

5 PROJECTS AND MANAGEMENT ACTIONS

The Porterville Irrigation District (PID) Groundwater Sustainability Agency (GSA) is committed to implementing Projects and Management Actions (PMAs) to support achievement of the Tule Subbasin (Subbasin) sustainability goal and to address groundwater conditions within the PID GSA GSP Plan Area (PID Plan Area). Collectively, the PID GSA PMAs are designed to achieve one or more of the following objectives:

- Expand the availability of water supplies;
- Improve the efficiency and use of existing water resources;
- Reduce consumptive groundwater use in excess of sustainable levels;
- Maintain groundwater elevations consistent with the sustainability metrics defined in this Plan;
- Limit or halt land subsidence, particularly in areas with critical infrastructure;
- Preserve groundwater quality for beneficial uses;
- Support development of funding mechanisms for local water management needs; and
- Enhance the PID GSA's capacity to collect, manage, and utilize water-related data.

All PMAs are intended to protect groundwater resources and associated beneficial uses within the PID Plan Area while supporting coordinated Subbasin-wide management efforts. A central and immediate priority of these actions is to address and reduce groundwater overdraft conditions within the PID Plan Area.

Based on the historical period [water year (WY) 1987 to WY2024] groundwater budget, average annual groundwater pumping within the PID Plan Area is estimated at approximately 23,700 acre-feet/year (AFY). This level of pumping has contributed to an average annual groundwater storage decline of approximately 2,200 AFY (see **Table 2-7**). Accordingly, the primary objective of the PID GSA PMAs is to offset this historical overdraft by achieving an average annual benefit to the groundwater system of at least 2,200 AFY.

While addressing the historical groundwater overdraft is expected to reduce many of the adverse groundwater conditions within the PID Plan Area, land subsidence in the vicinity of the Friant-Kern Canal (FKC) remains a priority concern. Due to the sensitivity of this area to groundwater storage declines and the importance of protecting the FKC, achieving the baseline groundwater benefit of 2,200 AFY may not, by itself, be sufficient to arrest subsidence within the FKC Land Subsidence Management Area. Accordingly, the PID GSA intends to implement PMAs specifically intended to reduce groundwater pumping in areas adjacent to the FKC, including the establishment of groundwater pumping allocations within the FKC Land Subsidence Management Area.

To provide a reasonable margin of confidence in achieving sustainability, the PID GSA plans to implement PMAs with a combined estimated groundwater benefit that exceeds the 2,200 AFY target, recognizing that actual benefits achieved by individual PMAs may vary over time. The PID GSA PMAs are further described in the following sections and are summarized in **Table 5-1**.

5.1 Tule Subbasin-wide Projects and Management Actions with PID GSA Participation [23 CCR § 354.44]

The Tule Subbasin-wide PMAs described in this section represent coordinated efforts implemented across multiple GSAs within the Subbasin, in which the PID GSA participates. Consistent with the 2024 Tule Subbasin Coordination Agreement, these PMAs are designed to support Subbasin-wide sustainability goals through shared monitoring, data collection, and management strategies that address conditions affecting multiple GSAs. The PMAs included herein focus on land subsidence monitoring, management, and evaluation, as well as mitigation and data gap-filling efforts. Through PID GSA's participation in these coordinated activities, the GSA contributes to improving the understanding of Subbasin conditions, refining monitoring networks, and supporting the development and implementation of management responses intended to avoid undesirable results, particularly those related to land subsidence.

5.1.1 *Friant-Kern Canal Land Subsidence Monitoring Plan*

5.1.1.1 Project Description [23 CCR § 354.44(a)]

The Friant-Kern Canal (FKC) Land Subsidence Monitoring Plan (LS Monitoring Plan) is a coordinated monitoring framework established to monitor land subsidence conditions in the eastern portion of the Tule Subbasin along the FKC. When originally developed, this plan was known as the Eastern Tule Groundwater Sustainability Agency (ETGSA) Land Subsidence Monitoring Plan (**Appendix G**). Although the ETGSA has since been dissolved and its member agencies have formed independent GSAs, the plan, which the PID GSA now refers to as the FKC LS Monitoring Plan, continues to be implemented by participating GSAs, including the PID GSA, as a consistent, subbasin-aligned approach to monitoring land subsidence conditions.

The FKC LS Monitoring Plan is designed to enhance the monitoring of land subsidence, particularly in areas of known or potential impacts to critical infrastructure such as the Friant-Kern Canal. The plan establishes an enhanced monitoring network, supplemental to the Tule Subbasin Monitoring Plan, to improve the spatial resolution, frequency, and reliability of subsidence-related data.

The monitoring program includes:

- GPS surveys to track land surface elevation changes;
- Extensometers to measure aquifer system compaction;
- InSAR data to assess regional subsidence patterns; and
- Groundwater level monitoring in both the Upper and Lower Aquifers to evaluate conditions contributing to subsidence.

The FKC LS Monitoring Plan also includes standardized monitoring procedures, identification and reduction of data gaps, and ongoing evaluation and refinement of the monitoring network. Data generated through the monitoring program are compiled, analyzed, and documented through regular reporting to support improved understanding of subsidence conditions and to inform groundwater management decisions by participating GSAs.

5.1.1.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Implementation of the FKC LS Monitoring Plan is expected to improve the ability of participating GSAs to detect, evaluate, and track land subsidence conditions over time. The enhanced monitoring network provides the data necessary to better understand the causes, magnitude, and rates of subsidence, particularly in areas influencing the FKC.

The FKC LS Monitoring Plan supports early identification of adverse subsidence trends and improves the technical basis for groundwater management decisions. By reducing uncertainty and addressing key data gaps, the monitoring program contributes to more effective management actions that can reduce overdraft, stabilize groundwater levels, and minimize non-recoverable land subsidence.

Secondary benefits include supporting maintenance of surface water conveyance capacity, improving coordination among GSAs, and reducing uncertainty related to groundwater level conditions and aquifer response.

Progress toward achieving these outcomes will be evaluated using data collected through the FKC LS Monitoring Plan monitoring network, including:

- Trends in land surface elevation derived from GPS and InSAR data;
- Measurements of aquifer system compaction from extensometers;
- Groundwater level trends in the Upper and Lower Aquifers; and
- Improvements in spatial coverage and completeness of the monitoring network.

These metrics will be used to evaluate subsidence conditions, reduce uncertainty, and support adaptive groundwater management consistent with the sustainability objectives of this GSP.

5.1.1.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Focused monitoring efforts within the FKC LS Monitoring Plan area began in September 2021 in response to documented land subsidence within the Tule Subbasin and the need for enhanced monitoring to better understand and manage subsidence-related impacts.

Implementation of the FKC LS Monitoring Plan is ongoing and will continue throughout the GSP planning and implementation horizon. The monitoring program is designed to be adaptive and will be maintained and refined by participating GSAs as additional data are collected, monitoring technologies evolve, and data gaps are identified.

5.1.1.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Participating GSAs implement the FKC LS Monitoring Plan through coordinated monitoring, data collection, and reporting activities.

Implementation includes:

- Conducting GPS surveys at established benchmarks to measure land surface elevation changes;
- Collecting and analyzing extensometer data to evaluate aquifer system compaction;
- Utilizing InSAR satellite data to assess regional subsidence patterns;
- Monitoring groundwater levels in wells completed in both the Upper and Lower Aquifers; and
- Maintaining and expanding the monitoring network to improve spatial coverage and address identified data gaps.

Monitoring is conducted at frequencies defined in the FKC LS Monitoring Plan (e.g., quarterly GPS surveys in key areas, continuous extensometer monitoring, and periodic InSAR analysis), and data are compiled and evaluated to identify trends and support ongoing assessment.

Implementation also includes preparation of annual reports summarizing monitoring results, evaluating subsidence conditions, and identifying recommended refinements to the monitoring program.

5.1.1.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Focused monitoring efforts within the FKC LS Monitoring Plan area began in September 2021 and will continue upon adoption of an updated plan, anticipated in December 2026.

Near-term benefits include improved data availability, enhanced monitoring coverage, and increased understanding of subsidence conditions. Over the medium- to long-term, continued data collection and analysis will reduce uncertainty, improve identification of subsidence trends, and support more effective groundwater management decisions.

The benefits of the FKC LS Monitoring Plan will continue to accrue over time as the monitoring network is refined, data gaps are addressed, and long-term datasets are developed to support evaluation of subsidence conditions throughout the GSP implementation period.

5.1.1.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No additional permits are anticipated for implementation of the FKC LS Monitoring Plan beyond those already secured or satisfied under existing rules and regulations. CEQA compliance has been completed where applicable and will continue to be addressed as needed.

To the extent future management actions or related projects are identified and advanced under the FKC LS Monitoring Plan, any applicable permitting and regulatory requirements will be addressed at the time those activities are proposed and implemented.

5.1.1.7 Legal Authority [23 CCR § 354.44(b)(7)]

Participating GSAs have the legal authority necessary to implement the FKC LS Monitoring Plan pursuant to the Sustainable Groundwater Management Act (SGMA). Key authorities include:

- Undertaking actions necessary or appropriate to fulfill the purposes of SGMA [Water Code § 10725.2(a)];

- Adopting rules, regulations, ordinances, and resolutions required for effective SGMA implementation [Water Code § 10725.2(b)].

These authorities support implementation of the monitoring activities defined in the FKC LS Monitoring Plan.

5.1.1.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The FKC LS Monitoring Plan was made available for public review, providing stakeholders the opportunity to submit written and verbal comments. In addition, workshops were held, and the Stakeholder and Executive Committees were given multiple opportunities to participate in the development and refinement of the plan prior to its adoption.

The PID GSA intends to refine the FKC LS Monitoring Plan through stakeholder engagement and collaboration with FWA and surrounding GSAs before the plan is adopted by the PID Board of Directors. Implementation of the FKC LS Monitoring Plan will occur in a transparent manner with opportunities for stakeholder engagement consistent with SGMA requirements.

5.1.1.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Implementation of the FKC LS Monitoring Plan requires ongoing staff and consultant support for monitoring, data evaluation, reporting, and program administration. These efforts include operation and maintenance of the monitoring network, data analysis, preparation of annual reports, and coordination among participating GSAs. The total cost of the Subbasin's benchmark survey monitoring effort is \$87,750, with the PID GSA's portion being \$2,900.

Funding for FKC LS Monitoring Plan implementation is expected to be provided through GSA budgets, including revenues generated under adopted rules and regulations, as well as other available funding mechanisms. Additional funding sources may be pursued, as appropriate, to support continued implementation and refinement of the monitoring program.

5.1.2 *Friant-Kern Canal Land Subsidence Management Plan*

5.1.2.1 Project Description [23 CCR § 354.44(a)]

The Friant-Kern Canal (FKC) Land Subsidence Management Plan (LS Management Plan) is a policy and implementation framework currently being developed to address pumping-induced land subsidence and associated impacts to critical infrastructure, particularly the Friant-Kern Canal. The plan will establish management strategies, action criteria, and implementation concepts to reduce and prevent further land subsidence within defined areas of concern.

As part of the FKC LS Management Plan's development, the Tule Subbasin GSAs are evaluating potential modifications to historic groundwater management actions and considering expansion of the FKC Land Subsidence Management Area to better address subsidence conditions and protect the canal. In the meantime, the PID GSA has limited groundwater pumping within the FKC Land Subsidence Management Area to a Sustainable Yield-based Allocation through its Groundwater Accounting and Allocation PMA described in **Section 5.2.1**.

As an initial effort, the PID GSA will evaluate measured land subsidence and metered groundwater pumping data to identify localized subsidence hotspots within the PID Plan Area, assess conditions relative to the established land subsidence minimum thresholds, and develop targeted management actions to reduce localized impacts. The localized management approach will be coordinated with the Friant Water Authority (FWA) and FKC-corridor GSAs to support implementation of consistent management strategies along the Friant-Kern Canal. As additional metered pumping data become available across the Tule Subbasin, subsequent phases may evaluate regional groundwater pumping influences on land subsidence to refine and expand the coordinated management strategy.

5.1.2.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Implementation of the FKC LS Management Plan is intended to reduce and prevent further land subsidence within the Subbasin, particularly in areas that may impact the FKC and other critical infrastructure. The plan will provide a structured approach to managing groundwater extractions and implementing mitigation actions in response to observed subsidence conditions. Expected outcomes also include stabilization of groundwater levels in subsidence-prone areas and minimization of aquifer compaction. The plan will support increased use of surface water supplies and development of alternative water management strategies to reduce reliance on groundwater pumping.

Additional benefits will include protection of infrastructure capacity, improved coordination among participating GSAs, and support for achieving sustainability goals related to land subsidence and groundwater level conditions. The PID GSA's analysis of localized subsidence and metered groundwater pumping data will support development of targeted management actions for the areas exhibiting the greatest subsidence, providing a focused and adaptive approach that complements broader regional land subsidence management efforts.

Progress will be evaluated using metrics derived from the associated monitoring program, including:

- Measured land subsidence relative to baseline conditions;
- Changes in groundwater extraction levels within the FKC Land Subsidence Management Area;
- Groundwater level trends in subsidence-prone areas; and
- Implementation and effectiveness of management actions and projects.

These metrics will be used to evaluate whether subsidence conditions are stabilizing and to inform adjustments to management actions over time.

5.1.2.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

The FKC LS Management Plan will be implemented through a phased approach to develop and refine a coordinated land subsidence management strategy for the Friant-Kern Canal within the Tule Subbasin. The initial phase, currently underway, focuses on the PID Plan Area and includes evaluation of measured land subsidence, metered groundwater pumping, groundwater levels, and other available monitoring data to identify and prioritize localized subsidence hotspots. The results of this evaluation will be used by the PID GSA to develop targeted management actions for the highest priority areas, with priority generally

given to hotspots having the greatest potential to affect the Friant-Kern Canal. Potential management actions may include agricultural land retirement, in-lieu recharge through increased surface water use, groundwater recharge or injection, or other measures determined to be appropriate based on site-specific conditions.

The proposed management actions will be coordinated with the FWA and participating GSAs as part of development of the coordinated FKC LS Management Plan. Upon completion of the initial phase, subsequent phases will evaluate regional groundwater pumping influences across the Tule Subbasin using expanded metered pumping and monitoring datasets to improve understanding of basin-scale drivers of land subsidence. The coordinated management plan will be refined over time as additional monitoring data become available, and the effectiveness of implemented management actions is evaluated through ongoing monitoring of land subsidence, groundwater levels, and groundwater pumping.

5.1.2.4 Implementation Plan [23 CCR § 354.44(b)(6)]

The PID GSA will implement the FKC LS Management Plan in coordination with the FWA and participating GSAs. The PID GSA will be responsible for completing the localized hotspot evaluation, developing proposed management actions for priority areas within the PID Plan Area, and coordinating those recommendations with FWA and participating GSAs as part of development of the coordinated FKC LS Management Plan.

The coordinated management plan will identify and prioritize management actions to address localized and regional land subsidence affecting the Friant-Kern Canal. The management plan will be refined over time as additional monitoring data, metered groundwater pumping information, and regional evaluations become available, supporting continued adaptive management and coordination among participating GSAs.

5.1.2.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The initial phase of the FKC LS Management Plan is currently underway and is anticipated to be completed by the end of 2026. This phase includes evaluation of localized land subsidence conditions within the PID Plan Area and development of targeted management actions for identified priority areas. Following completion of the initial phase, the PID GSA will coordinate the proposed management actions with the Friant Water Authority and participating GSAs while beginning implementation of localized management actions, where appropriate.

Future phases will expand the evaluation to assess regional groundwater pumping influences on land subsidence across the Tule Subbasin and refine the coordinated FKC LS Management Plan as additional metered groundwater pumping data become available. Benefits are expected to begin accruing in 2027 through implementation of targeted management actions in priority areas, with additional long-term benefits realized as the coordinated management plan is refined and implemented across participating GSAs.

5.1.2.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Development of the FKC LS Management Plan is not anticipated to require permits or regulatory approvals. However, implementation actions identified through the planning process may require project-specific permits or regulatory approvals, depending on the nature of the action. Environmental review under CEQA and compliance with other applicable regulatory requirements will be completed as necessary, prior to implementation of individual projects and management actions.

5.1.2.7 Legal Authority [23 CCR § 354.44(b)(7)]

Participating GSAs have the legal authority necessary to develop the FKC LS Management Plan pursuant to SGMA. Key authorities include:

- Regulating groundwater extractions, including limiting or restricting pumping [Water Code § 10726.4(a)(2)];
- Authorizing transfers of groundwater extraction allocations [Water Code § 10726.4(a)(3)];
- Undertaking actions necessary to achieve sustainable groundwater management [Water Code § 10725.2(a)]; and
- Adopting rules and regulations to support implementation [Water Code § 10725.2(b)].

These authorities enable the PID GSA to implement management actions within its jurisdiction and participate in development of the coordinated FKC LS Management Plan to support achievement of the sustainability goal.

5.1.2.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The PID GSA will coordinate development of localized management recommendations through ongoing collaboration with the Friant Water Authority and participating GSAs. Coordination will occur through periodic meetings with the Friant Water Authority and Tule Subbasin technical working group meetings to support development and refinement of the coordinated FKC LS Management Plan.

Public notification and engagement will occur through regularly scheduled PID GSA Board meetings, which are conducted in accordance with the Ralph M. Brown Act, and other public outreach activities completed as part of GSP implementation under SGMA. The coordinated FKC LS Management Plan will be considered for adoption by the PID GSA Board of Directors at a public meeting, providing stakeholders and the public an opportunity to review and provide input prior to adoption.

5.1.2.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

The estimated cost to develop the coordinated FKC LS Management Plan is approximately \$200,000. This estimate includes completion of the localized hotspot evaluation, development of localized management recommendations, coordination with the Friant Water Authority and participating GSAs, and refinement of the coordinated management plan. Costs associated with implementation of management actions identified through the planning process are not included in this estimate and will be evaluated as specific projects and management measures are developed.

Funding for development of the plan is anticipated to be provided through a combination of PID GSA funding, cost-sharing among participating GSAs, and potential grant funding along with other external funding opportunities. Funding for implementation of future projects and management actions will be identified as part of the coordinated planning process and may include GSA revenues, grant funding, and other external funding opportunities.

5.1.3 Southern Land Subsidence Study

5.1.3.1 Project Description [23 CCR § 354.44(a)]

The Southern Land Subsidence Study (SLSS) to be conducted by Thomas Harder & Co focuses on the Southern Land Subsidence Study Area, a 12-mile-wide region centered on the boundaries of GSAs with critical pipeline infrastructure. The primary objective is to determine the spatial relationship between groundwater pumping and land subsidence, specifically estimating how pumping within and outside certain areas contributes to subsidence. By identifying areas requiring additional pumping restrictions and quantifying the relative contribution of various GSAs to subsidence, the project aims to potentially modify sustainable management criteria (SMC) to protect critical infrastructure.

5.1.3.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The primary benefit of this study is to provide a scientifically defensible foundation for managing land subsidence that threatens critical infrastructure within the Subbasin. By quantifying the spatial relationship between groundwater pumping and subsidence, the project will:

- **Protect Critical Infrastructure:** Specifically address risks to the regional pipeline system and other regional canals.
- **Identify Necessary Pumping Restrictions:** Determine where additional pumping restrictions, beyond those currently planned, are required to meet sustainability goals.
- **Clarify Cross-Boundary Impacts:** Estimate how much land subsidence in one GSA is caused by pumping occurring outside its legal boundaries.
- **Inform Mitigation Programs:** Provide a basis for mitigation planning and the reevaluation of SMC.

For the outcomes of this project, the successful completion of this scope of work will result in several key technical and regulatory deliverables:

- **Refined Groundwater Model:** A modified version of the Tule Subbasin Groundwater Flow Model featuring a higher-resolution grid (adding approximately 75 new Water Budget Areas) and the integration of actual well locations rather than virtual “farm wells.”
- **Scenario-Based Insights:** An analysis of up to 50 different pumping scenarios, including the effects of reducing Lower Aquifer pumping and shifting Delano Earlimart Irrigation District (DEID) pumping to shallower depths.
- **Technical Memorandum:** A comprehensive report summarizing the findings, including color flood difference maps, time-series charts of subsidence, and recommended revisions to land subsidence SMC.

- Optimized Pumping Volumes: A determination of allowable groundwater pumping volumes by location and depth necessary to maintain subsidence within protective limits.

The project will measure success and impact using the following technical metrics:

- Relative Percent Contribution: A table showing the specific percentage of subsidence at up to 10 locations attributed to pumping in different Water Budget Areas.
- Uncertainty Quantification: Use of ensemble methods (PEST++IES or ENSI) to establish the 10th to 90th percentile "plausible" range of additional subsidence.
- SMC Thresholds: Establish Cumulative Land Subsidence Minimum Thresholds (MTs) and Lower Aquifer Groundwater Level MTs that are protective of infrastructure.
- History Matching Statistics: Evaluation of the model's accuracy through Normalized Root Mean Square Error (NRMSE) and other objective function values.

5.1.3.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Development of the SLSS framework began in March of 2025, prior to the publication of California Department of Water Resources Subsidence Best Management Practice (BMP) guidance. The Subbasin GSAs intend to integrate the Subsidence BMP guidance into the SLSS on an ongoing basis, though additional analysis may be necessary to incorporate elements mentioned in the Subsidence BMP but not accounted for in the original SLSS framework.

Not all GSAs are currently in agreement on the established SMC or land subsidence attribution due to groundwater pumping. This work will allow for GSAs to be coordinated on land subsidence SMC and determine where more restrictive pumping limits are required.

5.1.3.4 Implementation Plan [23 CCR § 354.44(b)(6)]

This implementation plan outlines the scope, methodology, and schedule for conducting the technical analysis of land subsidence within the SLSS area.

1. Model Modification and Data Integration

The project begins by refining the existing Tule Subbasin Groundwater Flow Model to ensure it is technically equipped for high-resolution analysis.

- Grid Refinement: Transition from large Water Budget Areas (WBAs) to a smaller, approximately 2x2 mile grid. This includes adding approximately 75 new WBAs to the existing 56.
- Actual Well Integration: Replace virtual "farm wells" with actual well locations and perforation data provided by GSA registration programs.
- Temporal and Hydrological Updates: Revise stress periods from annual to monthly for the 20-year projection period (2019–2040).
 - Implement "repeated hydrology" to simulate variable wet and dry periods rather than using static averages.

- Consumptive Use (CU) Calibration: Process LandIQ satellite data from 2020–2023 to establish representative monthly averages for the new WBAs.

2. Scenario Development and Pumping Analysis

The modified model will simulate up to 50 unique pumping scenarios to assess cause-and-effect relationships regarding subsidence.

- Pumping Regimes: Scenarios will test different sustainable pumping start dates (e.g., 2015, 2020, 2024) and accelerated ramp-down schedules.
- Aquifer Management: Specific scenarios will incorporate "No Pumping" zones below 1,000 and 1,200 feet to assess the benefit of reducing Lower Aquifer extractions.
- DEID Infrastructure Protection: Scenarios will evaluate the impact of shifting pumping from deeper to shallower wells to protect the DEID pipeline system.

3. Uncertainty and History Matching

To ensure findings are robust and defensible, the project includes a sophisticated uncertainty analysis.

- Ensemble Methods: Utilize PEST++IES or PEST++ENSI to complete history matching.
- Parameter Scaling: Increase pilot points and parameters to several hundred thousand to capture spatial correlations in hydraulic conductivity and specific yield.
- Probabilistic Results: Present results at selected Locations of Interest as cumulative probability graphs and violin plots, identifying the "Plausible" (10th to 90th percentile) range of additional subsidence.

4. Regulatory Framework and Reporting

The final phase translates technical data into actionable management criteria.

- Recommended SMC: Establish cumulative land subsidence and Lower Aquifer groundwater level MTs that protect infrastructure.
- Pumping Allocations: Calculate allowable groundwater pumping volumes by location and depth to remain within the recommended SMC.
- Technical Memorandum: Summarize all findings, including color flood difference maps, profile charts along the DEID pipelines, and a table showing the percent contribution of pumping by GSA to localized subsidence.

5.1.3.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Thomas Harder & Co began the study in April 2026 and will estimate study results, recommend SMC, and complete a technical memorandum by the end of December 2026.

5.1.3.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No permits are required for this study.

5.1.3.7 Legal Authority [23 CCR § 354.44(b)(7)]

A GSA derives its legal authority to fund technical studies from Water Code § 10730, which allows agencies to impose fees to cover the cost of groundwater management, which includes the preparation and amendment of GSPs and the necessary technical investigations.

5.1.3.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Progress updates and findings will be shared during regular GSA manager meetings, meetings of the Tule Subbasin Technical Advisory Committee, and, when requested, at GSA Board meetings. The PID will share updates at regular public board meetings.

5.1.3.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

The estimated total cost for this study is \$284,100. The cost of this study is to be funded by all GSAs in the Subbasin and the cost share will be on a per acre basis. The PID GSA will be responsible for \$11,000.

5.1.4 *Friant-Kern Canal Land Subsidence Mitigation Plan*

5.1.4.1 Project Description [23 CCR § 354.44(a)]

The Friant-Kern Canal (FKC) Land Subsidence Mitigation Plan (LS Mitigation Plan) provides a coordinated framework for addressing land subsidence impacts to the Friant-Kern Canal that may remain following implementation of the FKC LS Management Plan. While the primary objective of the FKC LS Management Plan is to avoid and minimize land subsidence impacts through proactive management, the FKC LS Mitigation Plan recognizes that additional mitigation may be necessary and establishes a process for collaboratively developing a coordinated mitigation framework with the Friant Water Authority (FWA) and participating GSAs.

The FKC LS Mitigation Plan will establish a framework for defining applicable baseline conditions, evaluating potential impacts, determining when mitigation may be warranted, identifying appropriate mitigation measures, and establishing funding mechanisms to support implementation. The mitigation framework will be developed and refined through coordination with FWA and participating GSAs as additional technical information becomes available.

5.1.4.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The FKC LS Mitigation Plan will provide a consistent and coordinated framework for evaluating and addressing land subsidence impacts to the Friant-Kern Canal that cannot be avoided through implementation of the FKC LS Management Plan. Development of the mitigation framework will improve consistency among participating GSAs, provide greater certainty regarding mitigation responsibilities, and establish a coordinated process for addressing future impacts, if necessary.

Expected outcomes include development of an agreed-upon mitigation framework, establishment of funding mechanisms to support future mitigation, and improved coordination between participating GSAs and FWA. If the FKC LS Management Plan is successful in avoiding or minimizing impacts, the need for mitigation is expected to be limited.

Progress will be evaluated based on:

- Completion of the coordinated mitigation framework;
- Coordination with FWA and participating GSAs;
- Establishment of mitigation funding mechanisms; and
- Periodic evaluation and refinement of the mitigation framework as additional technical information becomes available.

5.1.4.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

The FKC LS Mitigation Plan is being implemented through a phased, collaborative process involving FWA and participating GSAs. Development of the mitigation framework is currently underway through ongoing coordination with FWA and participating GSAs and will continue as technical evaluations and mitigation discussions progress.

The FKC LS Mitigation Plan will establish methods for defining baseline conditions, evaluating potential impacts, determining when mitigation may be warranted, identifying appropriate mitigation measures, and establishing funding mechanisms to support future implementation, if necessary. The plan will be refined over time through continued coordination with FWA and participating GSAs as additional technical information becomes available.

5.1.4.4 Implementation Plan [23 CCR § 354.44(b)(6)]

The PID GSA will participate in implementation of the FKC LS Mitigation Plan in coordination with the Friant Water Authority and participating GSAs. The PID GSA will contribute localized technical information and participate in development and refinement of the plan, while coordinating mitigation recommendations applicable to the PID Plan Area.

The FKC LS Mitigation Plan will establish the process for evaluating potential impacts, determining when mitigation may be warranted, identifying appropriate mitigation measures, and implementing mitigation, if necessary. The plan will be refined over time as additional technical information and regional evaluations become available.

5.1.4.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Development of the FKC LS Mitigation Plan is currently underway through ongoing coordination with FWA and participating GSAs and is anticipated to be substantially complete by the end of 2026. Development of the mitigation framework will continue through coordination with FWA as technical information is refined and agreement is reached on the framework for evaluating and addressing future land subsidence impacts, if necessary.

Benefits are expected to begin accruing upon completion of the FKC LS Mitigation Plan by providing participating GSAs and FWA with a coordinated framework for evaluating potential impacts and implementing mitigation, if necessary. Additional long-term benefits will be realized as the plan is refined over time and implemented, as warranted.

5.1.4.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Development of the FKC LS Mitigation Plan is not expected to require permits or regulatory approvals. However, implementation of mitigation actions identified through the plan may require project-specific permits or approvals depending on the nature of the mitigation measure. Environmental review under CEQA and compliance with other applicable federal, state, and local regulatory requirements will be completed, as necessary, prior to implementation of individual mitigation actions.

5.1.4.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has the legal authority necessary to participate in development and implementation of the FKC LS Mitigation Plan pursuant to SGMA. Relevant authorities include:

- Regulating groundwater extractions, including limiting or restricting groundwater pumping, as necessary to achieve sustainability [Water Code § 10726.4(a)(2)];
- Authorizing transfers of groundwater extraction allocations [Water Code § 10726.4(a)(3)];
- Undertaking actions necessary to achieve sustainable groundwater management [Water Code § 10725.2(a)]; and
- Adopting rules, regulations, ordinances, and resolutions to support implementation of the GSP [Water Code § 10725.2(b)].

These authorities enable the PID GSA to implement management actions within its jurisdiction and participate in development of the coordinated FKC LS Mitigation Plan to support achievement of the sustainability goal.

5.1.4.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The PID GSA will participate in development of the FKC LS Mitigation Plan through ongoing coordination with the Friant Water Authority and participating GSAs. Coordination will occur through periodic meetings with FWA and Tule Subbasin Technical Working Group meetings to support development and refinement of the plan.

Public notification and engagement will occur through regularly scheduled PID GSA Board meetings, conducted in accordance with the Ralph M. Brown Act, and other public outreach activities completed as part of GSP implementation under SGMA. The FKC LS Mitigation Plan will be considered for adoption by the PID GSA Board of Directors at a public meeting.

5.1.4.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

The estimated cost to develop the FKC LS Mitigation Plan is on the order of \$200,000. This estimate includes plan development, coordination with FWA and participating GSAs, and refinement of the plan. Costs associated with implementation of mitigation actions are not included in this estimate and will be evaluated as specific mitigation measures are identified.

Participating GSAs intend to establish a mitigation reserve fund to support implementation of future mitigation actions, if necessary. The extent of the reserve fund will be coordinating with FWA and participating GSAs. Funding for development of the FKC LS Mitigation Plan is anticipated to be provided through cost-sharing among participating GSAs and available state or federal grant funding, as appropriate. Funding for implementation of future mitigation actions will be evaluated separately as specific mitigation measures are identified.

5.1.5 Tule Subbasin Mitigation Plan

5.1.5.1 Project Description [23 CCR § 354.44(a)]

The draft Tule Subbasin Drinking Water Well Mitigation Plan (Mitigation Plan) (**Appendix H**), establishes a coordinated, subbasin-wide framework for identifying, evaluating, and mitigating impacts to drinking water wells.

Prior to implementation of SGMA, groundwater management practices in the Tule Subbasin contributed to conditions that adversely affected drinking water wells. As GSAs implement groundwater sustainability plans and transition toward achieving sustainability by 2040, groundwater management activities, such as continued pumping and managed aquifer recharge, may still result in impacts to beneficial users during the transition period.

The Mitigation Plan is designed to address the potential impacts to drinking water wells through a structured and coordinated program implemented by participating GSAs. Key components of the Mitigation Plan include:

- A formal claims process designed to evaluate impacts affecting several types of drinking water wells, including private domestic wells, multi-use drinking water wells, state small water systems, and community water systems (including small community water systems).
- Requirements that all determinations be supported by written technical data and analytical evaluation.
- A clearly defined sequence for submitting a claim, gathering necessary information by either the Tule Subbasin GSAs or the claimant, conducting technical assessments to identify probable causes, selecting appropriate remedies, and coordinating actions among involved parties.

- A funding structure, supported by both subbasin-wide planning and individual GSA financing mechanisms, sufficient to cover approved mitigation measures.
- A coordinated, Subbasin-wide mitigation effort that outlines the claims procedures, eligibility criteria, funding approach, and implementation schedule for the Mitigation Program.

The Mitigation Plan provides a comprehensive, adaptive approach to ensuring that impacts resulting from GSA-authorized groundwater management activities are addressed in a manner that supports continued progress toward groundwater sustainability while protecting affected beneficial users.

5.1.5.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The Tule Subbasin Mitigation Plan is intended to protect beneficial uses and users of groundwater by providing a coordinated, subbasin-wide approach to addressing impacts associated with groundwater management during the transition to sustainability. The program supports avoidance of undesirable results related to chronic groundwater level declines, land subsidence, and degraded groundwater quality, while ensuring that impacts to affected users are appropriately mitigated.

The Mitigation Plan provides defined mechanisms to support affected users, including provision of emergency and interim water supplies, well rehabilitation or replacement, and technical assistance for drinking water wells. Domestic well owners are eligible for full mitigation of impacts attributable to GSA-authorized groundwater management activities, consistent with the Mitigation Plan.

The Mitigation Plan applies to impacts occurring after January 1, 2015. Impacts addressed through implementation of this program are managed in a coordinated and structured manner and, therefore, are not considered significant and unreasonable during the implementation period.

Expected outcomes of the Mitigation Plan include:

- Timely identification and evaluation of impacts to drinking water wells;
- Implementation of appropriate mitigation measures to maintain access to water supplies, particularly for domestic users;
- Protection of the human right to water and other critical beneficial uses; and
- Support for continued implementation of GSPs without causing unmanaged or unmitigated impacts.

Program performance and effectiveness will be evaluated through:

- Tracking of mitigation claims, including number, type, and resolution;
- Monitoring of groundwater levels and water quality conditions used to inform claim evaluations;
- Documentation of mitigation measures implemented and associated outcomes; and
- Ongoing evaluation and refinement of the program through adaptive management.

Implementation of the Mitigation Plan in coordination with other GSP management actions, such as groundwater allocation and sustainability forecast analyses, helps ensure that impacts remain within anticipated conditions and that mitigation responses are implemented in a timely and effective manner.

5.1.5.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of the Tule Subbasin Mitigation Plan is warranted by the need to address potential impacts to beneficial users resulting from GSA-authorized groundwater management activities during the transition to sustainable groundwater conditions.

Groundwater level declines, land subsidence, and degraded groundwater quality have been identified as key sustainability concerns within the Tule Subbasin. While projects and management actions are intended to reduce overdraft and achieve sustainability, these actions may still result in localized or temporary impacts to drinking water wells.

The Mitigation Plan is therefore implemented as a critical component of the GSP framework to ensure that such impacts are identified, evaluated, and mitigated in a manner that protects public health and safety, maintains access to water supplies, and supports continued progress toward sustainability goals.

5.1.5.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Tule Subbasin Mitigation Plan is carried out through a coordinated, multi-component program administered by participating GSAs in collaboration with partner organizations.

Key components of implementation include:

- A structured mitigation claims process for evaluating impacts to drinking water wells;
- Outreach and engagement efforts to inform stakeholders of the program and how to access mitigation assistance;
- Technical evaluation of claims, including data collection, analysis, and determination of probable cause;
- Coordination with partner organizations, including Self-Help Enterprises (SHE) and the Tule Basin Water Foundation (TBWF), for provision of interim supplies, water quality testing, and mitigation support;
- Oversight by a Mitigation Advisory Committee (MAC), which reviews technical information and provides recommendations regarding mitigation and funding; and
- Administration of funding mechanisms to support implementation of approved mitigation measures.

Following technical evaluation, mitigation will be provided for claims that meet the criteria established in the Mitigation Plan. At a minimum, mitigation will be provided where the following conditions are met:

- The impact occurred after January 1, 2015, and is supported by available data;
- The claimant's own groundwater management activities did not cause or contribute to the impact; and
- The impact is attributable to GSA-authorized groundwater management activities.

Mitigation measures provided under the Mitigation Plan are based on the type of affected drinking water well. Private domestic wells, including agricultural wells used for domestic supply, and state small water

systems are eligible for emergency and interim drinking water supplies and, where claims meet the eligibility criteria established in the Mitigation Plan, full mitigation and funding.

Community water systems are eligible for technical assistance to evaluate impacts and determine appropriate response actions. Based on the results of technical evaluation and determination of probable cause, these claims may also be eligible for limited funding to support repair or replacement of impacted wells, or implementation of other acceptable mitigation measures with the consent of the affected landowner.

The Mitigation Plan is adaptive and will be refined over time based on monitoring data, claim experience, improved technical understanding, and evolving conditions within the Subbasin.

5.1.5.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

As a member of the former ETGSA, PID began working on the development of the Tule Subbasin Mitigation Plan in 2020. During the time it was a part of the ETGSA, PID did not have any drinking well mitigation claims. Since separating from ETGSA, the PID GSA and other Tule Subbasin GSAs have drafted an updated Tule Subbasin Mitigation Plan, which is anticipated to take effect before December 2026. The PID GSA will coordinate with other participating GSAs and continue to consider input from SWRCB to ensure consistent application of the program.

Benefits of the program are realized immediately upon implementation through provision of emergency and interim mitigation measures for impacted users. Additional benefits will accrue over time as:

- Claims are evaluated and resolved;
- Long-term mitigation measures are implemented;
- Monitoring and data collection improve understanding of impact mechanisms; and
- Adaptive management refines mitigation approaches.

5.1.5.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Implementation of the Tule Subbasin Mitigation Plan does not require additional program-level permits. However, site-specific permitting may be required for individual mitigation actions, such as construction of replacement wells or modification of existing wells.

Any such permitting requirements will be addressed at the time mitigation measures are identified and implemented, consistent with applicable local, state, and federal regulations.

5.1.5.7 Legal Authority [23 CCR § 354.44(b)(7)]

Participating GSAs, including the PID GSA, have the legal authority necessary to implement the Tule Subbasin Mitigation Plan pursuant to SGMA.

Under California Water Code § 10725.2, GSAs are authorized to undertake actions necessary or appropriate to carry out SGMA, including adoption and implementation of programs to mitigate impacts associated with groundwater management. This includes authority to:

- Develop and implement mitigation programs;
- Collect fees and establish funding mechanisms to support program implementation; and
- Adopt rules, regulations, ordinances, and resolutions necessary to achieve sustainable groundwater management.

Implementation of the Mitigation Plan is consistent with these authorities and supports the requirement that GSPs provide an adequate approach to addressing impacts associated with groundwater management.

5.1.5.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

During development of the Tule Subbasin Mitigation Plan, participating GSAs coordinated with existing regional programs, including the Tule Basin Water Foundation (TBWF) and Self-Help Enterprises (SHE), to incorporate input and leverage existing services.

Prior to implementation, participating GSAs, including the PID GSA, will conduct outreach to notify landowners and other stakeholders of program requirements and the process for requesting mitigation assistance. Outreach will continue during implementation to ensure affected users remain informed of available resources.

Outreach efforts may include workshops, mailed notices, informational flyers, website postings, email notifications, and announcements at Board meetings, as well as community-based engagement conducted in partnership with TBWF and SHE. Outreach materials will be provided in multiple languages, with translation services available as needed. Targeted outreach may also be conducted based on groundwater conditions to ensure timely communication with affected users.

5.1.5.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Based on planning-level assumptions, total program costs are estimated to be on the order of approximately \$26 million over the GSP planning horizon, with annual costs of approximately \$2.5 million. Estimated costs for implementation of the Tule Subbasin Mitigation Plan are described in Section 10.0 of the Mitigation Plan (**Appendix H**) and include costs associated with:

- Emergency and interim water supplies;
- Well repair, replacement, or modification;
- Technical assistance for community water systems;
- Program administration and coordination; and
- Monitoring, evaluation, and reporting.

At the Subbasin level, participating GSAs will fund implementation through a coordinated approach that includes groundwater management program revenues, grant funding, and coordination with partner organizations. Existing programs, including the Tule Basin Water Foundation and Self-Help Enterprises,

will provide immediate support for emergency and interim mitigation needs, with participating GSAs responsible for reimbursing eligible costs in accordance with the Mitigation Plan. GSAs will also pursue state and federal grant funding and coordinate with related programs, where appropriate, to support implementation; however, certain funding sources (e.g., SAFER funding) are not available for direct implementation of the Mitigation Plan.

The PID GSA will establish a funding protocol based on identified mitigation needs and program demand and will evaluate and implement funding mechanisms as needed to ensure adequate and sustainable funding. These mechanisms may include adjustments to groundwater extraction fees, land-based assessments, and the use of available penalty revenues. Funding mechanisms and mitigation budgets will be reviewed periodically, and at a minimum annually, to ensure sufficient resources are available to meet mitigation commitments.

To support timely response to impacts, participating GSAs have established a minimum mitigation reserve fund based on anticipated annual mitigation demand across impact categories. The reserve fund is informed by historical dry well occurrence data and anticipated groundwater quality-related mitigation needs. Based on these considerations, the participating Tule Subbasin GSAs have established a minimum reserve fund on the order of approximately \$3.5 million, including a contingency factor to account for variability in annual mitigation demand. PID GSA's portion of the reserve fund contribution is approximately \$336,200 annually. This reserve fund provides readily available funding to address claims and will be reviewed and adjusted as part of ongoing program implementation.

5.1.6 Monitoring Network Data Gap Filling

The PID GSA is proposing to construct a single multi-completion monitoring well to fill water level and groundwater quality monitoring data gaps for the PID Plan Area and the Subbasin. The additional monitoring data will be used to refine the Subbasin GSAs' understanding of critical head and groundwater management actions that contribute to subsidence, as well as improve the hydrogeologic conceptual model.

The PID GSA, in coordination with other Tule Subbasin GSAs, is currently evaluating all sustainability indicator Representative Monitoring Networks (RMNs) to identify monitoring network data gaps. Upon completion of the initial data gap analysis, the PID GSA will address identified data gaps within the PID Plan Area consistent within the Tule Subbasin's agreed upon implementation schedule. However, based on the currently identified data gaps and currently planned data gap implementation efforts, the PMA described herein focuses on data gap filling efforts for the groundwater level and groundwater quality networks.

5.1.6.1 Project Description [23 CCR § 354.44(a)]

This project involves the design, permitting, and installation of one (1) multi-completion monitoring well to enhance the Subbasin's monitoring network. The primary objective is to address critical data gaps across the PID Plan Area, particularly in areas susceptible to land subsidence and near boundaries with neighboring GSAs.

To ensure high-resolution data collection across distinct hydrogeologic units, the well will be constructed with the following configuration:

- **Dual-Completion Well:** One well will be constructed to monitor two aquifer zones. Well completion in either the Upper Aquifer and Lower Aquifer or the Lower Aquifer and Pliocene Marine Deposits will be dependent upon test hole drilling and further geologic investigation. If feasible, the deepest completion will target the Pliocene Marine Deposits. These installations will provide essential data on the vertical interaction between unique aquifer zones.

The tentative location for the installation is detailed in **Section 4** of the GSP and illustrated in **Figure 4-10b**. The selection of the site was driven by three high-priority criteria:

1. **Subsidence mitigation:** Location is situated in an area identified as high-risk for land subsidence to monitor the correlation between deep-aquifer head decline and inelastic compaction of fine-grained sediments.
2. **Inter-Agency coordination:** Strategic placement along GSA boundaries will facilitate better management of cross-boundary flows and ensure alignment with the sustainable management criteria of adjacent GSAs.
3. **Proximity to existing production wells:** This will allow for monitoring during future long-term pumping tests to improve estimates of aquifer parameters (e.g. hydraulic conductivity, storativity).

Recent subsidence modeling (INTERA, 2025) indicated that groundwater levels in the deeper principal aquifers are below the estimated critical head, therefore contributing to additional subsidence.

5.1.6.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

This project will benefit monitoring of all applicable sustainability indicators within the PID Plan Area but will primarily benefit monitoring of the chronic lowering of groundwater levels, land subsidence, and degraded water quality. Installation of the multi-completion monitoring well will provide critical data necessary for long-term sustainable groundwater management within the PID Plan Area and the Subbasin. The specific benefits to be evaluated include:

1. Enhanced aquifer characterization,
2. Validation of critical head values,
3. Refinement of aquifer parameters, and
4. Understanding the impacts of groundwater management and PMAs.

The outcome of this project will be an improved monitoring network. The benefits of this project will be measured by maximizing the beneficial use of groundwater while preventing undesirable results for all applicable suitability indicators.

5.1.6.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Construction of the additional monitoring well is considered a critical priority. The Subbasin is critically over drafted and filling data gaps is required for achieving sustainability.

5.1.6.4 Implementation Plan [23 CCR § 354.44(b)(6)]

This plan outlines the strategic approach for the construction of one new monitoring well by the PID GSA. The objective is to enhance the monitoring network to ensure compliance with sustainability goals and provide high-quality data for groundwater management.

1. Stakeholder Outreach and Landowner Engagement

- **Landowner Identification:** Identify strategic parcel based on hydrogeologic data and technical requirements. District owned land will first be considered.
- **Direct Outreach:** Initiate formal communication with the landowner to discuss the necessity of the well, potential location, and access agreement (easement).
- **Stakeholder Briefings:** Provide updates to the GSA Board and relevant stakeholders to ensure transparency regarding the project's scope and benefits.

2. Financial Strategy and Funding Acquisition

The GSA will evaluate two primary avenues for funding the project to ensure fiscal responsibility.

- **Option A: Grant Funding:** Actively research and apply for available state or federal grants (e.g., DWR Sustainable Groundwater Management grants).
- **Option B: Landowner Fees:** In the absence of grant funding, the GSA will develop a fee structure to collect necessary funds from landowners within the district.
- **Cost-Benefit Analysis:** The GSA will finalize the budget once the preliminary design and location constraints are identified.

3. Technical Design and Coordination

Technical precision is required to ensure the monitoring well provides meaningful data for the entire Subbasin.

- **Consultant Collaboration:** The PID GSA Consultant will coordinate with the broader Subbasin Consultant (Thomas Harder & Co and 4creeks) to align on:
 - **Spatial Distribution:** Ensuring the monitoring well fills critical data gaps in the regional monitoring network.
 - **Well Specifications:** Defining depths, screening intervals, and casing materials to target specific aquifer zones.
- **Site Characterization:** Finalizing exact drilling location based on utility clearance, site accessibility, and hydrogeologic suitability.

4. Implementation and Construction

Once funding is secured and design is finalized, the project will move into the execution phase.

- Permitting: Secure all necessary well construction permits from the County Environmental Health Department.
- Contracting: Issue a Request for Proposals (RFP) to licensed drilling contractors and select a firm based on experience and cost-effectiveness.
- Field Oversight: The PID GSA Consultant will provide on-site oversight during drilling, logging, and well completion to ensure adherence to design specifications and regulatory standards.

5.1.6.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The new monitoring well will be constructed before the end of 2027. The start of the construction process will depend on finalizing the monitoring site and securing funds to construct the well. The anticipated timeline is as follows:

1. The PID GSA Consultant will prepare design specifications for monitoring well (1 month).
2. The PID GSA Consultant will prepare an RFP and contact qualified drilling contractors and solicit bids for the construction of the monitoring well following the procurement policies of the PID GSA. The bid period will be open for two (2) months.
3. Once a qualified bidder is selected, the drilling contractor will have six months to complete the monitoring well. The estimated time required for construction is approximately 1-2 months.

Upon completion of the well, data collected from drill cuttings and geophysical logging will be utilized to update this GSP and future flow modeling efforts.

In the medium-to-long term time period, once the monitoring well is incorporated into the monitoring network, the additional data collected will improve the GSA's understanding of how groundwater management affects groundwater levels and groundwater quality across the different principal aquifers. Additionally, estimates of water levels within the Pliocene and Santa Margarita Formations will validate estimates made from subsidence modeling. SMC for the new monitoring site may be established once five years of data has been collected, if the new monitoring well is added to the RMN(s).

5.1.6.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Construction of the new monitoring well and associated monitoring activities will comply with all local and state regulatory requirements. The primary permitting pathways include local ministerial permits for well construction and state-level environmental documentation for data collection activities. The two permitting requirements are:

1. Tulare County Well Permit
2. CEQA Notice of Exemption

In accordance with Tulare County Ordinance, Well Permit(s) will be obtained from the Tulare County Environmental Health Services Division prior to the commencement of any drilling activities. A licensed C-57 water well contractor will submit the permit application(s). The well will be designed and constructed to meet or exceed California Well Standards (DWR Bulletin 74-81 and 74-90) and local county

requirements to ensure the protection of groundwater quality and prevent cross-contamination between monitored zones. Upon completion, a Well Completion Report (WCR) will be filed with the DWR.

The GSA determined that this project is exempt from the CEQA under the Class 6 Categorical Exemption (Information Collection). The final drilling location will be vetted and selected to ensure it meets all criteria for the CEQA Class 6 Categorical Exemption, with specific care taken to avoid "exceptions" to the exemption. This includes ensuring that the site is not located in particularly sensitive environments, does not contribute to cumulative impacts, and will not result in significant effects on the environment due to unusual circumstances. By prioritizing previously disturbed areas or existing public rights-of-way, the GSA will ensure that the installation of the monitoring well maintains its status as a non-disruptive data collection activity.

5.1.6.7 Legal Authority [23 CCR § 354.44(b)(7)]

Under Water Code § 10725.2, a GSA is empowered to take any actions deemed necessary or appropriate to carry out SGMA, including the adoption of rules, regulations, ordinances, and resolutions needed for implementation. Because the Department must determine whether a GSP offers an adequate approach to addressing ongoing overdraft, construction of a new monitoring well is considered a necessary and appropriate action under SGMA, consistent with 23 CCR § 355.4(b)(6).

5.1.6.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement will occur through PID GSA Stakeholder meetings.

5.1.6.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

The estimated cost for the monitoring well is presented in **Table 5-2**.

Table 5-2 – Estimated Cost for PID GSA Monitoring Well Construction	
Task	Cost
Design and Specification	\$7,000
Bidding	\$4,000
Permitting	\$6,000
Well Drilling and Construction ¹	\$450,000
Engineering (Construction Management)	\$15,000
Total Cost	\$482,000

1. Cost estimates based on standards rates (not prevailing wage)

The total estimated cost for the implementation of the monitoring well is approximately \$482,000. This budget encompasses all project phases, including technical design, the bidding process, permitting, construction management, and the actual drilling and construction costs. Funding for the monitoring

well will be provided through fees assessed to local landowners, though the project will actively seek alternative grant opportunities to offset these costs should they become available.

5.2 PID GSA-Specific Projects and Management Actions [23 CCR § 354.44]

The PID GSA-specific PMAs described in this section are implemented solely by the PID GSA to support achievement of the Tule Subbasin sustainability goal and to address groundwater conditions within the PID Plan Area. These PMAs include a combination of administrative, regulatory, and operational measures focused on groundwater accounting and allocation, fees and incentives, well permitting and registration, well metering, managed aquifer recharge and banking, surface water development, in-lieu recharge, agricultural land retirement, and sustainability forecasts. Central to these efforts is the development of accounting tools and a centralized data management platform capable of efficiently compiling groundwater-related data. This platform will provide reliable information to the PID GSA Board, other Tule Subbasin GSAs, and stakeholders, supporting informed decision-making and enabling the PID GSA to adapt management strategies and policies over time in a manner consistent with SGMA requirements. Collectively, these PMAs are intended to provide the PID GSA with the tools and authorities necessary to manage groundwater use, support recharge and supply augmentation, and avoid undesirable results within its jurisdiction.

5.2.1 Groundwater Accounting and Allocation

5.2.1.1 Project Description [23 CCR § 354.44(a)]

The Groundwater Accounting and Allocation PMA consists of a comprehensive framework established by the PID GSA to quantify, track, and manage groundwater use in accordance with SGMA and the PID GSA GSP. This framework is implemented through the PID GSA Rules and Regulations (**Appendix B**), which define the structure for groundwater accounting, allocation, and enforcement.

At the core of this program is an online groundwater accounting system (“BasinSafe”) that tracks water use at the parcel level and maintains accounts for individual landowners. Water use is tracked and accounted for within each landowner’s account based on quantities recorded and reported in accordance with the PID GSA Rules and Regulations. Water use data supporting the groundwater accounting system are derived from well metering and reporting programs, as described in **Section 5.2.3**, Water Metering Policy.

The PID GSA establishes groundwater allocations that are based on the Tule Subbasin Sustainable Yield and its associated components (e.g., native yield, precipitation, and other budgeted water supply inputs) (Sustainable Yield-based Allocation). Groundwater allocations are made available to landowners and tracked within the accounting framework to support management of groundwater use within sustainable limits. Compliance with established allocations is supported through financial mechanisms, including fees and incentives, as described in **Section 5.2.5**, Fees and Incentives.

Together, the groundwater accounting system and allocation framework establish allowable groundwater extraction for each parcel and provide the primary mechanism for tracking groundwater use relative to those allocations. As such, this program serves as the PID GSA’s primary demand management tool for supporting progress toward and achievement of sustainable groundwater conditions.

5.2.1.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The primary benefit of this project is the stabilization of the aquifer system through rigorous management and monitoring of groundwater extractions. This project directly addresses:

- Chronic Lowering of Groundwater Levels: by eliminating groundwater overdraft, the project will arrest the continuous decline of groundwater levels.
- Reduction in Groundwater Storage: maintaining groundwater levels above MTs will ensure the total volume of water in storage is preserved for long-term reliability, particularly as a buffer against future drought conditions.
- Land Subsidence: reduction in groundwater pumping will result in rising groundwater levels and prevent future subsidence.

By eliminating pumping in excess of the Tule Subbasin Sustainable Yield, this project is expected to result in the elimination of all undesirable results and MT exceedances.

The successful execution of this management action is expected to result in one of two primary outcomes:

1. Attainment of Sustainability: The management action will demonstrate that the current actions are sufficient to maintain the basin within its Sustainable Yield, effectively eliminating Undesirable Results and preventing any further MT exceedances.
2. SMC/Sustainable Yield Refinement: If observed conditions deviate from modeled projections despite the elimination of excess pumping, the project will provide the empirical data necessary to refine the SMC. This outcome would involve a data-driven modification of the Tule Subbasin Sustainable Yield or an update to the established MTs and Measurable Objectives (MOs) to better reflect the basin's actual hydrogeologic response.

To quantify the benefits and progress of this project, the PID GSA will utilize the following metrics, tracked via the expanded monitoring network:

- Hydrographs (Groundwater Elevation): Comparison of seasonal high and low water levels against the established MTs and MOs. Success is defined as water levels remaining at or above the MOs.
- Subsidence Monitoring Data: Evaluation of InSAR data or continuous GPS station records. The metric for success is a rate of subsidence that does not exceed the annual or cumulative MTs defined in the GSP.
- Annual Reporting: Annual quantification of total pumping volumes compared to the calculated Sustainable Yield to ensure compliance with the management project's core objective.

5.2.1.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Reduction in groundwater pumping is considered a critical priority within the PID Plan Area due to long-term overdraft conditions. Implementation of the groundwater accounting and allocation program is necessary to limit groundwater use to achieve sustainable conditions.

The program is applied on an ongoing basis to regulate groundwater extraction and ensure consistency with established allocations.

5.2.1.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Groundwater Accounting and Allocation PMA is carried out through the PID GSA Rules and Regulations, which establish the legal, administrative, and operational framework for groundwater accounting, allocation, and compliance.

The PID GSA utilizes an online groundwater accounting system (BasinSafe) to maintain water accounts for individual landowners. This platform allows landowners to view their groundwater allocations, track water use, and manage their groundwater accounts. Each account tracks water use and available supplies at the parcel level and serves as the basis for managing groundwater use within the PID Plan Area.

The accounting system incorporates multiple categories of water use and supply, including groundwater extraction, surface water use, precipitation, groundwater recharge and banking activities, recycled water, and groundwater credits. These components are tracked within each landowner account and are used to account for available water supplies and water use within the program.

Groundwater allocations are established within the accounting system and made available to landowners on an annual basis. Allocations are tied to the Tule Subbasin Sustainable Yield and its associated components and are tracked within each landowner account.

Groundwater use is tracked within each account based on quantities recorded and reported. Two methods are used to quantify groundwater use within the accounting system: measurement based on flow meter data (Meter Measurement) and estimation of water use based on evapotranspiration (ET Measurement) using satellite-based data and supporting models. Landowners may elect to use either the Meter Measurement or ET Measurement method, except those landowners using both surface water and groundwater are required to use the ET Measurement method per the current PID Rules and Regulations. The PID GSA anticipates revising its Rules and Regulations to require meter installation for all groundwater extraction wells and use the Meter Measurement method (see **Section 5.2.3**).

Landowners are required to report groundwater extraction on a monthly basis. Reported groundwater use is incorporated into each landowner's account and used to track water use relative to established allocations. This ongoing accounting allows both the PID GSA and landowners to:

- monitor groundwater use throughout the water year,
- track groundwater use relative to allocations,
- evaluate compliance,
- implement corrective actions where necessary, and
- enforce allocation limits.

The groundwater accounting and allocation framework provides accounting mechanisms that allow landowners to manage their water use over time, including provisions for carryover of unused allocations,

transfers of allocations between landowners, and accounting of groundwater credits within a multi-year period, in accordance with the PID GSA Rules and Regulations.

The PID GSA Rules and Regulations establish requirements for compliance with groundwater allocations, including provisions for enforcement where groundwater use exceeds allocated amounts. These provisions, including financial penalties and adjustments to future allocations, are supported by related PMAs that provide the data and compliance mechanisms necessary for implementation, including the Well Metering Policy (**Section 5.2.3**) and the Fees and Incentives PMA (**Section 5.2.5**). The PID GSA reviews groundwater pumping volumes periodically throughout the water year. The PID GSA then alerts landowners when groundwater use is approaching the groundwater allocation limit and encourages landowners to seek additional surface water or undertake other actions to avoid exceeding the groundwater allocation.

5.2.1.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The groundwater accounting and allocation program was established under the ETGSA GSP and implemented beginning in WY2021 through deployment of the BasinSafe platform, which the PID GSA adopted upon formation.

Under the ETGSA GSP, groundwater use was allowed to exceed the Sustainable Yield-based Allocation through a phased reduction approach extending to 2035. This approach, referred to as transitional pumping, allowed for pumping in excess of the Sustainable Yield-based Allocation during the early years of implementation, with gradual reductions over time (**Table 5-3**).

Table 5-3. Percentage of Historical Annual Average Use Allowed Above Sustainable Limit per 2024 ETGSA GSP			
2021-2025	2026-2030	2031-2035	2035-2040
90%	80%	30%	0%

To accelerate progress toward sustainable conditions and address ongoing land subsidence concerns, the PID GSA adopted Resolution 2024-09-20 in 2024, declining all transitional pumping credits beginning in WY2025. This action effectively eliminated the phased reduction approach approximately ten years earlier than the original ETGSA GSP schedule.

For reference, the Sustainable Yield-based Allocation for the PID GSA was established as 0.99 AF/acre for WY2025. Historical average pumping for the PID Plan Area was approximately 23,100 AFY or 1.37 AFY/acre. By eliminating transitional pumping, the PID GSA elected to disregard the glide path in WY2025 and all future years. For WY2025, by pumping at the Sustainable Yield-based Allocation and not allowing for any transitional pumping, the PID GSA reduced pumping by approximately 6,500 AFY or 28% of the historical average.

Implementation of the groundwater accounting and allocation program is ongoing, with continued refinement of data inputs and program administration. Benefits began accruing immediately with the reduction in groundwater pumping and are expected to continue as supporting programs, including metering and reporting, are fully implemented.

5.2.1.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Groundwater management carried out by the PID GSA must comply with SGMA and remain consistent with Section 2 of Article X of the California Constitution, which provides that groundwater management shall not determine or modify water rights (Water Code § 10720.5). These requirements are incorporated into the PID GSA Rules and Regulations.

5.2.1.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement groundwater accounting and allocation programs and regulate groundwater extraction within its jurisdiction. Key authorities include:

- Regulating groundwater extractions, including imposing limits or restrictions to support sustainable management [Water Code § 10726.4(a)(2)];
- Authorizing temporary and permanent transfers of groundwater extraction allocations [Water Code § 10726.4(a)(3)];
- Establishing accounting rules that allow unused groundwater allocations to be carried over between years [Water Code § 10726.4(a)(4)]; and
- Adopting rules, regulations, ordinances, and resolutions necessary to implement SGMA [Water Code § 10725.2(b)].

5.2.1.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The PID GSA conducted outreach to support implementation of the BasinSafe platform and development of its Rules and Regulations through an open and participatory public process. The Executive and Stakeholder Committees collaborated in drafting the regulations through publicly noticed meetings.

Workshops were conducted to provide detailed information on BasinSafe and the groundwater accounting and allocation framework. In addition, PID GSA continues to conduct one-on-one meetings with landowners to provide guidance on account enrollment, allocation tracking, and program administration.

5.2.1.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

The initial development of the BasinSafe platform, along with the consultant support required to create and maintain the system, represents a significant portion of this PMA's costs. Additional consultant expenses were incurred during the preparation of the PID GSA Rules and Regulations, particularly for drafting assistance and technical review.

Ongoing funding is expected to be provided through fees assessed to landowners, with potential grant funding pursued to offset program costs where available.

5.2.2 Well Registration

5.2.2.1 Project Description [23 CCR § 354.44(a)]

The Well Registration PMA consists of a program implemented by the PID GSA to identify, track, and maintain records of groundwater wells within its jurisdiction. The program is established through the PID GSA Rules and Regulations.

Under the current PID Rules and Regulations, groundwater wells within the FKC Land Subsidence Management Area and those electing to use the Meter Measurement method are required to be registered with the PID GSA. Registration requires submittal of key information such as ownership, location, and operational details. The PID GSA anticipates revising its Rules and Regulations to require registration of all groundwater wells to support development of a more complete inventory of groundwater wells within the PID Plan Area.

All newly constructed wells must be registered within 30 days of filing a well completion report. Updates are required following changes in ownership or operation to ensure accurate and current groundwater management records. Collectively, these requirements support the development and maintenance of a comprehensive and accurate inventory of groundwater wells within the PID Plan Area.

5.2.2.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The Well Registration Program supports sustainable groundwater management by improving the accuracy and completeness of data related to groundwater extraction and well distribution. By reducing data gaps, the program enhances the PID GSA's ability to evaluate groundwater conditions, assess potential impacts to wells, and support implementation of other PMAs.

This PMA does not directly affect the groundwater budget but provides critical information that supports management decisions related to groundwater levels, subsidence, and water quality. A key outcome of the program is development of a complete inventory of groundwater wells within the PID Plan Area, allowing for improved understanding of well locations and groundwater extraction patterns.

Improved well registration data also supports drought response by enhancing the ability to identify at risk wells, evaluate potential impacts, and provide timely communication to landowners.

Progress will be evaluated based on the percentage of wells registered, completeness of well data, and continued improvements in the PID GSA's groundwater monitoring and management capabilities.

5.2.2.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

The Well Registration Program is implemented pursuant to the PID GSA Rules and Regulations and applies to wells within the PID Plan Area, including those located within the FKC Land Subsidence Management Area and newly constructed wells. Requirements are triggered by well construction, ownership or operational changes, and ongoing regulatory compliance obligations.

5.2.2.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Well Registration Program involves maintaining a centralized database of registered wells, including both digital and hard copy records. The PID GSA collects and maintains well information submitted by landowners and integrates this information into its groundwater management and monitoring programs.

Well registration requirements apply to wells within the PID Plan Area, including those located within the FKC Land Subsidence Management Area and newly constructed wells. The program includes mandatory registration and, where applicable, metered reporting in accordance with the PID GSA Rules and Regulations.

Ongoing implementation includes maintaining and updating well registration records and working to address data gaps in information submitted by landowners.

5.2.2.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Well registration efforts were initiated in 2023 within the FKC Land Subsidence Management Area and have since been continued. The Well Registration Program was formally implemented by the PID GSA in WY2025 and is anticipated to be completed by the end of 2026.

Initial registration of wells within the PID Plan Area is under way. After initial registration is complete, PID GSA will focus on verifying submitted information and addressing data gaps in well registration records. The PID GSA intends to complete a field inventory to confirm well owner compliance with well registration requirements. The PID GSA also intends to ensure future well registration efforts gather information about all other well-types within the PID Plan Area.

Benefits are expected to accrue as the completeness and accuracy of well registration data improve over time and support ongoing groundwater management and monitoring efforts.

5.2.2.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No additional regulatory approvals or permits are required for implementation of the Well Registration Program.

5.2.2.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement well registration requirements and collect groundwater extraction information (Water Code §§ 10725.2 and 10725.6).

5.2.2.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The PID GSA has conducted outreach to support implementation of the Well Registration Program and adoption of its Rules and Regulations through an open public process. Development of the Rules and Regulations included participation by both the Executive Committee and Stakeholder Committee and was carried out through publicly noticed meetings.

Ongoing outreach efforts are focused on ensuring landowners understand the requirements of the Well Registration Program and have the resources needed to comply. These efforts include workshops, direct coordination with landowners, and one on one assistance to support well registration and reporting.

The PID GSA will continue outreach and engagement efforts throughout the GSP implementation period to support completion of well registration and improve the quality and completeness of well data.

5.2.2.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs associated with the Well Registration Program include administrative and data management activities. These costs are supported through administrative fees established by the PID GSA in accordance with the Rules and Regulations.

5.2.3 Well Metering Policy

5.2.3.1 Project Description [23 CCR § 354.44(a)]

The Well Metering Policy PMA consists of requirements established by the PID GSA to measure and report groundwater extraction from wells within the PID Plan Area. These requirements are defined in Section 2.02 of the PID GSA Rules and Regulations (**Appendix B**) and are intended to ensure accurate and consistent tracking of groundwater use.

Under the current PID GSA Rules and Regulations, active groundwater production wells within the FKC Land Subsidence Management Area and those electing to use the Meter Measurement method under the Groundwater Accounting and Allocation PMA (**Section 5.2.1**) are required to be equipped with flow meters that meet specified performance and installation standards. The PID GSA anticipates revising its Rules and Regulations to also require meter installation on all wells outside the FKC Land Subsidence Management Area to develop a more robust groundwater extraction dataset for informed adaptive management decisions. The PID GSA is considering an exemption from the proposed meter installation requirement for de minimis uses, i.e. two acre-feet or less, if the well owner can demonstrate the annual volume of groundwater diverted complies with the volume limitation.

Metering requirements include a manufacturer's accuracy within ± 2 percent, measurement of instantaneous flow rate in gallons per minute and totalized volume in acre feet, and installation in accordance with manufacturer specifications to ensure reliable operation. Meters must be accessible for PID operators, and where multiple meters are used on a property, well owners must provide documentation identifying meter locations and associated service areas.

Well owners are required to report groundwater extraction on a monthly basis, within 30 days following the end of each month, based on meter readings. Reported quantities are associated with the parcel or service area supplied by each well. These requirements support the development of a comprehensive and reliable dataset for groundwater pumping within the PID Plan Area.

5.2.3.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The Well Metering Policy supports sustainable groundwater management by improving the accuracy, consistency, and completeness of groundwater extraction data. By providing reliable measurements of groundwater pumping, this PMA enhances the PID GSA's ability to evaluate groundwater conditions, assess trends in groundwater use, and support implementation of other PMAs.

This PMA does not directly affect the groundwater budget but provides critical data needed to manage groundwater levels, address land subsidence, and evaluate water quality conditions. Metering data allows the PID GSA to better quantify groundwater discharge by location and aquifer zone, improving understanding of the relationship between groundwater pumping and undesirable results.

Well metering also strengthens drought response by improving the ability to evaluate groundwater demand, identify potential areas of concern, and support timely management actions.

Progress will be evaluated based on the percentage of wells equipped with compliant meters, completeness and timeliness of reporting, and improvements in the PID GSA's groundwater data and analysis capabilities.

5.2.3.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

The Well Metering Policy is implemented pursuant to the PID GSA Rules and Regulations and applies to groundwater production wells within the PID Plan Area, including those located within the FKC Land Subsidence Management Area.

Requirements are triggered by ongoing groundwater extraction, construction of new wells, and continued compliance with PID GSA regulations. Metering is required to support accurate accounting of groundwater use and to inform management decisions aimed at achieving sustainability objectives.

5.2.3.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Well Metering Policy involves installation, inspection, operation, and maintenance of flow meters by well owners in accordance with PID GSA requirements. Metering requirements apply to active production wells subject to the PID GSA groundwater production and reporting requirements as defined in the PID GSA Rules and Regulations.

Under the current PID Rules and Regulations, only wells within the FKC Land Subsidence Management Area (including de minimis domestic uses) and wells whose owner's elect to use the Meter Measurement method require meters. Groundwater users within the FKC Land Subsidence Management Area may request the PID GSA waive the meter requirement if they meet specific conditions, such as being used solely for domestic needs, having a household income below twice the federal poverty level, enrollment in a public assistance program, serving a public water system, or pumping at a depth less than 600 ft bgs. The PID GSA anticipates revising its Rules and Regulations to require all wells within the PID Plan Area to install meters. The PID GSA is considering an exemption from the proposed meter installation requirement

for de minimis uses, i.e. two acre-feet or less, if the well owner can demonstrate the annual volume of groundwater diverted complies with the volume limitation.

Landowners may install meters themselves using equipment that meets specified performance standards, subject to verification by a PID GSA retained contractor, or may elect to have meters installed by a PID GSA contractor. In cases where the PID GSA installs meters, landowners reimburse installation costs and assume ownership of the equipment.

All meters must be inspected and validated by a PID GSA contractor to confirm that meter and installation requirements are met. Meters on newly constructed wells must be installed and validated prior to use. Landowners are required to provide access to meters for reading and inspection.

Well owners are responsible for maintaining meters in proper working condition, including routine maintenance, repair, and calibration. If a meter requires repair, the landowner must complete repairs within 30 days of notification. Calibration must be performed by a facility traceable to the National Institute of Standards and Technology, and well owners must provide documentation of calibration in accordance with program requirements. If a landowner fails to complete required calibration within the specified timeframe, the PID GSA may arrange for calibration and recover associated costs.

Well owners are also responsible for reporting groundwater extraction based on meter readings on a monthly basis within required reporting timelines. The PID GSA collects and maintains reported data and incorporates it into its groundwater management and monitoring programs.

5.2.3.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Implementation of the Well Metering Policy began in WY2025 and is ongoing. The PID GSA anticipates initiating a compliance confirmation effort by the end of 2026.

Benefits are expected to increase as metering coverage expands and reporting becomes more complete, improving the accuracy and reliability of groundwater extraction data over time.

5.2.3.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No additional regulatory permits are required for implementation of the Well Metering Policy. Meter installation, inspection, and operation are governed by the PID GSA Rules and Regulations, including requirements for contractor verification, inspection, validation, and access for meter reading.

5.2.3.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to require measurement and reporting of groundwater extraction and to adopt rules and regulations necessary to implement sustainable groundwater management (Water Code § 10725.2).

5.2.3.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

The PID GSA has conducted outreach to support implementation of the Well Metering Policy through publicly noticed meetings associated with adoption of its Rules and Regulations. Additional outreach has been conducted to inform landowners of metering requirements, reporting obligations, and available options for meter installation.

The PID GSA continues to work directly with landowners to provide guidance and assistance with compliance and will maintain outreach efforts throughout the GSP implementation period.

5.2.3.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs associated with the Well Metering Policy are primarily borne by landowners, who are responsible for installation, maintenance, calibration, and repair of meters. Landowners may either install meters themselves or reimburse the PID GSA for meters installed by a PID GSA contractor.

The PID GSA may incur administrative costs associated with program oversight and data management, which may be recovered in accordance with adopted policies.

5.2.4 Well Permit Application Review

5.2.4.1 Project Description [23 CCR § 354.44(a)]

The Well Permit Application Review PMA establishes a process for the PID GSA to review proposed new wells within the PID Plan Area in coordination with Tulare County. Through this process, the PID GSA evaluates proposed well construction to assess potential risks to the applicant and surrounding groundwater conditions, including potential impacts to groundwater levels, water quality, land subsidence, and nearby beneficial uses and users. The review is intended to provide technical input on well siting, construction, and operation to support long-term groundwater sustainability.

While the PID GSA does not have authority to approve or deny well permits, this PMA provides a mechanism for coordination with Tulare County and applicants to ensure that new wells are developed in a manner consistent with the sustainability objectives of the PID GSA GSP and do not exacerbate undesirable results.

5.2.4.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The Well Permit Application Review PMA supports sustainable groundwater management by providing technical review of proposed well construction to identify potential risks to groundwater resources and nearby beneficial uses and users. Through coordination with Tulare County, this PMA helps inform well siting and construction decisions to reduce the likelihood of adverse impacts associated with new groundwater development.

While this PMA does not directly affect the groundwater budget, it supports multiple sustainability indicators, including chronic lowering of groundwater levels, degraded groundwater quality, and land

subsidence, by discouraging well development in locations or at depths that may increase vulnerability to undesirable results.

Expected outcomes include improved well siting and construction practices, increased awareness of groundwater conditions among applicants, and reduced risk of impacts to existing wells, infrastructure, and other beneficial uses. Progress will be evaluated using programmatic metrics such as the number of well permit applications reviewed and general trends in groundwater conditions and reported impacts over time.

5.2.4.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of the Well Permit Application Review PMA occurs when new well permit applications are submitted within the PID Plan Area. Upon receipt of a proposed well permit application from Tulare County, the PID GSA reviews available information to evaluate potential risks to groundwater resources, nearby wells, and other beneficial uses and users. This PMA is applied on a case-by-case basis for each proposed well and is ongoing as new well permit applications are received within the PID Plan Area.

5.2.4.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Well Permit Application Review PMA is carried out through coordination with Tulare County and review of proposed well permit applications submitted within the PID Plan Area. Well permit applications are forwarded to the PID GSA by Tulare County and presented to the Tule Subbasin Mitigation Advisory Committee (MAC) for initial review during public meetings.

As part of this review, the PID GSA evaluates each proposed well to assess potential risks to groundwater resources, nearby wells, and other beneficial uses and users, including whether the proposed well may be vulnerable to impacts or may contribute to adverse groundwater conditions. The review considers key technical and site-specific information, including:

- Proposed well location;
- Planned depth and perforation interval;
- Proposed aquifer (e.g. Upper, Lower);
- Intended use of the well (e.g., domestic, agricultural);
- Proximity to Representative Monitoring Sites (RMS) and associated MTs;
- Nearby existing wells and critical infrastructure; and
- Current groundwater level conditions in the vicinity of the proposed well.

Following MAC review, the PID GSA evaluates recommendations and provides formal comments to Tulare County for consideration as part of the well permitting process. These comments include evaluation of the relative risk that the proposed well may experience impacts, such as declining groundwater levels or potential for the well to go dry, as well as the potential for pumping from the well to contribute to adverse groundwater conditions.

As part of this process, the PID GSA may provide recommendations regarding well depth, location, and other design considerations, including measures to reduce the likelihood of future impacts and improve

long-term reliability of the water supply. In coordination with Tulare County, the PID GSA may also recommend modifications to proposed well construction or siting where necessary to avoid or minimize potential undesirable results.

The PID GSA does not have authority to approve or deny well permit applications; however, this review process facilitates coordination with Tulare County and promotes well development practices that are consistent with the sustainability objectives of the PID GSA GSP.

Implementation activities and outcomes are documented and reported as part of ongoing GSP monitoring and reporting efforts.

5.2.4.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The PID GSA's role in the Well Permit Application Review PMA is currently in development for new well permit applications received within the PID Plan Area. PID GSA's role is anticipated to build upon the review process previously implemented under the former ETGSA through coordination with Tulare County.

Benefits from this PMA are expected to accrue incrementally over time as proposed wells are reviewed and applicants incorporate technical guidance into well siting, design, and construction. Over the GSP implementation period, this PMA is expected to contribute to reduced risk of impacts to groundwater resources, existing wells, and critical infrastructure.

5.2.4.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No additional permits or regulatory approvals are required for implementation of the Well Permit Application Review PMA. Well permitting authority remains with Tulare County, and the PID GSA does not have authority to approve or deny well permit applications.

The PID GSA's role will be limited to providing technical review, data, and guidance to inform well siting, construction, and operation in support of sustainable groundwater management.

5.2.4.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has the legal authority to implement the Well Permit Application Review PMA pursuant to SGMA, including the authority to adopt and implement rules, regulations, and management actions necessary to achieve sustainable groundwater management (California Water Code § 10725.2).

This authority includes the ability to collect, evaluate, and provide technical information related to groundwater conditions and well development, and to coordinate with local agencies, including Tulare County, to support implementation of the PID GSA GSP.

While the PID GSA does not have authority to approve or deny well permit applications, this PMA is implemented under the GSA's authority to take actions necessary or appropriate to manage groundwater resources and avoid undesirable results.

5.2.4.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement for the Well Permit Application Review PMA occur through coordination with Tulare County and review of well permit applications during publicly accessible Tule Subbasin MAC meetings. Proposed well permit applications are presented for review and discussion, providing transparency into the evaluation process and associated technical considerations.

In addition, the PID GSA may coordinate directly with applicants and landowners to communicate relevant groundwater data, potential risks, and technical guidance associated with proposed well development. This outreach supports informed decision-making and helps applicants understand how well siting and construction may affect groundwater conditions and nearby beneficial uses and users.

The PID GSA will implement this PMA in a transparent manner, providing opportunities for public engagement through ongoing coordination, public meetings, and communication with groundwater users and stakeholders.

5.2.4.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Implementation of the Well Permit Application Review PMA involves administrative effort and ongoing consultant support to review well permit applications, evaluate groundwater conditions, and provide technical input.

The PID GSA has the authority to utilize available funding mechanisms, including groundwater extraction fees, penalties, and land-based assessments, in accordance with its Rules and Regulations and applicable law, to support implementation of the PID GSA GSP and associated management actions.

5.2.5 Fees and Incentives

5.2.5.1 Project Description [23 CCR § 354.44(a)]

The Fees and Incentives PMA establishes a framework for using financial mechanisms and enforcement tools to support compliance with groundwater management requirements and achievement of Sustainable Yield within the PID Plan Area. This PMA is implemented through the PID GSA Rules and Regulations (**Appendix B**), which authorize the use of fees, assessments, and penalties as part of the overall groundwater management program.

These mechanisms are intended to promote efficient water use and provide funding to support implementation of the PID GSP. In addition, the Rules and Regulations provide the PID GSA with authority to enforce compliance with groundwater management requirements through administrative and judicial remedies, consistent with SGMA.

Together, these fee-based and enforcement tools function as a demand management mechanism that supports sustainable groundwater use, reinforces adherence to allocation limits, and complements other PMAs identified in this GSP.

In addition to overdraft fees, the PID GSA is developing incentive mechanisms to encourage groundwater use practices that support sustainability objectives. These may include credits or reduced fees for landowners who implement verifiable water conservation measures or participate in managed aquifer recharge (MAR) activities that contribute to groundwater storage.

5.2.5.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The Fees and Incentives PMA is intended to support achievement of the Tule Subbasin's sustainability goal by promoting groundwater use that remains within sustainable limits and discouraging groundwater extraction in excess of established allocations. By applying financial penalties for excess use and authorizing groundwater extraction fees and assessments, this PMA provides a demand management mechanism that directly supports reduction of overdraft conditions.

Implementation of this PMA is expected to contribute to multiple sustainability indicators, including chronic lowering of groundwater levels, reduction of groundwater storage, land subsidence, and degraded groundwater quality. By incentivizing compliance with Sustainable Yield-based Allocations and limiting excess groundwater extraction, the PMA supports stabilization and improvement of groundwater elevations, reduction in aquifer compaction and associated subsidence, and protection of groundwater quality by minimizing changes in hydraulic gradients and potential contaminant migration.

The PID GSA Rules and Regulations establish that groundwater users exceeding their Sustainable Yield-based Allocation are subject to financial penalties based on the volume of excess groundwater extracted, with the applicable rate determined annually by the PID GSA Board. These financial disincentives, combined with available enforcement mechanisms, are intended to influence groundwater user behavior and promote adherence to allocation limits.

Expected outcomes of this PMA include reduced exceedances of Sustainable Yield-based Allocations, increased compliance with groundwater management requirements, and improved alignment between groundwater use and Sustainable Yield over time. Progress will be evaluated using metrics such as the frequency and magnitude of allocation exceedances, total volume of groundwater extracted relative to allocated Sustainable Yield, and trends in groundwater levels, storage, and subsidence conditions as measured through the monitoring network.

5.2.5.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of the Fees and Incentives PMA occurs through administration of the PID GSA Rules and Regulations as groundwater use is monitored and allocations are enforced. Fees and penalties are applied when groundwater extraction exceeds established Sustainable Yield-based Allocations or when groundwater users otherwise fail to comply with adopted regulations.

5.2.5.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Fees and Incentives PMA is carried out through administration of the PID GSA Rules and Regulations, which establish procedures for monitoring groundwater use, enforcing Sustainable Yield-based Allocations, and applying fees and penalties where appropriate.

Key components of implementation include:

- Groundwater use monitoring and accounting, including collection of pumping data and tracking of groundwater use relative to established allocations through the PID GSA accounting system;
- Annual determination and administration of Sustainable Yield-based Allocations, including notification to groundwater users and maintenance of allocation accounts;
- Assessment of fees and penalties, including application of financial penalties for groundwater extraction in excess of the Sustainable Yield-based Allocation and invoicing of groundwater extraction fees or other Board-adopted charges;
- Compliance and enforcement actions, including issuance of notices of violation, application of penalties, and, where necessary, pursuit of legal remedies consistent with SGMA and the PID GSA Rules and Regulations; and
- Ongoing program administration, including periodic evaluation and adjustment of fee structures, penalty rates, and program implementation as directed by the PID GSA Board.

Fees and penalty rates are established and updated by the PID GSA Board in accordance with adopted Rules and Regulations and applicable legal requirements. Implementation of this PMA is coordinated with other PMAs, including groundwater accounting and allocation, to ensure consistent application of management measures and support achievement of sustainable groundwater conditions.

5.2.5.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Groundwater extraction fees and associated penalties were initially implemented by the former ETGSA beginning in WY2021 and have since been adopted and continued by the PID GSA through its Rules and Regulations.

Implementation of this PMA is ongoing and occurs on an annual basis as groundwater use is monitored, allocations are established, and fees and penalties are assessed. Benefits from this PMA are expected to accrue progressively over time as groundwater users adjust pumping behavior in response to financial incentives and enforcement measures, resulting in improved compliance with Sustainable Yield-based Allocations and reduction of overdraft conditions.

5.2.5.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No permits or additional regulatory approvals are anticipated to be required for implementation of the Fees and Incentives PMA. Fees, assessments, and penalties are imposed pursuant to the PID GSA's authority under SGMA and are administered through the adopted Rules and Regulations.

Where applicable, the PID GSA will comply with relevant statutory and constitutional requirements associated with the adoption of fees and assessments.

5.2.5.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has the legal authority to implement the Fees and Incentives PMA pursuant to SGMA, including the authority to adopt rules, regulations, ordinances, and resolutions necessary to achieve

sustainable groundwater management (California Water Code § 10725.2). This authority includes the ability to impose groundwater extraction fees, penalties for non-compliance, and other financial mechanisms to support implementation of the PID GSA GSP.

Fees and assessments adopted by the PID GSA are subject to applicable statutory and constitutional requirements, including those associated with Proposition 218, where applicable.

The PID GSA Rules and Regulations further establish enforcement authority to ensure compliance with groundwater management requirements. Any owner, operator, or person found to be in violation of the regulations is subject to civil and criminal sanctions as authorized under SGMA. In addition, the PID GSA may pursue judicial remedies through the Superior Court, including temporary restraining orders, preliminary or permanent injunctions, or other equitable relief, to enforce compliance.

5.2.5.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement for the Fees and Incentives PMA occur through PID GSA's regular governance and rulemaking processes. Each year, the PID GSA Board establishes groundwater extraction fees, assessments, and penalty rates during publicly noticed meetings conducted in accordance with the Ralph M. Brown Act.

Stakeholders are provided opportunities to participate in the development and refinement of fee structures and related policies through public meetings, Board agendas, and associated materials. Where applicable, adoption of fees and assessments will also comply with required public notice, hearing, and protest procedures under relevant statutory and constitutional requirements, including Proposition 218.

The PID GSA will continue to provide transparency regarding implementation of this PMA through ongoing public meetings, reporting, and communication with groundwater users and other stakeholders.

5.2.5.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Implementation of the Fees and Incentives PMA requires staff and consultant support to administer the groundwater accounting system, establish and update fee and penalty structures, issue invoices, and carry out compliance and enforcement activities. Similar levels of support will be required on an ongoing basis to maintain the program, including data management, reporting, and coordination with other PMAs.

The PID GSA has the authority to impose groundwater extraction fees, penalties, and land-based assessments in accordance with its Rules and Regulations and applicable law. These funding mechanisms may be utilized, as needed, to support implementation of the PID GSP and associated management actions.

5.2.6 Managed Aquifer Recharge and Banking

5.2.6.1 Project Description [23 CCR § 354.44(a)]

The Managed Aquifer Recharge and Banking PMA includes activities that intentionally recharge groundwater using available surface water supplies and store that water within the aquifer for later

recovery and beneficial use. These activities may be implemented by landowners, irrigation districts, or public agencies and are conducted in accordance with policies adopted by the PID. The PID performs managed aquifer recharge on behalf of landowners within the PID Plan Area. Landowners pay fees to PID for the cost of recharge operations, and in return PID allocates recharge credits to paying landowners, including landowners within the PID Plan Area.

Within the PID Plan Area, this PMA is actively implemented through PID policies that allow landowners to operate recharge and banking facilities within the PID Plan Area. These policies establish requirements for water delivery, accounting, monitoring, and reporting to ensure recharge activities are conducted in a manner consistent with sustainable groundwater management objectives. Recharge and banking activities are accounted for through PID GSA's groundwater accounting system, which tracks surface water deliveries, recharge volumes, and recovery of banked water in accordance with adopted PID GSA Rules and Regulations.

5.2.6.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Managed Aquifer Recharge and Banking projects are intended to support sustainable groundwater management by increasing groundwater inflows and improving long term water supply reliability. These projects utilize available surface water supplies, including imported, recycled, or purchased water where available, to recharge the aquifer and store water for later recovery and beneficial use. These efforts support multiple sustainability indicators, including groundwater levels, groundwater storage, and land subsidence, by augmenting groundwater supplies and offsetting groundwater extractions.

Expected outcomes include increased groundwater storage, improved groundwater elevations, enhanced drought resilience, and reduced rates of land subsidence. Recharge activities during wetter periods allow excess surface water supplies to be stored within the aquifer and later recovered during dry periods, helping to stabilize groundwater conditions and reduce the risk of undesirable results. Recharge activities may also provide ancillary benefits, such as the creation of temporary habitat that can support wildlife.

The effectiveness of this PMA is dependent on the availability of surface water supplies for recharge, which are typically more abundant during wetter hydrologic conditions and limited during drought periods. However, water stored through recharge and banking during non-drought periods can be used during dry periods to reduce reliance on native groundwater supplies.

The effectiveness of recharge activities may vary depending on aquifer conditions and patterns of groundwater extraction within the PID Plan Area. In general, recharge basins primarily contribute to replenishment of the upper portions of the aquifer system, while a portion of groundwater production may occur from deeper aquifer zones. As additional data from well registration and monitoring efforts become available, the PID GSA will continue to evaluate the extent to which recharge activities influence groundwater conditions across aquifer zones and whether complementary approaches, such as targeted use of surface water in lieu of groundwater pumping or alternative recharge methods, may further enhance program effectiveness.

Implementation of this PMA to date has demonstrated successful participation by landowners within the PID Plan Area, contributing to increased recharge and supporting progress toward achieving the sustainability goal.

Progress will be evaluated through trends in groundwater levels, changes in groundwater storage, and recharge volumes, as measured through the Tule Subbasin Monitoring Plan. While the specific effects of individual projects may be difficult to isolate, overall trends will be used to assess the effectiveness of this PMA.

5.2.6.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of Managed Aquifer Recharge and Banking projects occurs when surface water supplies are available for recharge and when site-specific conditions are suitable for recharge activities. These conditions may include periods of excess surface water availability, appropriate soil and hydrogeologic conditions, and availability of recharge infrastructure.

When evaluating potential recharge or banking projects, public agencies, irrigation districts, or landowners consider the anticipated benefits of increased groundwater storage and supply reliability relative to the costs and feasibility of implementation. This includes assessing whether recharge and banking represent an effective approach to meeting the sustainability objectives of this Plan compared to other PMAs.

5.2.6.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of Managed Aquifer Recharge and Banking projects involves coordination between the PID GSA and participating landowners to ensure proper accounting and reporting of recharge and recovery.

Key implementation components include:

- Delivery of surface water to recharge sites in accordance with PID policies governing water availability and scheduling;
- Design, construction, operation, and maintenance of recharge facilities by participating landowners or other entities;
- Measurement and reporting of recharge and recovery activities by landowners, consistent with PID GSA requirements;
- Accounting for recharge and banking activities through the PID GSA's water accounting system, including crediting and debiting of recharge volumes in accordance with adopted policies; and
- Program oversight by the PID GSA to verify reported information and ensure consistency with accounting, monitoring, and compliance requirements.

Surface water deliveries are measured and documented by PID and incorporated into the accounting framework. Landowners are responsible for maintaining records of recharge and recovery activities and reporting these activities to the PID GSA in accordance with established requirements.

Recharge and banking activities are tracked in the PID GSA's accounting system, which supports monitoring of water use, evaluation of compliance, and implementation of allocation limits.

The effectiveness of this PMA is dependent on the availability of surface water supplies and participation by landowners or other entities. Recharge and banking activities are therefore expected to occur primarily during periods of excess surface water availability and may vary from year to year based on hydrologic conditions and operational considerations.

5.2.6.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

Managed Aquifer Recharge and Banking activities have been implemented within the PID Plan Area since 2017 and are ongoing. The program continues to be refined over time, including consideration of potential updates to policies and procedures.

Benefits are expected to accrue over time as recharge activities increase groundwater storage and improve groundwater conditions. The cumulative benefits of recharge and banking may become more pronounced during drought periods when stored groundwater is utilized.

5.2.6.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Permitting requirements for Managed Aquifer Recharge and Banking projects vary based on project characteristics and location. Projects typically require compliance with state and federal environmental regulations, as well as permits related to construction and potential impacts to natural resources. These may include, but are not limited to:

- Compliance with the CEQA, including preparation of appropriate environmental documentation;
- Compliance with the National Environmental Policy Act (NEPA), where federal funding or approvals are involved;
- Construction General Permit coverage and development of a Stormwater Pollution Prevention Plan (SWPPP);
- Preparation of a Dust Control Plan (DCP), as required by applicable air quality regulations;
- Permits from the U.S. Army Corps of Engineers and/or the California Department of Fish and Wildlife, where jurisdictional waters are affected; and
- Applicable local permits, including building permits issued by Tulare County.

5.2.6.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under the SGMA to implement PMAs that support sustainable groundwater management, including activities that increase groundwater recharge and improve water supply reliability (Water Code § 10725.2).

PID GSA's authority to establish groundwater accounting, including tracking recharge and banking activities and allowing credits and transfers, is supported by its adopted Rules and Regulations and applicable provisions of SGMA.

Recharge and banking projects may also be implemented by landowners, irrigation districts, or other public agencies under their respective authorities, with the PID GSA providing coordination, oversight, and accounting support consistent with its adopted policies.

5.2.6.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement for Managed Aquifer Recharge and Banking projects depend on the implementing entity. Projects undertaken by public agencies are subject to public review and participation requirements under CEQA and are discussed during publicly noticed meetings conducted in accordance with the Ralph M. Brown Act.

Projects implemented by individual landowners may not require formal public notification but are subject to coordination with the PID GSA and compliance with applicable rules and reporting requirements.

5.2.6.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs for Managed Aquifer Recharge and Banking projects vary depending on the surface water source and project scope. The costs may include environmental review and planning approvals, preparation of construction documents and permits, construction of recharge facilities, and ongoing operation and maintenance.

Landowners are typically responsible for the costs and risks associated with designing, constructing, operating, and maintaining recharge facilities, including necessary repairs and compliance with applicable regulatory requirements. Certain compliance-related costs, such as environmental review and permitting, may be shared between landowners and the PID GSA, as appropriate.

The PID GSA may incur administrative costs associated with program oversight, monitoring, accounting, and reporting, which may be recovered in accordance with adopted policies.

Funding for Managed Aquifer Recharge and Banking projects may be derived from a combination of state or federal grant programs, member agency assessments, and private landowner contributions.

5.2.7 Surface Water Development

5.2.7.1 Project Description [23 CCR § 354.44(a)]

The Surface Water Development PMA consists of actions that increase the availability and delivery of surface water supplies within the PID Plan Area through development of new supplies, expansion of existing infrastructure, or participation in water supply agreements. These actions are intended to supplement existing water supplies and reduce reliance on groundwater where surface water is available.

The Surface Water Development PMA includes the Southeast Service Area Lateral Project and the Northwest Service Area Pipeline Project, which expand PID's surface water delivery system through construction of new diversion and conveyance infrastructure to serve lands that have historically relied on groundwater. These projects increase access to surface water within the PID Plan Area and are

intended to reduce groundwater pumping, including in areas susceptible to subsidence. Additional surface water development opportunities may be pursued over time, as feasible.

5.2.7.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Surface Water Development activities are intended to increase the availability and reliability of surface water supplies within the PID Plan Area, thereby reducing reliance on groundwater and supporting sustainable groundwater management. By expanding surface water delivery to areas that have historically relied on groundwater, the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project are expected to result in measurable reductions in groundwater pumping, while also improving water supply reliability for local users.

Expected outcomes include reduced groundwater extraction, improved groundwater levels, increased groundwater storage, and reduced rates of land subsidence. During periods when surface water is available, substitution of surface water for groundwater use is expected to decrease pumping demand and support stabilization of groundwater conditions. Increased availability of surface water may also support recharge and banking activities, contributing to longer-term improvements in groundwater storage and drought resilience.

The effectiveness of this PMA is dependent on the availability of surface water supplies, which are generally greater during wetter hydrologic conditions and limited during drought periods. As a result, the ability of this PMA to reduce groundwater pumping may vary from year to year based on hydrologic conditions and surface water allocations.

Progress will be evaluated using trends in groundwater levels, changes in groundwater storage, groundwater extraction volumes, and subsidence conditions, as measured through the Tule Subbasin Monitoring Plan and PID GSA's groundwater accounting system. While it may be difficult to isolate the effects of this PMA from other concurrent actions, overall trends will be used to assess its effectiveness in supporting sustainable groundwater management.

5.2.7.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of the Surface Water Development PMA occurs when opportunities arise to increase surface water availability within the PID Plan Area, including through construction of new infrastructure, participation in water supply agreements, or other actions that increase surface water availability.

Implementation is primarily driven by the availability of surface water supplies and the feasibility of developing infrastructure to convey and deliver those supplies to areas currently reliant on groundwater. This PMA is particularly effective in areas experiencing groundwater overdraft or subsidence, where increasing access to surface water can reduce groundwater pumping.

Implementation of specific projects, such as the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project, occurs as funding, permitting, and design requirements are satisfied. Surface water use under this PMA is expected to be greatest during periods of above average hydrologic conditions when supplies are available for delivery.

5.2.7.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Surface Water Development PMA is carried out through development and expansion of surface water supply and delivery infrastructure, as well as coordination among the PID GSA, PID, and participating landowners or agencies.

Key implementation components include:

- Planning, design, and construction of infrastructure to divert, convey, and deliver surface water to areas currently reliant on groundwater;
- Coordination with landowners, irrigation districts, and other entities to facilitate access to surface water supplies;
- Development of agreements or arrangements necessary to secure, deliver, and utilize surface water supplies;
- Operation and maintenance of surface water delivery infrastructure by the PID or other responsible entities; and
- Integration of surface water deliveries into the PID GSA's accounting and monitoring framework to support evaluation of water use and groundwater conditions.

The PID GSA supports implementation through coordination, planning, and integration with other PMAs, while specific projects may be implemented by PID or other participating entities depending on project scope and ownership.

Implementation is dependent on the availability of surface water supplies, completion of necessary infrastructure, and coordination among participating entities, and may occur incrementally as projects are developed over time.

Current implementation includes construction of the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project.

5.2.7.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The Southeast Service Area Lateral Project is currently in development, with implementation initiated in 2022 and progressing through design, permitting, and construction phases. Construction is underway and is anticipated to be fully completed by spring of 2028. The Northwest Service Area Lateral Project is currently under construction and is anticipated to be fully completed in the fall of 2026. Surface water deliveries through both projects are expected to begin in 2027.

Benefits from this PMA are expected to begin accruing upon initiation of surface water deliveries to land served by the project infrastructure. Reductions in groundwater pumping and associated improvements in groundwater conditions are expected to occur immediately in areas served by the projects and to increase over time as surface water use is incorporated into ongoing operations.

Additional benefits may accrue over the long term through continued operation of the projects and potential implementation of future surface water development projects, as feasible.

5.2.7.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Permitting requirements for Surface Water Development projects vary depending on project location, design, and potential environmental impacts. Projects involving construction of diversion structures, pipelines, or other conveyance infrastructure are subject to applicable federal, state, and local regulations. These may include, but are not limited to:

- Compliance with CEQA, including preparation of appropriate environmental documentation;
- Compliance with NEPA, where federal funding or approvals are involved;
- Construction General Permit coverage and development of a SWPPP;
- Preparation of a DCP, as required by applicable air quality regulations;
- Permits from the U.S. Army Corps of Engineers and/or the California Department of Fish and Wildlife, where jurisdictional waters are affected; and
- Applicable local permits, including grading or building permits issued by Tulare County or other local agencies.

Specific permitting requirements will vary based on the scope and location of individual projects. Permitting requirements for the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project have been addressed through project-specific environmental review and approvals.

5.2.7.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management, including actions that increase the availability and use of surface water supplies and reduce reliance on groundwater (Water Code § 10725.2).

Surface Water Development projects may be implemented by the PID, other public agencies, or participating entities under their respective authorities. The PID GSA supports these efforts through coordination, planning, and integration of surface water use into the overall groundwater management framework to achieve the sustainability objectives of the PID GSA GSP.

5.2.7.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement for Surface Water Development projects depend on the implementing entity. Projects undertaken by public agencies, including the PID, are subject to public review and participation requirements under CEQA and are discussed during publicly noticed meetings conducted in accordance with the Ralph M. Brown Act. Information regarding project planning, design, and implementation, including the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project, is made available to the public through these meetings.

Projects implemented by individual landowners or other entities may not require formal public notification but may involve coordination with local agencies as part of permitting and implementation.

5.2.7.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs for Surface Water Development projects vary depending on project scope and may include environmental review and planning approvals, preparation of construction documents and permits, construction of diversion and conveyance infrastructure, and ongoing operation and maintenance.

For projects implemented by the PID, including the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project, costs are primarily associated with design, permitting, and construction of surface water delivery infrastructure. The total cost of the Southeast Service Area Lateral Project is approximately \$6 million. The total cost of the Northwest Service Area Pipeline Project is approximately \$700,000. The PID is responsible for implementation and associated project costs, while the PID GSA may incur administrative costs related to coordination, planning, and integration of project operations into the groundwater management framework.

Funding for Surface Water Development projects may be derived from a combination of state or federal grant programs, PID or member agency funding, and other available funding sources. The Southeast Service Area Lateral Project is supported by grant funding.

5.2.8 PID Recharge Basin Project

5.2.8.1 Project Description [23 § CCR 354.44(a)]

In 2026, PID acquired two adjacent parcels, totaling approximately 142 acres, located in the south-central portion of the PID Plan Area immediately adjacent to the Friant-Kern Canal. The property was acquired to permanently retire irrigated agricultural production, discontinue groundwater pumping, and repurpose the land for groundwater recharge.

The existing well(s) on the property will be retired from production to reduce groundwater demand along the FKC by approximately 500 AFY. By the end of 2029, PID intends to develop a recharge basin to support groundwater level stabilization and reduce the potential for continued land subsidence affecting the FKC. Recharge operations will include water delivery, accounting, monitoring, and reporting consistent with PID GSA Rules and Regulations and the GSA's groundwater accounting system.

5.2.8.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The PID Recharge Basin Project is intended to support sustainable groundwater management by combining permanent agricultural land retirement with development of groundwater recharge infrastructure. Retiring irrigated acreage will reduce consumptive water use and associated groundwater pumping, while recharge operations will increase groundwater inflows when surface water supplies are available. Expected outcomes include reduced groundwater extraction, increased groundwater storage, stabilization or improvement of groundwater elevations, and reduced rates of land subsidence.

Because the project is located near the Friant-Kern Canal, reducing groundwater demand at the site may help reduce stresses contributing to land subsidence along the FKC. The project supports achievement of

sustainability goals by reducing groundwater pumping, increasing recharge opportunities, and helping avoid undesirable results associated with groundwater level declines and land subsidence.

The effectiveness of recharge at the PID Recharge Basin Project will depend on the availability of surface water supplies, site-specific soil and hydrogeologic conditions, and groundwater extraction patterns within the PID Plan Area. Recharge benefits are expected to be greatest during wetter hydrologic periods when surface water supplies are available, while stored groundwater conditions may help reduce reliance on native groundwater supplies during drier periods.

Progress will be evaluated using changes in irrigated acreage, recharge volumes, groundwater levels, groundwater storage, and land subsidence conditions, as measured through the Tule Subbasin Monitoring Plan. While the effects of the PID Recharge Basin Project may be difficult to isolate from other PMAs, overall trends in groundwater conditions will be used to assess project effectiveness over time.

5.2.8.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

The PID Recharge Basin Project is being implemented by PID to support achievement of sustainable groundwater management within the PID Plan Area and to address land subsidence conditions in areas that influence the Friant-Kern Canal. By permanently retiring agricultural production and discontinuing groundwater pumping on the property, PID intends to reduce groundwater demand in a subsidence-sensitive area, support stabilization of groundwater levels, and reduce the potential for continued subsidence-related impacts to FKC infrastructure. The project also provides an opportunity for groundwater recharge when surface water supplies are available and site-specific soil and hydrogeologic conditions are suitable. In evaluating recharge opportunities at the project site, PID will consider the anticipated benefits of increased groundwater storage, improved water supply reliability, and reduced reliance on groundwater pumping relative to project costs, feasibility, and the effectiveness of recharge compared to other PMAs. Implementation of the PID Recharge Basin Project is consistent with the PID GSA's broader PMA framework and is intended to contribute to long-term groundwater sustainability goals under SGMA.

5.2.8.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Following acquisition of the PID Recharge Basin Project site in 2026, PID discontinued irrigation and associated groundwater pumping on the property as an initial demand reduction action. PID intends to develop the property as a surface water recharge basin, with recharge operations anticipated to begin by the end of 2029, subject to completion of final design, permitting, and construction activities. The existing well(s) on the property will be properly abandoned.

Key implementation components for the PID Recharge Basin Project, focused on construction and operation of the recharge basin, include:

- Delivering surface water to the recharge site in accordance with PID policies;
- Designing, constructing, operating, and maintaining the recharge facility;
- Measuring and tracking recharge volumes using PID-operated equipment;
- Accounting for recharge through the PID GSA water accounting system;

- Preparing delivery, billing, and recharge volume records;
- Maintenance of records documenting recharge; and
- Submittal of permits, agreements, and monitoring reports to support program oversight and compliance.

Surface water deliveries used for recharge are measured and recorded by PID using equipment installed, maintained, and operated by the District.

5.2.8.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

PID acquired the PID Recharge Basin Project site property in 2026. Following acquisition, agricultural operations on the property were permanently retired and groundwater pumping associated with the site was discontinued. PID plans to develop a surface water recharge basin on the property by the end of 2029.

Project benefits were expected to begin accruing shortly after the end of agricultural operations on the project property, which eliminated groundwater pumping at the site. Additional benefits are expected to accrue over time as recharge operations increase groundwater storage and improve local groundwater conditions.

5.2.8.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Permitting requirements for agricultural land retirement activities are generally limited and depend on the specific actions taken. Permanent land use changes or infrastructure removal may require compliance with CEQA and applicable local permitting requirements.

Aquifer recharge projects typically require compliance with state and federal environmental regulations, as well as permits related to construction and potential impacts to natural resources. These may include, but are not limited to:

- Compliance with CEQA, including preparation of appropriate environmental documentation;
- Compliance with NEPA, where federal funding or approvals are involved;
- Construction General Permit coverage and development of a SWPPP;
- Preparation of a DCP, as required by applicable air quality regulations;
- Permits from the U.S. Army Corps of Engineers and/or the California Department of Fish and Wildlife, where jurisdictional waters are affected; and
- Applicable local permits, including building permits issued by Tulare County.

5.2.8.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management, including actions that reduce groundwater demand (Water Code § 10725.2).

5.2.8.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Progress updates and findings will be shared during regular GSA manager meetings, meetings of the Tule Subbasin Technical Advisory Committee, and, when requested, at GSA Board meetings. PID will share updates at regular public board meetings as well.

5.2.8.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

PID estimates the PID Recharge Basin Project will cost approximately \$5 million. Costs associated with agricultural land retirement include economic impacts associated with reduced agricultural production, land use transition costs, and program administration. Costs for recharge basin infrastructure include environmental review and planning approvals, preparation of construction documents and permits, construction of recharge facilities, and ongoing operation and maintenance.

Funding sources may include state and federal grant programs, such as the Multi-Benefit Land Repurposing Program, as well as other incentive-based programs designed to support groundwater sustainability and land repurposing. The PID GSA also has the authority to utilize available funding mechanisms, including groundwater extraction fees, penalties, and land-based assessments, in accordance with its Rules and Regulations and applicable law, to support implementation of the PID GSA GSP and associated PMAs.

5.2.9 In-Lieu Recharge

5.2.9.1 Project Description [23 CCR § 354.44(a)]

The In-Lieu Recharge PMA is a strategy intended to reduce groundwater pumping by increasing the use of existing surface water supplies for irrigation in place of groundwater extraction within the PID Plan Area. This PMA focuses on encouraging and facilitating in lieu use of surface water where supplies and distribution infrastructure are already available.

A primary focus of this PMA is to increase surface water use in areas adjacent to the FKC, where reducing groundwater extraction is critical to minimizing further subsidence and protecting infrastructure. Specifically, this PMA is intended to reduce reliance on pumping from the Lower Aquifer, which is most closely associated with inelastic compaction and land subsidence within the PID Plan Area. This approach is particularly relevant where recharge activities primarily benefit the Upper Aquifer while groundwater extraction occurs from deeper aquifer zones.

This PMA does not identify specific projects at this time but establishes a framework for the PID GSA and participating entities to evaluate and promote in lieu use of surface water as a demand reduction strategy supporting groundwater sustainability.

5.2.9.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Use of surface water for irrigation in lieu of groundwater pumping is expected to reduce groundwater extraction, particularly during wetter than average years when surface water supplies are more readily

available. Substituting surface water for groundwater use during these periods can reduce stress on the aquifer system and support stabilization or recovery of groundwater levels.

Expected outcomes include increased use of surface water for irrigation, reduced groundwater extraction, improved groundwater elevations, and reduced rates of land subsidence. Targeted reduction of groundwater pumping from the Lower Aquifer, particularly in areas near the FKC, is expected to reduce aquifer compaction and support protection of critical infrastructure. This PMA is intended to complement managed aquifer recharge efforts by prioritizing demand reduction in areas where recharge may not directly offset deeper aquifer pumping.

The effectiveness of this PMA is dependent on the availability of surface water supplies, which are typically reduced during drought conditions. During extended dry periods, groundwater may remain the primary source of supply, and the ability of this PMA to reduce groundwater pumping may be constrained. However, increased use of surface water during non-drought periods can reduce cumulative groundwater extraction over time and help mitigate the severity of groundwater level declines and associated subsidence impacts during future drought conditions.

Progress will be evaluated using trends in groundwater levels, groundwater storage, and land subsidence conditions, as measured through the Tule Subbasin Monitoring Plan. While the specific effects of this PMA may be difficult to isolate due to concurrent implementation of other PMAs, overall trends will be used to assess the effectiveness in reducing groundwater pumping and associated impacts.

5.2.9.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of this PMA occurs when surface water supplies are available and can be utilized for irrigation in lieu of groundwater pumping within the PID Plan Area. This includes periods when surface water deliveries are sufficient to offset groundwater use and where infrastructure and operational conditions allow for substitution of surface water for groundwater.

Implementation is prioritized in areas where reducing groundwater extraction from the Lower Aquifer is necessary to address groundwater overdraft conditions, land subsidence, and protection of critical infrastructure, particularly in areas adjacent to the FKC. Opportunities may be identified by the PID GSA, local agencies, or landowners based on water availability, location, and site-specific conditions.

5.2.9.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the In-Lieu Recharge PMA involves identification and facilitation of opportunities to increase the use of existing surface water supplies for irrigation in place of groundwater pumping. This includes coordination with landowners, irrigation districts, and other water suppliers to promote in lieu use of surface water where supplies and distribution infrastructure are already available.

Key implementation components include:

- Identification and prioritization of areas, including those adjacent to the FKC, where substitution of surface water for groundwater pumping would provide the greatest benefit for reducing groundwater extraction from the Lower Aquifer and minimizing land subsidence;

- Coordination with irrigation districts, public agencies, and landowners to maximize use of available surface water supplies in lieu of groundwater pumping;
- Evaluation of operational practices and minor infrastructure or delivery adjustments needed to facilitate increased surface water use in areas currently reliant on groundwater;
- Consideration of hydrogeologic conditions to prioritize in lieu use in areas where recharge may not directly offset deeper aquifer pumping; and
- Support for development of agreements, incentives, or programs that encourage facilitate use of surface water in lieu of groundwater pumping.

The PID GSA may support or coordinate these efforts but may not be the direct implementing entity for all activities.

The effectiveness of this PMA is dependent on the availability and delivery of surface water supplies, which are generally obtained from sources outside the direct control or jurisdiction of the PID GSA. As a result, implementation is expected to vary based on hydrologic conditions with reduced opportunities during drought periods when surface water supplies are limited.

5.2.9.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The PID GSA anticipates initiating implementation of the In-Lieu Recharge PMA by April 2027. Implementation is expected to be opportunistic and phased, depending on surface water availability and delivery, as well as participation by local agencies and landowners.

Benefits are expected to accrue over time as surface water is increasingly utilized for irrigation in lieu of groundwater pumping during periods of surface water availability. This PMA is anticipated to result in incremental reductions in groundwater extraction and corresponding improvements in groundwater levels and subsidence conditions.

5.2.9.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Implementation of this PMA is not expected to require new permitting, as it involves the use of existing surface water supplies for irrigation in place of groundwater pumping. Activities associated with this PMA are generally limited to changes in water use practices by landowners and coordination with existing water suppliers.

To the extent that minor infrastructure modifications or operational changes are needed to facilitate increased use of surface water, such activities would be subject to applicable local, state, or federal permitting requirements. However, no specific permitting requirements have been identified for implementation of this PMA.

5.2.9.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management, including actions that reduce groundwater pumping through increased use of available surface water supplies (Water Code § 10725.2).

Implementation of this PMA may involve actions by public agencies, irrigation districts, or landowners operating under their respective authorities to deliver and utilize surface water for irrigation. The PID GSA may coordinate with these entities to support in lieu use of surface water that contributes to achieving the sustainability objectives of the PID GSP.

5.2.9.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement for this PMA are expected to occur primarily through coordination with irrigation districts, public agencies, and landowners, as well as through ongoing PID GSA outreach activities. Implementation of in lieu use of surface water is anticipated to involve operational changes rather than discrete projects and may be discussed through publicly noticed PID GSA Board meetings and other stakeholder engagement processes conducted in accordance with the Ralph M. Brown Act.

To the extent that implementation involves actions by public agencies, such activities may be subject to applicable public review and participation requirements, including compliance with CEQA. Activities undertaken by individual landowners generally would not require formal public notification but may involve coordination with local agencies and water suppliers.

5.2.9.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Implementation of this PMA is not expected to require significant capital investment, as it primarily involves changes in water use practices to increase the use of existing surface water supplies in place of groundwater pumping.

Potential costs may include minor operational adjustments by landowners, coordination efforts among irrigation districts and public agencies, and limited infrastructure or delivery modifications where needed to facilitate increased surface water use.

Costs associated with program coordination, evaluation, and outreach may be incurred by the PID GSA and are expected to be supported through existing funding mechanisms, including groundwater extraction fees or other GSA funding sources. Implementation by landowners and local agencies would generally be supported through their existing operations and water supply arrangements.

5.2.10 *Agricultural Land Fallowing Program*

5.2.10.1 Project Description [23 CCR § 354.44(a)]

The Agricultural Land Fallowing Program is a management strategy intended to reduce groundwater demand by temporarily removing irrigated agricultural land from production. This PMA will be implemented by individual landowners or public agencies through voluntary participation, incentive programs, or land repurposing efforts.

Agricultural land fallowing can take several forms, including annual, rotational, or multi-year fallowing of irrigated acreage in response to water supply conditions, groundwater sustainability objectives, or participation in incentive programs. In some cases, temporary fallowing efforts may inform future decisions regarding permanent land retirement or land repurposing opportunities.

While the PID GSA does not currently implement a formal agricultural land fallowing program, this PMA establishes a framework for evaluating and implementing voluntary fallowing opportunities through incentive-based programs and partnerships with willing landowners.

Programs such as the Multi-Benefit Land Repurposing Program (MLRP), administered by the California Department of Conservation, may provide opportunities for funding and technical support to facilitate voluntary land retirement and transition to lower water use land uses.

5.2.10.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Agricultural land fallowing is intended to support sustainable groundwater management by reducing overall groundwater demand. By decreasing irrigated acreage, this PMA directly reduces consumptive water use and associated groundwater pumping.

Expected outcomes include reduced groundwater extraction, stabilization or improvement of groundwater elevations, and reduced rates of land subsidence. In the PID Plan Area, fallowing irrigated land may reduce consumptive water use by approximately 2.5 to 4.0 acre feet per acre, based on typical agricultural water use described in this GSP.

Targeted land fallowing in areas where groundwater production is primarily from deeper aquifer zones may help reduce stresses contributing to land subsidence, particularly in areas near the Friant-Kern Canal. This PMA supports achievement of the sustainability goal by directly reducing groundwater demand and helping to avoid undesirable results associated with groundwater level declines and subsidence.

Land fallowing may be implemented on a temporary or rotational basis, allowing flexibility to reduce water demand during drought periods while maintaining the ability to return land to production during wetter years when water supplies are more available.

Progress will be evaluated through changes in irrigated acreage, groundwater levels, and groundwater storage, as measured through the Tule Subbasin Monitoring Plan and land use data. While the effects of individual land fallowing actions may be difficult to isolate, overall trends in groundwater conditions will be used to assess the effectiveness of this PMA.

5.2.10.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of this PMA occurs when water supply limitations, economic conditions, or participation in incentive programs make it feasible or desirable for landowners or agencies to temporarily reduce irrigated acreage. This may include periods of drought, reduced surface water availability, or regulatory or economic conditions that limit groundwater use.

Agricultural land fallowing may also be considered in areas where reducing groundwater demand would provide the greatest benefit for achieving sustainability objectives, including areas experiencing declining groundwater levels or land subsidence.

When evaluating land fallowing opportunities, landowners and agencies may consider the anticipated benefits of reduced groundwater pumping relative to the economic impacts of removing land from production, as well as the availability of funding or incentive programs.

5.2.10.4 Implementation Plan [23 CCR § 354.44(b)(6)]

Implementation of the Agricultural Land Fallowing Program will occur primarily through voluntary participation by landowners or through programs administered by public agencies.

Key implementation components may include:

- Identification of areas where land fallowing would provide the greatest benefit for reducing groundwater demand, including areas with high groundwater use or subsidence concerns;
- Participation in state or federal programs, such as the MLRP, that provide funding or technical assistance for land fallowing or land use transition;
- Coordination with landowners to support voluntary fallowing of irrigated acreage; and
- Tracking and reporting of changes in irrigated acreage and associated reductions in groundwater demand.

The PID GSA may support or facilitate these efforts but may not be the direct implementing entity for land fallowing projects.

5.2.10.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The timeline for the Agricultural Land Fallowing Program varies depending on the scale and nature of implementation, but the PID GSA anticipates implementing this management action by 2031. Temporary or rotational fallowing may occur on an annual basis in response to water supply conditions, funding availability, and landowner participation. Benefits are expected to accrue as reductions in groundwater pumping occur.

5.2.10.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Permitting requirements for Agricultural Land Fallowing Program projects are generally limited and depend on the specific actions taken. Temporary fallowing typically does not require permitting.

Participation in state or federally funded programs may also require compliance with program specific environmental review and reporting requirements.

5.2.10.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management, including actions that reduce groundwater demand (Water Code § 10725.2).

Agricultural land fallowing is primarily implemented by landowners or public agencies through voluntary actions or incentive programs, with the PID GSA supporting coordination and alignment with sustainability objectives.

5.2.10.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement related to the Agricultural Land Fallowing Program may occur through outreach associated with state or federal programs, such as the Multi-Benefit Land Repurposing Program, as well as through publicly noticed meetings of the PID Board and other participating agencies in accordance with the Ralph M. Brown Act.

Because participation in land fallowing is voluntary, individual landowner actions do not typically require formal public notification.

5.2.10.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs associated with the Agricultural Land Fallowing Program vary depending on the type and scale of implementation and may include economic impacts associated with reduced agricultural production, land use transition costs, and program administration.

Funding sources may include state and federal grant programs, such as the Multi-Benefit Land Repurposing Program, as well as other incentive-based programs designed to support groundwater sustainability and land repurposing.

5.2.11 *Agricultural Land Retirement*

5.2.11.1 Project Description [23 CCR § 354.44(a)]

The Agricultural Land Retirement PMA is a management strategy intended to reduce groundwater demand by removing irrigated agricultural land from production on a permanent basis. This PMA will be implemented by individual landowners or public agencies through voluntary participation, incentive programs, or land repurposing efforts.

Agricultural land retirement can take several forms, including permanent retirement through acquisition or conservation programs. These approaches reduce consumptive water use by decreasing irrigated acreage and associated groundwater pumping.

While the PID GSA has yet to implement a formal agricultural land retirement program, this PMA establishes a framework for evaluating and pursuing such agricultural land retirement projects within the PID Plan Area in the future. In particular, land retirement may be considered in areas where reducing groundwater demand would provide the greatest benefit, including areas adjacent to the Friant-Kern Canal, where subsidence is a concern. PID is currently implementing one such project, which is described in **Section 5.2.8**. The PID Recharge Basin Project is not solely an agricultural land retirement project, as SID also proposes construction of recharge facilities on the project property, but the initial project action taken is retirement of the site's agricultural land.

Programs such as the Multi-Benefit Land Repurposing Program, administered by the California Department of Conservation, may provide opportunities for funding and technical support to facilitate voluntary land retirement and permanent transition to lower water use land uses.

5.2.11.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

Agricultural land retirement is intended to support sustainable groundwater management by reducing overall groundwater demand. By decreasing irrigated acreage, this PMA directly reduces consumptive water use and associated groundwater pumping.

Expected outcomes include reduced groundwater extraction, stabilization or improvement of groundwater elevations, and reduced rates of land subsidence. In the PID Plan Area, retiring irrigated land may reduce consumptive water use by approximately 2.5 to 4.0 acre-feet per acre, based on typical agricultural water use described in this GSP.

Targeted land retirement in areas where groundwater production is primarily from deeper aquifer zones may help reduce stresses contributing to land subsidence, particularly in areas near the FKC. This PMA supports achievement of the sustainability goal by directly reducing groundwater demand and helping to avoid undesirable results associated with groundwater level declines and subsidence.

Progress will be evaluated through changes in irrigated acreage, groundwater levels, and groundwater storage, as measured through the Tule Subbasin Monitoring Plan and land use data. While the effects of individual land retirement actions may be difficult to isolate, overall trends in groundwater conditions will be used to assess the effectiveness of this PMA.

5.2.11.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

Implementation of this PMA occurs when water supply limitations, economic conditions, or participation in incentive programs make it feasible or desirable for landowners or agencies to reduce irrigated acreage. This may include periods of drought, reduced surface water availability, or regulatory or economic conditions that limit groundwater use.

Agricultural land retirement may also be considered in areas where reducing groundwater demand would provide the greatest benefit for achieving sustainability objectives, including areas experiencing declining groundwater levels or land subsidence.

When evaluating land retirement opportunities, landowners and agencies may consider the anticipated benefits of reduced groundwater pumping relative to the economic impacts of removing land from production, as well as the availability of funding or incentive programs.

5.2.11.4 Implementation Plan [23 CCR § 354.44(b)(6)]

The PID GSA anticipates implementing the Agricultural Land Retirement initiative by 2031. Implementation of this management action will occur primarily through voluntary participation by landowners or through programs administered by public agencies.

Key implementation components may include:

- Identification of areas where land retirement would provide the greatest benefit for reducing groundwater demand, including areas with high groundwater use or subsidence concerns;
- Participation in state or federal programs, such as the MLRP, that provide funding or technical assistance for land retirement or land use transition;
- Coordination with landowners to support voluntary retirement of irrigated acreage; and
- Tracking and reporting of changes in irrigated acreage and associated reductions in groundwater demand.

The PID GSA may support or facilitate these efforts by landowners or it may be the direct implementing entity for land retirement projects. One such PID GSA project is described in **Section 5.2.8**, PID Recharge Basin Project, above.

5.2.11.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The timeline for Agricultural Land Retirement varies depending on the scale and nature of implementation. Permanent land retirement may depend on funding availability and landowner participation.

Benefits are expected to accrue as reductions in groundwater pumping occur, with immediate effects and longer-term benefits from permanent land retirement anticipated.

5.2.11.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

Permitting requirements for Agricultural Land Retirement projects are generally limited and depend on the specific actions taken. Permanent land use changes or infrastructure removal may require compliance with CEQA and applicable local permitting requirements.

Participation in state or federally funded programs may also require compliance with program specific environmental review and reporting requirements.

5.2.11.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management, including actions that reduce groundwater demand (Water Code § 10725.2).

Agricultural land retirement is primarily implemented by landowners or public agencies through voluntary actions or incentive programs, with the PID GSA supporting coordination and alignment with sustainability objectives.

5.2.11.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Public notification and engagement related to Agricultural Land Retirement may occur through outreach associated with state or federal programs, such as the Multi-Benefit Land Repurposing Program, as well

as through publicly noticed meetings of the PID Board and other participating agencies in accordance with the Ralph M. Brown Act.

Because participation in land retirement is voluntary, individual landowner actions do not typically require formal public notification.

5.2.11.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Costs associated with Agricultural Land Retirement vary depending on the type and scale of implementation and may include economic impacts associated with reduced agricultural production, land use transition costs, and program administration. The estimated cost to purchase land for permanent retirement, if pursued by the PID GSA or participating entities, is approximately \$15,000 per acre.

Funding sources may include state and federal grant programs, such as the Multi-Benefit Land Repurposing Program, as well as other incentive-based programs designed to support groundwater sustainability and land repurposing.

5.2.12 Sustainability Forecast Analysis

5.2.12.1 Project Description [23 CCR § 354.44(a)]

The Sustainability Forecast Analysis is a proactive planning tool designed to support groundwater sustainability by identifying potential future MT exceedances before undesirable results occur. The analysis uses groundwater level and land subsidence data collected at RMS to evaluate trends, forecast future conditions, and estimate the groundwater benefit necessary to avoid projected MT exceedances.

The analysis establishes "MT Triggers" intended to provide an early warning of potential sustainability concerns. If seasonal low groundwater levels or land subsidence data exhibit a downward trend over three consecutive years indicating a projected MT exceedance within the upcoming water year, the PID GSA will evaluate the magnitude, location, and likely causes of the projected exceedance. The analysis will then be used to assess whether existing PMAs provide sufficient groundwater benefit or whether modifications, expansion, prioritization, or implementation of additional PMAs should be considered to avoid undesirable results.

5.2.12.2 Expected Benefits, Outcomes, and Metrics [23 CCR §§ 354.44(b)(1); 354.44(b)(2); 354.44(b)(5); 354.44(b)(9)]

The primary benefit of the Sustainability Forecast Analysis is the early identification of groundwater conditions that may result in future MT exceedances and undesirable results. By evaluating groundwater level and land subsidence trends and forecasting future conditions, the analysis provides a data-driven framework for evaluating whether existing PMAs are sufficient to achieve sustainability objectives or whether additional management actions should be considered.

The analysis supports achievement of sustainability objectives associated with:

- Chronic Lowering of Groundwater Levels, by identifying projected groundwater level declines before MT exceedances occur.
- Land Subsidence, by identifying projected subsidence trends that may result in future MT exceedances and undesirable results.

The successful execution of this project is expected to result in one of two primary outcomes:

1. Attainment of Sustainability: The project will demonstrate that the current management actions are sufficient to maintain the Subbasin within its Sustainable Yield, effectively eliminating undesirable results and preventing any further MT exceedances.
2. SMC/Sustainable Yield Refinement: If observed conditions deviate from modeled projections despite the elimination of excess pumping, the project will provide the empirical data necessary to refine the SMC. This outcome would involve a data-driven modification of the Tule Subbasin Sustainable Yield or an update to the established MTs and MOs to better reflect the basin's actual hydrogeologic response.

To quantify the benefits and progress of this project, the PID GSA will utilize the following metrics, tracked via the expanded monitoring network:

- Hydrographs (Groundwater Elevation): Comparison of seasonal high and low water levels against the established MTs and MOs. Success is defined as water levels remaining at or above the MOs.
- Subsidence Monitoring Data: Evaluation of InSAR data or continuous GPS station records. The metric for success is a rate of subsidence that does not exceed the annual or cumulative MTs defined in the GSP.
- Annual Reporting: Documentation of projected MT exceedances, estimated groundwater benefits necessary to avoid exceedances, and management recommendations developed through the analysis.

5.2.12.3 Circumstances for Implementation [23 CCR § 354.44(b)(1)(A)]

This project will be implemented when MT exceedances are projected to occur. Calculations of specific aquifer groundwater benefits necessary to avoid MT exceedances will be dependent on a complete well inventory with screen intervals for all wells within the PID Plan Area.

5.2.12.4 Implementation Plan [23 CCR § 354.44(b)(6)]

1. Annual Water Year Evaluation: At the conclusion of each water year (September 30), PID GSA will perform a comprehensive technical review of the monitoring network.
 - a. Trend Analysis: Evaluate groundwater elevation and land subsidence data at each RMS.
 - b. Trigger Verification: Identify sites where three consecutive years of seasonal low measurements exhibit a downward trajectory that projects an exceedance of the MT within the upcoming water year.
 - c. If an MT exceedance is projected, PID GSA will evaluate the magnitude, location, and likely causes of the projected exceedance and identify the potential management responses to avoid undesirable results.

2. Sustainability Forecast Analysis.
 - a. Historical Pumping Evaluation: Using historical data, correlate annual pumping volumes with observed water level and subsidence responses.
 - b. Quantification of Required Groundwater Benefit: Calculate the estimated annual groundwater benefit, expressed in AFY, necessary to avoid projected MT exceedances.
3. Management Response Evaluation: Management actions will be evaluated and targeted to maximize effectiveness and minimize economic disruption.
 - a. PMA Evaluation: Assess whether existing PMAs provide sufficient groundwater benefit to address projected groundwater conditions or whether modifications, acceleration, expansion or additional actions should be considered. Evaluations will consider whether PMAs should be targeted to the aquifer unit (e.g., the Lower Aquifer) and geographic area where the MT exceedance is projected.
 - b. Management Recommendations: Develop recommendations regarding the implementation, modification, prioritization, or expansion of PMAs based on projected groundwater conditions and sustainability indicator trends.
4. Ongoing Monitoring & Adaptive Adjustment: The plan maintains an active feedback loop to evaluate whether groundwater conditions are responding as anticipated to implemented PMAs.
 - a. In-Season Evaluation: Continuously monitor groundwater levels and InSAR subsidence data throughout the year to evaluate whether observed conditions are consistent with forecasted trends.
 - b. Adaptive Management: If monitoring data suggests that groundwater conditions are not responding as anticipated, the GSA will evaluate whether additional PMAs or modifications to existing PMAs should be implemented for the subsequent quarter or water year.

5.2.12.5 Timeline for Implementation and Accrual of Expected Benefits [23 CCR § 354.44(b)(4)]

The PID GSA anticipates implementing the Sustainability Forecast Analysis by October 2026. The execution of this PMA follows a rigorous schedule designed to ensure that data-driven decisions translate into immediate field-level actions.

Implementation Schedule: The trigger for implementation is based on the technical review of the prior water year's data. Once the annual monitoring analysis confirms that an MT exceedance is projected for the upcoming cycle, the GSA will initiate a 60-day response window. Within this 60-day period, the GSA will:

- Finalize the site-specific historical pumping analysis.
- Calculate the required annual groundwater benefit on an AFY basis.

Accrual of Expected Benefits: The primary benefit of this program, the stabilization of groundwater levels and the arrest of inelastic subsidence, is expected to accrue rapidly due to the targeted nature of the analysis and subsequent PMA implementation.

- Continuous Evaluation: While performance is tracked continuously via PID GSA's established monitoring schedule, the system is designed to show measurable improvement in groundwater level trends within one year of PMA implementation.
- Corrective Horizon: This one-year "correction window" allows the GSA to verify that the hydrogeologic response aligns with predictive modeling. If the expected benefits (i.e., stabilization or recovery) are not observed within this timeframe, the program's adaptive management clause triggers an immediate re-evaluation of the estimated groundwater benefit volumes necessary to avoid MT exceedances and ensure the GSA remains on track to meet its 2040 sustainability goals.

5.2.12.6 Permitting Requirements [23 CCR § 354.44(b)(3)]

No permitting is required for this PMA.

5.2.12.7 Legal Authority [23 CCR § 354.44(b)(7)]

The PID GSA has authority under SGMA to implement PMAs that support sustainable groundwater management (Water Code § 10725.2).

5.2.12.8 Public Notification and Engagement [23 CCR § 354.44(b)(1)(B)]

Projects undertaken by public agencies are subject to public review and participation requirements under CEQA and are discussed during publicly noticed meetings conducted in accordance with the Ralph M. Brown Act.

Projects implemented by individual landowners may not require formal public notification but may involve coordination with local agencies as part of permitting and implementation.

5.2.12.9 Estimated Costs and Funding Sources [23 CCR § 354.44(b)(8)]

Implementation of the Sustainability Forecast Analysis is expected to require an initial one-time cost of approximately \$20,000 to support development of program components, including data analysis, modeling, and preparation of allocation adjustments and administrative procedures.

Ongoing costs are estimated to range from approximately \$0 to \$15,000 per year, depending on whether implementation is triggered in a given year. Annual costs may include continued monitoring and data evaluation, technical analysis to support determination of PMA implementation, landowner notification, and program administration.

Funding for this PMA is expected to be provided through existing PID GSA funding mechanisms, including groundwater extraction fees or other GSA revenue sources. Implementation costs may vary from year to year based on the need for program activation and the extent of required technical and administrative support.

5.3 Summary of Actions and Ability to Achieve Sustainability [23 CCR § 354.44(d)]

Groundwater sustainability within the Tule Subbasin is achieved through a coordinated set of PMAs implemented at both the Subbasin-wide and individual GSA levels. Collectively, these actions are designed to address the causes of overdraft, reduce groundwater demand, including both ongoing allocation management and targeted demand reduction actions, improve water supply reliability, and mitigate impacts to beneficial uses and users during the transition to sustainable conditions.

5.3.1 Subbasin-Wide Coordination and Monitoring Framework

A foundational component of the Subbasin's approach to sustainability is the implementation of coordinated, Subbasin-wide PMAs that support consistent monitoring, evaluation, and management of groundwater conditions across GSA boundaries. These include the FKC LS Monitoring, Management, and Mitigation Plans; the Tule Subbasin Mitigation Plan; the Southern Land Subsidence Study; and Monitoring Network Data Gap Filling efforts.

These coordinated PMAs provide the technical and institutional framework needed to understand and manage groundwater conditions at the appropriate regional scale. Enhanced monitoring networks, including GPS, extensometers, InSAR, and multi-completion monitoring wells, improve the resolution and reliability of data used to evaluate groundwater levels, aquifer conditions, and land subsidence. Ongoing and planned technical studies further refine understanding of the relationship between groundwater pumping and subsidence, including cross-boundary effects and the role of pumping from different aquifer zones.

In parallel, Subbasin-wide management and mitigation programs establish coordinated responses to groundwater conditions and associated impacts. The FKC LS Management Plan provides a framework for implementing management actions based on observed subsidence conditions, while the FKC LS Mitigation Plan establishes a structured process for addressing infrastructure impacts. Additionally, the Tule Subbasin Mitigation Plan establishes a structured process for addressing impacts to drinking water wells. Together, these programs ensure that groundwater management actions are informed by consistent data, implemented in a coordinated manner, and supported by mechanisms to address impacts that may occur during the transition to sustainability.

5.3.2 PID GSA-Implemented PMAs

Within this Subbasin-wide framework, the PID GSA has implemented a comprehensive set of PMAs focused on demand management, data collection, and program administration. These include groundwater accounting and allocation, fees and incentives, well registration, well metering, and well permit application review.

The PID GSA has taken a proactive approach to demand management by eliminating transitional pumping and immediately limiting groundwater extraction to a Sustainable Yield-based Allocation. Together with ongoing groundwater accounting, these actions directly address overdraft conditions and provide a strong foundation for achieving sustainability within the PID Plan Area.

Supporting this effort are programs that improve the accuracy and completeness of groundwater data, including well registration and well metering. These PMAs provide the information necessary to quantify groundwater use, evaluate conditions, and support enforcement of Sustainable Yield-based Allocations. The well permit application review PMA further supports sustainability by helping ensure that new wells are constructed in a manner that avoids or minimizes potential impacts to groundwater resources and nearby users.

The Fees and Incentives PMA complements these efforts by providing financial mechanisms to encourage compliance with groundwater allocations and discourage excess pumping. Together, these PMAs establish a robust regulatory and administrative framework that enables the PID GSA to effectively manage groundwater use and respond to changing conditions.

5.3.3 Supply Augmentation and Demand Reduction Strategies

In addition to regulatory and administrative actions, the PID GSA supports a range of PMAs intended to improve groundwater conditions and reduce groundwater demand over time. These include Managed Aquifer Recharge and Banking, Surface Water Development, In-Lieu Recharge, Agricultural Land Fallowing, Agricultural Land Retirement, and other targeted management actions and projects, including the PID Recharge Basin Project.

Managed Aquifer Recharge and Banking is implemented within the PID Plan Area through recharge and banking activities conducted by landowners and coordinated through the PID GSA's accounting and reporting framework. These activities increase groundwater storage and support improved groundwater levels, contributing to enhanced drought resilience and reduced subsidence rates.

The Surface Water Development PMA, including the Southeast Service Area Lateral Project and Northwest Service Area Pipeline Project, is intended to increase the availability and delivery of surface water supplies to areas that have historically relied on groundwater. By expanding surface water use for irrigation, this PMA reduces groundwater pumping and supports improved groundwater conditions, particularly in subsidence-prone areas.

The In-Lieu Recharge PMA is a forward-looking strategy intended to increase the use of existing surface water supplies for irrigation in lieu of groundwater pumping, particularly in areas near the Friant-Kern Canal where reducing Lower Aquifer pumping is critical to minimizing subsidence. This approach emphasizes substitution of surface water for groundwater use rather than development of new supplies. Similarly, Agricultural Land Fallowing and Retirement represent potential demand reduction strategies to reduce groundwater use through voluntary land fallowing or repurposing, particularly in areas where other PMAs may be less effective or more costly.

The Sustainability Forecast Analysis provides a proactive, data-driven framework to identify potential future sustainability concerns and evaluate whether existing PMAs are sufficient to avoid MT exceedances and undesirable results.

These PMAs provide flexibility within the overall management framework and allow the PID GSA to respond to changing hydrologic conditions, operational constraints, and groundwater system responses over time.

5.3.4 Integration of Action and Path to Sustainability

The PMAs described above function collectively as an integrated management strategy that addresses both the causes and effects of groundwater overdraft. Subbasin-wide monitoring and coordination efforts provide the technical foundation for understanding groundwater conditions and ensuring consistent implementation across GSAs. PID GSA-specific PMAs establish enforceable mechanisms to reduce groundwater demand and improve data reliability, while supply augmentation and demand reduction strategies provide additional tools to support long-term sustainability. The Sustainability Forecast Analysis provides an additional mechanism to respond to short-term or localized conditions that may otherwise result in MT exceedances.

The PID GSA's decision to eliminate transitional pumping and operate within the Sustainable Yield-based Allocation represents a significant and proactive step toward achieving sustainability. When combined with implementation of managed aquifer recharge, expansion of surface water use, and potential demand reduction actions such as agricultural land retirement, these efforts are expected to stabilize groundwater levels, reduce land subsidence rates, protect groundwater quality, and avoid undesirable results within the PID Plan Area and the broader Tule Subbasin.

Continued implementation, monitoring, and refinement of these PMAs will allow the PID GSA and participating GSAs to respond to new information and changing conditions, ensuring groundwater management remains effective throughout GSP implementation.