Appendix E. Madera Subbasin Revised Joint GSP Cover Letter and Revised Joint GSP Matrix, March 2023.

March 21, 2023

Paul Gosselin
Deputy Director for Sustainable Groundwater Management
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Sent Electronically

RE: Revisions to the 2020 Madera Subbasin Joint Groundwater Sustainability Plan

Dear Mr. Gosselin:

In January 2020, the Madera Water District Groundwater Sustainability Agency (GSA), County of Madera – Madera GSA, Madera Irrigation District GSA, and City of Madera GSA submitted a Joint Groundwater Sustainability Plan (Joint GSP) to the California Department of Water Resources (DWR), which outlined a plan for achieving groundwater sustainability in their collective jurisdictions within the Madera Subbasin (Subbasin) by 2040, in accordance with the Sustainable Groundwater Management Act (SGMA). In addition to the Joint GSP, GSPs were prepared and submitted by Gravelly Ford Water District, Root Creek Water District, and New Stone Water District. In total, the Subbasin contains seven GSAs governed by four GSPs.

The Joint GSP developed and submitted in January 2020 was the result of extensive technical work and stakeholder engagement spanning over two years leading up to the submittal. During the Joint GSP revision process in 2022 and 2023, the GSAs conducted further public outreach through public GSA governing body meetings, and through public notices regarding the GSP revision process and subsequent public hearings. The Joint GSP submitted in January 2020 and the Revised Joint GSP is the product of this process and reflects a balance of local interests across a very broad and diverse cross-section of stakeholders and beneficial uses and users.

A key element included and described in the Joint GSP is a Domestic Well Mitigation Program to mitigate undesirable results for domestic well users that are significantly and adversely impacted by groundwater level declines that may occur during the GSP implementation period while the GSAs implement other projects and management actions to achieve and maintain sustainability.

On September 22, 2022, the seven GSAs received DWR's incomplete determination (please see attached). Of specific importance is the fact that the identified deficiencies are applicable to the "Plan" for the Subbasin as a whole, including all four GSPs and the Coordination Agreement. In other words, the success or failure of the Subbasin rests in the adequacy and coordination between all four GSPs within the Subbasin. As noted in DWR's September 22, 2022 letter, the GSAs had 180 days, the maximum allowed by GSP Regulations, to address the identified deficiencies. A summary of the four deficiencies identified in DWR's September 22, 2022 letter is as follows:

1. Details in the GSPs fail to demonstrate that the four GSPs have coordinated to address the regulatory aspects of SGMA in a manner that complies with SGMA and substantially complies with the GSP regulations.

2. The Plan does not establish minimum thresholds for chronic lowering of groundwater levels in a manner substantially compliant with the GSP regulations.

3. The Plan does not develop sustainable management criteria for land subsidence using the best available information and science.

4. The Plan does not develop sustainable management criteria for the depletions of interconnected surface water using the best available information and science.

Consistent with the GSAs' commitment to work cooperatively with DWR regarding revisions to the GSPs, the GSAs have met with DWR two (2) times from November 2022 through December 2022. Specific meeting dates and topics discussed in each of the meetings are as follows:

Madera Subbasin - DWR Meeting Summary	
Meeting Date	Topic(s)
November 10, 2022	Coordination among GSAs and across GSPs
December 8, 2022	Groundwater levels, Subsidence, and Interconnected Surface Water

From the GSAs' perspective, the meetings with DWR staff were helpful in facilitating an open and transparent discussion about the deficiencies identified and the subsequent corrective actions necessary to allow DWR to approve the Plan for the Subbasin. The GSAs want to thank DWR for their cooperation and direction on each of the deficiencies.

For both meetings, the GSAs provided DWR with a detailed agenda and/or questions ahead of time in an effort to solicit a meaningful and productive discussion (please see attached). A summary of the guidance provided is as shown below:

Overarching Comments:

1. Although the Subbasin is governed by four GSPs, adequacy has and will continue to be assessed at the Subbasin level.

2. Subbasin conditions can temporarily exceed Minimum Thresholds (MTs) on the way to achieving sustainable conditions, and will not immediately be considered a failure of the

GSP as long as Projects and Management Actions (PMAs) are being implemented according to schedule and Interim Milestones (IMs) are being met.

3. IMs are intended to chart a path towards sustainability. IMs should be set to reflect conditions that are anticipated to occur during the GSP implementation period while the GSAs are implementing PMAs to achieve sustainable conditions. IMs may exceed MTs provided that the GSP demonstrates a plan for achieving sustainable conditions and avoiding Undesirable Results (URs) by 2040.

4. Annual reports are an important opportunity to explain and demonstrate progress towards implementation of the GSPs, especially as it pertains to conditions relative to the established Sustainable Management Criteria (SMC).

5. DWR understands that data gaps exist and encourages the GSAs to work cooperatively to fill data gaps as resources become available.

6. The GSAs have opportunities to review the GSP and adjust SMC through the GSP updates required at least every five years.

Domestic Well Mitigation Program:

1. The Domestic Well Mitigation Program (Program) is an important component that should be developed and applied across the entirety of the Subbasin.

    a. Because the SMC were established with the understanding that URs are occurring and will occur for domestic and municipal well users, the acceptability of the GSPs hinges on a firm commitment by the GSAs to develop and implement a Program to mitigate for the most vulnerable users.

    b. By the end of the 180-day consultation period, the GSAs must set clear intentions and have a timeline for implementing this Program, e.g., having a draft Memorandum of Understanding (MOU) prepared by the time the revised GSPs are submitted and/or a PMA outlining the Program and its application across the entirety of the Subbasin.

2. It is okay for the GSAs to coordinate with the Safe and Affordable Funding for Equity and Resilience (SAFER) and/or other short-term programs, but the GSAs need to make sure that they consider development of a plan to manage around those programs without relying on them for long-term mitigation.

    a. Domestic well mitigation over the GSP implementation horizon should be more comprehensive and include lasting solutions to address domestic water needs beyond short-term mitigation programs.

Coordination:

1. There needs to be one sustainability goal for the entire Subbasin.

2. The sustainability goal should be included in the Coordination Agreement.

3. Current and future water budgets need to be included in the Coordination Agreement.

4. Adding items to the Coordination Agreement through an addendum is appropriate and will be accepted by DWR.

5. DWR recommends the use of one groundwater model across the entirety of the Subbasin.

6. There should be one consistent sustainable yield for the entirety of the Subbasin.

7. There should be one water budget for the Subbasin that aggregates the water budgets for each of the GSAs/GSPs.

Groundwater Levels:

1. Subbasin conditions can temporarily exceed MTs on the way to achieving sustainable conditions.

2. If groundwater level decline is occurring, the GSPs must have an implementable plan to address those impacts.

    a. Because the SMC were established with the understanding that URs are occurring and will occur for domestic and municipal well users, the acceptability of the GSPs hinges on a firm commitment by the GSAs to develop and implement a Program to mitigate for the most vulnerable users (see above).

3. Provide more explanation of the Program and rationale for setting SMC in coordination with that Program.

4. Need to clearly address/assess URs for municipal service wells, public supply wells, and agricultural wells.

Subsidence:

1. SMC for subsidence should be set across the Subbasin.

2. Modeling (during the 180-day consultation period) is not necessary to establish or support SMC.

3. The GSPs should clearly define the types, locations, and characteristics of critical infrastructure in the Subbasin and analyze/explain the potential effects of subsidence on that critical infrastructure.

4. The GSPs should clearly analyze/explain the relationship between subsidence and the Corcoran clay layer, as relevant to the processes that were used to set the subsidence SMC.

5. The GSPs should include additional descriptions of actions taken toward subsidence mitigation since GSP adoption.

6. DWR understands that data gaps exist. Creating the framework for subsequent detailed work plans that will collect more data to improve understanding of subsidence conditions would be helpful.

7. The GSPs should provide some estimate of anticipated/expected residual and/or additional subsidence that may occur during the GSP implementation period.

8. Zero subsidence is not a realistic expectation; however, the GSPs need an assessment and narrative discussion of anticipated additional subsidence (whether that be considered "residual" or "renewed" subsidence, and what that means for critical infrastructure).

9. SMC can be changed in the five-year GSP updates with justification from additional data collection and improved basin understanding.

10. The GSPs can set different MTs for different portions of management areas depending on proximity to critical infrastructure, but it is important that those differences are described.

11. IMs are a way to account for subsidence expectations during the GSP implementation period (e.g., IMs reflect a declining rate of subsidence).

12. GSP regulations make no distinction between elastic and inelastic subsidence so both should be considered in setting SMC.

Interconnected Surface Water:

1. It would be helpful to create the framework for a detailed work plan for filling Interconnected Surface Water (ISW) data gaps, including:

    a. Additional locations for shallow monitoring wells.

    b. River stage recorders paired with monitoring wells.

    c. Incorporating Airborne Electromagnetic (AEM) data when available.

    d. Thalweg surveys.

2. In terms of the temporal aspect of ISW, the historical percent of time a groundwater/surface water connection exists (e.g., primarily during winter/spring of wet years) should not decrease in the future.

3. The GSPs should analyze whether future groundwater management will deplete any possible groundwater/surface water connection, and whether Groundwater Dependent Ecosystems (GDEs) are affected.

4. If data gaps exist, note those and a preliminary timeline/schedule for filling those.

5. DWR recognizes the high uncertainty related to the ISW Sustainability Indicator (SI) as implied by regulations that indicate SWRCB will not intervene until 2025 for this SI.

Considering DWR's direction as summarized above, the GSAs have worked diligently during the 180-day consultation period to make the necessary revisions to the Joint GSP and more broadly, the Plan for the Subbasin. Indeed, the technical leads for each of the GSPs have met multiple times to review the technical issues and discuss approaches for coordination across the Subbasin. During the 180-day period, the GSAs have also reviewed DWR's determinations for surrounding and neighboring subbasins and have used this information to inform their own GSP revisions. In particular, several approaches in the Madera Subbasin GSP revisions are modeled after the approved Merced Subbasin GSP revisions. In addition, and consistent with the Coordination Agreement for the Subbasin, the Coordination Workgroup has also met to give strategic guidance to management and technical staff for each of the GSAs. Related to the Coordination Workgroup, and with the goal of increasing collaboration and coordination in the Subbasin, **the Coordination Workgroup plans to meet on a quarterly basis until, at a minimum, successful completion of the 2025 GSP Update. Related to the 2025 GSP Update, the GSAs have elected to initiate development of the 2025 GSP Update and are considering development of one GSP as part of the 2025 Update.**

In an effort to streamline DWR's review of the Revised Joint GSP as included herein, the GSAs have prepared two matrixes (please see attached). Details related to each of the matrixes are shown below:

1. Original GSPs Matrix – This matrix summarizes the four GSPs' approach to various components in each of the four original GSPs. This matrix may be used by DWR as a means of quickly and efficiently identifying where there is variation amongst the four original GSPs, prior to the revisions made during the 180-day consultation period.

2. Revised Joint GSP Matrix: This matrix outlines each of the defined deficiencies, a general description of the deficiency, the corrective action taken in the Revised Joint GSP, where the deficiency was addressed in the Revised Joint GSP, how the deficiency was addressed in the Revised Joint GSP, and the corresponding direction from DWR that was relied upon for the revision.

As you will see, and consistent with your recommendations, there are several significant changes to the Joint GSP and, more broadly, to all of the GSPs in the Subbasin. Those significant changes include, but are not limited to:

1. Inclusion of a draft Domestic Well Mitigation Program MOU (inclusive of domestic and municipal users) that very clearly outlines the foundational components of the Program in the Subbasin and further that the Program will be **developed within the first 5 years of GSP implementation (by 2025)**.

2. Development of Subsidence and ISW Workplans. Protection of critical infrastructure within the Subbasin, such as the Chowchilla Bypass, continues to be a priority. In addition, and as DWR recognizes, data to support and analyze SMC for ISW within the Subbasin is extremely limited by currently available data. The GSAs will continue to enhance their subsidence monitoring and

management and understanding of ISW within the Subbasin that will be informed by additional information collected through completion of the activities set forth in Subsidence and ISW Workplans.

3. The GSAs within the Subbasin have agreed to use one groundwater model across the entirety of the Subbasin, the groundwater model initially developed for the Joint GSP.

4. Revision of SMC for groundwater levels across the entirety of the Subbasin (see Chapter 3 and Table 3-13 of the Revised Joint GSP):
    a. MTs: Set equal to the Fall 2015 measurement, if that observed data point is available at the RMS. Otherwise, set equal to the expected Fall 2015 groundwater level determined from groundwater model results, with adjustment, if necessary, to account for the offset between historical observed and modeled data.
    b. MOs: Set equal to the Fall 2010 measurement, if that observed data point is available at the RMS. Otherwise, set equal to the expected Fall 2010 groundwater level determined from groundwater model results, with adjustment, if necessary, to account for the offset between historical observed and modeled data.
    c. URs: Same 30 percent of wells below minimum threshold for two consecutive fall measurements.

5. Establishment of SMC for subsidence across the entirety of the Subbasin (see Chapter 3 and Table 3-13 of the Revised Joint GSP):
    a. MTs: 0 feet/year (subject to uncertainty of +/-0.16 feet/year).
    b. MOs: 0 feet/year (subject to uncertainty of +/-0.16 feet/year).
    c. URs: Average subsidence across 75 percent or more RMS exceeding minimum threshold for two consecutive years.

6. Establishment of interim SMC for ISW across the entirety of the Subbasin (see Chapter 3 and Table 3-13 of the Revised Joint GSP):
    a. MTs: A percent of time surface water is connected to shallow groundwater that is equal to historical conditions for a similar climatic/hydrologic period.
    b. MOs: A percent of time surface water is connected to shallow groundwater that is equal to historical conditions for a similar climatic/hydrologic period.
    c. URs: Greater than 30 percent of RMS wells below minimum threshold for two consecutive annual five-year rolling average annual evaluations.

7. Amendment to the coordination agreement accounting for inclusion of a Subbasin wide sustainability goal, sustainable yield, and current and future water budgets.

8. An agreed upon timeline associated with the Revised GSPs and the 2025 GSP Update (please see attached).

As is evidenced by the initial Joint GSP, progressive action to implement the Joint GSP since submission of the Joint GSP in January 2020, and the subsequent revisions included in the Revised Joint GSP, the Joint GSP GSAs in the Subbasin[1] remain steadfast in their commitment to manage groundwater resources in a

[1] Please note that the Madera Irrigation District Board of Directors took action on March 21, 2023 to not approve submission of the Revised Joint GSP.

sustainable manner. Should you have any questions or concerns, please feel free to contact me at (559) 479-6050.

Sincerely,

Stephanie Anagnoson

Stephanie Anagnoson
Joint GSP Plan Manager

Enclosures: Copy of September 22, 2022, Letter from DWR
November 10, 2022, Meeting Agenda
December 8, 2022, Meeting Agenda
Original GSPs Matrix
Revised Joint GSP Matrix
Revised GSP and 5-Year Timeline
Revised Joint GSP

cc: Administration Files
Madera County Board of Supervisors
Madera Water District Board of Directors
City of Madera City Council

For all enclosures, please see the Revised Joint GSP.

Original GSPs Matrix

Comparison of Initial GSPs vs Revised GSPs

Madera Subbasin Coordination

Summary of Data and Methods Used in each Groundwater Sustainability Plan (GSP)

GSP version: Initial GSPs (January 2020)

				GSP (GSAs)			
				Madera Subbasin Joint GSP	**GFWD GSP**	**NSWD GSP**	**RCWD GSP**
Section of GSP	Component	Subcomponent	Location in GSP Regulations (23 CCR)	(MID, MWD, Madera County, City of Madera GSAs)	(GFWD GSA)	(NSWD GSA)	(RCWD GSA)
Water Budget	Overall Accounting Method			Integrated water flow model (MCSim) for all scenarios. Historical and current water budgets also computed with root zone model (iDC) and tabular water budgets.	Tabular water budgets for all scenarios.	Tabular water budgets for all scenarios.	Tabular water budgets for all scenarios.
	Historical Scenario	Period, General Conditions, Inflows/Outflows	§ 354.18	1989-2014 hydrology and land use.	1989-2014 hydrology and land use.	2003-2012 hydrology and land use.	1989-2015 hydrology and land use.
	Current Scenario	Period, General Conditions, Inflows/Outflows	§ 354.18	1989-2014 hydrology, 2015 (current) land use and crop characteristics in all years. Data sources and general approaches consistent with historical scenario.	1989-2014 hydrology, 2015 (current) land use and crop characteristics in all years. Data sources and general approaches consistent with historical scenario.	2017 conditions. Data sources and general approaches consistent with historical scenario.	2017 land use. Data sources and general approaches consistent with historical scenario.
	Projected Scenario(s)	Period, General Conditions, Inflows/Outflows	§ 354.18	2020-2040 (implementation period) and 2041-2090 (sustainability period). Future years assigned to historical year sequences, with adjustment in certain cases for supply projections and climate projections. Future conditions estimated using historical hydrologic data from 1965-2015, historical water supply data from 1989-2015 (CVP supply adjusted based on San Joaquin River Restoration Program projections), and 2017 land use adjusted for projected growth from 2017-2070.	2020-2040. Future years assigned to historical year sequences.	2020-2070. Future years assigned to historical year sequences by water year type from 1965-2015, with 2015 land use in all years.	2020-2040. Future years assigned to historical average values or year sequences.
	Sustainable Yield		§354.18(b)(7)	Calculated based on change in groundwater storage and groundwater system inflows/outflows (historical), and calculated from MCSim results as the average annual groundwater extraction during 2040-2090 (sustainability period), accounting for projects and management actions.	Estimated as average annual groundwater extraction under sustaianble groundwater conditions.	Estimated as average annual groundwater extraction with net recharge equal to zero.	Estimated as average annual groundwater extraction with net recharge equal to zero.
Sustainable Management Criteria	Sustainability Goal		§ 354.24	To implement a package of projects and management actions that will, by 2040, balance long term groundwater system inflows with with outflows based on a 50 year period representative of average historical hydrologic conditions.	To minimize the listed undesirable results throughout the Subbasin by providing a Gravelly Ford GSP water supply that supports current cultivated acreage in the Plan area by developing an expanded surface water irrigation and recharge program, and groundwater monitoring and land elevation measurement program.	To provide a tool for managing groundwater, basin-wide, on a long-term basis and to meet measurable objectives for each indicator by maintaining a sustainable yield, thus avoiding undesirable results.	That the participants in the Madera Groundwater Subbasin will collectively work together to sustainably manage the groundwater resources of the basin while maintaining openness to the public and stakeholders such that the local citizenry has a voice in the outcome
	Undesirable Results, Minimum Thresholds, Measurable Objectives, and Interim Milestones	Chronic Lowering of Groundwater Levels	§ 354.26, 354.28(c)(1), § 354.30	Defined for GSP Plan Area (Joint GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (GFWD GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (NSWD GSP Section 4.2).	Defined for GSP Plan Area (RCWD GSP Section 4.2).
		Reduction of Groundwater Storage	§ 354.26, 354.28(c)(2), § 354.30	Defined for GSP Plan Area (Joint GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (GFWD GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (NSWD GSP Section 4.3).	Defined for GSP Plan Area (RCWD GSP Section 4.3).
		Seawater Intrusion	§ 354.26, 354.28(c)(3), § 354.30	Not applicable.	Not applicable.	Not applicable.	Not applicable.
		Degraded Water Quality	§ 354.26, 354.28(c)(4), § 354.30	Defined for GSP Plan Area (Joint GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (GFWD GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (NSWD GSP Section 4.4).	Defined for GSP Plan Area (RCWD GSP Section 4.4).
		Land Subsidence	§ 354.26, 354.28(c)(5), § 354.30	Not applicable.	Defined for GSP Plan Area (GFWD GSP Sections 3.2 through 3.4).	Defined for GSP Plan Area (NSWD GSP Section 4.5).	Defined for GSP Plan Area (RCWD GSP Section 4.5).
		Depletions of Interconnected Surface Water	§ 354.26, 354.28(c)(6), § 354.30	Not applicable.	Found that durring times when the San Joaquin River is flowing, there is a direct connection to the groundwater but, when dry, the groundwater levels are below the river's channel.	Not applicable.	Not applicable.

Madera Subbasin Coordination

Summary of Data and Methods Used in each Groundwater Sustainability Plan (GSP)

GSP version: Revised GSPs (March 2023)

				GSP (GSAs)			
				Madera Subbasin Joint GSP	**GFWD GSP**	**NSWD GSP**	**RCWD GSP**
Section of GSP	Component	Subcomponent	Location in GSP Regulations (23 CCR)	(MID, MWD, Madera County, City of Madera GSAs)	(GFWD GSA)	(NSWD GSA)	(RCWD GSA)
Water Budget	Overall Accounting Method			**Coordinated across all GSPs, as memorialized in Coordination Agreement.** Integrated water flow model (MCSim) and tabular water budgets for all scenarios and all GSAs. Summary results are included in the Coordination Agreement.	**Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.** (results of Joint GSP approach verified through comparison with GFWD tabular water budgets).	**Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.** (results of Joint GSP approach verified through comparison with NSWD tabular water budgets).	**Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.** (results of Joint GSP approach verified through comparison with RCWD tabular water budgets).
	Historical Scenario	Period, General Conditions, Inflows/Outflows	§ 354.18	***Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.***			
	Current Scenario	Period, General Conditions, Inflows/Outflows	§ 354.18	***Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.***			
	Projected Scenario(s)	Period, General Conditions, Inflows/Outflows	§ 354.18	***Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.***			
	Sustainable Yield		§354.18(b)(7)	***Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.***			
Sustainable Management Criteria	Sustainability Goal		§ 354.24	***Coordinated across all GSPs, as memorialized in Coordination Agreement amendment.***			
	Undesirable Results, Minimum Thresholds, Measurable Objectives, and Interim Milestones	Chronic Lowering of Groundwater Levels	§ 354.26, 354.28(c)(1), § 354.30	**Consistent SMC defined for the entire Subbasin** (described in Revised Joint GSP Sections 3.2 through 3.4).	**Consistent SMC defined for the entire Subbasin** (described in Revised GFWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised NSWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised RCWD GSP).
		Reduction of Groundwater Storage	§ 354.26, 354.28(c)(2), § 354.30	**Consistent SMC defined for the entire Subbasin** (described in Joint GSP Sections 3.2 through 3.4).	**Consistent SMC defined for the entire Subbasin** (described in Revised GFWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised NSWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised RCWD GSP).
		Seawater Intrusion	§ 354.26, 354.28(c)(3), § 354.30	Not applicable.	Not applicable.	Not applicable.	Not applicable.
		Degraded Water Quality	§ 354.26, 354.28(c)(4), § 354.30	**Consistent SMC defined for the entire Subbasin** (described in Joint GSP Sections 3.2 through 3.4).	**Consistent SMC defined for the entire Subbasin** (described in Revised GFWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised NSWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised RCWD GSP).
		Land Subsidence	§ 354.26, 354.28(c)(5), § 354.30	**Consistent SMC defined for the entire Subbasin** (described in Joint GSP Sections 3.2 through 3.4).	**Consistent SMC defined for the entire Subbasin** (described in Revised GFWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised NSWD GSP).	**Consistent SMC defined for the entire Subbasin** (described in Revised RCWD GSP).
		Depletions of Interconnected Surface Water	§ 354.26, 354.28(c)(6), § 354.30	**Consistent SMC defined for the Subbasin** (described in Joint GSP Sections 3.2 through 3.4).	**Consistent SMC defined for the Subbasin** (described in Revised GFWD GSP).	**Consistent SMC defined for the Subbasin** (described in Revised NSWD GSP).	**Consistent SMC defined for the Subbasin** (described in Revised RCWD GSP).

Revised Joint GSP Matrix

MADERA SUBBASIN JOINT GROUNDWATER SUSTAINABILITY PLAN (GSP)
REVISED GSP MATRIX

Deficiency Number	Deficiency Identified by DWR	Corrective Action Recommended by DWR	Sections Where Deficiency was Primarily Addressed in the Revised Joint GSP	How Deficiency was Addressed in the Revised Joint GSP	Information Learned from DWR During Consultation
1	The GSPs Have Not Sufficiently Coordinated on Data And Methodologies Including Coordination of Sustainability Goal, Water Budget and Sustainable Yield, and Undesirable Results As Required by SGMA and the GSP Regulations.	The GSAs in the Subbasin should modify each of their respective GSPs, as well as any applicable coordination materials, to substantially comply with the GSP Regulations and define sustainable yield and undesirable results, and develop water budgets in a manner that addresses groundwater conditions occurring throughout the Subbasin, not for only the portion of the Subbasin represented by the respective GSPs.	• Appendix 1.J (Coordination Agreement Amendment) • Executive Summary (ES) (summary of coordination) • 3 (summary) • 3.1 (Sustainability Goal) • 3.2 (Measurable Objectives (MOs) and Interim Milestones (IMs)) • 3.3 (Minimum Thresholds (MTs)) • 3.4 (Undesirable Results (URs))	The Coordination Agreement has been amended to include: • A single, consistent sustainable yield value for the entire Madera Subbasin (Subbasin). • Water budgets for all GSAs in the Subbasin that have been calculated through a single, unified approach. • A single, consistent sustainability goal for the entire Subbasin. The revised Joint GSP (consistent with the other three GSPs in the Subbasin) includes additional discussion of the Subbasin-wide considerations and coordination efforts that led to the selection of Sustainable Management Criteria (SMC) applicable to the entire Subbasin. These coordination efforts and Subbasin-wide SMC are described throughout Section 3. The SMC have been developed in coordination with – and are consistent with – the SMC described in the GFWD, NSWD, and RCWD GSPs. Together, the four GSPs will achieve sustainable groundwater management in the entire Madera Subbasin through a consistent approach.	• Although the Subbasin is governed by four GSPs, adequacy has and will continue to be assessed at the Subbasin level. • There must be one sustainability goal for the entire Subbasin, and the sustainability goal should be included in the Coordination Agreement. • Current and future water budgets need to be included in the Coordination Agreement. • Adding items to the Coordination Agreement through an addendum is appropriate and will be accepted by DWR. • DWR recommends the use of one groundwater model across the entirety of the Subbasin. • There should be one consistent sustainable yield for the entirety of the Subbasin. • There should be one water budget for the Subbasin that aggregates the water budgets for each of the GSAs/GSPs.
2	The Plan Does Not Establish Minimum Thresholds for Chronic Lowering of Groundwater Levels in A Manner Substantially Compliant with the GSP Regulations.	The GSAs must provide more detailed explanation and justification regarding the selection of the sustainable management criteria for groundwater levels, particularly the minimum thresholds, and the effects of those criteria on the interests of beneficial uses and users of groundwater.	• 3.3.1 (groundwater level MTs) • 3.4.1 (groundwater level URs) • Appendix 3.A (hydrographs) • Appendix 3.E (Domestic Well Mitigation Program Memorandum of Understanding (Mitigation Program MOU))	The revised Joint GSP (consistent with the other three GSPs in the Subbasin) addresses this deficiency by: • Providing more explanation of the decision to set the MTs equal to Fall 2015 groundwater levels to be more conservative and protective of groundwater users (described in Section 3.3.1, Table 3-13, and Appendix 3.A). • Providing additional explanation of the considerations and decisions to set MTs for chronic lowering of groundwater levels and plans to avoid specific undesirable results for groundwater users, including the GSAs' development of a Domestic Well Mitigation Program (Section 3.3.1.1, Appendix 3.E). • Additional discussion of the relationship between the groundwater level MTs and other sustainability indicators (Section 3.3.1.4).	• The GSPs must provide more detailed and consistent explanations and justification regarding the selection of SMC. • The GSPs must clearly address/assess URs for municipal service wells, public supply wells, and agricultural wells. • Subbasin conditions can temporarily exceed MTs on the way to achieving sustainable conditions, although GSP implementation must avoid URs after 2040. • If groundwater level decline is occurring, the GSPs must have an implementable plan to address those impacts. • The GSPs should provide additional detail and commitments for development and implementation of a Domestic Well Mitigation Program to mitigate for the most vulnerable users. • The GSPs must provide more explanation of the Program and rationale for setting SMC in coordination with that Program.

Deficiency Number	Deficiency Identified by DWR	Corrective Action Recommended by DWR	Sections Where Deficiency was Primarily Addressed in the Revised Joint GSP	How Deficiency was Addressed in the Revised Joint GSP	Information Learned from DWR During Consultation
3	The Plan Does Not Develop Sustainable Management Criteria for Land Subsidence Based on Best Available Information and Science.	The GSAs must provide more detailed information, as required in the GSP Regulations, regarding land subsidence associated with groundwater use, particularly by developing sustainable management criteria and a monitoring network for subsidence, and by coordinating information across elements of the Plan.	• 3.2.3 (subsidence MOs and IMs) • 3.3.3 (subsidence MTs) • 3.4.3 (subsidence URs) • 3.5 (subsidence monitoring network) • Figures 3-2 and 3-10 (subsidence monitoring network) • Appendix 3.G (Infrastructure Sensitivity Assessment) • Appendix 3.H (subsidence data gaps workplan)	The revised Joint GSP (consistent with the other three GSPs in the Subbasin) addresses this deficiency by: • Providing more explanation of the Subbasin-wide considerations and coordination efforts that led to the selection of land subsidence SMC applicable to the entire Subbasin (throughout Section 3). • Describing subsidence SMC applicable to the entire Subbasin (described in Sections 3.2.3, 3.3.3, 3.4.3, and Table 3-13). • Describing and providing maps of the Subbasin-wide subsidence monitoring network (Figures 3-2 and 3-10). • Providing a workplan for filling subsidence-related data gaps (Appendix 3.H).	• SMC for subsidence should be set across the Subbasin. • Modeling (during the 180-day consultation period) is not needed to establish/support SMC. • The GSPs should clearly define the types, locations, and characteristics of critical infrastructure in the Subbasin and analyze/explain the potential effects of subsidence on that critical infrastructure. • Zero subsidence during the GSP implementation period (before 2040) is not a realistic expectation; however, the GSPs need an assessment and narrative discussion of subsidence and what that means for critical infrastructure. • IMs are a way to account for subsidence expectations during the GSP implementation period. • The GSPs should include additional descriptions of actions taken toward subsidence mitigation since GSP adoption. • DWR understands that data gaps exist. Creating the framework for subsequent workplans that will collect more data to improve understanding of subsidence conditions would be helpful. • SMC can be changed in the five-year GSP updates with justification from additional data collection and improved basin understanding. • GSP regulations make no distinction between elastic and inelastic subsidence so both should be considered in setting SMC.
4	The Plan Does Not Develop Sustainable Management Criteria for the Depletions of Interconnected Surface Water Based on Best Available Information and Science.	The GSAs must provide more detailed information, as required in the GSP Regulations, regarding the presence and degree of interconnected surface waters and depletions associated with groundwater use.	• 2.2.2.5 (current and historical conditions related to interconnected surface water (ISW)) • 2.2.2.7.4 (ISW data gaps) • 3.2.5 (interim ISW MOs and IMs) • 3.3.5 (interim ISW MTs) • 3.4.5 (ISW URs) • 3.5 (ISW monitoring network) • Figures 3-4 (ISW monitoring network) • Appendix 3.I (ISW data gaps workplan)	The revised Joint GSP (consistent with the other three GSPs in the Subbasin) addresses this deficiency by: • Providing more analysis and discussion of historical and current conditions related to ISW. • Providing more explanation of the Subbasin-wide considerations and coordination efforts that led to the selection of ISW SMC (throughout Section 3). • Describing interim ISW SMC (described in Sections 3.2.5, 3.3.5, 3.4.5, and Table 3-13). • Describing and providing maps of the ISW monitoring network (Figure 3-4). Providing a workplan for filling ISW-related data gaps (Appendix 3.I).	• The GSPs should analyze whether future groundwater management will deplete any possible groundwater/surface water connection, and whether Groundwater Dependent Ecosystems (GDEs) are affected. • In terms of the temporal aspect of ISW, the historical percent of time a groundwater/surface water connection exists (e.g., primarily during winter/spring of wet years) should not decrease in the future. • If data gaps exist, note those and a preliminary timeline/schedule for filling those. • It would be helpful to create the framework for a detailed work plan for filling ISW data gaps, including additional locations for shallow monitoring wells, river stage recorders paired with monitoring wells, Thalweg surveys, and incorporating Airborne Electromagnetic data when available. • DWR recognizes the high uncertainty related to the ISW Sustainability Indicator, as implied by regulations that indicate SWRCB will not intervene until 2025 for ISW.

Appendix F. Madera Subbasin Domestic Well Mitigation Program Memorandum of Understanding, from the Madera Subbasin Revised Joint GSP, March 2023.

MEMORANDUM OF UNDERSTANDING ESTABLISHING A DOMESTIC WELL MITIGATION PROGRAM FOR THE MADERA SUBBASIN OF THE SAN JOAQUIN VALLEY GROUNDWATER BASIN

This Memorandum of Understanding ("MOU") is entered into this___day of _____2023 (the "Effective Date"), by and between the Groundwater Sustainability Agencies of the COUNTY OF MADERA ("COUNTY"), the CITY OF MADERA ("CITY"), the MADERA IRRIGATION DISTRICT ("MID"), , the MADERA WATER DISTRICT ("MWD"), and the GRAVELLY FORD WATER DISTRICT ("GFWD"), collectively hereinafter referred to as the "Parties," or individually as the "Party."

RECITALS

A. **WHEREAS**, groundwater and surface water resources within the Madera Subbasin of the San Joaquin Valley Groundwater Basin (DWR Bulletin 118 No. 5-22.06) (Subbasin) are vitally important resources, in that they provide the foundation to maintain and fulfill current and future environmental, agricultural, domestic, municipal, and industrial needs, and to maintain the economic viability, prosperity, and sustainable management of the Subbasin; and

B. **WHEREAS**, agriculture has been prominent in making Madera County one of the world's foremost agricultural areas and plays a major role in the economy of Madera County; and

C. **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

D. **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

E. **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

F. **WHEREAS,** there are seven GSAs within the Subbasin as set-forth in Exhibit A; and

G. **WHEREAS**, County, City, MID, and MWD have developed one GSP; Root Creek Water District has developed one GSP; GFWD has developed one GSP; and New Stone Water District has developed one GSP, such that the Subbasin is governed by four separate GSPs unified through the Subbasin Coordination Agreement; and

H. **WHEREAS**, in January 2020, the Parties submitted four GSPs to DWR; and

I. **WHEREAS**, the Parties agree, and as SGMA allows, a transition to sustainability over the 20-year GSP Implementation Period is in the best overall interest of the Subbasin, although this approach is expected to result in some continued groundwater level declines during the GSP Implementation Period; and

J. **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 and municipal wells in the Subbasin; and

K. **WHEREAS**, the Parties acknowledge that the number of domestic and municipal wells dewatered during implementation of the GSP (prior to 2040) is heavily dependent on precipitation and snowpack during that time period; and

L. **WHEREAS**, the Parties acknowledge that wet conditions may result in few dewatered wells; and

M. **WHEREAS**, the Parties acknowledge that substantial numbers of domestic and municipal wells may be dewatered if prolonged drought occurs during implementation of the GSP, while project and management actions are still being developed and implemented; and

N. **WHEREAS**, the Parties acknowledge that they cannot control groundwater conditions not caused by regional groundwater conditions; and

O. **WHEREAS**, the Parties do not intend to resolve or otherwise mitigate for issues related to normal wear and tear; and

P. **WHEREAS**, the Parties as part of their future analysis agree to review potential impacts to both domestic and municipal wells in the Subbasin; and

Q. **WHEREAS**, the Parties have reviewed and considered the content and recommendations set-forth by Self-Help Enterprises, Leadership Counsel for Justice and Accountability, and the Community Water Center in their publication titled, "Framework for a Drinking Water Well Impact Mitigation Program."

R. **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 review and consider mitigation for domestic and municipal well impacts resulting from declining groundwater levels that occur from groundwater management activities outlined in the four GSPs through development of a Domestic Well Mitigation Program (Program) as follows:

AGREEMENT

1. **POTENTIAL PROGRAM MITIGATION MEASURES.** Potential Program mitigation measures may include, but are not limited to:

    a. Short-term solutions in emergencies, such as delivery of bottled water and/or water tanks.
    b. Setting well pump at deeper depths, replacement of well pump, or well replacement.
    c. Residential water treatment equipment.
    d. Connection to or development of public water systems to serve impacted communities.
    e. Municipal service connections.

2. **PROPORTIONATE RESPONSIBILITY**. The Parties agree to work cooperatively together to determine the proportionate responsibility of each Party.

3. **FUNDING**. The Parties agree to fund the Program on an annual basis consistent with the final determination of each Party's proportionate responsibility.

4. **PROGRAM DEVELOPMENT COMMITTEE**. The Parties shall establish a Program Development Committee (Committee) that will oversee Program development. The Committee shall include at least one technical staff representative from each of the Parties. The Committee will define the purpose, objectives, roles, responsibilities, requirements, and potential outcomes of the Program. Items for consideration and development by the Committee include, but are not limited to:

    a. Definitions
    b. Property eligibility
    c. Property owner eligibility
    d. Program application process
    e. Preferred contractors
    f. Preliminary inspection process
    g. Program form development
    h. Priority
    i. Eligible mitigation
    j. Non-eligible mitigation
    k. Maximum mitigation award
    l. Recordation of mitigation award

5. **PROGRAM ORGANIZATIONAL STRUCTURE**. To aid the Committee in Program development and implementation, a DRAFT Program organizational structure is as shown in Exhibit B. That shown in Exhibit B is only a DRAFT and shall not limit or otherwise constrain the Committee in their analysis.

6. **PROGRAM IMPLEMENTATION.** To aid the Committee in Program development and implementation, a DRAFT implementation flowchart is as shown in Exhibit C. That shown in Exhibit C is only a DRAFT and shall not limit or otherwise constrain the Committee in their analysis.

7. **TERM**. The Program shall be developed within the first 5 years of GSP implementation (by 2025) and upon implementation, shall continue for the duration of the GSP Implementation Period, until groundwater sustainability is achieved and/or as otherwise directed by the Parties.

8. **PROGRAM MANAGEMENT**. Program management shall be facilitated by one of the Parties. If one of the Parties doesn't elect to program management duties and through recommendation of the Coordination Workgroup and approval of the Parties, Program management shall be facilitated through a third party.

9. **ENVIRONMENTAL REVIEW**. The Parties agree to cooperatively complete any environmental review as may be determined necessary for Program implementation. Any costs associated with environmental review shall be per the proportionate share as set-forth in this MOU.

10. **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.

To Madera County:	County of Madera Stephanie Anagnoson 200 W 4th Street, 4th Floor Madera, CA 93637
To MID:	Madera Irrigation District Thomas Greci 12152 Road 28 1/4 Madera, CA 93637
To GFWD:	Gravelly Ford Water District Don Roberts 18811 Road 27 Madera, CA 93638
To City:	City of Madera

Keith Helmuth
428 East Yosemite Avenue
Madera, CA 93638

To MWD: Madera Water District
Melanie J. Aldridge
1663 N. Schnoor Street, Suite 105
Madera, CA 93638

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 (conformation 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.

IN WITNESS WHEREOF, the Parties have caused this MOU to be executed, each signatory hereto represents that he/she has been appropriately authorized to enter into this MOU on behalf of the Party whom he/she signs.

County of Madera

ROBERT L. POYTHRESS
CHAIRMAN PRO-TEM

3.21.23
Date

Madera Irrigation District

Thomas Greci

3/21/2023
Date

Gravelly Ford Water District

Don Roberts

3-21-23
Date

City of Madera

Santos Garcia, Mayor

March 21, 2023
Date

Madera Water District

Phil Janzen

3-21-23
Date

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EXHIBIT A

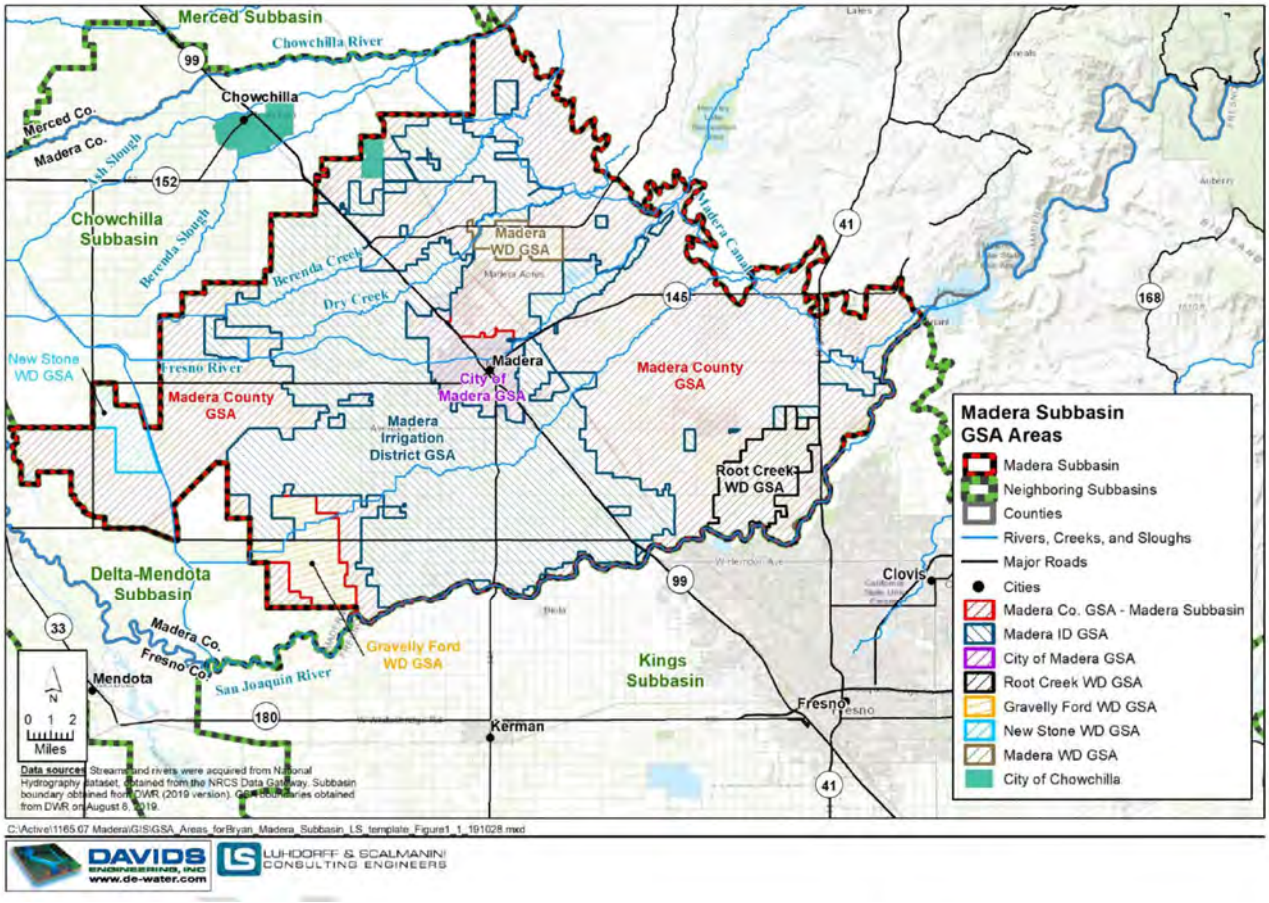
Merced Subbasin
Chowchilla River
Chowchilla
Merced Co.
Madera Co.
Ash Slough
Chowchilla Subbasin
Berenda Slough
Berenda Creek
Dry Creek
Madera WD GSA
Madera Canal
New Stone WD GSA
Fresno River
Madera County GSA
Madera City of Madera GSA
Madera Irrigation District GSA
Madera County GSA
Root Creek WD GSA
Clovis
Delta-Mendota Subbasin
Madera Co.
Fresno Co.
Gravelly Ford WD GSA
San Joaquin River
Mendota
Kings Subbasin
Fresno
Kerman
0 1 2 Miles
Data sources: Stream and rivers were acquired from National Hydrography dataset, obtained from the NRCS Data Gateway. Subbasin boundary obtained from DWR (2019 version). GSA boundaries obtained from DWR on August 8, 2019.
C:\Active\1165 07 Madera\GIS\GSA_Areas_forBryan_Madera_Subbasin_LS_template_Figure1_1_191028.mxd
DAVIDS ENGINEERING, INC www.de-water.com
LUHDORFF & SCALMANINI CONSULTING ENGINEERS
Madera Subbasin GSA Areas
Madera Subbasin
Neighboring Subbasins
Counties
Rivers, Creeks, and Sloughs
Major Roads
Cities
Madera Co. GSA - Madera Subbasin
Madera ID GSA
City of Madera GSA
Root Creek WD GSA
Gravelly Ford WD GSA
New Stone WD GSA
Madera WD GSA
City of Chowchilla

EXHIBIT B

DRAFT

Madera Subbasin – Domestic Well Mitigation Program Organizational Structure
March 5, 2023

Notes:
1. That shown herein is subject to revision by the Parties.
2. Public Outreach and Engagement is a necessary component as outlined by Self-Help Enterprises, Leadership Counsel for Justice and Accountability, and the Community Water Center in their publication titled, "Framework for a Drinking Water Well Impact Mitigation Program."
3. The Madera Subbasin Coordination Workgroup is defined in the Madera Subbasin Coordination Agreement entered into January 22, 2020.

EXHIBIT C

DRAFT

Madera Subbasin – Domestic Well Mitigation Program Implementation Flowchart
March 5, 2023

Notes:

1. Steps shown herein are intended to demonstrate critical decision points and is not intended to be indicative of all steps tha t may be required.
2. That shown herein is subject to revision by the Madera Subbasin GSAs.
3. The GSAs have reviewed and considered the content and recommendations set -forth by Self-Help Enterprises, Leadership Counsel for Justice and Accountability, and the Community Water Center in their publication titled, "Framework for a Drinking Water Well Impact Mitigation Program."