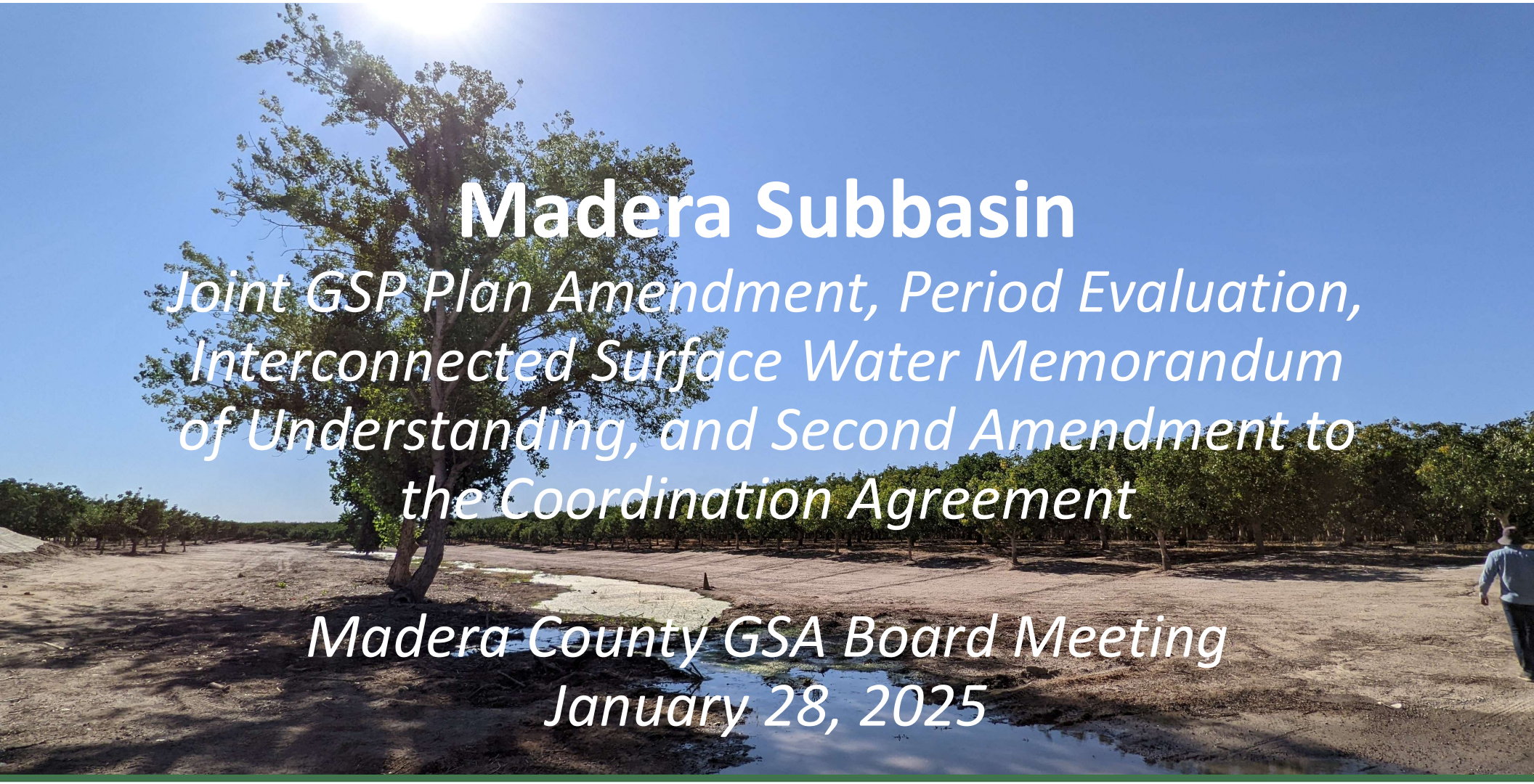

Madera Subbasin

Joint GSP Plan Amendment, Period Evaluation, Interconnected Surface Water Memorandum of Understanding, and Second Amendment to the Coordination Agreement

Madera County GSA Board Meeting
January 28, 2025

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Agenda

- Background
- Plan Amendment
  - Technical Approach to Corrective Actions in the Plan Amendment
  - Plan Amendment Public Review and Comments Received
- Periodic Evaluation
- Interconnected Surface Water Memorandum of Understanding
- 2nd Amendment to the Coordination Agreement
- Next Steps and Timeline
- Q&A

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Background

- **January 2020** – Madera Groundwater Sustainability Plans (GSPs) submitted to Department of Water Resources (DWR).
- **September 2022** – DWR finds the Madera GSPs incomplete.
- **March 2023** – Revised GSPs are submitted to DWR.
- **December 2023** – DWR approves Madera GSPs.
  - Included in the approval letter are a series of recommended corrective actions to further ensure that the GSP's achieve the Subbasin's sustainability goal.
  - 1st Periodic Evaluation and Plan Amendment (as required) due by January 31, 2025.
- **Coordination** – Facilitation, Technical Leads, Groundwater Sustainability Agency (GSA) Staff

Background (Cont.....)

- ***Plan Amendment vs. Periodic Evaluation***

Periodic Evaluation: an evaluation and written assessment of an approved GSP to occur at least every five years and when a Plan is amended (due no later than five years after initial GSP submittal) – this is an implementation evaluation tool.

Plan Amendment: a revised GSP that necessitates going through the Plan adoption process and submission to the Department for review (an agency may amend their GSP at any time; a Periodic Evaluation is required with every Plan Amendment) – this is an adaptive management tool.

REMINDER – Recommended Corrective Actions:
GSAs are expected to provide a detailed discussion of how the recommended corrective actions are being addressed or were addressed for each of the Plan elements and sections below, as applicable. When the recommended corrective actions warrant a Plan Amendment the Periodic Evaluation should describe the amended components of the Plan.

Changes made to the overall management of the basin, including sustainable management criteria, sustainability goal, addition or removal of management areas, or wholesale modifications to the representative monitoring sites network.

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Technical Approach to Corrective Action 1

- **Corrective Action 1 – All GSAs need to adopt the GSP**
- **Technical Approach:**
  - A response has been drafted and includes a timeline and summary of MID's action to approve the Joint GSP consistent with Resolution NO. 2024-GSA01.

Technical Approach to Corrective Action 2

- **Corrective Action 2 – The GSAs must continue to coordinate**
  - The GSAs must continue coordination and eliminate areas of disagreement.
  - The GSAs should come to a consensus regarding the data and methods utilized to develop refined future water budgets for the entire Subbasin, and an agreement regarding the availability and use of more detailed data as it becomes available from each GSP area.
- **Technical Approach:**
  - A response has been drafted that highlights:
    - The adoption and use of the MCSim GW model by all GSAs within the Subbasin
    - Facilitation support services (Madera ID/Root Creek)
      - Coordination Agreement and Stakeholder Engagement
    - DWR Grant for SB 552 Compliance (Madera County)
      - Domestic Well Mitigation Program Refinement (Madera Subbasin)
    - Recurring technical meetings
    - Recurring Joint GSP GSA meeting

Technical Approach to Corrective Action 3

- **<u>Corrective Action 3 – Clarify the relationship between GWL SMC and other SMC</u>**
  - Revise the GSPs to include a discussion of the relationship between the SMC for chronic lowering of groundwater levels and other sustainability indicators, including an explanation of how the SMC, including IMs, were established to avoid undesirable results for each of the other sustainability indicators.
- **<u>Technical Approach:</u>**
  - Added discussion on GWL-Subsidence connection and evaluation through modeling.
    - Additional Subsidence modeling was completed
    - Clear and consistent nexus between GWLs and subsidence was defined
  - Subsidence-related critical infrastructure interviews were held.
  - Clarified that GWL/Subsidence are separate sustainability indicators (with different metrics), and the most restrictive SMC govern.

Technical Approach to Corrective Action 4

- **<u>Corrective Action 4 – Land subsidence-related updates</u>**
  - Clearly describe the significant and unreasonable conditions the GSAs are managing the Subbasin to avoid, including UR metrics and cumulative allowable subsidence.
  - Update/revise discussion of the relationship between the SMC for land subsidence and the other sustainability indicators, and how subsidence SMC avoid undesirable results for each of the other sustainability indicators.
  - Reevaluate or eliminate the application of the level of subsidence measurement uncertainty.
  - Describe PMAs that will be implemented to minimize or eliminate subsidence (with details/schedule).

Technical Approach to Corrective Action 4 (Cont…)

- **Technical Approach**
  - Clearly described the significant and unreasonable conditions the GSAs are managing the Subbasin to avoid, our reevaluation UR metrics, and quantification of cumulative allowable subsidence.
  - Revised the GSPs to include a discussion of the relationship between the SMC for land subsidence and the other sustainability indicators, and how they avoid undesirable results for each of the other sustainability indicators.
  - Refined use of vertical measurement uncertainty in subsidence measurements.
  - Described PMAs that will be implemented to minimize or eliminate subsidence (with details/schedules).
  - IM Exceedance would trigger formation of working group to evaluate and implement additional potential measures (e.g., pumping reductions) in localized areas.
  - UR definition revised to be an exceedance of 25% of RMS MT.

Technical Approach to Corrective Action 4 (Cont…)

- **Technical Approach (Cont.)**
  - MO/MT for zero subsidence remains the same.
  - IM were modified to 5-Year Cumulative totals.

5-Year Interval Ending at Year	Maximum Average Annual Rate of Subsidence (feet)	Maximum 5-Year Cumulative Subsidence (feet)
2025		1.5[73]
2030	0.2	1.0
2035	0.1	0.5
2040	0.05	0.25

  - Revised IM generally consistent with recent agency interviews (e.g., SJRRP planning for 2.5 to 5 ft of additional subsidence), proposed IM in Chowchilla Subbasin, and proposed IM in Delta-Mendota Subbasin.

Technical Approach to Corrective Action 5

- **Corrective Action 5 – Hydrogeologic Conceptual Model**
  - Discuss the uncertainty concerning the hydrogeologic conceptual model and a description of hydrogeologic conceptual model data gaps.
- **Technical Approach:**
  - Added additional description of principal aquifers, aquifer confinement, etc.
  - Reviewed each data gap previously identified and described how that has been or is being addressed.
  - Discussed/refined workplans (subsidence, ISW).
  - Described other specific details, as relevant (e.g., Nested monitoring wells and their benefits to geologic understanding and monitoring).

Technical Approach to Corrective Action 6

- **<u>Corrective Action 6 – SMC for water quality</u>**
  - Revise the definition of URs so that exceedances of minimum thresholds caused by groundwater extraction are considered in the assessment of undesirable results in the Subbasin.
  - Clearly define what the Plan considers an UR for degraded water quality by describing conditions that it would consider to be significant or unreasonable.
  - Identify which minimum threshold values (either the MCL or existing concentration plus 20 percent) will be used at which representative monitoring sites.
  - Justify how establishing minimum thresholds at the higher of either MCLs or existing concentrations plus 20 percent does not constitute significant and unreasonable effects as defined by the GSP.

Technical Approach to Corrective Action 6

- **Technical Approach**
  - Added text to better describe specific water quality degradation GSP is trying to avoid (e.g., causing domestic/municipal supply wells to exceed MCLs).
  - Modified text to incorporate overall basin groundwater extraction (along with PMA) as potential causes of GW quality degradation GSAs are responsible for.
  - All GSP technical experts agreed to adopt Joint-GSP key constituents (TDS, Nitrate, and Arsenic) and MT approach (i.e., MCL or baseline + 20%).
  - Added technical justification for 20% increase allowance.
  - Updated GSP will include all GW quality data collected for RMS to date; will further develop baselines for RMS in Periodic Evaluation.

Plan Amendment Public Review and Comments Received

- 45-day Public Review Period
- 15 Public Comments Received
  - Groundwater Quality – 7 Comments
  - DWMP – 6 Comments
  - Groundwater Depletion – 1 Comment
  - Depletion of Interconnected Surface Water – 1 Comment
- Response to comments summarized in Appendix 2.C.e

Periodic Evaluation

- A written assessment describing whether implementation of the Plan, including implementation of projects and management actions (PMAs), are progressing to meet the sustainability goal for the subbasin. Specific requirements of Periodic Evaluations are described in 23 CCR §356.4.
- 1st Periodic Evaluation completed for the Subbasin
- Structure conforms with DWR's recommendation in May 2024
  - Subbasin wide document → GSP specific appendices
- Consistent with guidance from DWR, this 2025 Periodic Evaluation is focused on an evaluation of the Subbasin and Plan implementation with respect to the 2025 Plan Amendment

Periodic Evaluation (Cont.....)

- Sustainable Management Criteria
  - Groundwater Levels – majority of groundwater wells are above their 2025 IMs
  - Groundwater Storage – groundwater levels are a proxy
  - Water Quality – concentrations remain generally below the 2025 IMs
  - Land Subsidence – all RMS had a cumulative total less than the 2020 to 2025 IM
  - ISW – not enough data currently available to evaluate currently
  - Seawater Intrusion – not applicable

Periodic Evaluation (Cont.....)

- Projects and Management Actions

GSA	Estimated Average Benefit of all PMAs at 2040 (AFY, rounded)[1]	Average Reported Benefit of all PMAs in Years Implementation Occurred[2,3] (WY 2019-2023) (AFY, rounded)	Average Reported Benefit as a Percent of Estimated Average Benefit at 2040[3] (%)	Agricultural Demand Reduction[4]
MWD	2,810	2,140	76	-
MID	49,170	38,540	78	♦
MC	145,090	42,130	29	♦♦♦♦♦
CM	4,000	4,120	103	-
GFWD	14,200	4,000	28	-
NSWD	1,600	110	7	-
RCWD	4,200	5,060	120	♦♦♦
Total	**221,070**	**96,100**	**43**	

[1] Estimates developed for full PMA implementation. Estimated average benefits are summarized from the 2025 Periodic Evaluation GSP Attachments (**Appendix 1.B**). Some PMAs have been modified since the 2020 Initial Plan was developed, so these totals may not equal the totals reported in the 2020 Initial Plan.

[2] Averages were calculated based on reported PMA benefits in *only those years when implementation was feasible* during this Periodic Evaluation cycle. Reported benefits are consistent with the water budgets in the Annual Reports completed during this Periodic Evaluation cycle, and do not otherwise change the Subbasin water budget as reported in the Annual Reports.

[3] Benefits are reported for PMAs through the most recently completed Annual Report during this Periodic Evaluation cycle (WY 2023).

[4] Symbols are representative of the relative magnitude of agricultural demand reduction anticipated from PMA implementation, and are not intended to indicate a specific volume of agricultural demand reduction.

Periodic Evaluation (Cont.....)

- Subbasin Water Budget

		Net Seepage	Deep Percolation	GW Extractions	Net Recharge
Madera Subbasin					
Historical	Average (1989-2014)	130,000	230,000	-480,000	-110,000
Current	Average (2040-2090)	190,000	230,000	-540,000	-120,000
Projected with Projects	Average (2040-2090)	230,000	200,000	-390,000	35,000

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ISW Memorandum of Understanding

- By product of several discussions with Kings, USBR, and Friant Water Authority
- Agreement between the Madera Subbasin, Kings Subbasin, USBR, Restoration Administrator, and Friant Water Authority
- Developed with the intent of collaborative work between all parties (e.g., data sharing, development of a Technical Committee, etc.)
- No financial commitment
- Implementation of coordinated ISW Workplans in Madera and Kings Subbasins
- Additional Parties

2nd Amendment to the Coordination Agreement

- Existing Coordination Agreement termed out on 12/31/24
- Extends the termination date to 12/31/40
- Coordination Workgroup

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Next Steps and Timeline

- **Plan Amendment**
  - Governing Body Consideration – 1/15/25 → 1/28/25
  - Submission to DWR on or before – 1/31/25
- **Periodic Evaluation**
  - One Periodic Evaluation w/ GSP specific appendices.
  - Submission to DWR on or before – 1/31/25
- **ISW Memorandum of Understanding**
  - Included as appendix to Plan Amendment
  - Submission to DWR on or before – 1/31/25
- **Coordination Agreement**
  - Submission to DWR on or before – 1/31/25
- **Domestic Well Mitigation Program (DWMP)**
  - Domestic Well Mitigation MOU signed (by 5 of 7 GSAs) as part of Revised GSP.
  - Existing Madera County DWR grant being used to facilitate any necessary changes to the MOU, adoption by all GSAs, and development of an implementable DWMP in 2025.
  - Assessment to be discussed at upcoming Coordination Workgroup meeting

GSA	Approved	Pending
MID	X	
COM	X	
MWD	X	
GFWD	X	
RCWD	X	
CM		X
NSWD		X

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List of Acronyms

- GSP – Groundwater Sustainability Plan
- GSA – Groundwater Sustainability Agency
- DWR – Department of Water Resources
- SMC – Sustainable Management Criteria
- IM – Interim Milestone
- UR – Undesirable Result
- MO – Measurable Objective
- MT – Minimum Threshold
- RMS – Representative Monitoring Site
- ISW – Interconnected Surface Water
- RCWD – Root Creek Water District
- MID – Madera Irrigation District
- COM – City of Madera
- MC – Madera County
- GWL – Groundwater Level
- PMA – Projects and Management Actions
- SJRRP – San Joaquin River Restoration Program
- SJR – San Joaquin River
- FWA – Friant Water Authority
- MCL – Maximum Contaminant Level
- TDS – Total Dissolved Solids
- DWMP – Domestic Well Mitigation Plan
- MOU – Memorandum of Understanding
- MWD – Madera Water District
- GFWD – Gravelly Ford Water District
- NSWD – New Stone Water District

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