

**THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS  
BOARD ACTION SUMMARY**

DEPT: Environmental Resources

BOARD AGENDA:6.1  
AGENDA DATE: October 29, 2024

**SUBJECT:**

Public Hearing to Consider Adoption of the Northern Delta-Mendota Region Pumping Reduction Plan and Stanislaus County Groundwater Well Metering Monitoring and Reporting Guidelines

**BOARD ACTION AS FOLLOWS:**

**RESOLUTION NO. 2024-0628**

On motion of Supervisor Chiesa Seconded by Supervisor Withrow  
and approved by the following vote,

Ayes: Supervisors: B. Condit, Chiesa, Withrow, C. Condit, and Chairman Grewal


Noes: Supervisors: None

Excused or Absent: Supervisors: None

Abstaining: Supervisor: None

- 1)  Approved as recommended
- 2)  Denied
- 3)  Approved as amended
- 4)  Other:

**MOTION:**

ATTEST:   
ELIZABETH A. KING, Clerk of the Board of Supervisors

File No. GSA-3-13

**THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS  
AGENDA ITEM**

DEPT: Environmental Resources

BOARD AGENDA:6.1  
AGENDA DATE: October 29, 2024

CONSENT

CEO CONCURRENCE: YES

4/5 Vote Required: No

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**SUBJECT:**

Public Hearing to Consider Adoption of the Northern Delta-Mendota Region Pumping Reduction Plan and Stanislaus County Groundwater Well Metering Monitoring and Reporting Guidelines

**STAFF RECOMMENDATION:**

1. Conduct a public hearing to consider approval and adoption of the Pumping Reduction Plan for the Northern Delta-Mendota Region and Stanislaus County Well Metering Monitoring and Reporting Program Guidelines.
2. Adopt the Pumping Reduction Plan for the Northern Delta-Mendota Region and Stanislaus County Well Metering Monitoring and Reporting Guidelines.

**DISCUSSION:**

In September of 2014, Governor Edmund G. Brown signed into law the Sustainable Groundwater Management Act of 2014 (SGMA), which changed the landscape of groundwater management in California. SGMA is a comprehensive package of legislation that sets the framework for statewide sustainable groundwater management and declares that such authority be given to local public agencies that have either water supply or land use authority, or both.

SGMA requires, among many other items, the formation of Groundwater Sustainability Agencies (GSAs) made up of local public agencies. SGMA empowers these GSAs to use various management tools to achieve “sustainability” in the affected groundwater basins, including authorities required to manage groundwater in a sustainable manner. GSAs are the local agencies responsible for the development and implementation of the Groundwater Sustainability Plans (GSPs), ultimately aimed at ensuring groundwater sustainability over a 20-year implementation period. GSPs are focused on the development and implementation of long-term groundwater sustainability programs, plans and practices over a 50-year planning horizon.

There are four groundwater subbasins underlying Stanislaus County, in whole or in part. These basins include the following:

1. Eastern San Joaquin Groundwater Subbasin
2. Modesto Groundwater Subbasin
3. Turlock Groundwater Subbasin
4. Delta-Mendota Groundwater Subbasin

The Delta-Mendota Groundwater Subbasin has been designated by the California Department of Water Resources to be in a condition of “critical overdraft.” Pursuant to SGMA, groundwater subbasins in this category were required to develop and adopt GSPs by January 31, 2020.

On February 14, 2017, the Board of Supervisors approved the adoption of a Memorandum of Understanding creating the Northwestern Delta-Mendota Groundwater Sustainability Agency (Northwestern D-M GSA), a partnership consisting of Stanislaus County and Merced County.

On March 28, 2017, the Board of Supervisors approved the adoption of the SGMA Services Memorandum of Agreement (SS-MOA) with the San Luis and Delta-Mendota Water Authority (SLDMWA) consisting of Patterson Irrigation District, Del Puerto Water District and West Stanislaus Irrigation District. The SS-MOA, and associated Activity Agreement executed by already existing member agencies of the SLDMWA, established the Management Committee for the Northern Delta-Mendota Group of GSAs within the Delta-Mendota Groundwater Subbasin and established the formula for how costs would be shared. The GSAs of the Northern Delta-Mendota Group include the following:

1. West Stanislaus Irrigation District
2. DM-II (Del Puerto Water District-Oak Flat Water District)
3. Patterson Irrigation District (Patterson Irrigation District and Twin Oaks Irrigation District)
4. City of Patterson
5. Northwestern Delta-Mendota (Stanislaus and Merced counties)

SGMA regulations allow for the following scenarios, insofar as the creation of a groundwater basin GSP is concerned:

1. A single GSA may create a single GSP, or
2. Multiple GSAs may create a single GSP, or
3. Multiple GSAs may create multiple GSPs. In this case a formal Coordination Agreement is required among the parties creating the various GSPs to ensure that coordination is achieved.

On October 9, 2018, the Board of Supervisors approved entering into the formal Coordination Agreement which established, among other things, the 6-GSP Coordination Committee (Coordination Committee) and Cost-Share formulae among the GSP-GSA member agencies related to common and shared activities.

The GSAs (23 separate parties) within the Delta-Mendota Groundwater Subbasin developed and adopted six separate but coordinated GSPs for the subbasin. These GSPs include the following:

1. Northern & Central Delta-Mendota Region
2. San Joaquin River Exchange Contractors
3. Aliso Water District
4. Farmers Water District

5. Grassland Water District
6. Fresno County Management Areas A & B

After a two-year review, the Delta-Mendota Groundwater Subbasin GSAs received notification from the Department of Water Resources (DWR) that the Delta-Mendota Groundwater Subbasin GSPs were “incomplete.” The GSPs were amended as required to address certain deficiencies and resubmitted to DWR by the July 20, 2022, deadline. On March 2, 2023, the revised Delta-Mendota Groundwater GSPs were deemed to be “inadequate” by the DWR. The GSAs decided to adopt a single GSP for the subbasin to improve coordination among the many GSAs and increase efficiency.

The Memorandum of Agreement among the Delta-Mendota Subbasin Groundwater Sustainability Agencies (DMS-MOA) was approved by the Coordination Committee on November 13, 2023, and the Board of Supervisors on January 23, 2024, and replaced the Coordination Agreement when it became effective upon adoption of the single GSP on August 13, 2024. The DMS-MOA governs and clarifies the responsibilities of the GSAs under SGMA and the single GSP and coordinates the work and management of the subbasin.

The Delta-Mendota Groundwater Subbasin faces a potential probationary hearing by the State Water Resources Control Board (SWRCB) in the second quarter of 2025, based on the September 11, 2024, check in call between Delta-Mendota Subbasin representatives and the SWRCB. The GSAs in the Delta-Mendota Groundwater Subbasin would like to continue to manage the subbasin locally in lieu of SWRCB Intervention.

The Northern Delta-Mendota GSA Group contracted with EKI Environment and Water (EKI) to provide technical support for the development of the group’s Pumping Reduction Plan, applicable to all non-de minimus wells and required pursuant to Section 16.1.1 of the GSP. Section 16.1.1 requires the Pumping Reduction Plan to include the following six required components:

- (1) Monitoring and Data Collection Plan
- (2) Overdraft Mitigation Plan
- (3) Groundwater Level Minimum Threshold (GWL-MT) Avoidance Plan
- (4) Water Quality Minimum Threshold (WQ-MT) Exceedance Plan
- (5) Subsidence Avoidance Plan
- (6) Groundwater Allocation Backstop

As part of the Pumping Reduction Plan, each GSA is required to commit to adopting a Monitoring and Data Collection Plan that includes policies for mandatory well registration, metering, groundwater pumping measurement and reporting at all non-de minimus wells by October 2024, with implementation beginning January 2025 and complete implementation of meters, registration, monitoring and reporting requirements no later than January 1, 2026. The Stanislaus County Well Metering, Monitoring and Reporting Program Guidelines (Program Guidelines) were developed to be used by Stanislaus County to demonstrate compliance with this Monitoring and Data Collection Plan component of the GSP while meeting the minimum requirements of Chapter 9.37 of the Stanislaus County Ordinance Code, (Groundwater Ordinance),

Stanislaus County, as a member of the Northwestern D-M GSA, is responsible for implementing the GSP in the out-of-district areas within its boundaries. Stanislaus County is responsible for developing regulations to be adopted by the Board of Supervisors that are reasonably necessary to monitor and manage the existing condition of groundwater resources within the County, to determine trends, or to develop effective sustainable groundwater management plans and policies that are consistent with Chapter 9.37 of the Stanislaus County Ordinance Code, (Groundwater Ordinance), adopted Programmatic Environmental Impact Report and Discretionary Well Permitting and Management Program. The regulations must also be compatible with the Delta-Mendota GSP and the Adaptive Management Framework for the Subbasin outlined in the DMS-MOA. These regulations will include, without limitation, the establishment of required frequency and timing of reports, and the required information to be monitored, including, water level and pumping data, or other data necessary for any other method to determine groundwater production to ensure the sustainable management of groundwater resources.

The Program Guidelines specify that a completed well registration form, well use and construction data, meter installation and calibration certification records, and fee will be required to be submitted to the DER by January 1, 2026, for each non-exempt well. The registration fee will be used to cover the cost of service for the registration program which has been estimated to be 1 hour of weighted labor rate which amounts to \$137 as adopted in 2023 and will be incorporated into future County budget planning and approval efforts. Exempt wells, as defined by the Program Guidelines, are de minimus extractors, (two acre-feet or less of groundwater per year), and wells that were constructed before November 25, 2014, that extract less than ten acre-feet of groundwater per year. Exempt wells are not subject to the requirements of the Program Guidelines because they operate at a scale that has minimal impact on water resources and regulatory oversight of these extractors would not yield substantial benefits, would be inefficient, and impose significant burdens to disadvantaged communities.

Reports of monthly groundwater extraction for each non-exempt well for the previous water year shall be provided to the DER by January 1, 2026, and each November 1 thereafter, and include a photo of the meter for the final annual reading. Reports of surface water deliveries and evapotranspiration data products may be used instead of meters to measure groundwater extraction for small pumpers that extract less than 40 acre-feet per year, however, small pumpers must participate in other well registration, monitoring and reporting requirements specified in the Program Guidelines.

The Draft Program Guidelines were reviewed by the Stanislaus County Water Advisory Committee during the September 25, 2024, meeting and any recommendations have been considered and incorporated into the final Program Guidelines where possible.

To achieve the GSP sustainability goal, The Northern Delta-Mendota GSA Group is responsible for reducing their average lower aquifer pumping by approximately 9,000 acre-feet per year by 2030. The Overdraft Mitigation Plan requires meeting this reduction through an annual apportioned pumping reduction of 20% each year beginning in January 2025 and continuing each year for the following five years through the end of 2030.

The GWL-MT Avoidance Plan will enable the Northern Delta-Mendota GSA Group to identify defined triggers and required actions by the end of February each year to be

implemented as needed to prescribe pumping cutbacks in zones of impact to avoid minimum threshold exceedances within each principal aquifer. Subbasin model simulations will be used to minimize the total volume of pumping reduction needed for recovery and to achieve the necessary groundwater level increase. The program will be adaptively managed and assessed on a quarterly basis to ensure compliance.

The WQ-MT Plan triggers pumping cutbacks only when a statistically significant relationship as outlined in the WQ-MT plan is observed between GSA management activities and changes in water quality concentrations that are exceeding or approaching a minimum threshold exceedance. If after an investigation is completed and evidence is observed to indicate that the degradation is associated with groundwater level changes caused by GSA management activities, mitigation actions, included pumping cutbacks following the GWL-MT process where applicable, shall be completed to address the degradation and prevent future exceedances from occurring.

To proactively address projected land subsidence associated with modeled pumping and predicted climate change over the implementation period, a two-part Subsidence Avoidance Plan was developed using a 0.35 acre-feet per acre cutback to mitigate risks to critical infrastructure when annual or cumulative threshold rates are exceeded in the Northern Delta-Mendota Region and when within 0.5 miles around Delta-Mendota Canal and the California Aqueduct.

The DMS-MOA requires GSAs to initiate a groundwater allocation backstop if they cannot meet the minimum requirements specified in the GSP and Pumping Reduction Plan. A groundwater allocation backstop limited to the estimated sustainable yield for the basin will be triggered if any of the Northern Delta-Mendota GSA Group members fail to correct a GWL-MT exceedance within two consecutive years, fail to achieve the overdraft pumping reduction by 2030, fail to comply with GWQ-MT or the Subsidence Avoidance Plan requirements.

Due to the structure of the MOU governing the administration of the Northwestern D-M GSA both Stanislaus and Merced Counties must approve the Pumping Reduction Plan before the end of 2024 and must adopt policies required by the Monitoring and Data Collection Plan component for mandatory metering, well registration and groundwater pumping and reporting requirements that will be consistent with each county's exercise of its land-use authority and any existing groundwater ordinance. Approval of the Program Guidelines will meet the Monitoring and Data Collection Plan requirements of the Pumping Reduction Plan pursuant to Section 16.1.1 of the GSP.

Merced County will tentatively set their public hearing date on November 26, 2024, for approval of the Pumping Reduction Plan and a separate policy to satisfy the Monitoring and Data Collection Plan Component as required by the GSP.

**POLICY ISSUE:**

This proposed action complies with State legislation known as the "Sustainable Groundwater Management Act" which mandates the adoption and implementation of a Groundwater Sustainability Plan (GSP) for groundwater basins such as the Delta-Mendota Groundwater Subbasin which is categorized as being in a condition of critical overdraft.

**FISCAL IMPACT:**

Total costs for the Pumping Reduction Plan tasks were approved by the Northern GSA group in the amount of \$131,000, of which Stanislaus County’s portion is approximately \$42,000 pursuant to the existing cost sharing formula used between the Northern Delta-Mendota Group agencies. There are no current additional fiscal impacts associated with the development of the Program Guidelines because existing staff is currently undertaking this work.

Costs for development of Department of Environmental Resources procedures to be used for addressing and mitigating groundwater level minimum threshold exceedances under the DMS-MOA had previously been estimated at \$21,000. The scope of work has expanded to include the additional components of the GSP Pumping Reduction Framework with the progression of the development and adoption of the single GSP and sufficient funds have been included in the 2025 Adopted Budget for this purpose. There will be additional costs associated with implementing the GSP and for future GSP Plan updates over the coming decades. These costs, once determined, will be subject to future County budget considerations and Board of Supervisors approval.

**BOARD OF SUPERVISORS’ PRIORITY:**

The recommended actions are consistent with the Board’s priority of *Enhancing Community Infrastructure* by committing to the responsible management of community infrastructure and sustainable groundwater resources.

**STAFFING IMPACT:**

Existing staff will continue to oversee the work associated with this item. Once the Pumping Reduction Plan and Program Guidelines are implemented additional staff will be needed to effectively support the increased workload associated with this initiative to maintain quality, meet deadlines and ensure execution of a successful program. Over the upcoming months, the Department of Environmental Resources will gather additional information and assess program demands to refine our staffing plan so that it is adequate for future financial planning purposes.

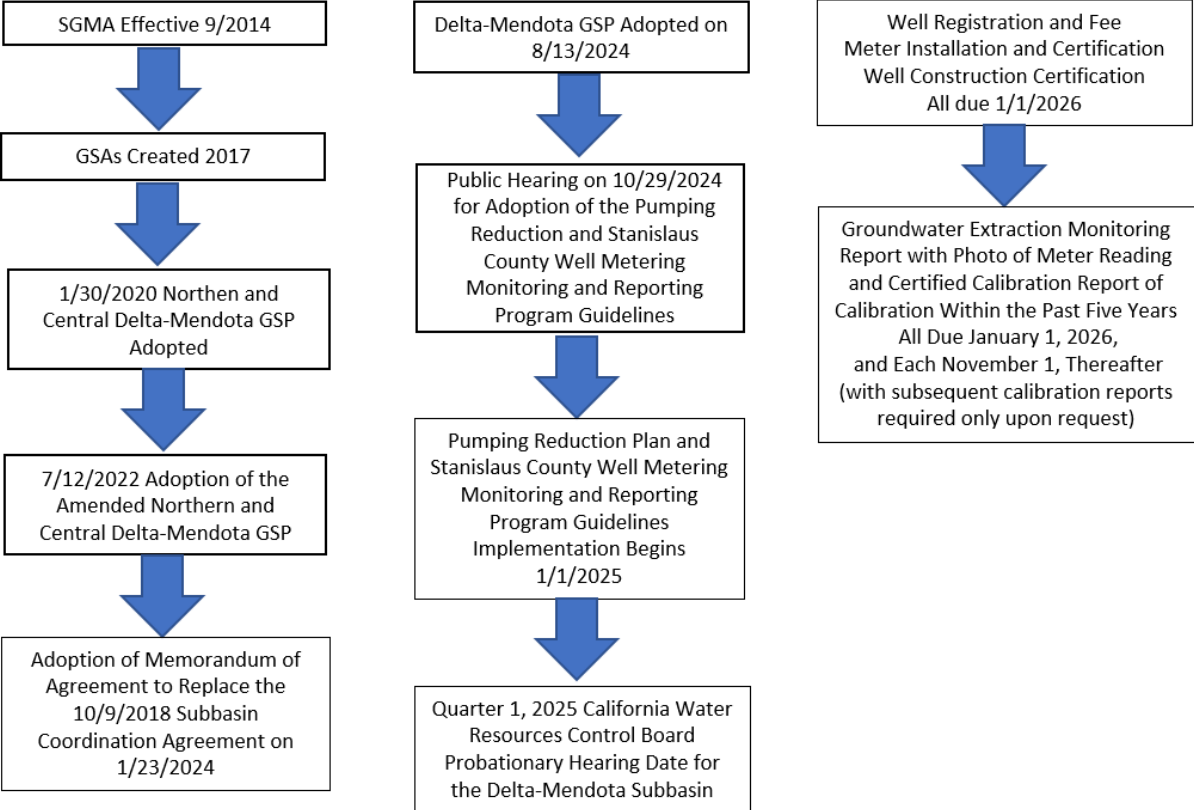
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**ATTACHMENT(S):**

1. Delta-Mendota GSP Development and Implementation Activities
2. Stanislaus County Well Metering Monitoring and Reporting Program Guidelines Application Chart
3. Northern Delta-Mendota Region Pumping Reduction Plan
4. Stanislaus County Well Metering Monitoring and Reporting Program Guidelines

# DELTA-MENDOTA GSP DEVELOPMENT AND IMPLEMENTATION ACTIVITIES



**Stanislaus County Well Metering Monitoring and Reporting Program Guidelines Application:**  
Only in Unincorporated GSP White Areas  
Only if Required by a GSP  
Applies to all Non-de minimus Wells Unless Exempt

**Exempt and Small Pumper Wells only if Constructed Before 11/25/2014**

**Exempt Wells less than 10 AFY**  
Do not have to participate and comply with the program

**Small Pumpers between 10 and 40 AFY**  
Meter Requirements or Evapotranspiration Data with Surface Water Records  
Monitoring and Reporting Required  
Well Registration and Fee Required  
Construction Certification Required

**Wells Constructed After 11/25/2014 and Wells Constructed Before 11/25/2024 that extract 40 AFY or more**

Meter Requirements Apply  
Monitoring and Reporting Required  
Well Registration and Fee Required  
Construction Certification Required



# NORTHERN DELTA-MENDOTA REGION PUMPING REDUCTION PLAN

October 2024

# NORTHERN DELTA-MENDOTA REGION PUMPING REDUCTION PLAN

**October 2024**

***Prepared for:***

Northern Delta-Mendota Region Management Committee

***Prepared by:***

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# NORTHERN DELTA-MENDOTA REGION PUMPING REDUCTION PLAN

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Appendix A: Selected Slides from Presentations to the Northern Delta Mendota Region Management Committee Outlining Technical Approach to Implementation of PRP Components

## 1 INTRODUCTION

The Northern Delta Mendota Region Management Committee (Committee) has developed this Pumping Reduction Plan (PRP) in accordance with Section 16.1 of the 2024 revised Groundwater Sustainability Plan (GSP) for the Delta Mendota Subbasin (Basin). The PRP addresses the following six required components of the GSP:

- (1) Monitoring and Data Collection Plan,
- (2) Overdraft Mitigation Plan,
- (3) Groundwater Level Minimum Threshold (GWL-MT) Avoidance Plan,
- (4) Water Quality Minimum Threshold (WQ-MT) Exceedance Plan,
- (5) Subsidence Avoidance Plan, and
- (6) Groundwater Allocation Backstop.

This PRP is applied to the five groundwater sustainability agencies (GSAs) forming the Committee (member GSAs), namely the City of Patterson GSA (City GSA), DM-II GSA, Northwestern Delta-Mendota GSA (NW-DM GSA), Patterson Irrigation District and Twin Oaks GSA (PID GSA), and West Stanislaus Irrigation District (WSID GSA).

For applicable PRP components, specific triggers and procedures are defined. These include an entry trigger to activate the PRP, a zone of impact (ZOI) to determine where the PRP will be applied, a cutback approach to provide quantitative estimates of pumping reductions, an exit trigger to conclude the cutback once objectives are met, and enforcement measures to ensure successful implementation. Additional monitoring and reporting requirements are outlined in each component, aligning with the Monitoring and Data Collection Plan. Wells solely used to supply de minimis groundwater users<sup>1</sup> are not subject to pumping cutbacks required under this plan.

Although the Committee has worked diligently to create this plan in support of achieving the GSP sustainability goals, the PRP is designed as a living document. It will be updated and adapted as new data and information become available to better serve the Committee and the Basin in achieving its sustainability goal.

Each responsible GSA will implement this Pumping Reduction Plan (PRP), with coordination and oversight provided by the Committee and the Basin Coordination Committee as applicable, unless otherwise specified. The processes and protocols for monitoring, reporting, and data sharing follow what is outlined in the GSP and/or agreed upon in the Basin GSAs' Memorandum of Agreement (MOA), unless otherwise specified. Enforcement of the PRP will follow the agreements outlined in the MOA, unless otherwise specified.

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<sup>1</sup> De minimis user is defined as a user that extracts two acre-feet or less per year of groundwater for domestic purposes.

## 2 MONITORING AND DATA COLLECTION PLAN

In accordance with Section 16.1 of the GSP, the Monitoring and Data Collection Plan developed by each GSA or GSA Group must include commitments and strategies for achieving the eight components outlined in Table 1. The Committee members have committed to meeting all these requirements as detailed in Table 1.

**Table 1. Scheduled Compliance with the Requirements of the Monitoring and Data Collection Plan**

Requirement	Commitment
Regular monitoring network(s) assessment	To be conducted on a regular basis, at least once annually, by the Committee
Quarterly groundwater level monitoring	To be implemented starting Fall 2024
Semiannual water quality monitoring	To be implemented starting Fall 2024
Well registration policy	All members will have adopted policies prior to January 2025
Well metering policy	
Well extraction reporting policy	To be measured and reported at least annually, or more frequently as needed by other plans, starting January 2025, and based on metered pumping starting January 2026
Provide well construction information for all monitoring wells	Committee is already in compliance
Replacing composite/production wells in the monitoring network with dedicated monitoring wells by 2030	Committed to complete by 31 December 2029, as-needed, and as appropriate and feasible.

### 3 OVERDRAFT MITIGATION PLAN

#### 3.1 Objective and Requirement

Per Section 16.1.1.2 of the GSP, the member GSAs are required to reduce their average pumping, based on the overdraft evaluation period (Water Year [WY] 2003 to WY 2023), by approximately 9,000 acre-feet per year (AFY) in the Lower Aquifer by 2030. The GSP mandates achieving this reduction through an annual minimum of 20% of the total apportioned pumping cut, beginning in January 2025 and continuing each year for the following five years accomplishing the total minimum reduction by the end of 2030.

#### 3.2 Implementation Approach

Each member GSA will reduce its pumping from the Lower Aquifer from the Model-estimated pumping for WY 2019-2023, as shown in Table 2. Pumping reduction under this plan may be adjusted and adapted based on model updates and the availability of additional data and measurements.

**Table 2. Planned Lower Aquifer Pumping by 2030**

Member GSA	Annual Pumping Reduction Starting in 2025 (AFY)	Target Pumping Reduction by 2030 (AFY)
City GSA	92	460
DM-II GSA	1,100	5,498
NW-DM GSA	194	968
PID GSA	83	417
WSID GSA	336	1,680
<b>Total</b>	<b>1,805</b>	<b>9,023</b>

#### 3.3 Additional Monitoring and Reporting Requirements

Planned pumping reductions will be verified and adjusted through pumping estimation using evapotranspiration (ET) products in 2025 and metered pumping after, conducted according to the Monitoring and Data Collection Plan and GSA-adopted well registration, metering, and reporting requirements.

#### 3.4 Enforcement

The Groundwater Allocation Backstop will be enforced in cases of implementation lapses. GSAs that fail to achieve their respective target pumping reduction will be subject to the groundwater allocation backstop per the GSP (Section 16.1.1.6) until the specific targets are met. If a GSA fails to meet its annual pumping reduction for any year, it is required to submit a report detailing the reasons for the shortfall and the corrective actions planned to return to the step-wise reduction targets. The Committee reserves the right to require the GSA to implement the groundwater allocation backstop if the failure is unjustified and/or the proposed corrective measures are insufficient until it is certain the annual reduction schedule can be met. Further actions governed by the dispute resolution mechanisms in the MOA.

## 4 GROUNDWATER LEVEL MINIMUM THRESHOLD AVOIDANCE PLAN

### 4.1 Objective and Requirements

Per Section 16.1.1.3 of the GSP, member GSAs are required to identify GWL-MT hotspots<sup>2</sup> based on defined triggers by the end of February each year for identified groundwater level representative monitoring wells (RMW-WL) within each principal aquifer and implement targeted pumping cutbacks, on an acre-foot per acre basis. These cutbacks will be applied at the rate and within an area determined by Zone of Impact (ZOI) and Cutback Approach (Section 4.3), accompanied by increased monitoring frequency, and adapted as required and justified under this plan.

### 4.2 Investigation Trigger

The occurrence of any of the following conditions at an RMW-WL triggers a GWL-MT investigation may lead to hotspot designation and require pumping reductions:

- Exceedance of the GWL-MT, determined by comparing the most recent seasonal low measurement (Fall) to the defined MTs (per GSP Section 16.1.1.3); OR
- Projected exceedance of the GWL-MT, based on the linear trend of the previous four Fall groundwater level measurements (using the seasonal average if multiple measurements are taken; per GSP Section 16.1.1.3); OR
- A seasonal high (Spring) groundwater level measurement lower than the RMW-WL-specific spring target level. If insufficient data exists to establish a spring target level, the February GWL from the last year without a GWL-MT exceedance will be used as a substitute.

If multiple measurements are taken during a season, the average will be used for comparison. Spring target levels are defined for each RMW-WL by adding the respective GWL-MTs to the average seasonal variation, which is calculated as the long-term average (typically more than six years) difference between seasonal highs and lows at the RMW-WL. A graphical demonstration of each trigger, using hypothetical hydrographs, is provided in Appendix A.

### 4.3 Investigation Approach

The investigation should focus on verifying the groundwater level measurement at the RMW-WL, ensuring it is not affected by pumping at the well, nearby wells, or any unusual management practices in the area. At a minimum, the investigation should include:

- Taking verification measurements after a sufficient shutoff period to allow groundwater levels at the RMW-WL to stabilize;
- Groundwater level measurements at nearby wells, as needed, for trend comparison; and
- Analysis of pumping activity around the RMW-WL to identify any significant deviations from typical practices.

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<sup>2</sup> Per GSP, if groundwater levels at an groundwater level representative monitoring wells (RMW-WL) exceeds established trigger levels, or is projected to exceed an MT, an investigation is required to determine if the RMW-WL should be designated as MT hotspot and require an RMW-WL. This plan will designate an RMW-WL that exceeds any of the cutback entry triggers an MT hotspot.

The implementing GSAs should conduct the investigation within the same measurement season, not exceeding 30 days from the initial measurement, and report the results to the Committee. If the verification and investigation do not provide sufficient evidence to refute the projected exceedance of the trigger, the RMW-WL should be classified as a GWL-MT hotspot and follow the cutback requirements outlined in this policy.

#### 4.4 Zone of Impact and Cutback Approach

The ZOIs around hotspot RMW-WLs will be delineated based on model simulations and validated through analytical calculations by a qualified professional (Professional Geologist, Professional Engineer, or equivalent). These zones represent areas where groundwater pumping directly influences water levels at the RMW-WL. The ZOIs may extend beyond GSA boundaries and are defined using a sensitivity threshold, which quantifies the change in GWL at the RMW-WL in response to pumping variations in different well clusters.

Sensitivities will be calculated as the rate of GWL change per unit of pumping reduction. To achieve the desired groundwater level recovery, defined as the difference between the measured GWL and the trigger target, a uniform acre-foot per acre pumping limit will be identified within the ZOI. The cumulative impact of the defined cutback across the ZOI will be assessed to estimate the overall recovery at the RMW using the estimated sensitivities. The objective is to minimize the total volume of pumping reduction while achieving the necessary groundwater level increase (An example process is provided in Appendix A). The estimations of the ZOI and the cutback serve as starting points and will be adaptive. Curtailment adaptation follows the 3-month rolling linear trend of groundwater levels, proportionally increasing or decreasing curtailment based on the difference between the slopes of the rolling 3-month trend and the trendline ending in Fall or Spring target levels.

Following the determination in February of each year, the uniform acre-foot per acre pumping limit will be implemented by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers. Pumping within the ZOI and the need for any curtailment adaptation will be assessed by the respective GSA(s) on a quarterly basis to ensure compliance.

#### 4.5 Cutback Exit Trigger

The pumping cutback may be exited upon occurrence of all of the following conditions:

- Cutbacks have been implemented for at least one water year (a period including consecutive Spring and Fall periods);
- Projected exceedance of GWL MT is projected to be avoided in the following year based on the linear trend calculated from the previous four Fall GWLs;
- An increasing spring level trend calculated based on the measurements made in the first quarter and Spring GWL has recovered to be above the Spring Target Level.

Following the determination that the exit trigger condition(s) have been met, the uniform acre-foot per acre pumping limit will be removed by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers.

#### 4.6 Additional Monitoring and Reporting Requirements

Per GSP Section 16.1.1.3, the GWLs and pumping within the ZOI will be measured monthly during the implementation of the pumping cutback. Measured data within the ZOI should be submitted to the

Committee within two weeks of collection. All data reported should also be imported into the Basin Data Management System (DMS) by the respective GSA(s). In the absence of metering, GSAs agree to report detailed surface water delivery data monthly, as applicable, and utilize Land IQ ET to estimate pumping.

#### **4.7 Enforcement**

The Groundwater Allocation Backstop will be enforced if a GSA fails to implement this plan within two quarters. Further actions will be governed by the dispute resolution mechanisms in the MOA.

## 5 WATER QUALITY MINIMUM THRESHOLD EXCEEDANCE PLAN:

### 5.1 Objective and Requirements

Per GSP Section 16.1.1.4, member GSAs are responsible for identifying exceedances or projected exceedances of a WQ-MT. If such exceedances are linked to Basin management (pumping or recharge), GSAs must investigate the cause and, if necessary, design and implement appropriate mitigation measures, including pumping cutbacks or other strategies, to prevent future WQ-MT exceedances caused by Basin management.

The WQ-MT Plan triggers pumping cutbacks only when a direct relationship or convincing linkage is established between changes in water quality concentrations exceeding or projected to exceed their MTs and management actions of the GSAs in the Basin or changes in groundwater levels. In the absence of such correlations or due to data gaps, continued monitoring and data collection are prioritized. When necessary, pumping cutbacks are implemented using the same approach outlined in the GWL-MT Plan. A general framework of this plan is illustrated in Figure 1.

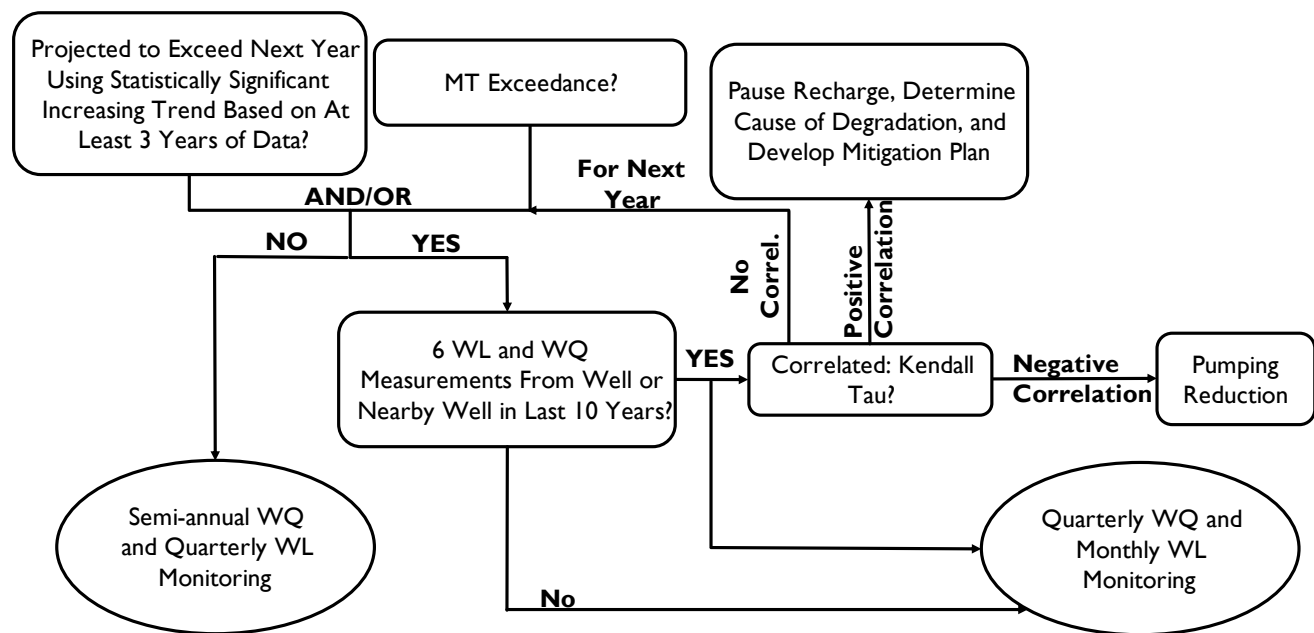


Figure 1. Investigation and Pumping Cutback Workflow for WQ-MT Plan

### 5.2 Investigation trigger

The occurrence of any of the following conditions at an identified groundwater quality representative monitoring well (RMW-WQ) triggers an investigation to assess the cause of the degradation and its correlation with groundwater level changes

- Exceedance of the WQ-MT, determined by comparing the most recent seasonal low measurement (Fall) to the defined MTs (per GSP Section 16.1.1.4); OR
- Projected exceedance of the WQ-MT, based on a statistically significant linear trend of the previous three Fall groundwater level measurements (using the seasonal average if multiple measurements are taken; per GSP Section 16.1.1.4).

The statistical significance of a linear trend is determined using the p-value of the linear model. A p-value of less than 0.05 is generally considered statistically significant, but this threshold can be adjusted based on sample size and professional judgment. It's important to note that the occurrence of an investigation trigger does not automatically necessitate the implementation of pumping cutbacks.

### 5.3 Investigation Approach

Respective GSAs are required to conclude an investigation within 60 days of reporting a WQ-MT investigation trigger and recommend next steps to be taken to the Committee. A Kendall Tau test<sup>3</sup> will be used to assess potential correlations between water quality (WQ) and GWLs at a triggered RMW-WQ site. At least six WQ/GWL sample pairs from the same or nearby wells are required, with pairs consisting of samples collected within the same year and season (e.g., Fall of a specific year) or within a sufficiently close timeframe.<sup>4</sup> If there are not enough samples, monitoring will continue until sufficient data is available. For groundwater management projects (e.g., recharge facilities) with known operational changes, additional case-specific investigations will be performed.

A significant correlation is identified when at least six WQ/GWL measurements, taken within the last decade—including at least one from the current year—yield an absolute Kendall Tau coefficient ( $|\tau|$ ) of 0.6 or greater and a p-value of 0.05 or less.<sup>5</sup> If a statistically significant correlation is not found or if the sample size is insufficient, more frequent sampling is implemented until a re-evaluation is possible. Otherwise, mitigation is triggered for the RMW-WQ and it is assigned as a WQ hotspot. A correlation between declining GWL and WQ prompts a reduction in pumping, while any correlation between GWL and WQ for recharge projects will require actions related to project implementation.

### 5.4 Mitigation Approach

Following the requirements of the GSP Section 16.1.1.4, upon triggering mitigation, respective GSAs will have 90 days to propose a mitigation action plan to address increased concentrations of constituents of concern (COCs) and prevent future exceedances of WQ-MTs. The responsible GSA is required to notify groundwater pumpers within a three (3) mile radius of the RMW-WQ exceeding the trigger about the projected degradation and potential mitigation. The mitigation approach will depend on whether the trigger is caused by GWL declines due to pumping or by the implementation of projects and management actions (P/MAs), primarily recharge projects.

#### 5.4.1 Mitigation for Degradation Due to Groundwater Level Decline

When WQ degradation is linked to GWL declines, a temporary GWL-MT hotspot is established at the RMW-WQ, or a nearby well with similar construction, to monitor and control conditions. The temporary

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<sup>3</sup> The Kendall Tau Test is a non-parametric statistical method used to measure the strength and direction of association between two variables. It is particularly useful when the data does not meet the assumptions of normality, and it works well with small sample sizes, making it a flexible choice for assessing correlations in datasets with limited observations (Kendall, M. G. "A New Measure of Rank Correlation." *Biometrika* 30, no. 1/2 (1938): 81–93. <https://doi.org/10.2307/2332226>.)

<sup>4</sup> In the absence of sufficient data or at the beginning of implementation, more flexible thresholds may be necessary, and samples from different years could be considered as pairs for the Kendall Tau test.

<sup>5</sup> The p-value of less than 0.05 is a typical threshold for hypothesis testing and statistical significance. These correlations can be loosened by the GSAs on an as-needed basis and based on professional judgment. It is recommended that depending on sample size and data available, a larger p-value is considered to be sufficient when a clear correlation can be observed from hydrographs.

GWL trigger is set to the previous year's seasonal high (average Spring water level). Pumping cutback is implemented following the GWL-MT process, based on the temporary GWL trigger set at the well, acting as the target level and the most current seasonal high measurement. The uniform acre-foot per acre pumping limit will be implemented by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers. Pumping within the ZOI and the need for any curtailment adaptation will be assessed by the respective GSA(s) on a quarterly basis to ensure compliance.

Upon achieving the GWL target, the conditions will be reevaluated. If cutback exit trigger is not met (WQ is not stabilized), the WQ/GWL correlation will be re-investigated. If a significant correlation persists, further cutbacks should be implemented.

#### 5.4.2 Mitigation for Degradation Due to Recharge Projects

If it appears that the WQ-MT has been triggered by a recharge project, the investigation will determine if the degradation results from factors such as poor-quality recharge water, flushing of soil constituents, geochemical reactions, altered groundwater gradients, etc.

Following the requirements of the GSP Section 16.1.1.4, the respective GSA will submit a detailed mitigation plan to the Committee within the 90-day time frame. The recharge project must be paused during this period and until the exit trigger is met unless the GSA can justify successful mitigation through modified or continued operation. The plan should address the source of water quality degradation, identified in the investigation, and propose modifications to operations to mitigate incurred impacts. Throughout this period, WQ monitoring continues to ensure that any future triggers are addressed promptly. These actions aim to ensure a stable balance between groundwater recharge efforts and the protection of groundwater quality in the Basin, adapting as needed based on new data and observations.

#### 5.5 Exit Trigger

Mitigation action (pumping cutback or mitigation plan) can be exited if any of the following occur:

- GWL target is met, and WQ at the hotspot RMW-WQ does not show a statistically significant increasing trend using the last three measurements; OR
- GWL target is met, and a significant correlation between WQ and GWL can no longer be established; OR
- Projected WQ at the RMW-WQ will not exceed the respective WQ-MT.

Following the determination that the exit trigger condition(s) have been met, the respective GSA(s) throughout the ZOI will communicate the removal of mitigation measures to the applicable landowners/pumpers.

#### 5.6 Additional Monitoring and Reporting Requirements

Monitoring will be generally conducted as outlined under the Monitoring and Data Collection Plan. Following the requirements of the GSP Section 16.1.1.4, if an investigation is triggered but insufficient data is available to conduct meaningful investigation and statistical correlation, WQ monitoring at the triggered RMW-WQ, and at least one upgradient and one downgradient RMW-WQ well, will be increased to quarterly sampling for the specified COC. GWL measurement at the triggered RMW-WQ, the upgradient and downgradient RMW-WQ, and the identified nearby wells will be increased to monthly. For any recharge project, regardless of trigger status, a minimum of quarterly WQ monitoring should be conducted at least in one upstream and one downstream well. Pumping should be measured monthly

**Water Quality Minimum Threshold Exceedance Plan:**

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within the ZOI. All measurements and monitoring conducted under this plan should be reported to the Committee within two weeks. All data reported should also be imported into the Basin DMS by the respective GSA(s).

### 5.6.1 Enforcement

Enforcement of this plan is governed by the dispute resolution mechanisms in the MOA. When pumping cutbacks are implemented, enforcement mirrors the procedures used for GWL-MT violations. In such cases, failure to comply with implementation or a delay of more than two quarters will trigger the Groundwater Allocation Backstop.

## 6 SUBSIDENCE AVOIDANCE PLAN

### 6.1 Objective and Requirements

Per GSP Section 16.1.1.5, member GSAs are required to proactively address progressing land subsidence that does not or is not projected to comply with the requirements of the GSP. The Subsidence Avoidance Plan has two components that lead to different requirements. The Critical Infrastructure Component only applies to critical infrastructure and includes areas around the Delta Mendota Canal (DMC) and California Aqueduct (Aqueduct) in the Northern Delta Mendota Region (Region). The Hotspot Mitigation Component applies to the entire Basin and will correspondingly apply to the entire Region.

### 6.2 Cutback Entry Trigger

The pumping cutback under the Subsidence Avoidance Plan is triggered under the following conditions for each component, per GSP Section 16.1.1.5:

- **Critical Infrastructure Component:** the three-year average subsidence rate exceeds 0.2 feet per year (ft/year) within 0.5 miles of critical infrastructure (DMC and Aqueduct, shown in Figure 2)
- **Hotspot Mitigation Component:** The five-year linear trend established based on InSAR data indicates a projected subsidence of more than 2.0 feet by 2040 (MT), or more than 0.5 feet by 2030 (IM) or exceedance of any subsequent IM.

Triggers under both components will be based on subsidence caused by Basin management, or under conditions that such causality cannot be justifiably established. Appendix A provides examples of hypothetical cases of triggers under both components and applicable ZOIs and cutbacks under this plan.

### 6.3 Zone of Impact and Cutback Approach

#### 6.3.1 Critical Infrastructure Component

Zone of exceedance is the area within 0.5 miles of the critical infrastructure where the three-year average subsidence rate exceeds 0.2 ft/year, symmetrically defined on both sides of the critical infrastructure. The ZOI will be identified as the zone of exceedance plus the areas where the three-year average subsidence rate exceeds 0.1 ft/year contiguous with such defined zone of exceedance.

Pumping cutback starts at 0.35 AFY/acre (approximately the estimated sustainable yield for the Lower Aquifer in the Region)<sup>6</sup> within the ZOI. Groundwater extraction over this estimated sustainable yield is considered likely to contribute to the projected exceedance of subsidence thresholds. The uniform acre-foot per acre pumping limit will be implemented by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers. Pumping cutbacks are increased based on rolling annual average rates of subsidence to ensure reduction in subsidence. However, pumping cutbacks can only be decreased annually, based on rates calculated over the same period as the entry trigger. The adjustment to pumping cutbacks will be estimated by a qualified professional (Professional Geologist, Professional Engineer, or equivalent). Per GSP Section 16.1.1.5, no new Lower Aquifer or Composite Wells are permitted within the ZOI until the exit trigger is met.

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<sup>6</sup> The Committee may adjust this limit upon availability of additional data and information.

### 6.3.2 Hotspot Mitigation Component

The ZOI is defined as a radius of 0.5 miles around any point that meets the cutback entry trigger. Pumping cutbacks are initiated at a rate of 0.35 AFY/acre (approximately the estimated sustainable yield for the Lower Aquifer in the Region)<sup>7</sup> and adjusted based on rolling annual average subsidence rates. The uniform acre-foot per acre pumping limit will be implemented by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers. The adjustment to pumping cutbacks will be estimated by a qualified professional (Professional Geologist, Professional Engineer, or equivalent).

If ZOIs defined under different components intersect, the largest overlapping area is subject to the most stringent criteria under the Subsidence Avoidance Plan. Adjustments to the pumping cutback under both components should be made based on the ratio of cutbacks to reduced subsidence achieved.

### 6.4 Cutback Exit Trigger

Pumping cutback under the Subsidence Avoidance Plan may be relieved if the conditions defined under each respective component below are met:

- **Critical Infrastructure Component:**
  - the four-year average subsidence rate within the ZOI is smaller than 0.1 feet per year (ft/year), per GSP Section 16.1.1.5; OR
  - GSA(s) can provide justification in the form of a technical report from a qualified professional to sufficiently demonstrate that subsidence is not caused due to pumping within ZOI, using multiple years of pumping measurement data gathered after the trigger
- **Hotspot Mitigation Component:**
  - Subsidence due to Lower Aquifer Pumping attributable to Basin is eliminated, per GSP Section 16.1.1.5; OR
  - The five-year linear trend established based on InSAR data no longer indicates exceedance of cumulative MT or IMs; OR
  - GSA(s) can provide justification in the form of a technical report from a qualified professional to sufficiently demonstrate that subsidence is not caused due to pumping within ZOI, using multiple years of pumping measurement data gathered after the trigger.

Following the determination that the exit trigger condition(s) have been met, the uniform acre-foot per acre pumping limit will be removed by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers.

### 6.5 Additional Monitoring and Reporting Requirements

Monthly pumping measurements and subsidence rates (if available) should be reported to the Committee within two weeks of collection. All data reported should also be imported into the Basin DMS by the respective GSA(s). If subsidence data is unavailable, quarterly reporting is sufficient. GWL measurements in the Lower Aquifer should be measured monthly within the ZOI and reported within two weeks of collection. The number of new Lower Aquifer or Composite wells within the ZOI should be reported

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<sup>7</sup> The Committee may adjust this limit upon availability of additional data and information.

monthly. For the purposes of the Subsidence Avoidance Plan, composite wells are conservatively considered Lower Aquifer wells for calculating pumping cutbacks and complying with other requirements, unless detailed data and information are provided to support a more precise apportionment and decision-making process.

## **6.6 Enforcement**

The Groundwater Allocation Backstop will be enforced if a GSA fails to implement policy within two quarters. Further actions will be governed by the dispute resolution mechanisms in the MOA.

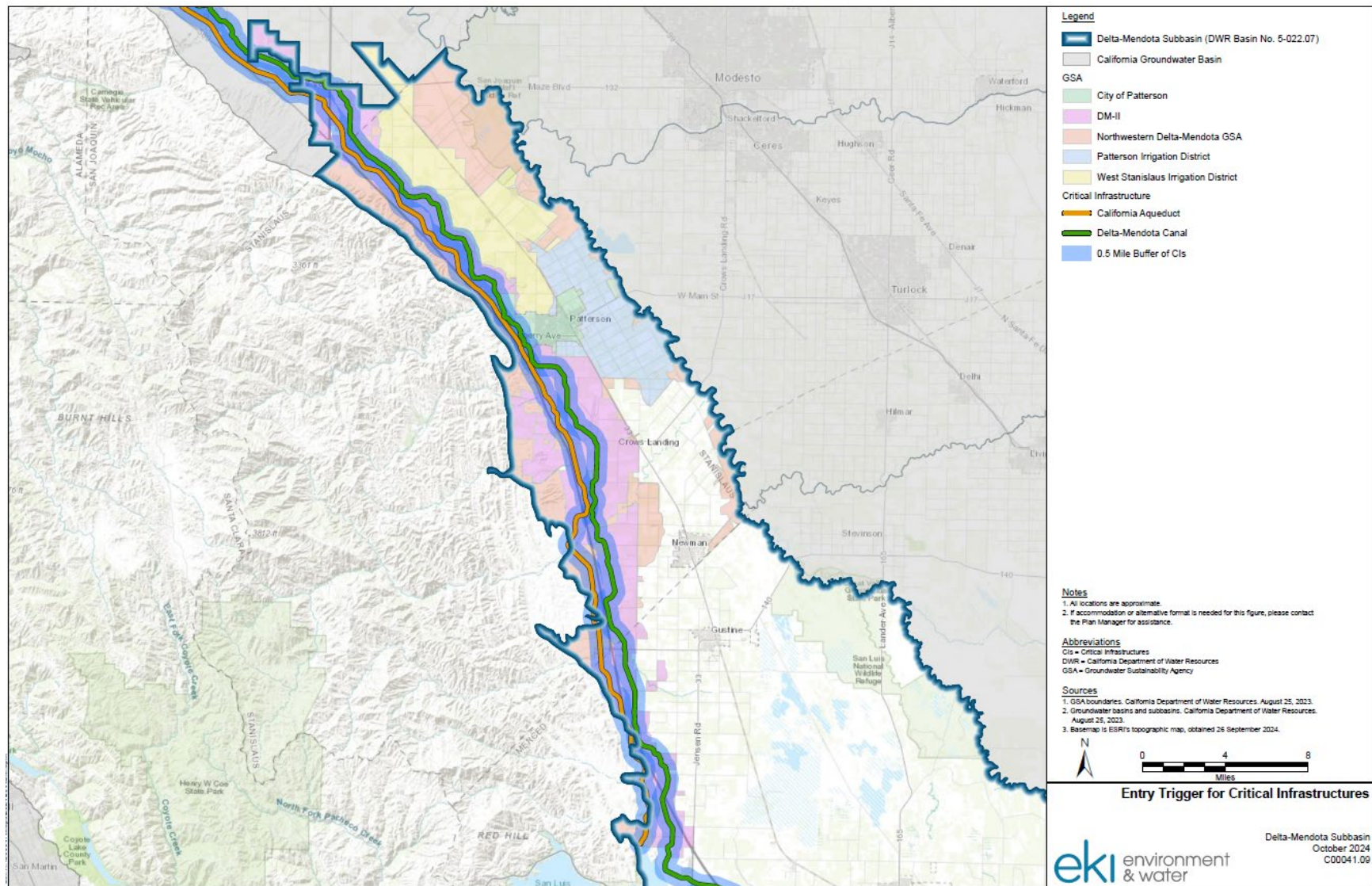


Figure 2. Area Around Critical Infrastructure Subject to Subsidence Avoidance Plan

## 7 GROUNDWATER ALLOCATION BACKSTOP

### 7.1 Objective and Requirements

Per GSP Section 16.1.1.6, and in accordance with Exhibit C of the MOA, GSAs are required to implement the groundwater allocation backstop plan if they cannot sufficiently meet the requirements of the GSP 2024.

### 7.2 Cutback Entry Trigger

The occurrence of any of the following conditions will result in groundwater allocation backstop:

- GWL-MT exceedances for 2 consecutive years; OR
- Failure to achieve allocated Overdraft Mitigation pumping reduction by 2030; OR
- Failure to comply with the GWL-MT or GWQ-MT requirements.
- Failure to comply with the Subsidence Avoidance Plan requirements.

### 7.3 Zone of Impact and Cutback Approach

This plan applies to the entire service area of the GSA subject to it. Pumping within the subjected GSAs will be limited to the estimated sustainable yield for the Basin and implemented through AFY/acre allocations. The uniform acre-foot per acre pumping limit will be implemented by the respective GSA(s) throughout the ZOI through communications with the applicable landowners/pumpers. GSAs may submit a request to the Committee to exit the groundwater allocation backstop when the triggering conditions are resolved. If approved by the Committee, groundwater allocation backstop can be exited by the subjected GSA(s).

### 7.4 Additional Monitoring and Reporting Requirements

Monthly pumping measurements should be reported to the Committee within two weeks of collection. All data reported should also be imported into the Basin DMS by the respective GSA(s).

### 7.5 Enforcement

Enforcement of the groundwater allocation backstop is governed by the dispute resolution mechanisms in the MOA.

# **Appendix A**

**Selected Slides from Presentations to the  
Northern Delta Mendota Region Management  
Committee Outlining Technical Approach to  
Implementation of PRP Components**

# OVERDRAFT MITIGATION PLAN

## (2) OVERDRAFT MITIGATION PLAN

- Target:
  - Reduce ~9,000 AFY of Lower Aquifer groundwater pumping by 2030
- High-level plan:
  - Reduce the amount by 20% per year between 2025-2030

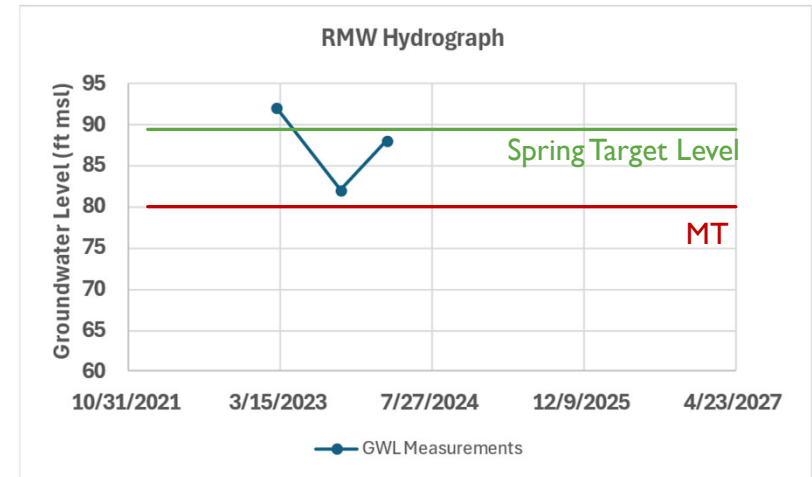
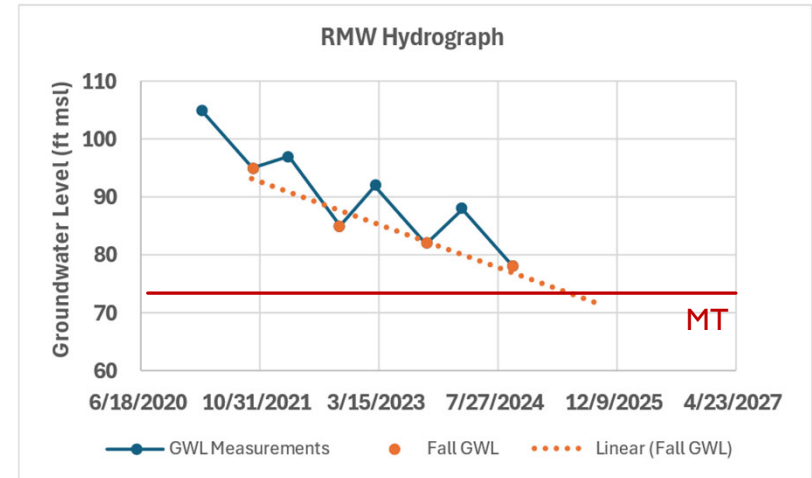
Member GSA	Annual Pumping Reduction Starting in 2025 (AFY)	Target Pumping Reduction by 2030 (AFY)
City GSA	92	460
DM-II GSA	1,100	5,498
NW-DM GSA	194	968
PID GSA	83	417
WSID GSA	336	1,680
<b>Total</b>	<b>1,805</b>	<b>9,023</b>

By Year End	City of Patterson GSA	DM-II GSA	NW-DM GSA	Patterson/Twin Oaks GSA	WSID GSA	Total
2026	92	1,100	194	83	336	1,805
2027	184	2,199	387	167	672	3,609
2028	276	3,299	581	250	1,008	5,414
2029	368	4,399	774	334	1,344	7,218
2030	460	5,498	968	417	1,680	9,023

# GWL-MT AVOIDANCE PLAN

# GWL-MT AVOIDANCE INVESTIGATION TRIGGER

- As described in Section 16.1.1.3 of Single GSP, exceedance of GWL MT or projected exceedance of GWL MT in a year following a four-year declining trend in Fall GWLs.
- Linear trend will be calculated based on the previous four Fall GWLs and extended for a year to assess the likelihood of MT exceedance.
- Compare the spring/winter level (February measurement) of the current year with established Spring target levels at each RMW.
  - $\text{Spring Target Level} = \text{MT} + \text{Average Seasonal Variation}$
  - If insufficient data to calculate average seasonal variation, the February level of last year will be substituted as the target level to be maintained.



*Example investigation trigger illustration based on data availability*

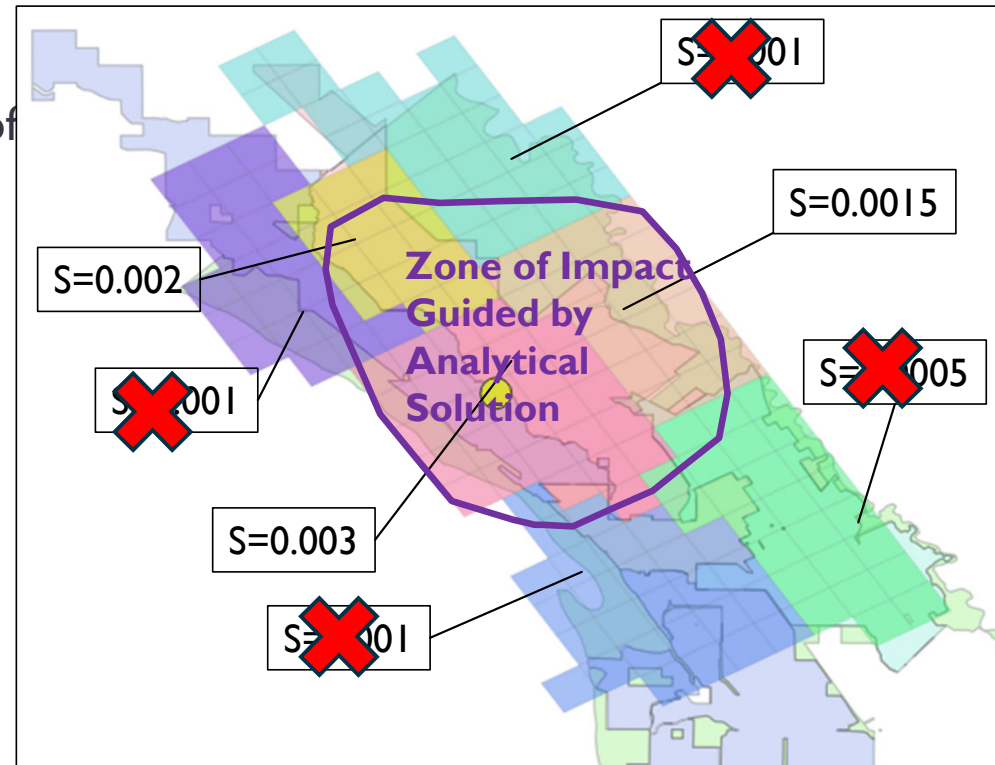
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# ESTABLISH CURTAILMENTS

- Curtailments will be established based on target GWL recovery and current February GWLs.
  - Target GWL Recovery
$$(GWL_x) = \text{Max} \left\{ \begin{array}{l} \text{Spring Target} - \text{Most Recent Spring Measurement} \\ \text{MT} - \text{Projected Fall Measurement Based on four year Trend} \end{array} \right.$$
- Zones of Impact and their respective sensitivities will be used to achieve the cumulative GWL recovery at the RMW, assuming superposition.
- This will lead to allocation/pumping reduction for each Zone of Impact.

# ESTABLISH CURTAILMENTS: EXAMPLE

- Sensitivities are defined for predefined clusters of cells:
  - Sensitivity: change in GWL at a specific RMW due to an incremental change in pumping at predefined clusters.
- Zone of Impact is defined based on a sensitivity threshold (ex.  $S > 0.001$ ), guided by analytical estimation.
- To achieve predefined GWL increase (GWL<sub>x</sub>):
  - $GWL_x = PRP_{Zone1} * S_{Zone1} + \dots + PRP_{Zone n} * S_{zone n}$
  - Subject to: Minimize (sum of PRP or AF/acre reduction)
  - Example:  
 $2 \text{ (ft)} = 0.002 * 100 + 0.0015 * 100 + 550 * 0.003$



\* Zones, selections, thresholds, and sensitivities are completely arbitrary and for illustration purposes.

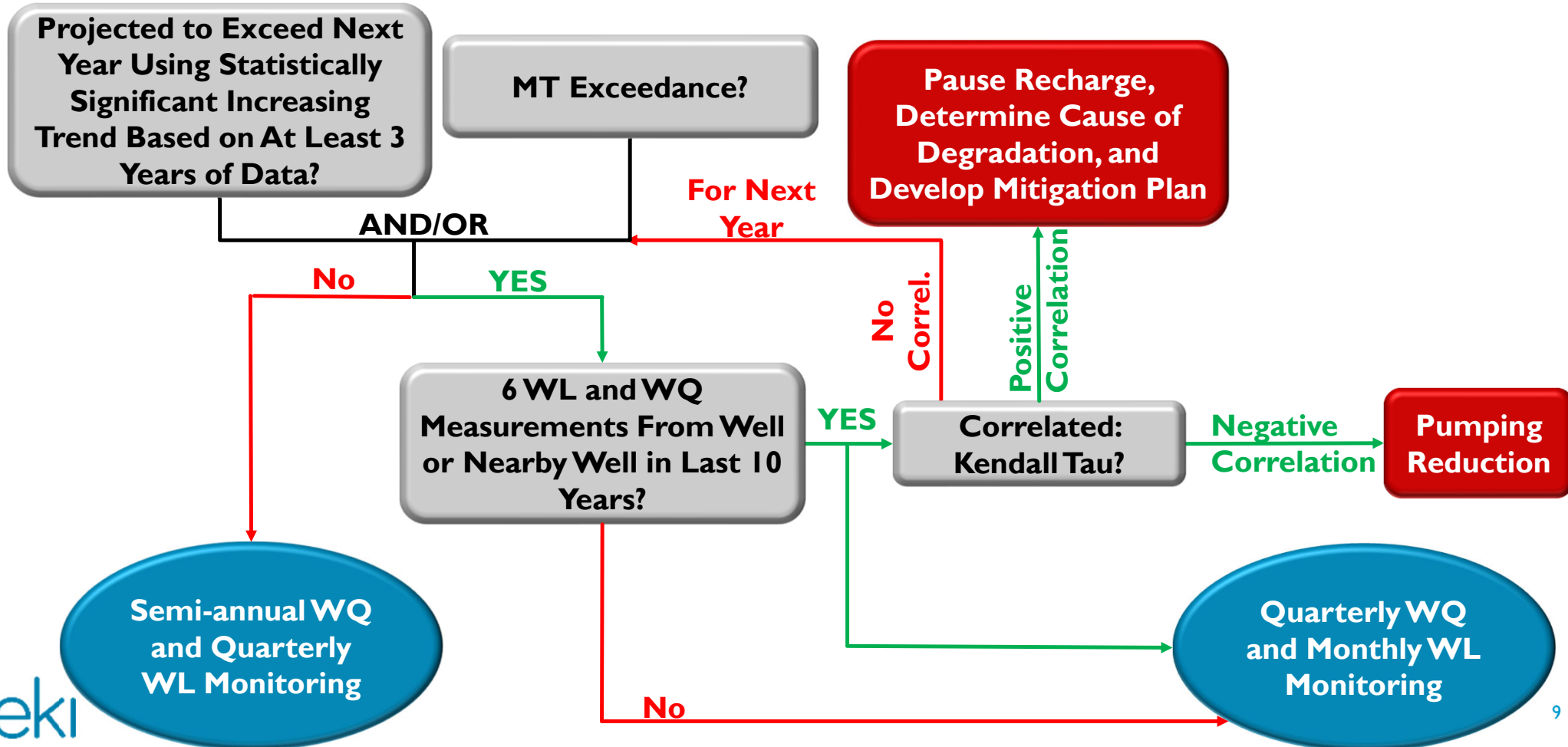
# WQ-MT EXCEEDANCE PLAN

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## WQ-MT INVESTIGATION STEPS

- If at least 6 water level and concentration measurements have been taken within the last 10 years that can be used as pairs, including one in the current year:
  - Kendall Tau  $|\tau| \geq 0.6$  and  $p \leq 0.05$
  - Note that groundwater level and concentration measurements must occur in the same season as one another to serve as a data pair.
  - If correlation is not determined as significant, or there is not enough samples to conduct the test, continue more frequent sampling until re-evaluation is possible
  - To cover WQ impacts due to recharge projects under PRP, all recharge projects should include comprehensive monitoring at least as frequent as required under triggered PRP.
    - Data from upstream and downstream wells for the recharge project will be used to establish its impact on WQ degradation in nearby monitoring wells and the need for a mitigation plan.
- Check for declining water levels, increasing concentrations, or correlation in at least one upgradient and one downgradient well

# PUMPING REDUCTION FOR WQ EXCEEDANCE



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# ESTABLISH ZONE OF IMPACTS AND CURTAILMENTS

- If caused by GWL declines due to pumping:
  - Deliver mitigation plan to Coordination Committee within 90 days:
    - Establish a temporary GWL MT hotspot at the well or a nearby well with similar construction
    - Temporary GWL trigger equals the previous year's seasonal high
    - Target GWL recovery in the first year
  - This will allow a re-evaluation of GWL/GWQ correlation at the well

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# DEGRADED WATER QUALITY DUE TO RECHARGE

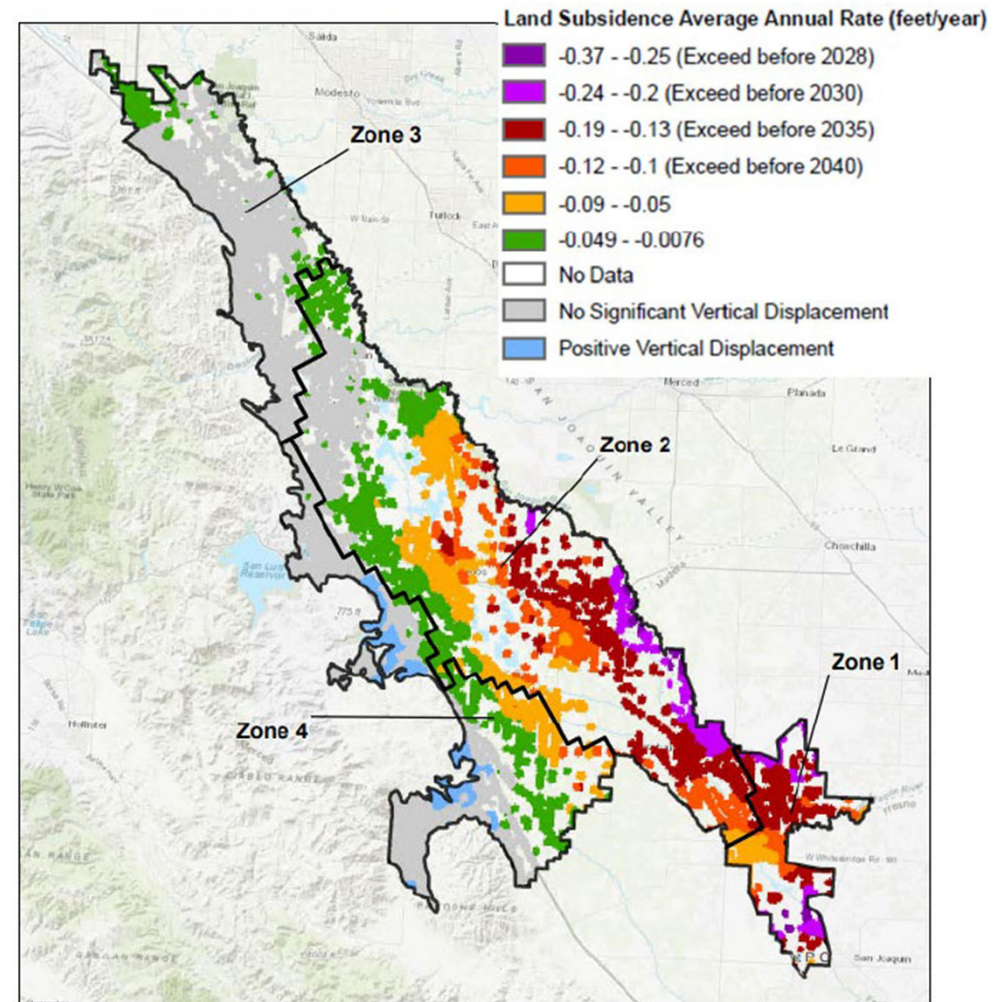
- Pause recharge
- Deliver mitigation plan to Coordination Committee within 90 days:
  - Determines why recharge was degrading water quality
    - Poor quality recharge water (Recharge project monitoring data)
    - Flushing of constituents in soil (Recharge project monitoring data)
    - Geochemical reactions
    - Altered gradients
  - Mitigate impacts and/or provide sufficient additional data to reject the causality previously established.
- WQ quarterly monitoring should be conducted near the recharge site regardless of trigger as part of P/MA.

# SUBSIDENCE MITIGATION POLICY

# CUTBACK ENTRY TRIGGER

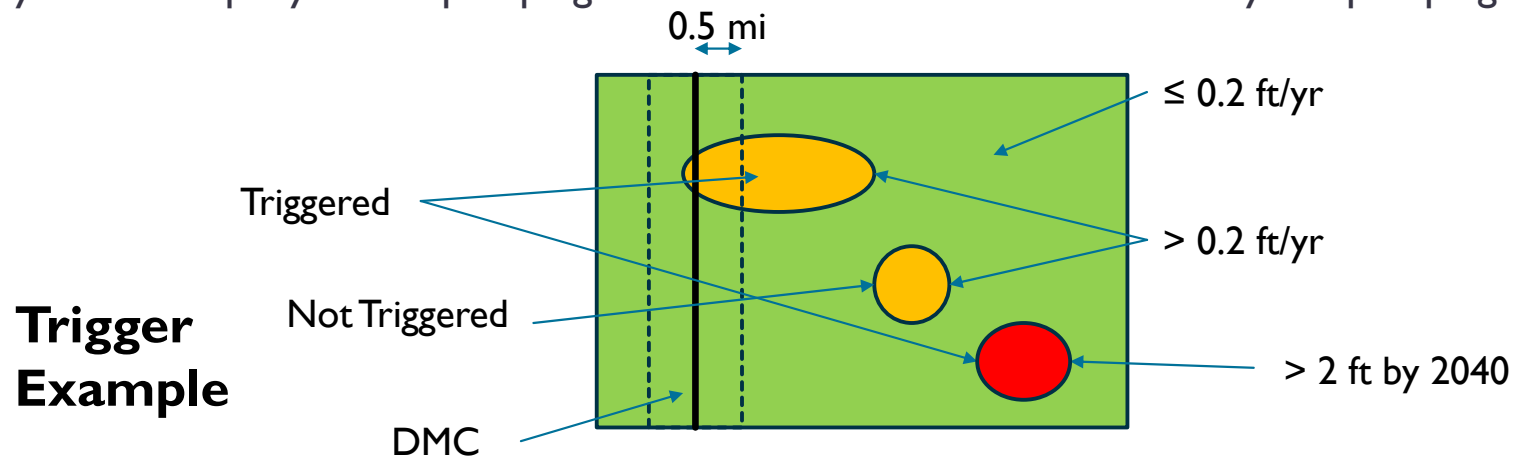
Triggers set in Section 16.1.1.5 of Single GSP:

- Critical Infrastructure
  - 3-year average rate  $> 0.2$  ft/year within 0.5 miles of critical infrastructure
- Hotspot
  - 5-year trend indicates  $> 2$  ft by 2040 (MT) or  $> 0.5$  ft by 2030 (IM)



# CUTBACK EXIT TRIGGER

- Critical Infrastructure
  - 4-year average rate  $< 0.1$  ft/year
  - GSAs can justify with multiple years of pumping data that subsidence is not caused by the pumping within ZOI.
- Hotspot Mitigation
  - Subsidence due to Lower Aquifer Pumping attributable to Basin is eliminated (PRP).
  - 5-year trend no longer indicates exceedance of cumulative 2 ft (MT) or 2030 IM.
  - GSAs can justify with multiple years of pumping data that subsidence is not caused by the pumping within ZOI.



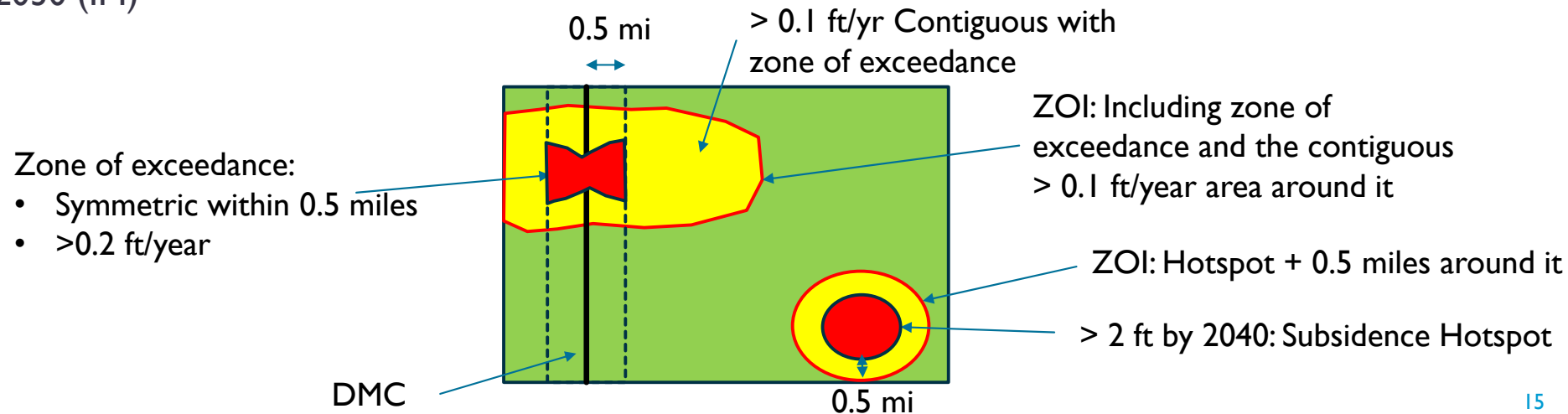
# ESTABLISH ZONES OF IMPACT

## ■ Critical Infrastructure

- Zone of exceedance defined as anywhere with a 3-year average rate  $> 0.2$  ft/year; symmetrically defined within 0.5 miles of critical infrastructure; and,
- Areas with a 3-year average rate  $> 0.1$  ft/year contiguous with the defined zone of exceedance above.

## ■ Hotspot

- Radius of 0.5 miles around any points that 5-year trend indicates  $> 2$  ft by 2040 (MT) or  $> 0.5$  ft by 2030 (IM)



# ESTABLISH CURTAILMENTS

- NDM only includes zones 5 and 6 of the GSI masterplan.
- Critical Infrastructure
  - Start pumping reduction at 0.35 AFY/acre (Approximate SY for LA) within the Zone
  - Decrease pumping allocation based on rolling annual average rates.
  - Relieve pumping reduction only annually based on rates calculated over the same period as the trigger.
  - No new Lower Aquifer Wells within the zone until exit trigger is met.
- Hotspot Mitigation
  - Start pumping reduction at 0.35 AFY/acre within the Zone
  - Reduce or relieve based on annual rates
- Composite wells will be considered Lower Aquifer wells unless detailed data is provided on the well that facilitates dividing their pumping between the aquifers

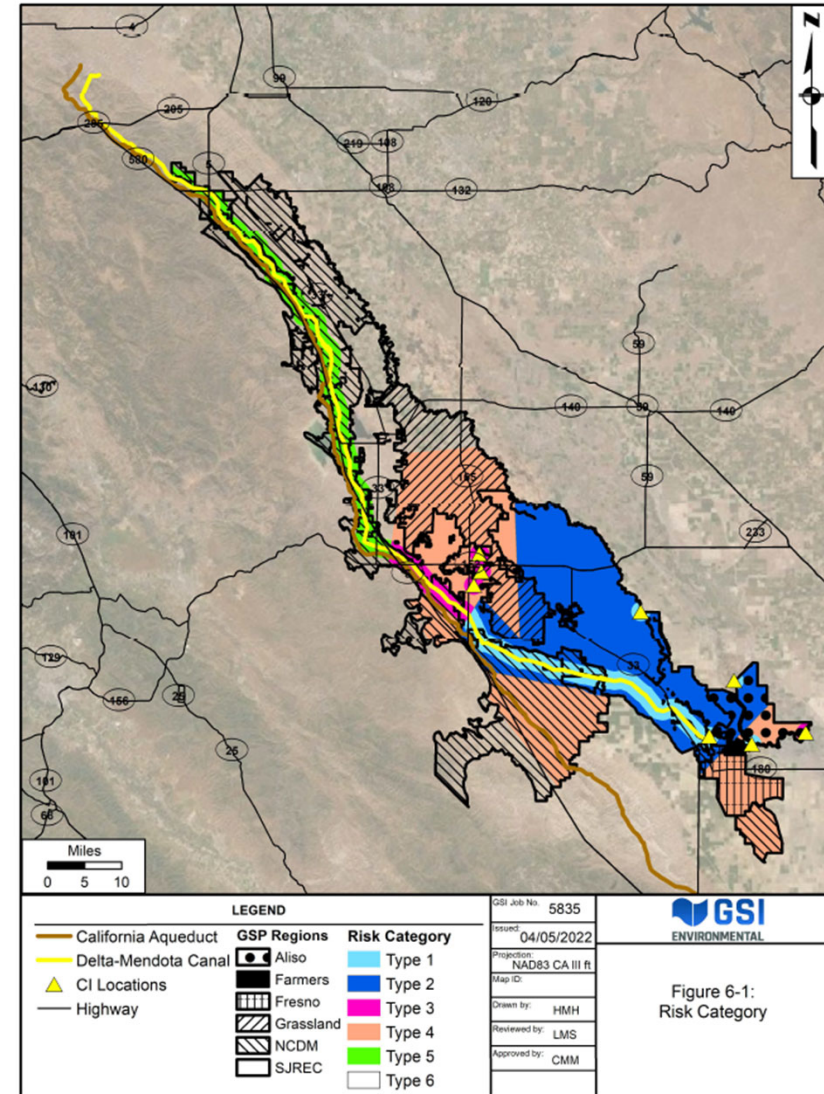


Figure 6-1:  
Risk Category



Questions?





# STANISLAUS COUNTY GROUNDWATER WELL METERING MONITORING AND REPORTING PROGRAM GUIDELINES

## October 29, 2024

### I. Purpose

In 2014, Stanislaus County (County) adopted Chapter 9.37 of the Stanislaus County Ordinance Code (SCOC), the “Groundwater Ordinance,” to address sustainable groundwater management and the export of groundwater from within the County. The Groundwater Ordinance codifies requirements, prohibitions, and exemptions that ensure the sustainable management of the County’s groundwater resources. This Groundwater Ordinance serves as a framework primarily based on California’s Sustainable Groundwater Management Act (SGMA), enacted in 2014.

SGMA mandates the creation of Groundwater Sustainability Agencies (GSAs) to manage groundwater subbasins within their jurisdictions. These GSAs are required to develop and implement subbasin-specific Groundwater Sustainability Plans (GSPs), which must identify sustainable management criteria for the subbasin and outline projects and management actions to achieve these sustainability goals over a 20-year implementation period. The four groundwater subbasins within the County’s boundaries are the Eastern San Joaquin, Modesto, Turlock, and Delta-Mendota Groundwater Subbasins, as shown in Attachment 1.

The sustainable management of groundwater resources is essential for maintaining agricultural production, supporting a viable economy, and enhancing community infrastructure to accommodate current and future development within the County. It is also crucial to prevent the following undesirable results from occurring such as:

- **Chronic lowering of groundwater levels** indicating a significant and unreasonable depletion of supply continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.
- **Significant and unreasonable reduction of groundwater storage.**
- **Significant and unreasonable degraded water quality**, including the migration of contaminant plumes that impair water supplies.
- **Significant and unreasonable land subsidence** that substantially interferes with surface land uses.
- **Depletion of interconnected surface water** which has significant and unreasonable adverse impacts on the beneficial uses of the surface water.

The purpose of the Stanislaus County Groundwater Well Metering Monitoring and Reporting Program Guidelines (Guidelines) is to provide guidance for compliance with SGMA and state GSP regulations. These Guidelines outline the minimum requirements necessary for accurate monitoring and measuring groundwater extractions, and for obtaining and reporting essential data. There is a critical need for water well construction and extraction data to analyze and understand the degree of groundwater depletion or recharge, establish water budgets, and balance the conjunctive use of groundwater resources.

Metering, monitoring, and reporting requirements are crucial for sustainable groundwater management, as they provide the necessary data to understand and manage groundwater resources accurately, ensure compliance with regulations, and optimize resource use. The data obtained will foster transparency and collaboration between the County, the public, and other GSAs. This will enable the County to detect issues early and allow for proactive adaptive management strategies to best respond to changing subbasin conditions, securing equitable and long-term water source reliability for all beneficial uses and to protect the quality of life for all County residents.

## **II. Authority**

The Stanislaus County Department of Environmental Resources (DER) is responsible for protecting the health, welfare and safety of County residents by ensuring that the County's groundwater resources are protected from adverse environmental impacts resulting from unsustainable groundwater extraction. These impacts include, but are not limited to, a decline in property values, increased pumping, treatment, and well replacement costs, damage to critical infrastructure, loss of groundwater storage, lowering of groundwater levels, depletion of interconnected surface waters, and degradation of groundwater-dependent ecosystems.

The County's authorities and requirements are contained within the Groundwater Ordinance, which allows for the adoption of new regulations to establish the frequency and timing of required periodic reports of groundwater information. These reports must be reasonably necessary to monitor the existing condition of groundwater resources within the County, to determine trends, or to develop effective sustainable groundwater management plans and policies. The new regulations shall specify the required information to be monitored, including water level and pumping data, or other data necessary for any other method to determine groundwater production, (SCOC Section 9.37.065). Under the Groundwater Ordinance, the County has the authority to regulate all non-de minimis groundwater well extractors located in the unincorporated areas of the County, including public water agencies, which shall submit detailed groundwater information reports to the DER as necessary and upon request.

In 2014, SGMA empowered GSAs, made up of local public agencies with water supply or land use authority (or both), to use various management tools to achieve sustainability in the affected groundwater subbasin. The County is a member of five GSAs, with additional authorities granted under SGMA to adopt rules required for sustainable groundwater management. SGMA expanded the authorities of local agencies to include additional powers, such as, but not limited to, well registration, extractor measurements and reporting, regulating groundwater extractions (including limiting or prohibiting groundwater production), and imposing fees and assessments (California Water Code Sections 10725-10726.4, 10730.2, 10732, 10735.2). These Guidelines comply with the above authorities.

## **III. Implementation**

DER will utilize the following information in implementing these Guidelines, in conjunction with the Groundwater Ordinance, the applicable GSP, and any additional adopted plans, policies, ordinances, or regulations enacted to fulfill the intent and purpose of these Guidelines under state legislation and County ordinances and codes:

- References, reports and studies regarding the known hydrology and groundwater water quality conditions associated with Stanislaus County;
- DER's "[Programmatic Environmental Impact Report, Discretionary Well Permitting and Management Program\(PEIR\)](#)," dated June 2018;
- [Stanislaus County Groundwater Well Siting and Construction Guidelines, August 29, 2023](#);
- [Technical Memorandum Approach for Screening Well Construction Permit Applications Under Section 9B of Executive Order N-7-22](#), Formation Environmental, May 9, 2022;
- [Draft Best Management Practices for the Sustainable Management of Groundwater, Sustainable Management Criteria BMP](#), California Department of Water Resources, November 2017;
- [Water Data Library Station Map](#), California Department of Water Resources;
- [SGMA Data Viewer](#), California Department of Water Resources;
- [Well Completion Report Map Application](#), California Department of Water Resources;
- [Revised July 2024 Modesto Subbasin Groundwater Sustainability Plan](#);
- [Revised July 2024 Turlock Subbasin Groundwater Sustainability Plan](#);
- [Eastern San Joaquin Revised Groundwater Sustainability Plan \(2022\)](#);
- [Delta-Mendota Subbasin Groundwater Sustainability Plan](#);
- [Pumping Reduction Framework for the Delta-Mendota Subbasin](#), EKI Environment & Water, March 2024;
- [Northern Delta-Mendota Region's Proposed Plan to Address Groundwater Overdraft](#), EKI Environment & Water, February 2024.

The resulting Guidelines are consistent with all local, regional, and state regulations. These Guidelines will be revised as necessary when future GSP updates, amendments, or supplemental plans, policies, or programs are adopted.

#### **IV. Application:**

These Guidelines are applicable only in the unincorporated, "white areas" of the County if a well metering, monitoring, and reporting program is mandated by an adopted GSP. The GSA may adopt additional policies for the regulation of groundwater extraction measurements, monitoring, reporting, and data collection requirements. In cases where there is a conflict between the requirements specified in these Guidelines and those in the GSP or GSA policy, the GSP and/or GSA Policy shall prevail. However, where there is a conflict between the GSP or GSA policy and the Groundwater Ordinance, the provisions of the Groundwater Ordinance shall prevail.

All non-de minimis wells constructed after November 25, 2014, that extract groundwater in the "white areas" of the County shall be required to comply with the requirements included in these Guidelines. Existing wells constructed before November 25, 2014, that extract less than 10 acre-feet of groundwater per year are exempt from the requirements of these Guidelines because they operate at a scale that has minimal impact on water resources and regulatory oversight of these extractors would not yield substantial benefits, would be inefficient, and impose significant burdens to disadvantaged communities.

Small pumpers operating prior to November 25, 2014, that extract less than 40 acre-feet of groundwater per year typically operate at a scale that has a limited impact on overall water

resources. The cost of installing and maintaining well metering equipment for these small operations can be disproportionately high compared to the benefits derived and can threaten the viability of their operations. Small pumpers are required to comply with the mandatory well registration, monitoring and reporting requirements specified in these Guidelines but may use an alternative method of groundwater extraction measurement, to prevent undue financial burden on users without compromising the overarching goals of the GSP or Stanislaus County water resources management. In the absence of metering, small pumpers may use evapotranspiration products to estimate monthly groundwater extractions and shall include all reports for any surface water deliveries that occurred during the groundwater extraction monitoring and reporting period.

New non-de minimis wells constructed on or after January 1, 2025, and existing inactive wells shall demonstrate compliance with these Guidelines prior to the well-being placed into operation or returned to service on or after January 1, 2025. Landowners shall be responsible for compliance with these regulations by any lessee or well operator on their property.

#### V. Definitions:

- A. **Abandoned:** A well is considered abandoned, or prematurely inactive, if it has not been used for one year and there is no intention of future use. Abandoned wells must be destroyed (decommissioned) immediately unless the owner demonstrates "intent for future use" and maintains the well in accordance with California Health and Safety Code Section 115700.
- B. **Agricultural Wells:** Water wells are used to supply water only for irrigation or other agricultural purposes, including so-called "stock wells".
- C. **Aquifer:** A body of rock or sediment that is sufficiently porous and permeable to store, transmit, and yield significant quantities of groundwater to wells and springs. (DWR Bulletin 118: California's Groundwater, 2003)
- D. **Bacteria:** Microscopic single-celled organisms lacking a distinct nucleus.
- E. **Confined groundwater:** Confined groundwater is isolated from the atmosphere by geologic materials of low permeability and generally is present under pressures that are higher than atmospheric pressure. (Groundwater and Wells, 2007, modified)
- F. **Confined aquifer:** An aquifer overlain by a confining layer. (Applied Hydrogeology, Fetter, 1994)
- G. **Confining layer:** A bed or stratum of rock or sediment stratigraphically above or below and significantly less permeable than one or more aquifers.
- H. **Contaminant:** Any physical, chemical, biological or radiological substance or matter in water listed in the Primary or Secondary Contaminant List in the Safe Drinking Water Act (SDWA).
- I. **Contamination:** An impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. Contamination includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.
- J. **Corcoran Clay:** A low-permeability, regionally extensive, lacustrine deposit as much as 200-ft thick that divides the groundwater-flow system of the western San Joaquin Valley into an upper semi-confined zone and a lower confined zone.
- K. **County:** means the County of Stanislaus.
- L. **De minimis extractor:** a person who extracts two acre-feet or less of groundwater per year.
- M. **Department:** Means the Stanislaus County Department of Environmental Resources.
- N. **Exempt Well:** A de minimis extractor or a well that was constructed before November 25, 2014, that extracts less than 10 acre-feet of groundwater per year.
- O. **Formation:** A body of rock or sediment sufficiently homogeneous or distinctive to be mappable as a unit.

- P. Groundwater:** The water that occurs beneath the surface of the Earth within the zone below the water table in which the soil is completely saturated with water but does not include water that flows in known and definite channels.
- Q. Groundwater Ordinance:** Means the Stanislaus County Groundwater Ordinance codified as Chapter 9.37 Groundwater of the Stanislaus County Ordinance Code.
- R. Groundwater Sustainability Plan:** A plan adopted pursuant to California Water Code Section 10727 et seq.
- S. Pollution:** Pollution” means an alteration of the quality of the waters of the state by waste to a degree which unreasonable affects: (1) Such water for beneficial use; or (2) Facilities which service such beneficial uses. Pollution may include contamination.
- T. Qualified Professional:** A Professional Engineer, Professional Geologist, or equivalent with experience in the design and construction of wells and related infrastructure.
- U. Small Pumper:** A well that was constructed prior to November 25, 2014, that is not a de minimis well but extracts less than 40 acre-feet of groundwater per year.
- V. Special Management Area:** Areas in Stanislaus County where, due to local soil, geologic or hydrogeologic conditions, minimum setback screening distances and construction requirements have been adopted pursuant to the “Technical Memorandum Approach for Screening Well Construction Permit Applications Under Section 9B of Executive Order N-7-22,” to prevent impacts to nearby wells and infrastructure, (Tech Memo...). Several Special Management Area have been designated. They are demarked as SMA1; SMA2, & SMA3, in Section IX and **Attachment 5** of these Guidelines;
- W. Minimum Setback Screening Distance, (MSSD):** The distance between a proposed well and existing nearby wells and nearby infrastructure, outside of which the proposed well is not likely to interfere with the production and functioning of existing nearby wells or cause subsidence that would adversely impact or damage nearby infrastructure.
- X. Minimum Thresholds:** A quantitative value that represents the groundwater conditions at a representative monitoring site that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause an undesirable result(s) in a groundwater Subbasin (Draft Best Management Practices for the Sustainable Management of Groundwater, Sustainable Management Criteria BMP, California Department of Water Resources, November 2017).
- Y. Sustainable Groundwater Management:** The management and use of groundwater in a manner that can be maintained during a GSP planning and implementation horizon without causing or substantially contributing to undesirable results as described by California’s Sustainable Groundwater Management Act of 2014.
- Z. Target Aquifer:** That aquifer or water bearing zone that is screened to access groundwater.
- AA. Trigger:** A trend and/or groundwater level(s) established by an adopted GSP or GSA Policy that, refers to a predefined level or condition of groundwater that, when reached or exceeded, indicates that the groundwater resource is approaching or has reached a critical limit that requires actions to be taken to prevent a minimum threshold exceedance and undesirable results from occurring.
- BB. Unconfined Aquifer:** An aquifer without a confining layer at the top. The top of an unconfined aquifer is the water table, which is the plane where groundwater pressure is equal to atmospheric pressure. (Groundwater Hydrology, 1978, modified).
- CC. Unsustainable Extraction of Groundwater:** The extraction of groundwater in a manner that is not sustainable groundwater management as defined by state law.
- DD. Upper Zone:** In SMA1, the Upper Zone shall be defined as the groundwater-bearing zone that overlies the Corcoran Clay. In SMA2, the Upper Zone shall be as defined for the Nitrate Control Program adopted by the Central Valley Regional Water Quality Control Board and published in the report prepared titled “Region 5: Updated Groundwater Quality Analysis and High Resolution Mapping for Central Valley Salt and Nitrate Management Plan,” prepared for

the Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS) program dated June 2016. Different aquifer zones are not defined in SMA3.

- EE. Water Well:** Any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into, the underground. This definition shall not include: (a) oil and gas wells, or geothermal wells constructed under the jurisdiction of the Department of Conservation, except those wells converted to use as water wells; or (b) wells used for the purpose of (1) dewatering excavation during construction, or (2) stabilizing hillsides or earth embankments. (California Water Code Section 13710)
- FF. Water Year:** The twelve-month period October 1, for any given year, through September 30 of the following year, and designated by the calendar year in which it ends.
- GG. White Areas:** These include unincorporated areas that are not in the jurisdictional boundaries of a public water agency covered by a Groundwater Management Plan or a Groundwater Sustainability Plan.

**VI. Hydrogeology.** The Eastern Alluvial Fans, Western Alluvial Fans and Basin Deposits are part of complex set of interbedded aquifers and aquitards that comprises the regional aquifer system within the San Joaquin Valley Groundwater Basin (SJVGB). In Stanislaus County, the SJVGB is bounded by the relatively impermeable basement rocks of the Sierra Nevada foothills to the northeast and the Coast Range to the southwest and subdivided along the major rivers into the Delta-Mendota, Eastern San Joaquin, Modesto, and Turlock groundwater subbasins. The aquifers tend to be unconfined to semi-confined in the upper alluvial fan areas, grading to semi-confined and confined near the valley axis due to the presence of better-defined stratification and aerially-extensive lacustrine clays in this area. The cumulative thickness of the water-bearing formations in the basin ranges from a few hundred feet near the SJVGB margins to over 1,000 feet in the center of the basin. Separating the shallow and deep aquifers in the area of the Basinal Deposits is the Corcoran Clay, a laterally extensive lacustrine unit of the Upper Tulare and Upper Turlock Lake Formations. The Corcoran Clay occurs at a depth of approximately 250 to 300 feet below ground surface (bgs), is approximately 150 to 250 feet thick, and acts as a regional aquitard, impeding groundwater exchange between upper and lower aquifers. As a result, groundwater quality is often variable in the shallow and deep aquifers. It extends through the width of the county in a swath on either side of the San Joaquin River.

Depth to groundwater generally increases with distance away from the San Joaquin River, although this pattern can be locally modified by well extraction or recharge from irrigation. In the Basinal Deposit area, the depth to groundwater varies between approximately 2 and 20 feet bgs, and in the Eastern and Western Alluvial Fans, depths vary between 20 and 200 feet bgs. In the Foothills geomorphic region, groundwater flows through fractures in the bedrock, and is typically found at depths greater than 100 feet. Groundwater in the Coast Range is also usually found depths greater than 100 feet, where it exists in either the pores of sedimentary rocks or in fractures in metamorphic rock, and occasionally reaches the surface in natural springs.

**VII. Water Quality:** Groundwater in Stanislaus County is generally of good quality, although some elevated concentrations of pollutants and contaminants do occur. Extensive agricultural activities in the county have led to areas where nitrate levels are above drinking water standards, especially in the shallow aquifer system. Animal waste associated with dairy farming in addition to fertilizers used in agriculture and lawns were identified as the most likely sources of nitrate contamination, with onsite wastewater treatment systems (OWTS) noted as another potential source. Basinal sediments in the valley can be locally anoxic, a condition that

favours bacterial denitrification and the reduction of nitrate to nitrogen gas. Nitrate impacts may locally extend into the deeper aquifers when drawn down by municipal pumping.

Elevated concentrations of uranium have been identified primarily in shallow groundwater in the middle and lower Eastern Alluvial Fan area in the vicinity of Modesto and Ceres. Uranium is naturally contained in sediments derived from the granitic rocks of the Sierra Nevada, and is believed to have been mobilized as modern, alkaline recharge water penetrated into the shallow aquifer system. In Modesto, it has been found to be strongly correlated with nitrate. Also, coincident with elevated nitrate levels in portions of agricultural regions in the middle and lower Eastern Alluvial Fan area are elevated concentrations of soil fumigant residuals such as 1,2,3-trichloropropane (1,2,3-TCP) and dibromo-chloro-propane (DBCP). Municipal supply wells have also been impacted in some areas by these agricultural chemicals, which tend to persist in the environment and can be drawn deeper into the aquifer system by pumping municipal wells.

Elevated concentrations of arsenic have been detected at various depths in some areas of Eastern Alluvial Fan and Basinal Deposit areas, for example near Modesto, Salida and Hughson. Arsenic behaves in a complex way geochemically and can be mobilized under a variety of conditions. It is often associated with older, anoxic water or with the dissolution of ferric complexes as groundwater is drawn from anoxic into oxic zones by pumping. It can occur in the shallow and the deep aquifer system.

Similarly, wells serving the communities of Newman, Patterson, Grayson and Crows Landing have been locally impacted by hexavalent chromium in sediments derived from the Diablo Range. Concentrations of hexavalent chromium are generally greater in oxic groundwater compared to anoxic groundwater, but it is found at various depths.

Urban sources of groundwater contamination in the County include dry-cleaning operations, landfills, industrial sites, and leaking underground storage tanks. Historical dry-cleaning facilities remain a source of the organic contaminant, perchloroethylene (PCE) near contamination sites in Modesto and Turlock. Methyl tert-butyl ether (MTBE) originates from leaking underground gasoline storage tank sites.

Elevated concentrations of salts (total dissolved solids or TDS) are found at depth beneath the freshwater aquifers in the County, generally below a depth of about 1,000 feet bgs. However, elevated TDS is also found in some areas both above and below the Corcoran Clay in the Basinal Deposit area. Operation of deep-water wells has locally caused upwelling of deep saline groundwater that underlies the base of freshwater in some parts of the San Joaquin Valley.

#### **VIII. Special Management Areas (SMAs)**

The following SMAs are established for the purposes of these Guidelines, based on specific geologic and hydrogeologic conditions in various parts of the County as shown in **Attachment 5**. For each SMA, minimum setback screening distances (MSSDs) can be identified using the procedure, defined in the “Technical Memorandum Approach for Screening Well Permit Applications under Section 9B of Executive Order N-7-2022.” The MSSD is the minimum distance a new well must maintain so that it will not likely cause interference with the production and functioning of nearby wells, or subsidence that would cause adverse impacts to or damage to critical infrastructure.

- **SMA1 Corcoran Clay Area.** In this area, the Corcoran Clay represents a regional aquitard that separates an upper unconfined to semi-confined aquifer system from a lower confined aquifer system. These systems may have different water quality conditions and groundwater levels, and cross connecting the aquifers above and below the Corcoran Clay can lead to vertical migration of pollution. The boundaries of this area shall be based on the extent of the Corcoran Clay as mapped by the United States Geological Survey in Professional Paper 1766, or as updated in the future. Pursuant to the “Stanislaus County Well Siting and Construction Guidelines,” (WSCG) all wells located within the area underlain by the Corcoran Clay and penetrating the Corcoran Clay shall be constructed in such a manner that prevents the intermixing of water above and below the Corcoran Clay layer.
- **SMA2 Alluvial Fans.** The boundaries of this area extend from the outer groundwater basin boundaries as determined in the latest edition of DWR Bulletin 118 to the boundary of the Corcoran Clay. In these alluvial fan areas, vertical groundwater movement is less impeded and oxygenated groundwater extends deeper into the aquifer system. All wells located within SMA2 shall be constructed in a manner that prevents the intermixing of water between the Upper Zone and underlying aquifers, as required by the WSCG.
- **SMA3 Fractured Bedrock.** The boundaries of this area extend from the County line to the outer groundwater basin boundaries as determined in the latest edition of DWR Bulletin 118. These areas are underlain by fractured bedrock aquifers of the Coast Range, or of the crystalline bedrock area east of the San Joaquin Valley alluvial basin.

#### **IX. Well Registration, Requirements and Fees**

A “Well Registration Form,” (WRF) (Attachment-2) must be completed and submitted to the DER with the well registration fee before January 1, 2026, for each operating non-de minimis or non-exempt well. The WRF shall include the well owner’s (landowner) name and contact information, well use and demand data; assessor’s parcel number, global positioning system (GPS) coordinates, date of construction or estimate, well permit number, well depth, diameter, pump capacity, instantaneous pump flow rate and well casing screening interval(s). The WRF shall be accompanied by a Well Completion Report or equivalent record to certify well construction details, from a licensed C-57 Water Well Contractor, licensed in accordance with the California Water Code (Section 13750.5) or a Qualified Professional.

A new “Well Registration Form,” must be completed and submitted to the DER within 30 days of change of property ownership, well use or operational status, including a change in off-site use.

#### **X. Monitoring and Reporting Requirements**

Unless de minimis or exempt, all groundwater well extractors shall install and maintain a metering device as part of the water supply and distribution system to document groundwater extraction from each well in gallons per month. Proof from a qualified professional or licensed contractor verifying that the device is installed and operational (a manual and photos) shall be submitted to the DER for each non-de minimis or non-exempt well prior to January 1, 2026. The device shall be maintained as required by the manufacturer for the life of the well. Small pumpers shall comply with the monitoring and reporting requirements specified in these Guidelines, but can use an alternative approved method of measurement, other than installation of an approved meter.

The metering device shall consist of a propeller type (turbine meter), suitable for the range of extraction flows expected and shall be installed in a straight piping run at least 10 pipe diameters from any valves, bends or fittings, and shall register total gallons and instantaneous flow rate in gallons per minute. Electromagnetic flow metering devices shall be either a flange type or saddle type meter and contain a flow sensor based on Faraday's law of electromagnetic induction.

All metering devices shall meet American National Standards Institute, (ANSI) Cold-Water standards, to measure groundwater use and be accurate within 2% of actual flow, be installed according to the manufacturer and be appropriately sized for the production rate and discharge piping of the well. The meter shall measure all flow rate in gallons per minute, or cubic feet per second, and totalize extractions in gallons, cubic feet or acre-feet.

The DER may accept other devices that measure flow rate and totalize volume if sufficient evidence is provided to the DER to indicate that the device meets or exceeds these standards, and DER approval is provided in writing prior to installation.

By January 1, 2026, and each November 1, thereafter, the well owner shall submit an the annual "Groundwater Extraction Monitoring Report," (Attachment 3) to the DER that details the volume of groundwater extracted each month from the well for the previous water year in gallons and acre-feet per month. In addition to recording groundwater use, a photograph of the face of the water meter with sufficient resolution to read the meter value shall be taken on the date of the last meter reading of each water year and submitted with the annual "Groundwater Extraction Monitoring Report," (GEMR) for each well. For newly installed meters, a copy of the licensed contractor or qualified professional's installation inspection report shall be attached to the annual GEMR. The report shall include the date of the meter's installation and indicate that the meter was installed according to the manufacturer's instructions. For all wells, a certified meter calibration report shall be attached to the GEMR showing proof of calibration within the past five years. Subsequent meter calibration records shall be made available to the DER upon request

In areas where groundwater levels decline below an established "trigger" or if a minimum threshold is exceeded, the DER may require an increased frequency of groundwater extraction reporting to proactively monitor the implementation of localized pumping reductions and other management actions to assess groundwater level recovery and determine the need for additional corrective actions to avoid undesirable results.

If the DER has cause to believe that a well extractor's groundwater production is in excess of that reported to the DER, the DER may request additional information from the landowner to substantiate the reported production amount.

Data obtained for the implementation of groundwater extraction measuring, monitoring, and reporting regulations under these Guidelines is presumptively confidential and proprietary information, including geological, geophysical, plant production data, or trade secrets. The DER had determined that the need to receive or obtain such data, and to maintain its confidentiality, outweighs the public need for site specific private information and the public will have access to the aggregate of such information which is a better measure of the cumulative status of groundwater resources (SCOC Section 9.37.020).

## **XI. Inspections**

All meters shall be installed in a manner that makes it reasonably accessible for inspection and reading. The DER or DER representative may enter the property at all reasonable

times during normal business hours to conduct inspections to assure compliance with the requirements of these Guidelines.

## **XII. Non-compliance and Enforcement Actions**

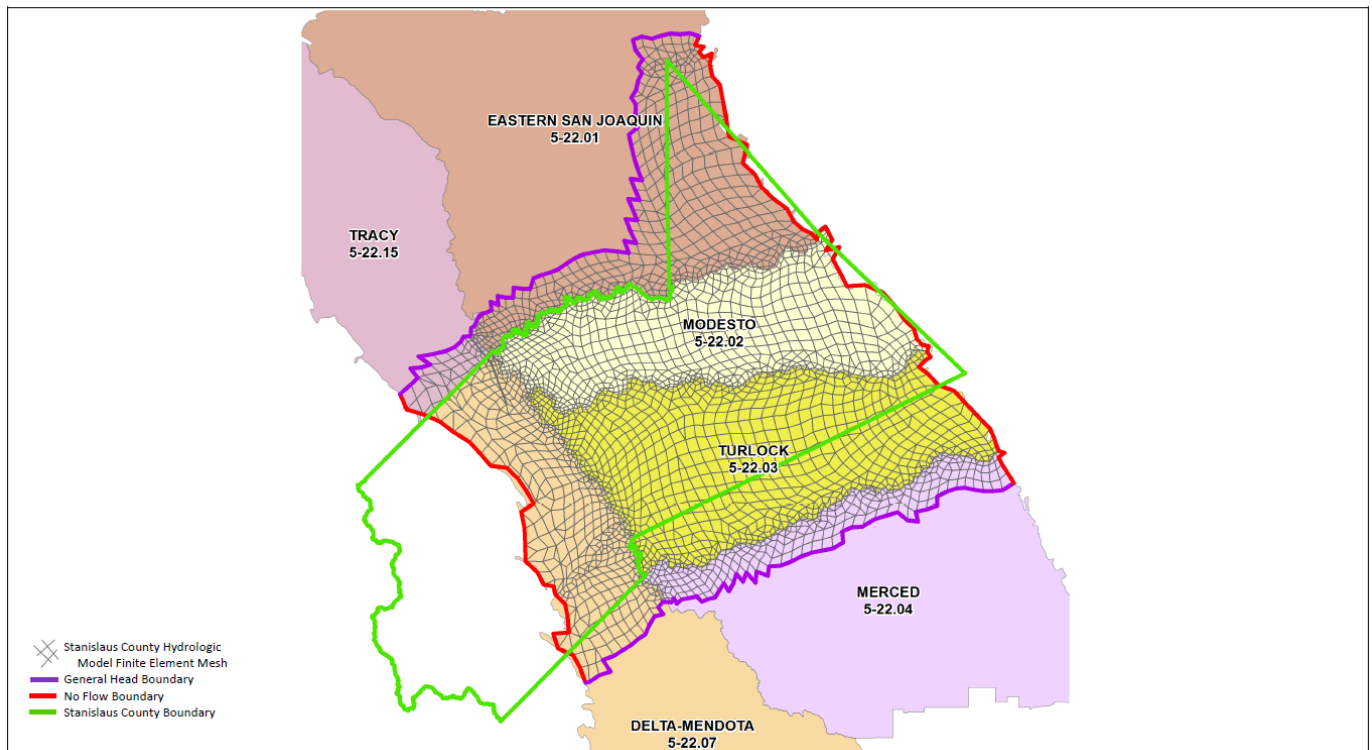
Insufficient landowner participation in this program may warrant the initiation of more restrictive backstop groundwater management programs and state intervention to ensure that all groundwater subbasins within Stanislaus County are sustainably managed in accordance with SGMA, (Water Code Sections 10735.2 (a)(1)-(5), 10735.8(a)).

Landowners shall be responsible for compliance with these rules and regulations by any lessee or well operator on their property. Failure to comply with the requirements specified in these Guidelines may result in legal action as set forth in SCOC Section 1.36.010, 9.37.070 and Chapter 2.92 which includes, but is not limited to, abatement, and the issuance of administrative citations, and penalties. If the violation remains uncorrected, it shall be deemed a public nuisance and may create a cause of action for injunctive relief, including, but not limited to, any remedy under Chapter 5 (commencing with Section 17200) of Part 2 of Division 7 of the Business and Professions Code.

## **XIII. Attachments**

- Attachment 1: Groundwater Subbasins in Stanislaus County
- Attachment 2: Well Registration Form
- Attachment 3: Groundwater Extraction Monitoring Report
- Attachment 4: Map Showing Applicability of the Groundwater Ordinance
- Attachment 5: Figure 1 Location of Special Management Zones

**ATTACHMENT 1**  
**Groundwater Subbasins in Stanislaus County**



JACOBSON | JAMES  
& associates, inc

Stanislaus County Hydrologic Model: Development and Forecasts  
Stanislaus County, California

PROJECT NO.	DATE	DRAWN BY	APPR. BY
STANCO.002	11/10/17	JH	MT

FIGURE 3-3

Groundwater Subbasins in Stanislaus County

**ATTACHMENT 2**  
**Well Registration Form**



# Well Registration Form

## Groundwater Well Metering, Monitoring and Reporting Program

Fill out a separate form for each well you/your company owns. If you/your company owns multiple wells, please make copies of the form and fill one out for each well and return it to the Department of Environmental Resources Groundwater Resources Division (209) 525-6700.

Property Owner Name: \_\_\_\_\_ City: \_\_\_\_\_ APN: \_\_\_\_\_

Well Location: Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Well Permit Number: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Company: \_\_\_\_\_

Owner Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Well Operator Name: \_\_\_\_\_ Well Operator Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

\* If there is a change in ownership, well operator, or operational status, the DER must be notified of this change and a new "Well Registration Form" may be required.

Well Status	
<input type="checkbox"/> Active <input type="checkbox"/> Inactive <input type="checkbox"/> Abandoned	
Water Well Type (check all that apply)	
<input type="checkbox"/> Domestic Public	<input type="checkbox"/> Industrial
<input type="checkbox"/> Agricultural	<input type="checkbox"/> Irrigation
<input type="checkbox"/> De minimus	<input type="checkbox"/> Exempt
<input type="checkbox"/> Commercial (type: _____)	
<input type="checkbox"/> Other (type: _____)	
<input type="checkbox"/> Small Pumper	
Groundwater Extraction Monitoring	
<p>The Department of Environmental Resources (DER) has adopted the "<a href="#">Stanislaus County Well Metering Monitoring and Reporting Guidelines</a>," (Guidelines) as authorized by SCOC Section 9.37.065.</p> <p>Pursuant to the Guidelines, all non-de minimus or non-exempt groundwater extractors in an unincorporated area of a groundwater subbasin shall submit periodic reports of groundwater information that are reasonably necessary to monitor the existing conditions of groundwater resources within the county, to determine trends and to develop and implement effective groundwater management plans and policies that are required by an adopted Groundwater Sustainability Plan.</p>	
Exemptions	
<p>All de-minimus (2 AFY or less) wells and existing wells constructed before November 25, 2014, that extract less than 10 acre-feet of groundwater per year shall not be required to register with the DER or participate in the Well Metering Monitoring and Reporting Program. Small Pumpers that extract less than 40 acre-feet of groundwater per year, may use an alternative approved method of measurement and shall complete all registration, monitoring and reporting requirements.</p>	
Well Registration	
Well Name:	Flowmeter Type/Model:
Well Depth:	Horsepower:      Power Source:
Well Casing Diameter:	Well Casing Screening Interval:
Flowmeter Present? <input type="checkbox"/> Yes <input type="checkbox"/> No	Pump Manufacturer and Model:
Pump Capacity:	Pump instantaneous flow rate:
Well distance from property line:	

Describe all uses that are served by the well (ex: 10 acres of almonds, residence, and a dairy) : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Does the well provide the primary source of water for the existing use?  Yes  No

Are there additional water sources available?  Yes  No

If yes, list additional available sources (surface water, public/district water, additional wells, etc.)

\_\_\_\_\_  
\_\_\_\_\_

What is the average annual historical water demand supplied by the well over the past 10 years (AFY): \_\_\_\_\_  
\_\_\_\_\_

### Off-Site Well Use

Does the well supply any off-site uses  Yes  No

If yes, list parcels also supplied by this well \_\_\_\_\_  
\_\_\_\_\_

(attach a separate sheet if necessary).

Are the parcels supplied by this well contiguous under the same ownership?  Yes  No

### Owner Agreement

I agree to comply with the rules and regulations set forth by the Guidelines and all applicable county codes including, but not limited to, installation, maintenance and calibration of an approved flow meter unless exempt, payment of the well registration fee, compliance with groundwater extraction monitoring and reporting requirements, allowing the DER or DER representative access to the property for inspection of the meter, water well, and related appurtenances. I consent to notify subsequent property owners of the Stanislaus County Well Metering Monitoring and Reporting Program and acknowledge that upon a change in use, operator or operational status the DER will be notified and completion of a new well registration form and fee may be required.

Owner Signature \_\_\_\_\_

Date \_\_\_\_\_

Owner Signature \_\_\_\_\_

Date \_\_\_\_\_

For office use only

Groundwater Subbasin \_\_\_\_\_

Groundwater Sustainability Agency \_\_\_\_\_

Special Management Area:  SMA1  SMA2  SMA3

Well Registration Number \_\_\_\_\_

Reviewed By \_\_\_\_\_ Date \_\_\_\_\_

**ATTACHMENT 3**  
**Groundwater Extraction Monitoring Report**



**ATTACHMENT 4**  
**Map Showing Applicability of the Groundwater Ordinance**

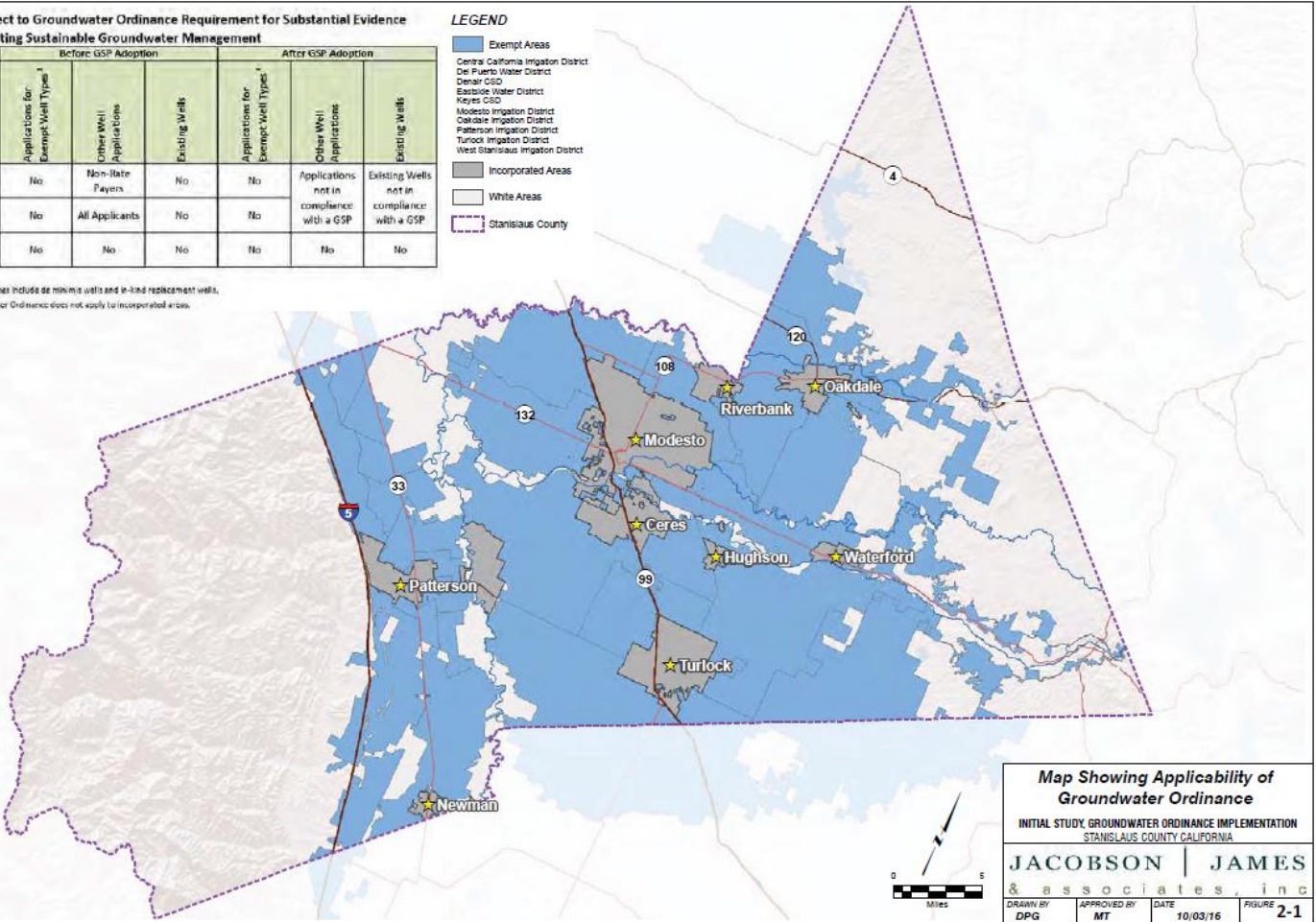
**Wells Subject to Groundwater Ordinance Requirement for Substantial Evidence Demonstrating Sustainable Groundwater Management**

Area	Before GSP Adoption			After GSP Adoption		
	Applications for Exempt Well Types <sup>1</sup>	Other Well Applications	Existing Wells	Applications for Exempt Well Types <sup>1</sup>	Other Well Applications	Existing Wells
Exempt Areas	No	Non-Rate Payers	No	No	Applications not in compliance with a GSP	Existing Wells not in compliance with a GSP
White Areas	No	All Applicants	No	No		
Incorporated Areas <sup>2</sup>	No	No	No	No	No	No

**LEGEND**

- Exempt Areas
- Central California Irrigation District
- Del Puerto Water District
- Denair CSD
- Eastside Water District
- Keyes CSD
- Modesto Irrigation District
- Oakdale Irrigation District
- Patterson Irrigation District
- Turlock Irrigation District
- West Stanislaus Irrigation District
- Incorporated Areas
- White Areas
- Stanislaus County

Notes:  
 1. Exempt well types include de minimis wells and in-kind replacement wells.  
 2. The Groundwater Ordinance does not apply to incorporated areas.



**Map Showing Applicability of Groundwater Ordinance**

INITIAL STUDY, GROUNDWATER ORDINANCE IMPLEMENTATION  
 STANISLAUS COUNTY CALIFORNIA

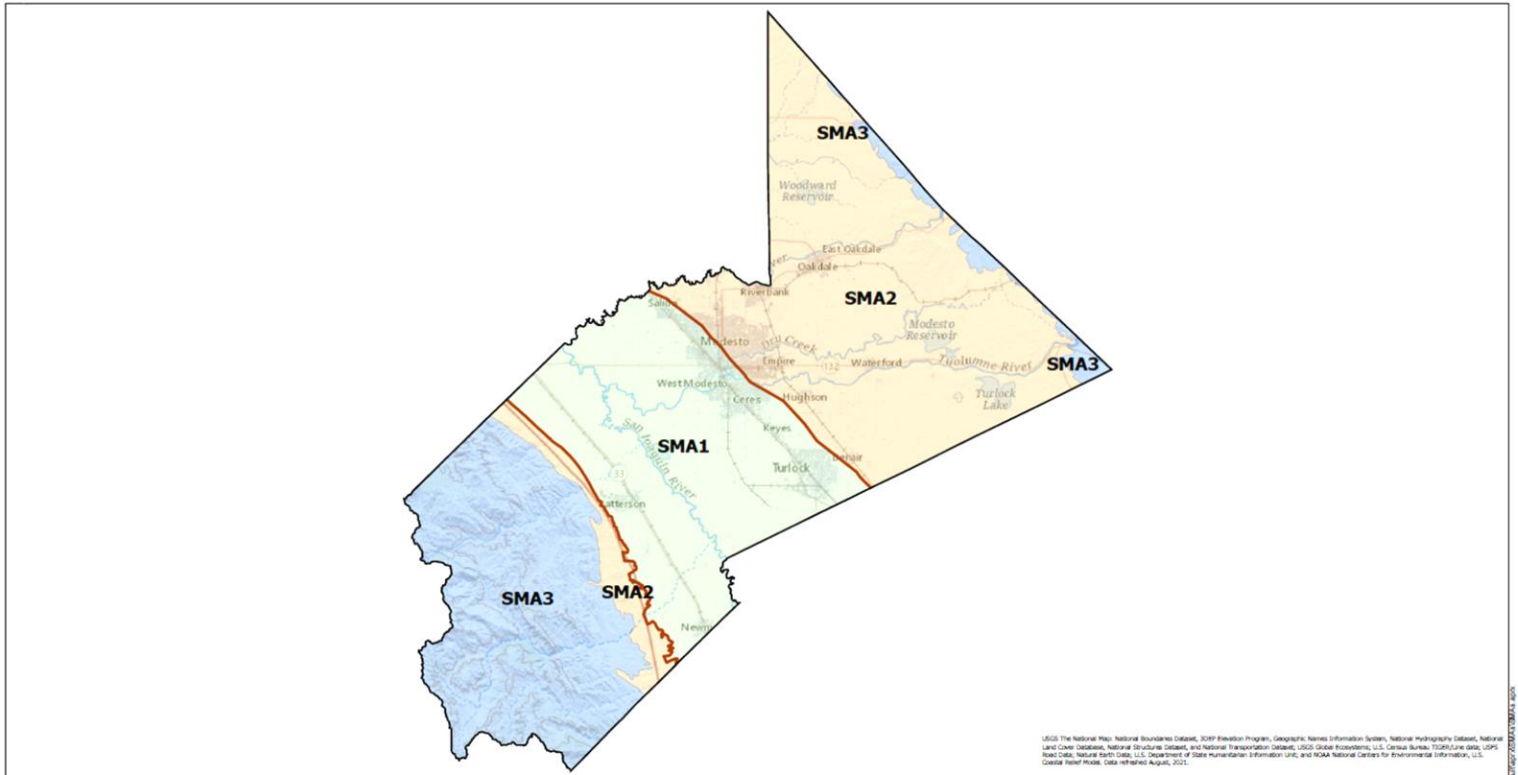
**JACOBSON | JAMES**  
 & associates, inc

DRAWN BY DPG	APPROVED BY MT	DATE 10/03/16	FIGURE 2-1
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Path: J:\GIS\StanislausCounty\Figures\2-1\_Groundwater Ordinance.mxd

## **ATTACHMENT 5**

### **Figure 1. Location of Special Management Zones**



USGS The National Map, National Boundaries Database, 30M Riverline Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Database, and National Transportation Database; USGS Global Elevation, U.S. Census Bureau, TIGER/Line data; USGS Road Data; National Earth Data, U.S. Department of State Munitions Information Unit, and NOAA National Centers for Environmental Information, U.S. Coastal Relief Profile. Data referenced August, 2021.

FIGURE 1

**LOCATIONS OF SPECIAL MANAGEMENT ZONES**

*Stanislaus County Groundwater Well Siting and Construction Guidelines*

- Legend**
- Stanislaus County Boundary
  - SMA1 - Area Underlain by the Concrete Clay
  - SMA2 - Alluvial Fan Area
  - SMA3 - Inactive Areas of Coal Range and Sierra Nevada Piedmonts

Scale for basemap

0 4 8 Miles

Stanislaus County

DATE: MAR. 09, 2022



**Northern Delta-Mendota GSA Group**  
**Pumping Reduction Plan**  
**Stanislaus County Well Metering Monitoring and Reporting**  
**Program Guidelines**  
**October 29, 2024**

Presented By: Christy McKinnon, Water Resources Manager  
Groundwater Resources Division  
Department of Environmental Resources  
Margaret Caligaris, Trihydro Corporation



Conduct a Public Hearing to consider  
approval and adoption of the  
Northern Delta-Mendota GSA Group Pumping  
Reduction Plan and Stanislaus County Well Metering  
Monitoring and Reporting Program Guidelines

# Staff Recommendation

- Conduct a Public Hearing to consider approval and adoption of the Northern Delta-Mendota GSA Group Pumping Reduction Plan and the Stanislaus County Well Metering Monitoring and Reporting Program Guidelines.
- Approve and adopt the Northern Delta-Mendota GSA Group Pumping Reduction Plan as required by Section 16.11 of the adopted Groundwater Sustainability Plan.
- Approve and adopt the Stanislaus County Well Metering, Monitoring and Reporting Program Guidelines.

# GSP Implementation Status

- January 23, 2024, approved Memorandum of Agreement (MOA) among the Delta-Mendota Subbasin Groundwater Sustainability Agencies (GSAs) to replace the existing Coordination Agreement and become effective upon adoption of the updated single GSP.
- August 13, 2024, adopted the Delta-Mendota Subbasin GSP which required a commitment to develop a Pumping Reduction Plan by October 2024 and implementation of the Pumping Reduction Plan (PRP) in January of 2025.
- October 23, 2024, The Northern GSA Group approved the PRP at the Special Northern Region Management Committee Meeting.

# GSP Inadequate Determination

- March 2, 2023, State Inadequate Determination provided
- Intervention means State enforcement and mandatory well metering, reporting, well registration fees of up to \$300 per non-exempt well, and up to \$40 an acre foot of pumped water
- A “potential” probationary hearing will be set for the second quarter of 2025 with the State Water Board and the Subbasin is facing the loss of local control from state intervention.

# Pumping Reduction Plan: Component 1

## **Stanislaus County Well Metering Monitoring and Reporting Program Guidelines (Program Guidelines)**

- Meets requirements in Section 16.111 of the GSP which requires the PRP to have a Monitoring and Data Collection Plan Component
- Each member GSA would address the Monitoring and Data Collection Plan Component Separately
- Guidelines can be used in line with an adopted GSP

# Pumping Reduction Plan: Component 1 (cont.)

## **Groundwater Ordinance Section 9.37.065**

- Adoption of new regulations to establish the frequency and timing of required periodic reports of groundwater information.
- To monitor the existing condition of groundwater resources within the County, to determine trends, or to develop effective sustainable groundwater management plans and policies.
- The new regulations shall specify the required information to be monitored, including water level and pumping data, or other data necessary for any other method to determine groundwater production

# Program Application

- Required in all out of district areas and unincorporated areas if mandated by an adopted GSP. Can be applied to other subbasins within Stanislaus County.
- Required for all non-de minimus wells constructed after November 25, 2014.
- Required for all existing wells constructed **before November 25, 2014**, if they extract 10 AFY or more.

# Program Application (cont.)

- Consideration for small pumpers (extract less than 40 AFY)
  - may use ET data as an alternative for metering
  - must participate in other well registration, monitoring and reporting requirements.
  - must also include surface water delivery reports

# Program Application (cont.)

- Exempt wells are de minimus extractors and wells constructed before November 25, 2014, that extract less than ten acre-feet of groundwater per year.
- Regulating these wells would not yield substantial benefits, be inefficient and impose significant burdens on disadvantaged communities and underrepresented farmers.

# Program Implementation

- Well registration form and estimated \$137 fee due to DER before January 1, 2026.
- Include Well completion report or equivalent required to verify pumping aquifer.
- Well Metering Requirements to be completed by January 1, 2026
  - Approved type based on acceptable industry standards certified upon installation and within the past 5 years
  - accurate to within 2%,
  - installation, maintenance and contractor or qualified professional documentation provided to DER.

# Program Implementation (cont.)

- Reporting Requirements
  - By January 1, 2026, and each November 1 thereafter
  - Reports of monthly groundwater extraction for the previous water year
  - Include photo of meter reading for the final annual reading
  - More frequent reporting if necessary to stay above trigger thresholds and to achieve groundwater level recovery
- Inspections
  - DER staff to inspect as necessary to determine compliance

# Non-Compliance and Enforcement

- Allocation Backstop required pursuant to the GSP and the PRP
- State intervention and loss of local control
- County Action
  - SCOC 9.37.045: Authority to Regulate Extraction
  - SCOC 9.37.060(C): Authority to Investigate and Prohibit
  - SCOC Chapter 2.92: Enforcement of Code Violations
- Landowner, well operator, and public water agency cooperation is essential for achieving our sustainability goals, avoiding probation and implementation of an interim State Plan.

**Northern Delta-Mendota GSA**  
**Group Pumping Reduction Plan**  
**Delta-Mendota Subbasin GSP**

Presented by: Margaret Caligaris  
Trihydro Corporation

# Overview

- Developed by EKI Environment and Water, Inc. using the groundwater model created for the Delta Mendota Subbasin (DM) (required by California Department of Water Resources (DWR)).
- Trihydro Corporation is supporting the County with approval and implementation of the plan.
- In accordance with Section 16.1 of the 2024 Revised Single Groundwater Sustainability Plan (GSP)

# Overview (cont.)

- Addresses the six required components of the GSP
  - Monitoring and Data Collection Plan (addressed by the prepared Well Metering, Monitoring, and Reporting Program Guidelines)
  - Overdraft Mitigation Plan
  - Groundwater Level Minimum Threshold (MT) Avoidance Plan
  - Water Quality Minimum Threshold Exceedance Plan
  - Subsidence Avoidance Plan
  - Groundwater Allocation Backstop

# Overdraft Mitigation Plan

- Northern DM zone must reduce overall pumping in the lower aquifer by approximately 9,000 ac-ft per year prior to 2030 to achieve sustainability by 2040.
  - Annual reduction by 20 percent across GSAs (beginning 2025 with first 20 percent reduction to be accomplished by the end of 2026)
  - Accomplish minimum reduction by end of 2030
- In the instance that goals are not reached, the GSA will be required to default to a pre-determined allocation

# Groundwater Level Minimum Threshold (MT) Avoidance Plan - Investigation

- Locations (representative monitoring wells) with negative trends towards minimum thresholds for groundwater level (as established by the GSP) will be identified each year by February. Investigation is triggered by:
  - Exceedance of the MT, determined by seasonal low (fall) water level measurement
  - Projected exceedance of MT based on previous four (4) fall water level measurements
  - Seasonal high (spring) measurement lower than the monitoring well's specific target level
- Investigation requires additional water level measurement within 30 calendar days. If the data supports the identified trigger, cutbacks will be required

# Groundwater Level Minimum Threshold (MT) Avoidance Plan (cont.) - Curtailment

- Cutbacks will be applied to non-de minimis extractors within the monitoring well's zone of impact (ZOI); established using groundwater modeling simulations
  - ZOIs will be validated by a qualified professional prior to implementing cutbacks
  - Areas where groundwater pumping directly influences water levels at the monitoring well, thereby influencing other surrounding wells
    - May cross GSA boundaries, necessitating a common reduction strategy across the subbasin
  - A uniform ac-ft per acre pumping limit will be identified and implemented within the ZOI to achieve groundwater level recovery
  - Groundwater levels and pumping will be measured monthly during implementation of the cutback

# Groundwater Level Minimum Threshold (MT) Avoidance Plan (cont.) - Recovery

- Pumping curtailment/cutback will be terminated once all the following have occurred;
  - Cutbacks have been implemented for at least one water year (a period including consecutive spring and fall periods);
  - Projected exceedance of MT is projected to be avoided in the next year based on the current linear trend
  - Spring groundwater level has recovered to be above the calculated spring target level
- In the instance that the GSA does not implement the appropriate cutbacks within two quarters, the groundwater allocation backstop for the subbasin will be enforced

# Water Quality Minimum Threshold Exceedance Plan - Investigation

- In the instance that groundwater quality deterioration is linked to subbasin management (pumping or recharge), GSAs must investigate the cause and implement appropriate mitigation measures
- Pumping cutbacks are only triggered when a convincing linkage is established between changes in water quality and management actions or groundwater levels in the basin.

# Water Quality Minimum Threshold Exceedance Plan – Investigation (cont.)

- Investigation to assess degradation cause and correlation with groundwater level changes is triggered when
  - Exceedance of WQ MT, determined by comparing the most recent seasonal low measurement (fall) to the defined WQ MTs
  - Projected exceedance of WQ MT based on linear trend of previous three (3) fall groundwater measurements
- Investigations must be completed within 60 days of reporting a WQ MT trigger

# Water Quality Minimum Threshold Exceedance Plan (cont.) - Mitigation

- Mitigation will depend upon whether WQ degradation is linked to changing groundwater levels or by implementation of projects and management actions (particularly recharge projects)
  - Groundwater level:
    - Implementation of a pumping cutback in the form of uniform ac-ft per acre pumping limit within the ZOI for the monitoring well.  
Effectiveness and need for adaptation of curtailment volumes will be assessed on a quarterly basis
  - Projects/management Actions (recharge projects)
    - Recharge project must be paused until exit trigger is met unless the GSA can justify successful mitigation through modified or continued operation.

# Water Quality Minimum Threshold Exceedance Plan (cont.) - Recovery

- Mitigation action (curtailment or mitigation plan) can be exited if any of the following occur;
  - Groundwater level target is met, and WQ at the monitoring well does not show a statistically significant increasing trend using the last three measurements; or
  - Groundwater level target is met, and a significant correlation between WQ and water level can no longer be established; or
  - Projected WQ at the monitoring well will not exceed the respective MT
- Failure to comply with implementation or delay of more than two quarters will trigger the allocation backstop

# Subsidence Avoidance Plan - Trigger

- Two components
  - Critical infrastructure component – applies to critical infrastructure and includes areas around the DM Canal and California Aqueduct (within the N DM region)
  - Hotspot mitigation component – applies to entire basin
- Pumping cutback is triggered under the following conditions for each component:
  - Critical infrastructure: three(3)-year average subsidence rate exceeds 0.2 ft per year within 0.5 miles of critical infrastructure
  - Hotspot mitigation Component: the five(5)-year linear trend established based upon InSAR data indicates a projected subsidence of more than 2.0 feet by 2040, or more than 0.5 feet by 2030 (IM) or exceedance of any subsequent IM

# Subsidence Avoidance Plan - Cutback

- Critical Infrastructure Component:
  - ZOI identified as the zone of exceedance (0.2 ft/yr subsidence within 0.5 miles of CI) plus the areas where the three-year average subsidence rate exceeds 0.1 ft/yr contiguous with such defined zone of exceedance
  - Cutback begins at 0.35 ac-ft/acre per year (estimated sustainable yield for the lower aquifer in the N DM region) within the ZOI
  - Pumping cutbacks are increased based upon rolling annual average rates of subsidence
    - No new lower aquifer or composite wells are permitted within the ZOI until the exit trigger is met

# Subsidence Avoidance Plan (cont.) - Cutback

- Hotspot Mitigation Component:
  - ZOI will be a radius of 0.5 miles around any point that meets the cutback entry trigger
  - Pumping cutbacks initiated at the 0.35 ac-ft/acre per year and adjusted based upon rolling annual subsidence rates

# Subsidence Avoidance Plan - Recovery

- Pumping cutbacks may be relieved if the conditions under each respective component are met:
  - Critical Infrastructure Component
    - The four(4)-year average subsidence rate within the ZOI is smaller than 0.1 ft per year
  - Hotspot mitigation component
    - Subsidence due to lower aquifer pumping attributable to subbasin is eliminated; or
    - The five(5)-year linear trend established based on InSAR data no longer indicates exceedance of cumulative MT or IMs

# Subsidence Avoidance Plan (cont.) - Recovery

- GSAs can provide justification in the form of a technical report from a qualified professional to sufficiently demonstrate that subsidence is not caused due to pumping within ZOI
- Groundwater allocation backstop will be enforced if GSA fails to implement policy within two quarters

# Groundwater Allocation Backstop

- 0.35 ac-ft/acre per year
- Default enforcement action in the case that an MT exceedance is reached, and data supports the claim that the exceedance is a result of GSA action, or lack of action
- Determined to be the ‘sustainable yield’ for the subbasin
  - How much can be extracted and still retain the subbasins ability to reach the sustainability goal by 2040
- In the event that the GSP is not approved, adopted, and implemented, prior precedent points to state implementing an allocation backstop for sustainable groundwater management.
  - In the N DM subbasin, the allocation would be 0.35 ac-ft/acre per year

# Groundwater Allocation Backstop (cont.) - Trigger

- Occurrence of any of the following conditions will result in groundwater allocation backstop
  - WL MT exceedances for 2 consecutive years; or
  - Failure to achieve allocated overdraft mitigation pumping reduction by 2030; or
  - Failure to comply with the WL MT or WQ MT requirements
  - Failure to comply with the Subsidence Avoidance Plan requirements
- Cutback would apply to whole N DM zone – once triggers are resolved, GSAs can independently petition to exit the groundwater allocation backstop

# Impacts to Constituents Following Implementation of Allocation Backstop

- Increase of fallowed lands
- Anticipated long-term conversion of agricultural lands to more drought resilient crops or parceling off in support of development
- Reduction in county revenue and economic viability
  - Loss or reduction of industry
- Implementation of the PRP is currently the best, proactive, approach to groundwater management within the subbasin

# Public Notice

- Public Hearing date for consideration of adoption of the Northern Delta-Mendota GSA Group Pumping Reduction Plan and Stanislaus County Well Metering Monitoring and Reporting Program Guidelines was set for action for today on October 1, 2024.
- The date of the Public Hearing was published in the Modesto Bee on October 13, 2024, and October 20, 2024, in compliance with the Government Code.

# Staff Recommendation

- Conduct a Public Hearing to consider approval and adoption of the Northern Delta-Mendota GSA Group Pumping Reduction Plan and the Stanislaus County Well Metering Monitoring and Reporting Program Guidelines.
- Approve and adopt the Northern Delta-Mendota GSA Group Pumping Reduction Plan as required by Section 16.11 of the adopted Groundwater Sustainability Plan.
- Approve and adopt the Stanislaus County Well Metering, Monitoring and Reporting Program Guidelines.

**Questions?**