: Qualitative Comparison of Alternatives and Supporting Strategies.

Alternative	Implementation Cost	Staff Effort	Infrastructure Improvements	Increased Surface Water Use	Potential Revenue Generation
Alternative 1 (**Surface Water Allocation Program**)	$	Low	Minor	💧 💧	$$
Alternative 2 (Groundwater Extraction Fee)	$$	Moderate-High	None	💧 💧 💧 💧	$$$
Alternative 3 (**Combined Surface Water Allocation Program and Groundwater Extraction Fee**)	$$	Moderate-High	Minor	💧 💧 💧 💧 💧	$$$
Supporting Strategy	**Implementation Cost**	**Staff Effort**	**Infrastructure Improvements**	**Potential Surface Water Use Increase**	**Potential Revenue Generation**
Supporting Strategy 1 (Surface Water Access Expansion)	$$$$	Moderate	Major	💧 💧 💧	N/A
Supporting Strategy 2 (Surface Water Quality Improvements)	$$	Low	Minor	💧 💧	N/A
Supporting Strategy 3 (Dual-Source Irrigation Systems)	$$$$	Low-Moderate	None (Only the Private Side)	💧 💧 💧	N/A

5 Discussion and Recommendations

The evaluation of three alternatives and three supporting strategies highlights a range of potential pathways for the District to encourage greater use of surface water and reduce groundwater extraction for irrigation. Alternative 1, the Surface Water Allocation Program, focuses on requiring a minimum level of surface water use, providing a relatively low-cost and quickly implementable mechanism to incentivize surface water use. Alternative 2, the Groundwater Extraction Fee, imposes a tiered fee structure on groundwater extraction above defined thresholds, directly discouraging groundwater extraction and generating significant potential revenue for reinvestment in PMAs identified in the GSP. Alternative 3 combines these two approaches, applying both a minimum surface water allocation and groundwater extraction fees, creating the greatest incentives and disincentives to shift behavior.

If the District elects to pursue **Alternative 1**, the next steps would include determining an appropriate surface water allocation threshold that balances grower flexibility with program effectiveness, adopting policies to authorize the program and to allow flexibility for a changing surface water allocation throughout the irrigation season, and ensuring accurate surface water delivery tracking. For **Alternative 2**, the District would need to establish the groundwater extraction fee structure and tier thresholds, seek legal counsel direction in doing so, determine the method for measuring or estimating groundwater use, and develop billing and enforcement procedures. Implementation would also require outreach to growers to explain the program and its purpose. For **Alternative 3**, the next steps would combine those for Alternatives 1 and 2, including concurrent policy development for both surface water allocation and groundwater extraction fee components, seeking legal counsel direction for doing so, establishing accurate measurement systems for both surface water and groundwater, and designing an integrated administrative process for tracking, billing, and enforcement.

Supporting strategies could be advanced alongside any of the alternatives to improve overall program effectiveness. Expanding surface water access would involve engineering, permitting, and environmental analysis for new conveyance infrastructure, while surface water quality improvements could be addressed through the installation of centralized screening systems. A dual-source irrigation system program would require program design and cost-share or incentive mechanisms to encourage on-farm adoption.

Based on the evaluation of each alternative detailed in this TM, DE recommends the District ultimately pursue Alternative 3. This alternative offers the greatest potential for increasing surface water use by combining incentives to use available surface water with disincentives to extract groundwater, thereby addressing both sides of the water balance. However, implementation would be best approached in phases. In the near term, Alternative 1 could be adopted using the District's existing tools to begin influencing grower behavior and build administrative capacity. A pilot version of Alternative 2 could then be tested to evaluate groundwater measurement and fee collection methods. These efforts would provide valuable experience and stakeholder feedback, laying the groundwork for full-scale implementation of Alternative 3. This phased approach would allow CWD to make immediate progress while preparing for implementation of a comprehensive GDM program as a backstop to other PMAs, positioning the District to meet both near-term sustainability goals and long-term SGMA compliance requirements.

Appendix B. Chowchilla Water District Surface Water Incentive Program – Potential Revenue Estimates

TECHNICAL MEMORANDUM

To: Brandon Tomlinson, General Manager
Doug Welch, Water Resource Manager
Chowchilla Water District Groundwater Sustainability Agency

From: Davids Engineering, Inc.

Date: February 20, 2026

Subject: **Chowchilla Water District Surface Water Incentive Program – Potential Revenue Estimates**

Executive Summary

Chowchilla Water District (CWD) lies within the Chowchilla Subbasin (Subbasin) and relies on a combination of available Central Valley Project (CVP) surface water supplies and privately pumped groundwater to meet irrigation demands. While surface water is available in many years, growers have historically relied on groundwater extractions to meet consumptive use needs, contributing to long-term declines in groundwater levels within the Subbasin. To address the declining groundwater levels and meet its commitments under the Chowchilla Subbasin Groundwater Sustainability Plan (GSP) and the Groundwater Demand Management and Subsidence Mitigation Memorandum of Understanding (MOU), CWD is evaluating policy options that promote greater use of available surface water and reduced groundwater extractions.

The analysis set forth herein was conducted to estimate the potential revenue CWD could hypothetically generate under three alternative policy frameworks designed to encourage the use of available surface water supplies and discourage groundwater extraction. The three alternatives evaluated include:

4. **Alternative 1 – Surface Water Allocation Program:** Establishes a minimum surface water use requirement (i.e., surface water allocation) per irrigated acre, with penalties assessed when actual surface water use falls below the surface water allocation.
5. **Alternative 2 – Groundwater Extraction Fee:** Implements a tiered fee structure for groundwater extraction above defined thresholds to discourage excessive groundwater extraction.
6. **Alternative 3 – Surface Water Allocation and Groundwater Extraction Fee:** Integrates both a surface water allocation and groundwater extraction fee to provide complementary incentives and disincentives.

Water Year (WY) 2023 provides a recent and accurate portrayal of CWD operations. Accordingly, all revenue estimates included in this Technical Memorandum (TM) are based on WYWY 2023 deliveries and hydrologic conditions, which reflect a year with ample surface water availability across CWD.

The analysis used parcel-level data on irrigated acreage, surface water use, and estimated groundwater extractions derived from remote-sensing and local operational datasets. Results show that each alternative could generate meaningful revenue while supporting groundwater sustainability objectives. As seen in Figure ES1, under WY 2023 conditions, the Surface Water Allocation Program could hypothetically have generated approximately **$6.8 million**, the Groundwater Extraction Fee approximately **$6.4 million**, and the Surface Water Allocation and Groundwater Extraction Fee Program up to approximately **$13.2 million** annually. While the Surface Water Allocation and Groundwater Extraction Fee Program alternative offers the strongest potential for groundwater reduction and revenue generation, it would also require the greatest administrative effort and stakeholder coordination.

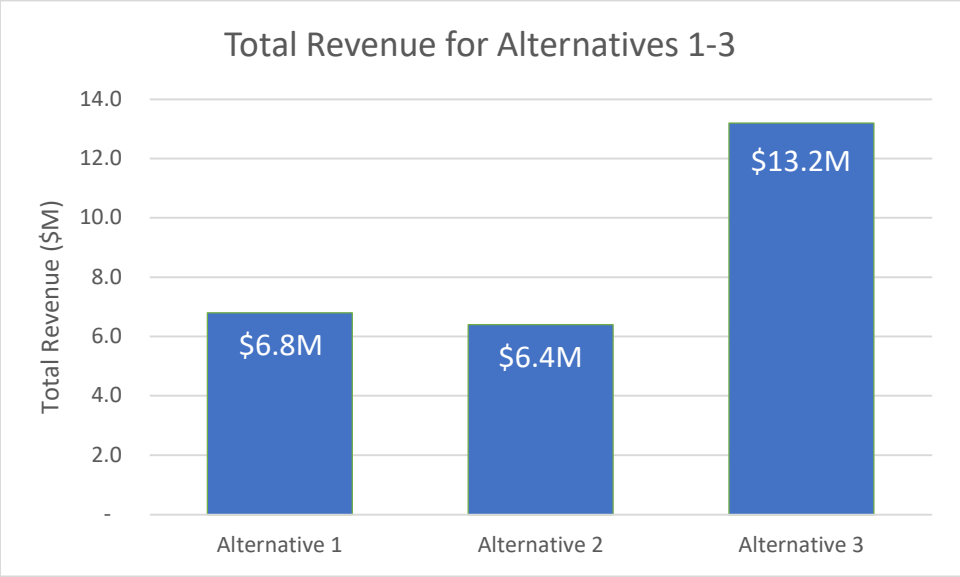

Figure ES3: Hypothetical revenue generated for Alternatives 1-3 under water year 2023 conditions.

Based on these findings, Davids Engineering, Inc. (DE) recommends a **phased implementation strategy** beginning with either the Surface Water Allocation Program or the Groundwater Extraction Fee, followed by a transition to the Combined Surface Water Allocation and Groundwater Extraction Fee Program as administrative capacity and data management systems mature. CWD is currently moving forward with implementation of the Groundwater Extraction Fee as the initial phase of this approach. This phased implementation strategy allows CWD, should they choose, to take immediate action toward meeting its GSP commitments while establishing a foundation for long-term groundwater sustainability and financial resilience.

1 Introduction

Chowchilla Water District (CWD) relies on a combination of contracted surface water supplies and privately extracted groundwater to meet irrigation demands within its service area. While surface water supplies from the Chowchilla River (via Buchanan Dam/Eastman Lake) and the San Joaquin River (via Friant Dam/Madera Canal) form the backbone of CWD's supply, groundwater remains a predominant source of irrigation water in many years. Long-term groundwater overdraft in the Chowchilla Subbasin (Subbasin) has resulted in declining groundwater levels, reduced groundwater storage, and localized subsidence, prompting the need for management consistent with the requirements of the Sustainable Groundwater Management Act (SGMA).

The Subbasin Groundwater Sustainability Plan (GSP) identifies several projects and management actions (PMAs) designed to reduce groundwater extraction and increase the use of surface water supplies for recharge, particularly through **in-lieu recharge**, in which growers apply available surface water instead of extracting groundwater. As a Groundwater Sustainability Agency (GSA) in the Subbasin, CWD has an important role in implementing PMAs and collaborating with the other Subbasin GSAs to meet sustainability targets and fulfill commitments related to the Groundwater Demand Management (GDM) Programs and Subsidence Mitigation Measures Memorandum of Understanding (MOU). CWD is fulfilling its commitment to the MOU by considering management actions that promote greater use of surface water when available and reduce groundwater extraction during normal and wet periods.

This Technical Memorandum (TM) documents an analysis conducted by **Davids Engineering, Inc. (DE)** to estimate potential annual revenue generation for CWD under three alternative policy alternatives specifically tailored to increase surface water use and reduce groundwater extraction. These alternatives represent a range of approaches that could be implemented individually or in combination to fulfill CWD's commitment in the MOU:

1. **Alternative 1 – Surface Water Allocation Program:** Establishes a minimum surface water use requirement (i.e., surface water allocation) per irrigated acre, with penalties assessed when actual surface water use falls below the surface water allocation.
2. **Alternative 2 – Groundwater Extraction Fee:** Implements a tiered fee structure for groundwater extraction above defined thresholds to discourage excessive groundwater extraction.
3. **Alternative 3 – Surface Water Allocation and Groundwater Extraction Fee:** Integrates both a surface water allocation and groundwater extraction fee to provide complementary incentives and disincentives.

The primary objective of this analysis is to provide a quantitative basis for comparing the revenue potential of each alternative, supporting future program design and implementation decisions by CWD. All potential revenue estimates presented herein are based on **Water Year (WY) 2023** deliveries and hydrologic conditions, which were selected because they are recent and reflect a year with ample surface water availability across CWD.

2 Data Sources

The revenue analysis set forth herein relied on a combination of data provided directly by CWD and datasets obtained from publicly available online sources. Data provided by CWD was used to describe physical and operational conditions within the service area, including irrigated acreage, surface water deliveries, and ownership groupings. Publicly available datasets were used to characterize field-level evapotranspiration (ET), land use, precipitation, and other agronomic conditions that influence irrigation demand and groundwater extraction estimates. Each of these data sources and its use in this analysis is described below.

2.1 Data Provided by CWD

The following datasets were supplied by CWD and represent operational information for CWD in WY 2023:

- **Parcel-Level Irrigated Acreage:**
  CWD maintains records of irrigated parcels within CWD's service area. These data were used to define the spatial locations of each parcel and to calculate the total acreage over which surface and groundwater volumes were applied.
- **Surface Water Deliveries:**
  Annual surface water delivery records, summarized by turnout and parcel, were provided by CWD. These data were used to quantify measured surface water deliveries to each parcel during WY 2023 and to identify parcels that used partial or full surface water allocations (in the analysis of Alternatives 1 and 3).
- **Ownership Groupings:**
  CWD's customer and ownership database was used to associate parcels with individual water users or management entities. This linkage allowed aggregation of parcel-level water use data to the grower level where appropriate for evaluating potential surface water allocation penalties or groundwater extraction fees (in the analysis of Alternatives 1-3).

2.2 Publicly Available Data

The following datasets were obtained from various publicly available sources.

2.2.1 Evapotranspiration

ET represents consumptive water use, the water lost to evaporation and plant transpiration. ET was estimated from **OpenET**, a multi-agency satellite-based platform that provides monthly 30-meter (m) resolution ET estimates. OpenET integrates multiple well-established remote-sensing models to produce ensemble ET estimates that are spatially and temporally consistent across the Subbasin. The WY 2023 ET estimates were used to calculate total consumptive water use for irrigated parcels within CWD's service area and to estimate groundwater extractions where surface water deliveries were insufficient to meet irrigation demand.

2.2.2 Land Use

Land use classifications for 2023 were obtained from a combination of statewide and regional mapping efforts, including the **California Department of Water Resources (DWR)** statewide land use surveys, and the United States Department of Agriculture (**USDA) CropScape Cropland Data Layer.**

These sources were combined to generate a 30 m grid coverage describing crop type and irrigation status for all agricultural lands within CWD's service area for WY 2023. Land use data were used to identify irrigated versus non-irrigated portions of parcels and to support estimation of irrigation demand by crop type.

2.2.3 Precipitation

Precipitation estimates were obtained from the **Parameter-elevation Regressions on Independent Slopes Model (PRISM)**, developed by the PRISM Climate Group at Oregon State University.

Monthly precipitation rasters at 4-kilometer (km) spatial resolution were downscaled to match the 30 m grid used for ET and land use data, allowing field-scale estimates of total precipitation. These data were used to calculate effective precipitation and to separate the portion of ET contributed by precipitation versus irrigation, thus supporting estimation of irrigation demand.

2.2.4 Other Agronomic Data

Additional agronomic parameters were applied to characterize typical irrigation system performance and soil conditions in CWD's service area. These included:

- Representative **consumptive use fractions and rooting depths** by crop type,
- **Conveyance and reuse efficiencies** for CWD, and
- **Soil properties** (e.g., available water-holding capacity, rooting depth, and infiltration characteristics) derived from the USDA Soil Survey Geographic (SSURGO) database.

These parameters were used to refine estimates of effective precipitation, irrigation demand, and groundwater extraction (after accounting for parcel-level surface water deliveries data), ensuring the analysis reflects realistic parcel-level conditions within CWD's service area.

3 Methodology

The purpose of this analysis was to estimate potential annual revenue generation under each of the three policy alternatives, each representing a different mechanism for encouraging surface water use and discouraging groundwater extraction. Calculations were performed using parcel-level data on irrigated acreage, surface water deliveries, and estimated groundwater extraction for **WY 2023**, representing a year in which surface water was ample across CWD. Parcel-level results were then aggregated by ownership into parcel groups to determine whether potential surface water allocation penalties or groundwater extraction fees should apply and to calculate total potential annual revenues under each alternative.

All potential penalties, allocations, and fees used in this analysis fall within the range of typical historical water use patterns and cost structures for CWD. However, it is emphasized that the specific fees and thresholds used in this analysis are examples; actual revenues will vary depending on the final program design and fee schedule adopted by CWD.

3.1 Alternative 1: Surface Water Allocation

Under Alternative 1, the Surface Water Allocation Program, a minimum surface water use requirement (i.e., surface water allocation) of 2 acre-feet per acre (AF/AC) was assumed for each irrigated parcel group. This surface water allocation was selected to represent a reasonable proportion of typical irrigation demands for crops within CWD and to align with years when surface water supplies are sufficient to meet a large portion of total irrigation demands.

For each parcel, the volume of unused surface water allocation (i.e., the penalty volume) was determined as:

$$\text{Penalty Volume (AF)} = \max\left(0, \text{Surface Water Allocation} - \text{Surface Water Deliveries}\right)$$

This difference was multiplied by the parcel irrigated acreage and a penalty fee of $200 per acre-foot (AF). The total surface water allocation penalty for each parcel was then calculated as:

$$\text{Surface Water Allocation Penalty (\$)} = \text{Penalty Volume (AF)} \times \text{Penalty Fee (\$/AF)}$$

Summing the results across all parcel groups provided an estimate of the total potential annual revenue generated under this alternative.

3.2 Alternative 2: Groundwater Extraction Fee

Under Alternative 2, the Groundwater Extraction Fee, a tiered fee structure was applied to groundwater extraction estimates exceeding defined thresholds.

Parcel-level groundwater extraction was first estimated based on an analysis of parcel-level irrigation demand. Total parcel-level irrigation demand was calculated using a spatial water accounting approach that integrates publicly available satellite-based ET, precipitation, and land use data (described in Section 2). For each 30 m grid cell within CWD, total irrigation demand was determined as the sum of consumptive use (ET), adjusted for effective precipitation. Effective precipitation was estimated using PRISM precipitation data, soil characteristics from the USDA SSURGO database, and crop-specific rooting depths, consistent with methods outlined in the U.S. Bureau of Reclamation and USDA National Engineering Handbook procedures. Available surface water deliveries were then distributed across irrigated parcels, and any remaining unmet irrigation demand was assumed to be met by groundwater extraction.

This spatial water accounting approach allows irrigation demand, surface water deliveries, and groundwater extraction to be quantified across CWD at a 30 m spatial resolution, providing parcel-level estimates suitable for use in the revenue and fee calculations described in this analysis.

Each parcel's estimated groundwater use was then categorized into three tiers, with incremental fees applied for groundwater extraction within each tier, as shown in **Table 1**.

Table 4: Penalty Fee Structure for Alternative 2: Groundwater Extraction Fee

Groundwater Extraction Tier	Groundwater Extraction (IN)	Groundwater Extraction (AF/AC)	Groundwater Extraction Tier Fee ($/AF)
Tier 1	0-24	0-2	No Fee
Tier 2	24-36	2-3	$200
Tier 3	36-48	3-4	$400

For each parcel group, the total groundwater use within each tier was calculated, and the applicable tier fee was applied. The total groundwater fee per parcel was computed as:

$$\text{Groundwater Extraction Fee (\$)} = \sum_i (\text{Groundwater Volume within Tier}_i) \times \text{Tier Fee}_i$$

Summing all parcel-level fees provided a total estimate of the potential annual revenue generated under this alternative.

3.3 Alternative 3: Surface Water Allocation and Groundwater Extraction Fee

Under Alternative 3, the Surface Water Allocation and Groundwater Extraction Fee Program, the two previous approaches are integrated, applying both a surface water allocation and a tiered groundwater extraction fee simultaneously. For each parcel, both the surface water penalty and groundwater fee were calculated as described above, and the total charge was determined as:

$$\text{Total Charge (\$)} = \text{Surface Water Allocation Penalty (\$)} + \text{Groundwater Extraction Fee (\$)}$$

Summing the results across all parcel groups provided an estimate of the total potential annual revenue generated under this alternative.

4 Results

The results of the revenue analysis quantify the total potential annual revenue that could be generated by CWD under each of the three policy alternatives based on the assumptions and methods given in Section 3. Results are summarized for **WY 2023**, representing a year with ample surface water supplies across CWD.

4.1 Alternative 1 – Surface Water Allocation Program

Out of a total of **383** parcel groups analyzed, **200** (approximately **52%**) would have incurred a surface water allocation penalty based on the assumptions and methods in Section 3.1. The **average delivery volume** among penalized parcel groups was **1.46 AF/AC**, resulting in a **total penalty volume of**

approximately 34,000 AF. Applying the $200 per acre-foot penalty fee, the **total potential annual revenue** generated from penalties under this alternative was approximately **$6.8 million**.

The results of Alternative 1 are summarized in **Table 2**, which presents the total penalty volume, penalty fee, and total potential annual revenue generated from parcels falling below the surface water allocation (i.e., the surface water allocation penalty) in WY 2023.

Table 5: Summary of Alternative 1 Total Penalty Volume, Penalty Fee, and Total Potential Annual Revenue (WY 2023).

Total Penalty Volume (AF)	Penalty Fee ($/AF)	Total Potential Annual Revenue ($)
34,000	200	6,800,000

4.2 Alternative 2 – Groundwater Extraction Fee

Out of the **383** total parcel groups analyzed, **155** (approximately **40%**) would incur groundwater extraction fees based on the assumptions and methods in Section 3.2. Based on assumptions and conditions in WY 2023, a total of approximately 73,000 AF of groundwater extraction occurred within Tier 1 (no fee), while approximately 17,000 AF and 7,000 AF occurred in Tiers 2 and 3, respectively. This resulted in a total of approximately 24,000 AF of groundwater extractions that are subject to fees, resulting in an estimated total potential annual revenue of approximately $6.3 million under this alternative.

The results of Alternative 2 are summarized in **Table 3**, showing the applied tier fees, groundwater volumes within each tier, and the total potential annual revenue hypothetically generated in WY 2023.

Table 6: Summary of Alternative 2 Tier Fees, Groundwater Volumes, and Total Potential Annual Revenue (WY 2023).

	Groundwater Volume within Tier (AF)	Tier Fee ($/AF)	Total Potential Annual Revenue ($)
Tier 1	73,000	0	0
Tier 2	17,000	200	3,400,000
Tier 3	7,000	400	3,000,000
Total	97,000	-	6,400,000

4.3 Alternative 3 – Combined Surface Water Allocation and Groundwater Extraction Fee

The Combined Surface Water Allocation and Groundwater Extraction Fee Program applies both the surface water allocation and the groundwater extraction fee simultaneously. Under these assumptions, the total potential annual revenue equals the sum of the penalties and fees applied under Alternatives 1 and 2.

Using the same fees and thresholds described previously, the **combined total potential annual revenue** is estimated at **$13.1 million in WY 2023**, representing the maximum potential financial return of the

alternatives evaluated. This approach provides the strongest combined incentive to increase surface water use and decrease groundwater extractions but would also require the greatest administrative complexity.

A comparison of the total revenues generated under each alternative is provided in **Table 4**. These results show the cumulative effect of implementing both a surface water allocation and a groundwater extraction fee.

Table 7: Summary of Total Potential Annual Revenue Under Each Alternative (WY 2023).

Alternative 1 Revenue ($)	Alternative 2 Revenue ($)	Alternative 3 Revenue ($)
6,800,000	6,400,000	13,200,000

5 Discussion and Recommendations

The results of this analysis indicate that each of the three proposed policy alternatives could provide meaningful benefits toward increasing surface water use, reducing groundwater dependence, and generating additional revenue to support long-term sustainability efforts. The Surface Water Allocation Program (Alternative 1) offers a straightforward and low-cost mechanism for incentivizing growers to use surface water when it is available. Its relative simplicity makes it well-suited for near-term implementation using existing delivery records and administrative procedures. Additionally, the results of this analysis demonstrate that a relatively modest surface water allocation threshold and penalty fee could generate meaningful revenue while strongly incentivizing increased use of available surface water. In contrast, the Groundwater Extraction Fee (Alternative 2) provides a more direct tool for managing groundwater demand and generating consistent revenue but would require methods to estimate groundwater extractions in order to implement. The Surface Water Allocation and Groundwater Extraction Fee (Alternative 3) achieves the greatest potential impact by applying both incentives and disincentives simultaneously, reinforcing behavioral change on both the surface and groundwater sides of the balance, though at a higher level of administrative complexity. This alternative also represents the maximum potential annual revenue generation scenario, combining both incentives to utilize available surface water and disincentives to rely heavily on groundwater extractions.

While each alternative provides distinct advantages, their implementation difficulty varies considerably. Alternative 1 could be initiated with minimal policy changes and limited new data infrastructure, allowing CWD to begin influencing water use behavior quickly. Alternative 2 would require either field-level metering or robust groundwater use estimation methods but would produce stronger behavioral and financial outcomes. Alternative 3 would require integration of both datasets and policies, making it the most comprehensive but also the most demanding to administer. Importantly, all three approaches are compatible with CWD's commitments under the GSP, including the groundwater demand management and subsidence MOU, by promoting in-lieu recharge and reducing groundwater extraction during years of surface water availability.

Based on these findings, DE recommends a phased implementation strategy that builds toward the combined program over time. CWD is currently moving forward with implementation of the Groundwater Extraction Fee (Alternative 2) as the initial phase, which allows CWD to establish the billing, compliance review, and demand accounting processes needed for a long-term program while

immediately advancing GSP objectives. As data systems mature and stakeholder familiarity increases, CWD can add a Surface Water Allocation component and transition toward Alternative 3. This approach enables near-term action while positioning CWD for long-term success in achieving groundwater sustainability.

Based on these findings, it is recommended that the CWD adopt a phased implementation strategy. CWD could begin by implementing either the Surface Water Allocation Program or the Groundwater Extraction Fee, depending on data readiness and administrative capacity. This would allow for early progress toward GSP objectives while building experience and stakeholder confidence. Over time, as data systems and policy frameworks mature, CWD could transition to a combined Surface Water Allocation and Groundwater Extraction Fee program that applies both allocation and extraction components. This phased approach offers a practical and flexible path forward, ensuring near-term action while positioning CWD for long-term success in achieving groundwater sustainability.

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Appendix A.2. Madera County GSA Demand Management Program

Excerpt from Chowchilla Subbasin GSP Water Year 2025 Annual Report (April 2026)

Madera County GSA currently administers a comprehensive demand management program – with associated allocation, penalties, recharge policies, and land fallowing as a byproduct of other policies – that will oversee a managed reduction in the volume of groundwater consumed by irrigated agriculture within the Madera County GSA area over the 20-year GSP implementation period. Since adoption of the groundwater allocation approach in 2020, Madera County GSA has proceeded with program development and implementation to incrementally reduce groundwater consumption across the Madera County GSA-managed portion of the Subbasin (and the Madera and Delta-Mendota Subbasins). The demand management program is applicable to lands within its jurisdictional area in the Subbasin, and represents Madera County GSA's mandatory measure under the GDM and Subsidence Mitigation Measures framework.

This program is expected to support sustainable groundwater management by gradually limiting groundwater extraction within the Madera County GSA areas to the sustainable yield of the Subbasin, accomplished by gradually reducing the transitional water to 0 AF per acre by 2040. In total, this is estimated to reduce demand to approximately 22,500 AF by 2040 for the Madera County GSA in the Chowchilla Subbasin. The targeted volume of demand reduction was determined through an analysis of the basin setting and water budget, consistent with the Subbasin GSP, with the goal of mitigating overdraft within the Madera County GSA area and achieving the sustainable yield by 2040.

To implement the demand management program, Madera County GSA has:

- Conducted a water market study (completed in 2021),
- Initiated work on a Voluntary Land Repurposing Program (VLRP) and a Multibenefit Land Repurposing Program (MLRP),
- Developed and implemented an allocation program, which is now being tracked and enforced with associated penalties, and
- Developed and implemented a structured demand measurement program (i.e., monitoring and reporting system) that enables accurate tracking of groundwater consumption and compliance across the Madera County GSA-managed areas.

The following sections briefly describe the VLRP, MLRP, the allocation program, and the demand measurement program.

Together with the other GSAs in the Subbasin, the Madera County GSA has also developed the GDM and Subsidence Mitigation Measures framework, with voluntary measures for immediate implementation and mandatory measures with trigger conditions to mitigate subsidence in the Subbasin.

Voluntary Land Repurposing Program (VLRP) and Multibenefit Land Repurposing Program (MLRP). Since initial Subbasin GSP development, the Madera County GSA received grant funding to explore the feasibility of adopting a sustainable agricultural land conservation (SALC) easement program within the Madera County GSA. The SALC program has since been referred to as the Voluntary Land Repurposing Program (VLRP). The VLRP aims to develop criteria for identifying and prioritizing agricultural land for protection, and to develop an incentive structure for agricultural landowners to rest, retire, restore, or permanently protect their land via various types of water-centric conservation easements.

Madera County GSA developed the VLRP through a stakeholder-driven process in 2020-2022, involving multiple public workshops and meetings, stakeholder interviews, and outreach with conservation groups. Details about this process are documented in previous Annual Reports. Rules and criteria for implementing the VLRP were approved by the Madera County GSA in December 2022. However, due to the failure of the Proposition 218 process, the Madera County GSA in the Subbasin is unable to fund the program at this time.

Stakeholders in the Madera County GSA do have the opportunity to participate in a grant-funded Multibenefit Land Repurposing Program (MLRP), which has received applications for projects in the Chowchilla, Madera, and Delta-Mendota Subbasins. The Multi-Benefit Agricultural Land Repurposing Plan (MALRP) was approved by the Board of Supervisors in October 2024. Since then, a call for projects was made in November 2024, resulting in a total of 72 pre-applications for potential projects. In 2025, 70 projects moved forward to complete full applications and 28 full applications were received. After the selection process in 2025, six projects were chosen to represent a diverse portfolio and support maximum benefits for the MLRP. Those projects will begin construction and implementation in 2026. The Madera County GSA is continuing GSP implementation and is seeking ways to reduce implementation costs (e.g., grants, refinements) and to secure alternate local funding to successfully implement PMAs, with stakeholder input and discussion *(see Section 7.1.5.1 of the Chowchilla Subbasin GSP Water Year 2025 Annual Report)*.

Demand Management Program. Individual components of the demand management program are described below, including the allocation, penalties, and recharge policies, and demand measurement program. Through these interrelated components, the demand management program is expected to result in a large reduction in groundwater pumping, but at the cost of reduced crop production and related economic activities in Madera County. Madera County GSA has observed landowner responses to the demand management program thus far, and initial data shows promising reductions in ETAW from actions in 2023-2025. However, the precise costs and benefits of these demand management efforts are still being quantified and are expected to be reported in future GSP evaluations and updates as well as future Annual Reports.

Allocation, Penalties, and Recharge Policies. The allocation framework at the center of the demand management program was initially adopted by the Madera County GSA Board of Directors through resolutions in December 2020, June 2021, and August 2021 that describe "per-acre" allocations and rules for credits. The Madera County GSA Board of Directors approved penalties for groundwater use in excess of these allocations in 2022. Links to the resolution documents are provided in previous Annual Reports.

Madera County GSA has been enforcing the approved allocations since 2022. In 2025, allocations remained in place and were tracked and enforced with associated penalties in the Madera County GSA (within the Chowchilla, Madera, and Delta-Mendota Subbasins) through measurements of groundwater use by approved measurement methods (described in the following section). In 2025, Madera County GSA adopted a resolution establishing allocation amounts in 2026-2040 due to farmer requests.

Madera County GSA has included certain refinements to the framework over time, allowing “farm units” (i.e., fields irrigated from the same well that are grouped and considered together in enforcement of the allocation) to be changed at the end of the calendar year, and allowing never-irrigated lands to opt-in in November of each year. A formal policy for allocation of carryover credits and penalties during farm unit reorganization was adopted in 2025.

Madera County GSA is also implementing recharge policies (approved through Resolution 2024-030) that credit recharge benefits to the allocation of areas where recharge occurred. One policy is related to recharge of surface water derived from a water right or contract, and one policy is related to recharge of surface water derived from an approved diversion during a flood event. Both policies have a “floor” of a 75% recharge credit and a "ceiling" of 90% recharge credit depending on data specific to the land on which the recharge occurred. The recharge credit is limited to the aquifer in which recharge occurred.

Per Resolution 2022-143, the penalties for exceeding the allocation include $1,000 per farm unit for those that have exceeded the authorized amount, in addition to a $300 per AF penalty for water use over the allocation in 2025 (penalties started at $100 per AF in calendar year 2023, increasing by $100 per AF per calendar year to a maximum of $500 per AF for water use over the allocation). Penalties collected in the Subbasin go towards funding Madera County GSA's portion of the DWMP. Enforcement of the allocation is incorporating adjustments to account for recharge credits, land fallowing credits, and successful appeals in the future.

Additional information about the allocation enforcement process is described as part of the demand measurement program, below.

Demand Measurement Program. As described in prior Annual Reports, Madera County GSA has continued to implement a demand measurement program to support implementation of the GSA’s allocation program. The main objective of the demand measurement program is to use, evaluate, and establish rules and processes for demand measurement options that are permitted to track ETAW against the allocation established in the Madera County GSA area (described in the previous section).

Three approved demand measurement options were available to growers in the Madera County GSA for allocation enforcement in 2025:

- IrriWatch approach (remote sensing approach that quantifies ETAW from satellite imagery using the Surface Energy Balance Algorithm for Land (SEBAL) algorithm)
- Land IQ approach (remote sensing approach, similar to IrriWatch, that quantifies ETAW from land use and satellite imagery)
- Use of approved flowmeters that are installed correctly and calibrated regularly. Although Madera County GSA is not responsible for installing flowmeters, Madera County GSA has adopted pre-approval processes for the use of private meters as a means of allocation tracking and enforcement. The adopted processes are intended to ensure correct installation and maintenance of flowmeters and their accuracy. In 2025, Madera County GSA adopted a meter rule refinement policy.

The Madera County GSA has allowed and developed an appeals process for growers who have elected to use the IrriWatch and Land IQ approaches. In 2023, Madera County GSA revised the rules for appealing the determination of use of the allocation through Resolution 2023-150. In early 2024, Madera County GSA also approved recharge credit policies that would credit recharge benefits to the allocation of areas where recharge occurred (described above). Enforcement of the allocation is incorporating adjustments to account for recharge credits, land fallowing credits, and successful appeals in the future.

Since the previous Annual Report, Madera County GSA circulated a request for proposals for new contracts for measurement methods, as the GSA's contracts with IrriWatch and Land IQ both expired at the end of 2025. Questionnaires were also sent to growers to solicit their choice of measurement methods. Updates will be provided in future Annual Reports.

Additional information regarding the demand measurement program is available on the Madera County website: https://www.maderacountywater.com/measurement/.

Appendix A.3. Triangle T Water District GSA Subsidence Control Measures Agreement

Excerpt from the 2025 Revised Subbasin GSP, Section 3.3.3.7 (with additions on the operating agreement in February 2026)

3.3.3.7.2 Subsidence Control Measures Agreement

The minimum thresholds (MTs) for land subsidence in the Subbasin, specifically the Western Management Area (WMA), were established to be consistent with the Subsidence Control Measures Agreement (initial Agreement) between certain landowners in the WMA of the Subbasin, the Central California Irrigation District (CCID), San Luis Canal Company, and Henry Miller Reclamation District #2131. Landowners that entered into the initial Agreement collectively manage more than 14,000 acres in the WMA. A copy of the initial Agreement is provided in Appendix 3.F *(of the 2025 Revised Subbasin GSP)*. The initial Agreement was executed in 2017 and was in effect from 2017-2021. The parties have worked under short term extensions in the time since the initial Agreement.

The provisions of the initial Agreement were designed to mitigate subsidence and avoid undesirable results to beneficial uses and users and critical infrastructure in the Subbasin and the adjacent Delta-Mendota Subbasin. The expressed purpose of the initial Agreement is to:

1. Reduce the use of groundwater from the Lower Aquifer. Loss of groundwater storage and associated reduction in pore pressures in clay layers in the Lower Aquifer (indicated by lowering groundwater levels) is understood by all parties to lead to conditions that cause and/or exacerbate land subsidence. The relationship between loss of groundwater storage and associated reduction in pore pressures in clay layers, lowering groundwater levels, and land subsidence is a central and common point of understanding between all parties who signed the initial Agreement, including the Expert Panel established under the Agreement.

2. Facilitate the distribution and use of surface water in areas of the Subbasin that are managed by participating landowners to reduce groundwater extraction (particularly from the Lower Aquifer), reduce subsidence, recharge the Upper Aquifer, and mitigate effects to critical infrastructure, including Sack Dam and the Poso Canal. Both systems are gravity-flow systems that are vulnerable to capacity reductions due to land subsidence and may require significant operational changes if subsidence continues unabated (e.g., pumping, relocation or reconstruction of diversion infrastructure).

Under the initial Agreement, parties in the Subbasin are required, among other provisions, to restrict the amount of groundwater they pump from the Lower Aquifer and to report, under penalty of perjury, the amounts of groundwater pumped, the source of that groundwater (Upper Aquifer or Lower Aquifer), the amounts recharged, the amounts of surface water used for irrigation, and other information about their irrigated acreage and crops. Parties in the Subbasin are also required to implement projects that increase use of surface water for irrigation (providing in-lieu recharge benefits to the Lower Aquifer) and increase use of surface water for direct recharge (increasing storage in the Upper Aquifer to support sustainable use of groundwater from the Upper Aquifer instead of the Lower Aquifer).

The initial Agreement also requires evaluation of the Lower Aquifer safe Yield by an Expert Panel to determine the allowable amount of pumping from the Lower Aquifer that can occur without causing

continuation of subsidence. While this Safe Yield evaluation was being conducted, the initial Agreement set specific limits for Lower Aquifer pumping as follows: 0.9 acre-feet per acre (AF/ac) in 2017, 0.75 AF/ac in 2018, 0.65 AF/ac in 2019, 0.6 AF/ac in 2020, and 0.5 AF/ac in 2021. Following completion of the Lower Aquifer Safe Yield Study by the Expert Panel, the annual limits and future allowable groundwater pumping amounts from the Lower Aquifer were modified in accordance with Expert Panel findings. The most recent Draft 2022 Expert Panel Report prepared in April 2023 is provided in Appendix 3.F *(of the 2025 Revised Subbasin GSP)*.

Since the initial Agreement was signed in 2017, parties to the Agreement have successfully constructed facilities to supply and distribute surface water to users in the Subbasin. Despite the dry start to the GSP implementation period and through the actions and infrastructure improvements performed in accordance with the initial Agreement, more than 25,000 AF of surface water has been delivered to participating landowners in the Subbasin since 2018. Annual volumes are reported in Section 4.6.4 *(of the 2025 Revised Subbasin GSP)*. This surface water has provided direct benefits to participating landowners for irrigation and groundwater recharge in an area that has historically relied solely on groundwater pumping, resulting in reduced pumping and helping to mitigate subsidence.

Landowners in the Subbasin that are party to the Agreement have also consistently fulfilled their obligation to report, under penalty of perjury, the amounts of groundwater pumped, the source of that groundwater (Upper Aquifer or Lower Aquifer), the amount recharged, the amounts of surface water used for irrigation, and other information about their irrigated acreage and crops. Table 3-11 provides a summary of groundwater pumping, surface water use, and irrigated acreage from the Draft 2022 Expert Panel Report *(Appendix 3.F of the 2025 Revised Subbasin GSP).* Beginning in 2017, participating landowners in the Subbasin have reduced pumping from the Lower Aquifer, including shifting considerable pumping from the Lower Aquifer to the Upper Aquifer. Each year since signing the initial Agreement, the participating landowners have collectively reported pumping between 0.13 and 0.50 AF/ac from the Lower Aquifer, less than the specified limits for Lower Aquifer pumping in the initial Agreement. Use of surface water during years it has been available has also provided between 0.66 and 1.76 AF/ac of benefit to those irrigated lands, providing direct recharge to the Upper Aquifer and offsetting demand for groundwater.

Efforts under the initial Agreement have already been successful for mitigating subsidence in the TTWD area of the WMA. Annual vertical displacement rates in the Subbasin, as reported from InSAR data, indicate a relative decrease in the rate of subsidence within Triangle T Water District since approximately 2017, as compared with rates of subsidence in surrounding areas *(see Section 2.2.2.4 of the 2025 Revised Subbasin GSP).*

The parties are currently in the process of negotiating an operating agreement consistent with the overall approach to groundwater extraction limits and subsidence mitigation as described in the initial agreement. The operating agreement covers issues including commitments through 2040 related to surface supply, facility operations and expansion, and operations in compliance with the groundwater demand management (GDM) and subsidence mitigation measures memorandum of understanding (MOU), as described in 2025 Revised Subbasin GSP.

Table 3-11. Reported Groundwater Use, Surface Water Use, and Total Water Use by Chowchilla Subbasin Landowners that are Signatories to the Subsidence Control Measures Agreement.[1]
(from the 2025 Revised Subbasin GSP)

Description	2017	2018	2019	2020	2021	2022
Total Groundwater Use (AF)	**17,089**	**27,764**	**23,988**	**30,478**	**34,744**	**34,851**
Lower Aquifer Pumping (AF)	***1,777***	***6,978***	***1,770***	***5,355***	***5,262***	***6,036***
Upper Aquifer Pumping (AF)	***15,312***	***20,786***	***22,218***	***25,123***	***29,482***	***28,815***
Total Surface Water Use (AF)	22,653	10,244	24,798	9,329	0	1,444
Surface Water Purchases (AF)	*0*	*8,279*	*10,746*	*9,329*	*0*	*1,444*
Surface Water Diversions, Fresno River (AF)	*15,666*	*620*	*11,007*	*0*	*0*	*0*
Surface Water Diversions, Eastside Bypass (AF)	*6,987*	*1,345*	*3,045*	*0*	*0*	*0*
Total Water Use (AF)	39,742	38,008	48,786	39,807	34,744	36,295
Total Irrigated Area (ac)	13,911	13,911	14,111	14,111	14,111	14,111
Total Groundwater Use (AF/ac)	**1.23**	**2.00**	**1.70**	**2.16**	**2.46**	**2.47**
Lower Aquifer Pumping (AF/ac)	***0.13***	***0.50***	***0.13***	***0.38***	***0.37***	***0.43***
Upper Aquifer Pumping (AF/ac)	***1.10***	***1.49***	***1.57***	***1.78***	***2.09***	***2.04***
Total Surface Water Use (AF/ac)	1.63	0.74	1.76	0.66	0.00	0.10
Surface Water Purchases (AF/ac)	*0.00*	*0.60*	*0.76*	*0.66*	*0.00*	*0.10*
Surface Water Diversions, Fresno River (AF/ac)	*1.13*	*0.04*	*0.78*	*0.00*	*0.00*	*0.00*
Surface Water Diversions, Eastside Bypass (AF/ac)	*0.50*	*0.10*	*0.22*	*0.00*	*0.00*	*0.00*
Total Water Use (AF/ac)	2.86	2.73	3.46	2.82	2.46	2.57

[1] Source**: Appendix 3.F** *(of the 2025 Revised Subbasin GSP)*. Draft 2022 Expert Panel Report ("2022 Monitoring Data for the Sack Dam-Red Top Area"), **Table S3**-Subsidence Abatement Agreement Summary.

Landowners in the Subbasin that are party to the initial Agreement are committed to fulfilling the obligations under the Agreement. Fulfillment of these obligations is expected to also support sustainable groundwater management in the Subbasin in accordance with the SMC established in this GSP. Actions under the Agreement are expected to help maintain groundwater levels in the Lower Aquifer at or above recent historical levels, thereby avoiding undesirable results related to land subsidence. Compliance with the Agreement will help avoid undesirable results to infrastructure – including Sack Dam, Poso Canal, and other waterways in the WMA – as well as other beneficial uses of land and groundwater in the surrounding region. The initial Agreement has already provided significant and measurable benefits to the Subbasin. The outcomes and effectiveness of the Agreement will continue to be evaluated, and will be reported in subsequent periodic GSP updates and Annual Reports as more is known.

3.3.3.7.3 Other Subsidence Control Measures in the Western Management Area

Outside of areas managed under the Agreement, the GSAs in the Subbasin plan to couple their GSP projects and implementation efforts with provisions that complement and are consistent with the Agreement.

For example, Madera County GSA and TTWD GSA are developing large, coordinated groundwater recharge projects in the WMA that will enhance groundwater storage in the Upper Aquifer. The GSAs will be executing agreements with participating landowners as part of these projects. In these agreements the GSAs plan to include provisions that only permit the recovery of project groundwater recharge benefits from wells in the Upper Aquifer, where the recharge from the projects will be occurring. These provisions will effectively reduce groundwater extraction from the Lower Aquifer and shift extraction to the Upper

Aquifer, similar to the Agreement, and are anticipated to reduce subsidence rates in parts of the WMA outside of the TTWD GSA. Together, the combined benefit area of these projects and the lands managed under the Subsidence Control Measures Agreement represent the majority of land within the WMA (Figure 3-9).

As an example of the recharge projects described above and recent progress, as of early 2024, the Madera County GSA has developed recharge credit policies (Madera County GSA Resolution No. 2024-030[2]) that credit recharge benefits to the allocation of areas where recharge occurred. Madera County GSA Resolution No. 2024-030 includes two policies: one related to recharge with surface water that is purchased, and one related to recharge with water derived from an approved diversion during a flood event. Both policies have a "floor" of a 75% recharge credit and a "ceiling" of 90% recharge credit depending on data specific to the land on which the recharge occurred.

Of specific importance in both policies is term 5. Term 5 was intentionally included such that extraction of the recharge credit shall be limited to the aquifer in which recharge water was percolated. Recognizing the presence of the Corcoran Clay in the Subbasin and subsidence resulting from the extraction of groundwater from below the Corcoran Clay, this is a critically important provision to avoid the proliferation of subsidence in areas where recharge takes place. If recharge took place in the upper aquifer where the Corcoran Clay is present, extraction too must occur in the upper aquifer. Additionally, both policies state that as of January 1, 2025, any well that has been screened both above and below the defined Corcoran Clad layer shall be considered to be extracting from below the Corcoran Clay. Term 5 is consistent with the well documented and successful TTWD Subsidence Control Measures Agreement that is discussed in more detail in Section 3.3.3.7.2 and in Appendix 3.F *(of the 2025 Revised Subbasin GSP).*

While development of these groundwater recharge projects is ongoing, the GSAs will continue to monitor the progress and subsidence mitigation benefits of the initial Agreement. These findings will be used to inform development of Lower Aquifer groundwater pumping restrictions or other efforts to mitigate subsidence in the Madera County GSA area. Limitations on groundwater pumping from the Lower Aquifer may also be achieved through well permitting provisions in response to Executive Order N-7-22 or by other means determined by the GSAs. Based on the results of the "Projected, With Projects" water budget scenario simulated in the Madera-Chowchilla Groundwater-Surface Water Simulation (MCSim)[3], it is expected that shifts in pumping practices, paired with implementation of the planned PMAs, will help to achieve sustainable groundwater conditions in the Subbasin. Updates and outcomes of other subsidence mitigation measures will be reported in future GSP updates and Annual Reports. Together, landowners and GSAs are making consistent efforts to achieve and maintain groundwater sustainability in the WMA.

[2] For more details the full Madera County GSA Resolution No. 2024-030 can be found online at: https://www.maderacountywater.com/wp-content/uploads/2024/03/RES-NO.-2024-030.pdf

[3] See Appendix 6.D, Section 3.5.3.2. In the MCSim projected model, approximately 90 percent of groundwater pumping was simulated from the Upper Aquifer and approximately 10 was simulated from the Lower Aquifer.

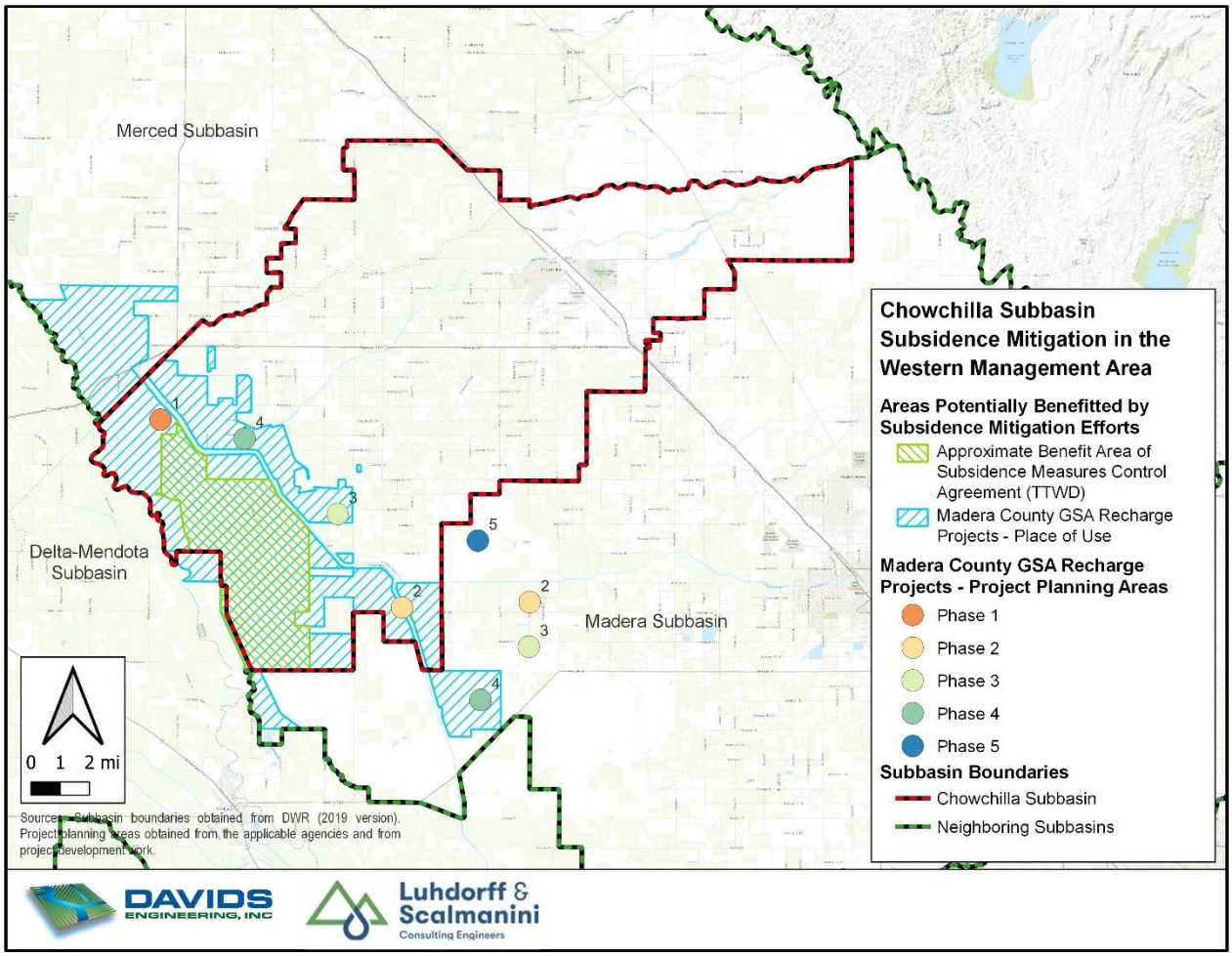

Figure 3-9. Subsidence Mitigation Efforts in the Western Management Area.
(from the 2025 Revised Subbasin GSP)

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

In the Matter of	Resolution No. 2026-____
THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT Chowchilla Subbasin	RESOLUTION ADOPTING THE CHOWCHILLA SUBBASIN GROUNDWATER DEMAND MANAGEMENT PROGRAMS AND SUBSIDENCE MITIGATION MEASURES

WHEREAS, the California Legislature passed a statewide framework for sustainable groundwater management, known as the Sustainable Groundwater Management Act (California Water Code §10720 *et seq.*), pursuant to Senate Bill 1168, Senate Bill 1319, and Assembly Bill 1739, which was approved by the Governor and Chaptered by the Secretary of State on September 16, 2014; and

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; and

WHEREAS, the Chowchilla Groundwater Subbasin ("Chowchilla Subbasin") has been designated by the Department of Water Resources ("DWR") as a high-priority basin and in critical groundwater overdraft (DWR Bulletin 118 Groundwater Basin: 5-022.05); and

WHEREAS, the Madera County - Chowchilla GSA is a GSA under SGMA for certain portions of the Chowchilla Subbasin; and

WHEREAS, pursuant to Water Code section 10727, SGMA requires that a Groundwater Sustainability Plan (GSP) or multiple GSPs be developed and implemented by January 31, 2020 for each high-priority basin; and

WHEREAS, the Madera County Chowchilla GSA, the Chowchilla Water District GSA, the Triangle T Water District GSA, and the Merced County Chowchilla GSA (collectively hereinafter the "Chowchilla Subbasin GSAs") have collaboratively prepared a single GSP for the Chowchilla Subbasin ("Chowchilla Subbasin GSP") in accordance with Water Code section 10727.2 to include all the components required by SGMA; and

WHEREAS, on or about December 17, 2019, the Chowchilla Subbasin GSAs adopted the Chowchilla Subbasin GSP; and

WHEREAS, on or about January 29, 2020, the Chowchilla Subbasin GSP was submitted to DWR for review, public comment, and approval; and

WHEREAS, on November 18, 2021, DWR completed a review of the Chowchilla Subbasin GSP and released an incomplete determination of the Chowchilla Subbasin GSP, initiating a 180-day consultation period between January 28, 2022, and July 27, 2022; and

WHEREAS, the Chowchilla Subbasin GSAs completed the first revision of the Chowchilla Subbasin GSP in response to the incomplete determination made by DWR; and

WHEREAS, on or about July 27, 2022, the first revision of the Chowchilla Subbasin GSP was submitted to DWR for review, public comment, and approval; and

WHEREAS, on March 2, 2023, DWR completed a review of the first revision of the Chowchilla Subbasin GSP submitted July 27, 2022, and released an inadequate determination of the first revision of the Chowchilla Subbasin GSP; and

WHEREAS, the Chowchilla Subbasin GSAs acted quickly whereby seeking to eliminate the need for a probationary hearing before the State Water Resources Control Board (SWRCB) through informal submission of the second revision of the Chowchilla Subbasin GSP to the SWRCB on May 5, 2023; and

WHEREAS, following the May 5, 2023, submission, the Chowchilla Subbasin GSAs consulted on numerous occasions with SWRCB staff; and

WHEREAS, over the course of numerous discussions with SWRCB staff, it was explicitly clear that SWRCB staff were concerned that Projects and Management Actions (PMAs) in the Chowchilla Subbasin GSP may not come to fruition and/or may not deliver the intended benefit; and

WHEREAS, given SWRCB staff's concern regarding the uncertainty of PMA implementation, SWRCB staff indicated that the Parties must prepare demand management programs and subsidence mitigation measures with specific triggers, providing a "backstop" and an alternative pathway for achieving sustainability should the other Chowchilla Subbasin GSP PMAs either not come to fruition or not yield the intended benefits; and

WHEREAS, in response to SWRCB staff direction, the Chowchilla Subbasin GSAs developed and entered into a Groundwater Demand Management and Subsidence Mitigation Measures Memorandum of Understanding (GDM MOU); and

WHEREAS, the GDM MOU obligated the Chowchilla Subbasin GSAs to develop, review, consider, and undertake demand management and subsidence mitigation measures through development of a GDM Program, ready for implementation no later than January 1, 2026, consistent with the terms of the GDM MOU; and

WHEREAS, the Chowchilla Subbasin GSAs completed additional revisions to the Chowchilla Subbasin GSP in 2023-2025, consistent with the direction provided by SWRCB staff; and

WHEREAS, the Chowchilla Subbasin GSAs submitted the 2025 Revised Chowchilla Subbasin GSP to the SWRCB in March 2025, inclusive of the GDM MOU; and

WHEREAS, in April 2025 the SWRCB released a Staff Assessment that concluded further consideration of a probationary designation for the Chowchilla Subbasin based on DWR's 2022 GSP Inadequate Determination was not warranted at that time, and further recommended that the SWRCB return the Chowchilla Subbasin to DWR's jurisdiction under chapter 10 of SGMA; and

WHEREAS, on June 3, 2025, the SWRCB voted unanimously to return the Chowchilla Subbasin to DWR's jurisdiction under chapter 10 of SGMA; and

WHEREAS, execution of the GDM MOU and development of the GDM Program is believed to be the primary mechanism that allowed the Chowchilla Subbasin GSAs to avoid probationary status; and

WHEREAS, consistent with the GDM MOU, the Chowchilla Subbasin GSAs have worked diligently and expeditiously to develop the GDM Program; and

WHEREAS, the GDM Program includes a host of voluntary, mandatory, and potential additional mandatory measures; and

WHEREAS, while the GDM Program is expected to broadly benefit groundwater conditions in the Subbasin across all sustainability indicators, subsidence and potential impacts of subsidence are anticipated to be the most limiting factors in achieving the Subbasin's sustainability goal, and thus the Chowchilla Subbasin GSAs have prioritized development and implementation of the GDM Program to proactively monitor and promptly address subsidence conditions in the Chowchilla Subbasin; and

WHEREAS, the GDM Program includes detailed and specific triggers for implementation; and

WHEREAS, the GDM Program includes specific quantitative analyses of conditions in the Chowchilla Subbasin that trigger action; and

WHEREAS, the GDM Program includes specific monitoring and reporting requirements; and

WHEREAS, the GDM Program is intended to focus mandatory measures in specific areas of concern – or Zones of Implementation – if triggers conditions occur and additional action is necessary; and

WHEREAS, the GDM Program is not one-size fits all, and includes GSA-specific voluntary, mandatory, and potential additional mandatory measures; and

WHEREAS, the Chowchilla Subbasin GSAs are responsible for implementation of voluntary, mandatory, and potential additional mandatory measures within their jurisdictional boundaries; and

WHEREAS, the GDM Program is not intended to override or otherwise alter ongoing implementation of existing voluntary, mandatory, and potential additional mandatory measures currently being implemented by the Chowchilla Subbasin GSAs; and

WHEREAS, the GDM Program recognizes the adaptive management approach of SGMA; and

WHEREAS, implementation of potential additional mandatory measures as outlined in the GDM Program and/or as may be developed through adaptive management are only necessary if warranted to address trigger conditions in locally focused areas within the Chowchilla Subbasin.

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

1. The foregoing is true and correct.

2. The GDM Program as developed and as presented to the Board of Directors is hereby approved and adopted.

3. Implementation of the GDM Program will follow an adaptive management approach, as described in the GDM Program and the 2025 Revised Chowchilla Subbasin GSP.

4. The GDM Program and associated mandatory measures and/or potential additional mandatory measures may be developed and refined through adaptive management, and are only necessary if warranted to address trigger conditions within the Chowchilla Subbasin.

5. The Director of the County Department of Water and Natural Resources is hereby authorized and directed to timely provide notification of this approval and adoption to DWR, including a copy of this Resolution, the approved GDM Program, and any additional information required by law to DWR as an attachment to the Chowchilla Subbasin GSP Water Year 2025 Annual Report.

* *

The foregoing Resolution was adopted this _____ day of _____, 2026, by the following vote.

Director Wamhoff 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

By_____