

5. PROJECTS AND MANAGEMENT ACTIONS

The Terra Bella Irrigation District (TBID) 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 TBID GSA Groundwater Sustainability Plan (GSP) Plan Area (Plan Area).

Collectively, the TBID 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 TBID 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 TBID 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 TBID Plan Area.

Based on the historical period (water year [WY] 1987 to WY2024) groundwater budget, average annual groundwater pumping within the TBID Plan Area is estimated at approximately 10,200 acre-feet per year (AFY). This level of pumping has contributed to an average annual groundwater storage decline of approximately 1,800 AFY (see **Table 2-10**). Accordingly, the primary objective of the TBID GSA PMAs is to offset this historical overdraft by achieving an average annual benefit to the groundwater system of at least 1,800 AFY. However, as previously stated, the groundwater pumping simulated in the flow model is an overestimate, and actual groundwater pumping is approximately 2,000 AFY.

While addressing historical groundwater overdraft is expected to reduce many of the adverse groundwater conditions within the TBID Plan Area, land subsidence in the vicinity of the Friant-Kern Canal (FKC) remains a priority concern for the Tule Subbasin. The only portion of the TBID Plan Area within the current FKC Land Subsidence Management Area is the western non-contiguous area, which is TBID-owned land used exclusively for groundwater recharge basins. However, given the area's sensitivity to groundwater storage declines and the importance of protecting the FKC, TBID GSA intends to implement PMAs specifically intended to monitor and reduce groundwater pumping in areas adjacent to the FKC, including the establishment of groundwater pumping allocations within the FKC Land Subsidence Management Area, as appropriate.

To provide a reasonable margin of confidence in achieving sustainability, the TBID GSA plans to implement PMAs with a combined estimated groundwater benefit that exceeds the 1,800 AFY target, recognizing that actual benefits achieved by individual PMAs may vary over time. The TBID 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 TBID 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 TBID 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 TBID 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 TBID GSA now refers to as the FKC LS Monitoring Plan, continues to be implemented by participating GSAs, including the TBID 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:

- Global Positioning System (GPS) surveys to track land surface elevation changes;
- Extensometers to measure aquifer system compaction;
- Interferometric Synthetic Aperture Radar (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 the 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. TBID 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 TBID 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 TBID GSA's portion being \$2,500.

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 TBID 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, TBID GSA will evaluate measured land subsidence and metered groundwater pumping data to identify localized subsidence hotspots within the western-most non-contiguous portion of the TBID Plan Area, i.e., the portion of the TBID Plan Area within the FKC Land Subsidence Management 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 Tule 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. TBID 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 portion of the TBID Plan Area within the FKC Land Subsidence Management 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 TBID 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 the 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 TBID GSA will implement the FKC LS Management Plan PMA in coordination with the FWA and participating GSAs. The TBID GSA will be responsible for completing the localized hotspot evaluation, developing proposed management actions for priority areas within the portion of the TBID Plan Area within the FKC Land Subsidence Management Area, and coordinating those recommendations with FWA and participating GSAs as part of the 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 portion of the TBID Plan Area within the FKC Land Subsidence Management Area and development of targeted management actions for identified priority areas. Following completion of the initial phase, the TBID 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 TBID GSA to implement management actions within its jurisdiction and participate in the development of the coordinated FKC LS Management Plan to support the achievement of the sustainability goal.

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

The TBID 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 TBID 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 TBID 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 the 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 TBID 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 the 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 TBID 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 TBID GSA will be responsible for \$8,400.

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 the development of an agreed-upon mitigation framework, the 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 TBID GSA will participate in the implementation of the FKC LS Mitigation Plan in coordination with the Friant Water Authority and participating GSAs. The TBID GSA will contribute localized technical information and participate in the development and refinement of the plan, while coordinating mitigation recommendations applicable to the TBID 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 TBID GSA has the legal authority necessary to participate in the 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 TBID GSA to implement management actions within its jurisdiction and participate in the development of the coordinated FKC LS Mitigation Plan to support the achievement of the sustainability goal.

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

The TBID GSA will participate in the 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 TBID 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 TBID 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 the 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 coordinated 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 Drinking Water Well Mitigation Plan

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

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

Prior to the 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 DWW 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 DWW 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 DWW Mitigation Plan.

The DWW 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 DWW 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 DWW 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 DWW Mitigation Plan.

The DWW Mitigation Plan applies to impacts occurring after January 1, 2015. Impacts addressed through the 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 DWW 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 DWW 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 DWW 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 DWW 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 DWW 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 the technical evaluation, mitigation will be provided for claims that meet the criteria established in the DWW 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 DWW 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 DWW 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 the technical evaluation and determination of probable cause, these claims may also be eligible for limited funding to support the repair or replacement of impacted wells or the implementation of other acceptable mitigation measures with the consent of the affected landowner.

The DWW 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)]

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

The benefits of the program are realized immediately upon implementation through the 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 DWW Mitigation Plan does not require additional program-level permits. However, site-specific permitting may be required for individual mitigation actions, such as the construction of replacement wells or the 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 TBID GSA, have the legal authority necessary to implement the Tule Subbasin DWW Mitigation Plan pursuant to SGMA.

Under Water Code § 10725.2, GSAs are authorized to undertake actions necessary or appropriate to carry out SGMA, including the 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 DWW 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 DWW Mitigation Plan, participating GSAs coordinated with existing regional programs, including the TBWF and SHE, to incorporate input and leverage existing services.

Prior to implementation, participating GSAs, including the TBID 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 DWW Mitigation Plan are described in Section 10.0 of the DWW 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 TBWF and SHE, will provide immediate support for emergency and interim mitigation needs, with participating GSAs responsible for reimbursing eligible costs in accordance with the DWW 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., Safe and Affordable Funding for Equity and Resilience [SAFER] funding) are not available for direct implementation of the DWW Mitigation Plan.

The TBID 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. TBID GSA's portion of the reserve fund contribution is approximately \$10,000 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 TBID GSA is proposing to construct a single multi-completion monitoring well to fill water level, groundwater quality, and interconnected surface water monitoring data gaps for the TBID 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 TBID 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 TBID GSA will address identified data gaps within the TBID Plan Area consistent with 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, groundwater quality, and interconnected surface water networks.

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

This project involves the design, permitting, and installation of one multi-completion monitoring well to enhance the Subbasin's monitoring network. The primary objective is to address critical data gaps across the TBID Plan Area, particularly in areas of potential interconnected surface water 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:

- **Triple-Completion Well:** One well will be constructed to monitor shallow groundwater, the Upper Aquifer, and the Lower Aquifer. The deepest completion will be determined based on future

Subbasin technical consultation. 4-inch casings may be utilized to allow for groundwater quality sampling at greater depths.

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

1. Interconnected surface water identification: Location in close proximity to Deer Creek to monitor for potential interconnection of surface water and groundwater.
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).

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

1. Enhanced aquifer characterization,
2. Identification of interconnected surface water,
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 TBID 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., California Department of Water Resources (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 TBID 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 TBID 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 TBID GSA Consultant will prepare design specifications for monitoring well (1 month).
2. The TBID 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 TBID 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 and water levels are collected, this additional data will improve the GSA's understanding of how groundwater management affects groundwater levels and groundwater quality across the different principal aquifers. SMC for the new monitoring site may be established once five years of data have been collected, if the new monitoring well is added to the Representative Monitoring Networks (RMNs).

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 TBID 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 TBID GSA Monitoring Well Construction

Task	Cost
Design and Specification	\$7,000
Bidding	\$4,000
Permitting	\$6,000
Well Drilling and Construction ¹	\$390,000
Engineering (Construction Management)	\$15,000
Total Cost	\$422,000

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

The total estimated cost for the implementation of the monitoring well is approximately \$422,000. 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. TBID GSA-Specific Projects and Management Actions [23 CCR § 354.44]

The TBID GSA-specific PMAs described in this section are implemented solely by the TBID GSA to support achievement of the Tule Subbasin sustainability goal and to address groundwater conditions within the TBID 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, 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 TBID GSA Board, other Tule Subbasin GSAs, and stakeholders, supporting informed decision-making and enabling the TBID GSA to adapt management strategies and policies over time in a manner consistent with SGMA requirements. Collectively, these PMAs are intended to provide the TBID 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 TBID GSA to quantify, track, and manage groundwater use in accordance with SGMA and the TBID GSA GSP. This framework is implemented through the TBID GSA Rules and Regulations (**Appendix B**), which define the structure for groundwater accounting, allocation, and enforcement.

The TBID GSA tracks water use at individual parcels and maintains records for individual landowners based on quantities reported in accordance with the TBID 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, Well Metering Policy**.

The TBID 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 TBID 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 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 Measurable Objectives (MOs) to better reflect the Subbasin's actual hydrogeologic response.

To quantify the benefits and progress of this project, the TBID 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 a priority within the TBID Plan Area due to long-term overdraft conditions within the Subbasin. 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 TBID GSA Rules and Regulations, which establish the legal, administrative, and operational framework for groundwater accounting, allocation, and compliance.

The TBID GSA maintains parcel-level groundwater accounts for individual landowners within an accounting system that records water use and available supplies. This allows both the TBID GSA and landowners to monitor groundwater use, track groundwater allocations, and manage groundwater use within the TBID Plan Area.

Groundwater allocations are established annually based on the Tule Subbasin Sustainable Yield and are assigned to individual landowner accounts. Groundwater use is quantified using meter measurements from required flow meters and reported 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 TBID 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 TBID GSA Rules and Regulations establish requirements for compliance with groundwater allocations, including provisions for enforcement where groundwater use exceeds allocated amounts. These provisions include financial penalties and adjustments to future allocations and 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 TBID GSA reviews groundwater pumping volumes periodically throughout the WY. The TBID 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.

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 TBID GSA adopted Resolution 2024-09-01 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.

On average, historic groundwater pumping within the TBID Plan Area has been below the Sustainable Yield-based Allocation. Although historic pumping has been below the Sustainable Yield-based Allocation, the TBID GSA's resolution eliminated the ability of landowners within the TBID Plan Area to use transitional pumping credits in future years.

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 TBID 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 TBID GSA Rules and Regulations.

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

The TBID 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 TBID GSA conducted outreach to support the implementation of the groundwater allocation 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 the groundwater accounting and allocation framework. In addition, TBID GSA continues to conduct one-on-one meetings with landowners to provide guidance on groundwater allocation and accounting.

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

Initial costs for this PMA are associated with the development of the groundwater accounting and allocation framework, including preparation of the TBID GSA Rules and Regulations and supporting technical and administrative processes. These efforts included consultant support for program development, technical analysis, and regulatory drafting.

Ongoing costs are associated with the administration of the groundwater accounting and allocation program, including data management, tracking of groundwater use and allocations, compliance evaluation, and coordination with landowners. These activities may involve ongoing technical and administrative support.

Funding for this PMA 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 TBID GSA to identify, track, and maintain records of groundwater wells within its jurisdiction. The program is established through the TBID GSA Rules and Regulations.

Under this program, groundwater wells are required to be registered with the TBID Plan Area, including submittal of key information such as ownership, location, and operational details. Under the current TBID GSA Rules and Regulations, wells extracting two acre-feet or less per WY for domestic purposes are not required to register. The TBID GSA is considering removing this exception in a future update to its Rules and Regulations to support development of a more complete inventory of groundwater wells within the GSA.

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 TBID 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 TBID 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 the development of a complete inventory of groundwater wells within the TBID 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 TBID 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 TBID GSA Rules and Regulations and applies to wells within the TBID 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 TBID 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 TBID 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 TBID 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 TBID GSA in WY2025.

Initial registration of wells within the TBID Plan Area has been completed. TBID GSA completed a field inventory confirming well owner compliance with well registration requirements. Current efforts are focused on verifying submitted information and addressing data gaps in well registration records.

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 TBID 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 TBID 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 the 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 TBID 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 TBID GSA Board of Directors 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 TBID GSA to measure and report groundwater extraction from wells within the TBID Plan Area. These requirements are defined in Section 2.02 of the TBID GSA Rules and Regulations (**Appendix B**) and are intended to ensure accurate and consistent tracking of groundwater use.

Under this program, active groundwater production wells are required to be equipped with flow meters that meet specified performance and installation standards. 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 TBID operators, and where multiple meters are used on a property, well owners must provide documentation identifying meter locations and associated service areas.

TBID GSA staff read well meters and record groundwater extraction on a monthly basis, within 30 days following the end of each month. Recorded 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 TBID 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 TBID 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 TBID 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 TBID 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 TBID GSA Rules and Regulations and applies to groundwater production wells within the TBID 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 TBID 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 TBID GSA requirements. Metering requirements apply to all active production wells subject to the TBID GSA groundwater production and reporting requirements as defined in the TBID GSA Rules and Regulations. Wells extracting two acre-feet or less per WY for domestic purposes are currently not required to be registered and thus do not require meters.

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

All meters must be inspected and validated by a TBID 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 TBID GSA may arrange for calibration and recover associated costs.

TBID GSA staff record groundwater extraction based on meter readings on a monthly basis within the required reporting timelines. The TBID 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. Well meters were installed on all non-de minimis wells within the TBID Plan Area by the end of 2025.

Benefits are expected to increase as metering coverage continues, 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 TBID 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 TBID 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 TBID GSA has conducted outreach to support implementation of the Well Metering Policy through publicly noticed meetings associated with the 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 TBID 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 TBID GSA for meters installed by a TBID GSA contractor.

The TBID 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 TBID GSA to review proposed new wells within the TBID Plan Area in coordination with Tulare County.

Through this process, the TBID 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 TBID 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 TBID 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 a 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 TBID Plan Area. Upon receipt of a proposed well permit application from Tulare County, the TBID 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 TBID 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 TBID Plan Area. Well permit applications are forwarded to the TBID GSA by Tulare County and presented to the Tule Subbasin MAC for initial review during public meetings.

As part of this review, the TBID 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 TBID 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 TBID 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 TBID GSA may also recommend modifications to proposed well construction or siting where necessary to avoid or minimize potential undesirable results.

The TBID 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 TBID 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 TBID GSA's role in the Well Permit Application Review PMA is currently in development for new well permit applications received within the TBID Plan Area. TBID 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 TBID GSA does not have authority to approve or deny well permit applications.

The TBID 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 TBID 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 (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 TBID GSA GSP.

While the TBID 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 TBID 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 TBID 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 TBID 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 TBID 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 TBID Plan Area. This PMA is implemented through the TBID 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 TBID GSP. In addition, the Rules and Regulations provide the TBID 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 TBID 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 the 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 TBID 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 TBID 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 the administration of the TBID 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 TBID 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 TBID 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 TBID 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 TBID GSA Board.

Fees and penalty rates are established and updated by the TBID 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 TBID 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 TBID GSA's authority under SGMA and are administered through the adopted Rules and Regulations.

Where applicable, the TBID 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 TBID 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 (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 TBID GSP.

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

The TBID 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 TBID 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 the TBID GSA's regular governance and rulemaking processes. Each year, the TBID 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 TBID 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 TBID 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 TBID GSP and associated management actions.

5.2.6. Managed Aquifer Recharge

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

The Managed Aquifer Recharge PMA consists of activities implemented by the TBID to intentionally recharge groundwater using available surface water supplies. Within the TBID Plan Area, recharge is conducted exclusively by the TBID using Deer Creek surface water in the western-most non-contiguous portion of the TBID Plan Area, adjacent to the Friant-Kern Canal. These recharge activities are intended to enhance groundwater levels in the Upper Aquifer and increase groundwater storage.

Recharge activities are conducted in accordance with TBID policies and operational practices and are not associated with groundwater recovery or banking for later extraction by TBID. The Saucelito Irrigation District has periodically used the extraction wells adjacent to the recharge basins, but this extraction only occurred in extremely dry years, once in the last thirty years, and is not anticipated to occur in the future. Rather, recharge provides a localized benefit to groundwater conditions and supports broader subbasin sustainability objectives.

Recharge volumes and associated surface water deliveries are tracked through the TBID GSA's groundwater accounting system to support monitoring and evaluation of recharge activities.

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 activities implemented by the TBID are intended to support sustainable groundwater management by increasing groundwater inflows, improving groundwater storage, and

enhancing water supply reliability. Recharge of Deer Creek surface water in the western-most non-contiguous portion of the TBID Plan Area contributes to improved groundwater elevations and supports multiple sustainability indicators, including groundwater levels, groundwater storage, and land subsidence.

Expected outcomes include increased groundwater storage, improved groundwater elevations, enhanced drought resilience, and reduced rates of land subsidence. Recharging during periods of surface water availability allows excess supplies to be stored within the aquifer, helping to stabilize groundwater conditions and reduce the risk of undesirable results. Recharge activities may also provide ancillary benefits, such as a 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. In addition, recharge activities primarily benefit the Upper Aquifer, while a portion of groundwater production may occur from deeper aquifer zones. As additional data from well registration and monitoring efforts become available, the TBID GSA will continue to evaluate the extent to which recharge influences groundwater conditions across aquifer zones and whether complementary approaches, such as in lieu use of surface water, may further enhance program effectiveness.

Progress will be evaluated using trends in groundwater levels, changes in groundwater storage, and recharge volumes, as monitored through the Tule Subbasin Monitoring Plan. While the effects of recharge activities 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 the Managed Aquifer Recharge PMA is carried out by the TBID using available Deer Creek surface water in the western-most non-contiguous portion of the TBID Plan Area, adjacent to the Friant-Kern Canal. Recharge activities occur when surface water supplies are available and when site-specific conditions are suitable for recharge, including appropriate soil, hydrogeologic conditions, and availability of recharge infrastructure.

Recharge operations are managed by the TBID in accordance with its policies and operational practices, with recharge volumes varying based on surface water availability and hydrologic conditions. Implementation is therefore opportunistic and influenced by seasonal and annual variability in surface water supply.

The TBID GSA evaluates recharge performance over time using monitoring data and may adjust recharge operations or consider complementary approaches, as needed, to support the sustainability objectives of this Plan.

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

Implementation of Managed Aquifer Recharge is carried out by the TBID, which is responsible for the delivery of surface water, operation of recharge facilities, and accounting and reporting of recharge activities.

Key implementation components include:

- Delivery of Deer Creek surface water to recharge facilities in accordance with TBID policies governing water availability and scheduling;
- Operation and maintenance of recharge facilities by the TBID;
- Measurement and tracking of recharge volumes using equipment installed, maintained, and operated by the TBID;
- Recording and reporting of recharge volumes through the TBID GSA's groundwater accounting system; and
- Program oversight and compliance with applicable operational and regulatory requirements.

Recharge volumes are measured and recorded by the TBID and incorporated into the TBID GSA's accounting and monitoring framework to support evaluation of recharge performance and groundwater conditions.

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

Managed Aquifer Recharge activities have been implemented by the TBID since the late 1990s and are ongoing. Recharge operations continue to be refined over time, including potential updates to operational practices and program administration.

Benefits are expected to accrue over time as recharge activities increase groundwater storage and improve groundwater conditions. The cumulative benefits of recharge may become more pronounced over multiple years of implementation, particularly during periods of sustained recharge, and are expected to support improved groundwater levels and reduced subsidence over time.

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

Permitting requirements for Managed Aquifer Recharge activities implemented by the TBID depend on site-specific conditions and the nature of recharge operations. Recharge activities are subject to applicable federal, state, and local regulations, particularly where construction, land disturbance, or potential impacts to natural resources may occur.

Potential permitting and compliance requirements may include, but are not limited to:

- Compliance with CEQA, including preparation of appropriate environmental documentation;

- Compliance with the National Environmental Policy Act (NEPA), where federal funding or approvals are involved;
- Coverage under the Construction General Permit and preparation of a Stormwater Pollution Prevention Plan (SWPPP), where applicable;
- 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 or resources are affected; and
- Applicable local permits, including building or grading permits issued by Tulare County.

Specific permitting requirements will vary depending on the scale, location, and nature of recharge activities.

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

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

Recharge activities within the TBID Plan Area are implemented by the TBID in accordance with its operational authority, policies, and applicable regulatory requirements. The TBID GSA supports these activities through monitoring, accounting, and evaluation of recharge in support of the sustainability objectives of the GSP.

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

Public notification and engagement for Managed Aquifer Recharge activities implemented by the TBID occur through publicly noticed meetings of the TBID Board, conducted in accordance with the Ralph M. Brown Act. Information regarding recharge operations, planning, and program updates is made available to the public through these meetings.

Recharge activities undertaken by the TBID may also be subject to applicable public review and participation requirements under the California Environmental Quality Act, where environmental review is required.

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

Costs for Managed Aquifer Recharge activities implemented by the TBID vary depending on the availability of surface water supplies and the scope of recharge operations. Costs may include planning and environmental review, preparation of construction documents and permits, construction or improvement of recharge facilities, and ongoing operation and maintenance.

The TBID is responsible for the design, construction, operation, and maintenance of recharge facilities, as well as associated regulatory compliance. The TBID GSA may incur administrative costs related to program oversight, monitoring, accounting, and reporting.

Funding for recharge activities and associated program costs is expected to be supported through existing TBID and TBID GSA funding mechanisms, including district resources and applicable fees, with potential grant funding pursued where available.

5.2.7. Class 1/Class 2 Surface Water Exchange

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

TBID participates in a surface water exchange arrangement with the Lower Tule River Irrigation District (LTRID) involving Central Valley Project (CVP) Friant Division water delivered through the Friant-Kern Canal.

The exchange provides a mechanism for the districts to make water available to one another under specified allocation and operational conditions. During years with higher CVP Class 1 allocations, TBID may make water available under the exchange arrangement. During years with reduced CVP Class 1 allocations, TBID may receive supplemental surface water supplies through the exchange. The specific operation of the exchange is governed by the applicable agreement and operational requirements.

This PMA recognizes the existing exchange arrangement as a water supply reliability measure that supports groundwater sustainability within the TBID Plan Area. By improving the reliability of surface water deliveries during drought and other water-short conditions, the exchange may reduce groundwater pumping demand within the TBID Plan Area.

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)]

The Class 1/Class 2 Surface Water Exchange is intended to improve the reliability of surface water supplies available to TBID during years when CVP Class 1 allocations are reduced. By providing access to supplemental surface water supplies during low-allocation conditions, the exchange reduces reliance on groundwater pumping within the TBID Plan Area.

The expected outcome of this PMA is increased surface water availability and a corresponding reduction in groundwater demand during years when the exchange is utilized. Benefits are expected to occur primarily during dry and critically dry years when CVP Class 1 allocations fall below levels needed to meet district demands.

The effectiveness of the PMA will be evaluated using the following metrics:

- Annual CVP Class 1 allocation percentage;
- Volume of water received through the exchange;
- Total annual surface water deliveries within TBID; and
- Estimated reduction in groundwater pumping attributable to exchanged surface water supplies.

This PMA supports achievement of the Tule Subbasin's sustainable management criteria by reducing groundwater demand during low-allocation years, thereby supporting progress toward groundwater level measurable objectives and helping avoid exceedance of applicable minimum thresholds.

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

The Class 1/Class 2 Surface Water Exchange is generally structured around a 60 percent CVP Class 1 allocation threshold. During years when Class 1 allocations are greater than or equal to 60 percent, TBID may make water available under the exchange arrangement. During years when Class 1 allocations are less than 60 percent, TBID may receive supplemental Class 1 water supplies through the exchange, subject to water availability and applicable operational and regulatory requirements.

The primary groundwater sustainability benefit of the PMA occurs during years when Class 1 allocations are below 60 percent and exchanged surface water supplies are available to reduce groundwater pumping demand within the TBID Plan Area.

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

TBID will continue to maintain and administer the existing Class 1/Class 2 Surface Water Exchange with LTRID in accordance with the applicable exchange agreement and operational requirements. Implementation of the PMA will consist of coordinating with LTRID and other applicable entities to evaluate annual CVP allocation conditions and determine whether exchange conditions are met.

During years when exchange conditions occur, TBID will coordinate the transfer and delivery of exchanged water supplies consistent with applicable contractual, operational, and regulatory requirements. TBID will track exchange-related water volumes and incorporate available information into the GSP implementation and monitoring program.

Because the exchange is an existing water supply management arrangement, no new facilities or infrastructure are currently anticipated to implement this PMA.

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

The Class 1/Class 2 Surface Water Exchange was established in 2000 and is currently available for implementation. Implementation occurs on an as-needed basis in response to annual CVP allocation conditions and in accordance with the applicable exchange agreement and operational requirements. Because the exchange is already established, implementation can occur immediately when exchange conditions are met.

Expected benefits accrue during the years when the exchange is utilized. The primary benefits, including increased surface water availability and reduced groundwater pumping demand within the TBID Plan Area, are anticipated to occur during years when CVP Class 1 allocations are less than 60 percent and supplemental surface water supplies are available through the exchange. Based on TBID's published allocation history, annual Class 1 allocations were below the 60 percent exchange threshold in 2021 and 2022. These conditions typically occur during drought and other water-short periods, when maintaining

reliable surface water supplies provides the greatest benefit for reducing groundwater pumping demand and supporting groundwater sustainability objectives.

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

The Class 1/Class 2 Surface Water Exchange is an existing water management action. No new local, state, or federal permits are currently anticipated specifically for implementation of this PMA.

Implementation of the exchange remains subject to the terms and conditions of applicable agreements, Central Valley Project operational requirements, and any approvals or regulatory requirements that may apply to individual exchange transactions. If future modifications to the exchange arrangement are proposed, TBID will evaluate whether additional approvals or authorizations are required.

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

TBID has authority to implement this PMA pursuant to its powers and authorities as an irrigation district under California law, including the authority to acquire, manage, convey, and distribute water supplies and to enter into agreements related to water management and delivery. Implementation of this PMA is further supported by TBID's Central Valley Project water service contract and the applicable exchange agreement with Lower Tule River Irrigation District.

The Class 1/Class 2 Surface Water Exchange will continue to be implemented in accordance with the terms and conditions of applicable contracts, agreements, and regulatory requirements.

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

The Class 1/Class 2 Surface Water Exchange is an existing water management action implemented pursuant to agreements between TBID and LTRID. Information regarding the exchange and its groundwater sustainability benefits will be communicated through the TBID GSA's ongoing GSP implementation, reporting, and stakeholder engagement activities.

The public will have opportunities to receive information and provide input regarding this PMA through public meetings of the TBID GSA, GSP updates, annual reporting, and other stakeholder outreach activities conducted in accordance with SGMA and applicable public meeting requirements. Any future modifications to the exchange arrangement that require additional public review or agency approvals will be addressed through the applicable public notification and engagement processes.

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

The Class 1/Class 2 Surface Water Exchange is an existing water management action and does not currently require capital improvements or new infrastructure. Any costs associated with implementation are expected to be limited to routine administrative and water management activities.

Implementation of the PMA is expected to be funded through existing TBID operational and water management funding sources.

5.2.8. Sustainability Forecast Analysis

5.2.8.1 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 TBID 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.

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

The 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 the 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 TBID 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.

5.2.8.3 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 TBID Plan Area.

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

1. Annual Water Year Evaluation: At the conclusion of each water year (September 30), TBID GSA will perform a comprehensive technical review of the monitoring network.
2. Trend Analysis: Evaluate groundwater elevation and land subsidence data at each RMS.
3. 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.
4. If an MT exceedance is projected, TBID GSA will evaluate the magnitude, location, and likely causes of the projected exceedance and identify the potential management responses to avoid undesirable results.
5. Sustainability Forecast Analysis.
6. Historical Pumping Evaluation: Using historical data, correlate annual pumping volumes with observed water level and subsidence responses.
7. Quantification of Required Groundwater Benefit: Calculate the estimated annual groundwater benefit, expressed in AFY, necessary to avoid projected MT exceedances.
8. Management Response Evaluation: Management actions will be evaluated and targeted to maximize effectiveness and minimize economic disruption.
9. 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.

10. Management Recommendations: Develop recommendations regarding the implementation, modification, prioritization, or expansion of PMAs based on projected groundwater conditions and sustainability indicator trends.
11. Ongoing Monitoring & Adaptive Adjustment: The plan maintains an active feedback loop to evaluate whether groundwater conditions are responding as anticipated to implemented PMAs.
12. In-Season Evaluation: Continuously monitor groundwater levels and InSAR subsidence data throughout the year to evaluate whether observed conditions are consistent with forecasted trends.
13. 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.

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

The TBID 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 data from the prior water year. 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 the TBID 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.

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

No permitting is required for this PMA.

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

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

5.2.8.8 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.

5.2.8.9 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 the determination of PMA implementation, landowner notification, and program administration.

Funding for this PMA is expected to be provided through existing TBID 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 DWW 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 DWW 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. TBID GSA-Implemented PMAs

Within this Subbasin-wide framework, the TBID 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 TBID 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 TBID 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 TBID 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 TBID GSA supports a range of PMAs intended to improve groundwater conditions and reduce groundwater demand over time. These include Managed Aquifer Recharge and the Class 1/Class 2 Surface Water Exchange.

Managed Aquifer Recharge is actively implemented within the TBID Plan Area by the TBID using Deer Creek surface water in the western-most non-contiguous portion of the TBID Plan Area. These recharge activities increase groundwater storage and support improved groundwater levels, contributing to enhanced drought resilience and reduced subsidence.

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 TBID 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. TBID 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 TBID 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 ongoing monitoring, coordinated Subbasin-wide management actions, and adaptive implementation of additional PMAs, these efforts are expected to stabilize groundwater levels, reduce land subsidence, protect groundwater quality, and avoid undesirable results within the TBID Plan Area and the broader Tule Subbasin.

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

Table 5-1. Project Management Actions Summary

PMA Name	Summary Description	Status	Relevant Sustainability Indicators Affected				Estimated Benefit (AFY)
			Groundwater Levels & Storage	Groundwater Quality	Interconnected Surface Water	Land Subsidence	
FKC Land Subsidence Monitoring Plan	The FKC Land Subsidence Monitoring Plan is a coordinated, subbasin-wide monitoring program implemented by participating GSAs to track land subsidence conditions, particularly in areas affecting the Friant-Kern Canal. The program uses a standardized monitoring approach and an enhanced network, including GPS, extensometers, InSAR, and groundwater level monitoring, to evaluate subsidence and aquifer conditions.	Ongoing				✓	NA
FKC Land Subsidence Management Plan	The FKC Land Subsidence Management Plan is a coordinated, subbasin-wide management framework for participating GSAs to address land subsidence affecting the Friant-Kern Canal. The plan uses phased evaluations of localized subsidence hotspots and regional groundwater pumping influences to develop and refine coordinated management actions that avoid and minimize land subsidence impacts.	Planning	✓			✓	NA
Southern Land Subsidence Study	The Southern Land Subsidence Study evaluates the spatial correlation between groundwater pumping and land subsidence along a 12-mile-wide corridor of critical pipeline infrastructure. The findings will quantify cross-boundary impacts from various GSAs to inform potential pumping restrictions and the refinement of sustainable management criteria.	Ongoing	✓			✓	NA
FKC Land Subsidence Mitigation Plan	The Friant-Kern Land Subsidence Mitigation Plan provides a coordinated framework for participating GSAs and the Friant Water Authority to evaluate and address potential land subsidence impacts that may remain following implementation of the FKC LS Management Plan. The plan establishes methods for evaluating potential impacts, determining when mitigation may be warranted, identifying appropriate coordinated mitigation measures, and establishing funding mechanisms for future mitigation, if necessary.	Planning				✓	NA
Tule Subbasin Drinking Water Well Mitigation Plan	The Tule Subbasin Drinking Water Well Mitigation Plan is a coordinated, subbasin-wide framework implemented by participating GSAs to identify and mitigate impacts to beneficial uses and users of groundwater resulting from groundwater management activities. The plan establishes a formal, data-driven claims process and funding mechanism to evaluate impacts to drinking water wells, supported by technical evaluation and coordinated implementation among GSAs, and to implement appropriate mitigation measures during the transition to sustainable groundwater conditions.	Planning	✓	✓			NA
Monitoring Network Data Gap Filling	This project entails the design and installation of one multi-completion monitoring well to address critical data gaps within the TBID Plan Area. By utilizing a triple-completion configuration, the network will provide high-resolution data on vertical aquifer interactions and groundwater levels across distinct hydrogeologic units. Strategic site selection focuses on investigating interconnected surface water, managing cross-boundary flows with neighboring agencies, and refining aquifer parameters through proximity to existing production wells. This PMA currently focuses on the construction of a multi-completion monitoring well, but additional monitoring network data gap filling efforts may be incorporated as data gaps are identified and prioritized through the ongoing Tule Subbasin monitoring network evaluation.	Planning	✓	✓	✓	✓	NA
Groundwater Accounting and Allocation	The Groundwater Accounting and Allocation PMA is a framework implemented to track and manage groundwater use and establish allowable extraction limits based on the Tule Subbasin Sustainable Yield. TBID GSA staff maintain parcel-level accounts, track water use, and support compliance with allocations through integration with metering, reporting, and financial mechanisms.	Completed - Accruing Benefits	✓	✓		✓	1,100
Well Registration	The Well Registration PMA is a program implemented to identify and maintain a comprehensive inventory of groundwater wells within the TBID Plan Area. The program requires registration of wells and submittal of ownership, location, operational, and well construction information, including updates for new wells and changes in ownership or operation, to support accurate groundwater use and management records.	Ongoing	✓	✓	✓	✓	NA

PMA Name	Summary Description	Status	Relevant Sustainability Indicators Affected				Estimated Benefit (AFY)
			Groundwater Levels & Storage	Groundwater Quality	Interconnected Surface Water	Land Subsidence	
Well Metering Policy	The Well Metering Policy PMA establishes requirements for measuring and reporting groundwater extraction from wells within the TBID Plan Area. The program requires the installation of flow meters meeting specified accuracy and installation standards, and monthly reporting of groundwater use to support accurate tracking of pumping. This PMA provides the primary data source for quantifying groundwater use and supports implementation of groundwater accounting, allocation, and management programs.	Ongoing	✓	✓		✓	NA
Well Permit Application Review	The Well Permit Application Review PMA establishes a process for the TBID GSA to review proposed new wells in coordination with Tulare County to assess potential impacts to groundwater conditions and nearby beneficial uses and users. Through this process, the TBID GSA provides technical input on well siting, construction, and operation to support groundwater sustainability. While the TBID GSA does not approve or deny permits, this PMA supports the development of wells in a manner consistent with sustainability objectives and helps reduce the risk of undesirable results.	Planning	✓	✓	✓	✓	NA
Fees and Incentives	The Fees and Incentives PMA utilizes financial mechanisms, assessments, and enforcement tools to promote efficient water use and ensure compliance with groundwater management requirements and allocation limits. By combining penalties for overdraft with incentive-based credits for conservation and recharge activities, this framework functions as a demand management tool that supports the sustainable yield objectives of the TBID GSA GSP.	Ongoing	✓	✓		✓	NA
Managed Aquifer Recharge	The Managed Aquifer Recharge PMA consists of recharge activities implemented by the TBID using Deer Creek surface water to increase groundwater storage and improve groundwater conditions within the TBID Plan Area. Recharge is conducted in the western-most non-contiguous portion of the TBID Plan Area and is tracked through the TBID GSA’s accounting system to support monitoring and sustainable groundwater management objectives.	Ongoing	✓			✓	1,300
Class 1/Class 2 Surface Water Exchange	The Class 1/Class 2 Surface Water Exchange is a drought-resiliency measure that allows TBID and LTRID to exchange CVP water under specified allocation conditions. When Class 1 allocations fall below the 60% threshold identified in the exchange arrangement, TBID may receive supplemental surface water supplies that help offset groundwater pumping demand within the TBID GSA.	Ongoing	✓			✓	Up to 11,600
Sustainability Forecast Analysis	The TBID GSA will conduct an annual Sustainability Forecast Analysis to identify Representative Monitoring Sites at risk of future Minimum Threshold (MT) exceedances, estimate the groundwater benefit needed to avoid MT exceedances, and evaluate whether modifications to existing PMAs or implementation of additional PMAs should be considered.	Conceptual	✓	✓	✓	✓	2,400

NA = not applicable

Table 5-1. Project Management Actions Summary (continued)

PMA Name	Secondary					Source(s) of Water, if applicable	Circumstances for Implementation	Anticipated Start	Anticipated Completion	Timeline for Accrual of Expected Benefits	Permitting and Regulatory Process Requirements	Legal Authority Required	Public Noticing Process	Estimated Costs		
	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Mitigation Program	Data Gap Filling / Monitoring									One-time	Ongoing (per year)	Potential Funding Sources (s)
FKC Land Subsidence Monitoring Plan			✓		✓	NA	Overdraft	September 2021	Ongoing	2022	CEQA	GSA SGMA Authorities	Subbasin Stakeholder Meetings; Workshops; TBID GSA Board Meetings	NA	Benchmark Survey Subbasin: \$87,750 TBID: \$2,500	TBID (Assessments)
FKC Land Subsidence Management Plan			✓			NA	Overdraft	April 2026	December 2026	2027	CEQA; TBD	GSA SGMA Authorities	Subbasin Stakeholder Meetings; Workshops; TBID GSA Board Meetings	Plan Development : \$200,000 (Subbasin)	Variable	TBID (Assessments)
Southern Land Subsidence Study					✓	NA	Overdraft, Undesirable Results	April 2026	December 2026	2027	NA	GSA SGMA Authorities	Subbasin Stakeholder Meetings; TBID GSA Board Meetings	Subbasin: \$284,100; TBID: \$8,400	NA	TBID (Assessments)
FKC Land Subsidence Mitigation Plan				✓		NA	Overdraft, Undesirable Results	April 2026	December 2026	2027	None	JPA; GSA SGMA Authorities	Subbasin Stakeholder Meetings; TBID GSA Stakeholder Meetings	Plan Development : \$200,000 (Subbasin)	Variable	TBID (Assessments)
Tule Subbasin Drinking Water Well Mitigation Plan	✓			✓		NA	When groundwater management activities impact beneficial uses and users	December 2026	2040	2027	Site-specific permitting TBD	GSA SGMA Authorities	Future outreach to include Subbasin Stakeholder Meetings; Workshops; TBID GSA Board Meetings	NA	Subbasin: \$2.5M TBID: \$10,000	TBID (Assessments); Grant Funding (if available)
Monitoring Network Data Gap Filling	✓				✓	NA	Data Gap, Completion of other PMAs	January 2027	December 2027	December 2027	Tulare County Well Permit, CEQA	GSA SGMA Authorities	TBID GSA Board Meeting	\$422,000	Monitoring Costs: \$5,000	TBID (Assessments)
Groundwater Accounting and Allocation	✓		✓			NA	Overdraft	October 2020	Ongoing	October 2021	Remain consistent with CA Water Code § 10720.5	GSA SGMA Authorities	Subbasin Stakeholder Meetings; TBID GSA Board Meetings	NA	\$10,000	TBID (Assessments); Grant Funding (if available)

PMA Name	Secondary					Source(s) of Water, if applicable	Circumstances for Implementation	Anticipated Start	Anticipated Completion	Timeline for Accrual of Expected Benefits	Permitting and Regulatory Process Requirements	Legal Authority Required	Public Noticing Process	Estimated Costs		
	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Mitigation Program	Data Gap Filling / Monitoring									One-time	Ongoing (per year)	Potential Funding Sources (s)
Well Registration	✓		✓	✓	✓	NA	Data Gap	2023	2026	2023	None	GSA SGMA Authorities	TBID GSA Board Meetings; Landowner Outreach	\$35,000	\$2,500	TBID (Assessments)
Well Metering Policy	✓		✓		✓	NA	Overdraft	October 2024	2025	2025	None	GSA SGMA Authorities	TBID GSA Board Meetings; Landowner Outreach	\$82,500	\$10,000	TBID (Assessments)
Well Permit Application Review	✓		✓		✓	NA	CA Executive Order	2026	2026	2026	None	GSA SGMA Authorities	Subbasin Committee Meetings; Coordination with Tulare County	NA	\$2,500	TBID (Assessments)
Fees and Incentives						NA	Overdraft, Undesirable Results	2021	Ongoing	2021	NA	GSA SGMA Authorities	TBID GSA Board Meeting	NA	\$7,500	NA
Managed Aquifer Recharge			✓			Deer Creek	Available Surface Water Supplies	1990s	Ongoing	1990s	CEQA, NEPA, SWPPP, DCP, Tulare County	GSA SGMA Authorities	TBID Board Meetings	NA	Variable (Cost of Surface Water)	TBID (Assessments)
Class 1/Class 2 Surface Water Exchange			✓			Central Valley Project	Available Surface Water Supplies	2000	Ongoing	2000	NA	District Authorities	TBID Board Meetings	NA	Variable (Cost of Surface Water)	TBID (Assessments)
Sustainability Forecast Analysis			✓			NA	Overdraft, Undesirable Results	October 2026	December 2026	April 2027	NA	GSA SGMA Authorities	TBID GSA Board Meeting	\$20,000	\$0-15,000	TBID (Assessments)

NA = not applicable; JPA = Joint Powers Authority; DCP = Dust Control Plan; NEPA = National Environmental Policy Act; CEQA = California Environmental Quality Act; SWPPP = Stormwater Pollution Prevention Plan