9. IMPLEMENTATION PLAN

9.1. PLAN IMPLEMENTATION

Implementation of this GSP includes implementation of the projects and MAs included in **Chapter 8**, as well as the following:

- Modesto Subbasin GSAs administration and management
- Implementing the monitoring program
- Implementation of Projects and ~~MAs~~Management Actions
- Developing ~~annual reports~~Annual Reports
- Developing ~~required five-year GSP updates~~Periodic Evaluations

This chapter also describes the contents of both the annual and ~~five-year reports~~periodic evaluations that must be provided to the California Department of Water Resources (DWR) as required by Sustainable Groundwater Management Act (SGMA) regulations.

9.1.1. Implementation Schedule

Figure 9-1~~**Figure 9-1**~~ illustrates the GSP's implementation schedule. Included in the chart are activities necessary for ongoing GSP monitoring and updates, as well as tentative schedules for projects and MAs. Additional details about the activities included in the schedule are provided in these activities' respective sections of this GSP. ~~Adaptive management would only be implemented if triggering events are reached, as described in **Chapter 8**, and are shown as ongoing in the schedule.~~

Figure 9-1: Implementation Estimated Schedule[1,2]

#	Project/Management Action Name	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Beyond
Urban and Municipal Projects																						
1	Growth Realization of Surface Water Treatment Plant Phase II																					
2	Advanced Metering Infrastructure (AMI) Project																					
3	Storm Drain Cross Connection Removal ~~Project[2]~~Project[3]																					
4	Surface Water Supply Project																					
In-Lieu & Direct Recharge Projects																						
5	MID to Out-of-District Lands In-lieu and Direct Recharge Project																					
6	OID to Out-of-District Lands In-lieu and Direct Recharge Project																					
Flood Mitigation Projects																						
7	Tuolumne River Flood Mitigation Direct Recharge Project																					
8	Dry Creek Flood Mitigation Direct Recharge Project																					
Management Actions																						
1	~~Project development and design period~~Groundwater Allocation and Pumping Management Program	~~Project Construction~~		~~Project operation~~																		
2	Groundwater Extraction and Surface Water Reporting Program																					
3	Groundwater Extraction Fee																					
4	Groundwater Pumping Credit Market and Trading Program																					
5	Voluntary Conservation and/or Land Fallowing																					
6	Conservation Practices																					
7	Dry Well Mitigation Program																					

PMA development and design period Project construction PMA operation

[1] ~~Potential future~~Supplemental projects (Projects 9 through 13) and are not included because they ~~will be implemented by the GSAs as needed and~~ do not currently have a ~~planned~~definite schedule ~~at this time.~~.

[2] ~~This~~[2]In accordance with the resolution, a schedule for management actions 1 through 6 will be developed no later than January 31, 2026, and implemented no later than January 31, 2027. The dry well mitigation program (management action 7) will be developed and implemented no later than January 31, 2026.

[3] The Storm Drain Cross Connection Removal Project has multiple phases and components that will be developed over time and therefore portions are in development/design, construction, or are completed simultaneously.

9.2. IMPLEMENTATION COSTS BUDGETS AND FUNDING SOURCES

The operation of the Modesto Subbasin GSAs and GSP implementation will incur costs, which will require funding. The five primary activities that will incur costs are listed here. Table 9-1~~Table 9-1~~ summarizes these activities and their estimated costs. These estimates will be refined during GSP implementation as more information becomes available.

- Implementing the GSP
- Implementing GSP-related ~~projects~~Projects and ~~MAs~~Management Actions
- Operations of the GSAs
- Developing ~~annual reports~~Annual Reports
- Developing ~~five-year evaluation reports~~Periodic Evaluations

9.2.1. GSP Implementation and Funding

Costs associated with GSP implementation and operation of the GSAs could include the following:

- **Modesto Subbasin GSAs administration and legal support:** Overall program management and coordination activities, and legal services
- **Stakeholder Engagement:** GSAs board meetings, Technical Advisory (TAC) meetings, general GSA meetings, and public workshops as needed.
- **Outreach:** Email communications, newsletters, and website management
- **GSP implementation program management:** Program management and oversight of project and management action implementation, including coordination among GSAs Boards, staff and stakeholders, coordination of GSAs implementation technical activities, oversight and management of the GSAs consultants and subconsultants, budget tracking, schedule management, and quality assurance/quality control of project implementation activities, and integrating and maintaining a live projects and management actions list
- **Monitoring:** Data collection, filling data gaps, improvements and/or enhancements to DMS

Table 9-1: Modesto Subbasin GSAs and GSP Implementation Budgets

Activity	Estimated Annualized Budget [a]
GSP Implementation and GSA Management	
Administration and Legal Support for the GSAs	$35,000
Stakeholder and Board Engagement	$3,000
Outreach	$5,000
GSP Implementation Program Management	$25,000
Monitoring Program, including Data Management	$15,000
Annual Reporting	$100,000
~~Five-Year GSP Updates~~Periodic Evaluations (total cost estimated to be $500,000, $100,000 annually)	$100,000
Data Gap Analysis	TBD
Projects and Management Actions	
Project 1: Growth Realization of Surface Water Treatment Plant Phase II	$93,190,000
Project 2: Advanced Metering Infrastructure Project (AMI)	$20,000,000
Project 3: Storm Drain Cross Connection Removal Project	$40,000,000
Project 4: Waterford/Hickman Surface Water Pump Station and Storage Tank	$8,500,000
Project 5: Modesto Irrigation District In-lieu and Direct Recharge Project	$53,340,000 - $75,000,000
Project 6: Oakdale Irrigation District In-lieu and Direct Recharge Project	$17,780,000 - $25,000,000
Project 7: Tuolumne River Flood Mitigation and Direct Recharge Project	See Project 5 above [b]
Project 8: Dry Creek Flood Mitigation and Direct Recharge Project	$4,800,600 - $6,750,000
Project 9: Stanislaus River Flood Mitigation and Direct Recharge Project	To be developed ~~if implementation is needed~~during evaluation
Project 10: Detention Basin Standards Specifications Update	To be developed ~~if implementation is needed~~during evaluation
Project 11: Recharge Ponds	To be developed ~~if implementation is needed~~during evaluation
Project 12: OID Irrigation and Recharge to Benefit City of Oakdale	To be developed ~~if implementation is needed~~during evaluation
Project 13: Modesto Irrigation District ~~FloodMAR~~Flood-MAR Projects	To be developed ~~if implementation is needed~~during evaluation

Activity	Estimated Annualized Budget [a]
~~MA 1:~~ MA 1: Groundwater Allocation Program~~Voluntary Conservation and/or Land Fallowing~~	To be ~~developed if implementation is needed~~determined during evaluation
~~MA 2: Conservation Practices~~ ~~To be developed if implementation is needed~~	
MA ~~3:~~2: Groundwater Extraction and Surface Water Accounting Reporting Program	To be ~~developed if implementation is needed~~determined during evaluation
~~MA 4: Groundwater Allocation Program~~ ~~To be developed if implementation is needed~~	
MA ~~5~~3: Groundwater Extraction Fee	To be ~~developed if implementation is needed~~determined during evaluation
MA ~~6:~~4: Groundwater Pumping Credit Market and Trading Program	To be ~~developed if implementation is needed~~determined during evaluation
MA 5: Voluntary Conservation and/or Land Fallowing	To be determined during evaluation
MA 6: Conservation Practices	To be determined during evaluation
MA 7: Dry Well Mitigation Program	Baseline fund: $300,000

[a] Estimates are rounded and based on full implementation years (FY 2023 through FY 2042). Different costs may be incurred in FY 2022 as GSP implementation begins and during each 5-year update cycle.

[b] Projects 5 and 7 use the same infrastructure for surface water conveyance.

~~9.2.1.~~9.1.1. ~~GSP Implementation and Funding~~

~~Costs associated with GSP implementation and operation of the GSAs could include the following:~~

- ~~**Modesto Subbasin GSAs administration and legal support:** Overall program management and coordination activities, and legal services~~
- ~~**Stakeholder Engagement:** GSAs board meetings, Technical Advisory (TAC) meetings, general GSA meetings, and public workshops as needed.~~
- ~~**Outreach:** Email communications, newsletters, and website management~~
- ~~**GSP implementation program management:** Program management and oversight of project and management action implementation, including coordination among GSAs Boards, staff and stakeholders, coordination of GSAs implementation technical activities, oversight and management of the GSAs consultants and subconsultants, budget tracking, schedule management, and quality assurance/quality control of project implementation activities, and integrating and maintaining a live projects and management actions list~~
- ~~**Monitoring:** Data collection, filling data gaps, improvements and/or enhancements to DMS~~

Implementation of this GSP is projected to run between $250,000 and $350,000 per year, and projects ~~and MAs~~ totaling between $237,610,600 - $268,440,000. The GSAs have adopted a resolution committing to the development of MAs and a Well Mitigation Program. The GSAs anticipate having the policies and regulations, estimated future costs and funding sources for MAs and the Well Mitigation Program identified by January 31, 2026. Development of this GSP was funded through a Proposition 1 Sustainable Groundwater Planning Grant. Operation of the GSAs is fully funded through contributions from GSAs member agencies. Although ongoing operation of the GSAs is anticipated to include contributions from its member agencies, which are ultimately funded through customer fees or other public funds, additional funding may be required to implement the GSP. Of the implementation activities in the GSP, only project implementation is likely to be eligible for grant or loan funding; funding through grants or loans have varying levels of certainty. As such, the GSAs will develop a financing plan that may include one or more of the following financing approaches:

- **Pumping Fees:** Pumping fees would implement a charge for pumping that would be used to fund GSP implementation activities. In the absence of other sources of funding (i.e., grants, loans, or combined with assessments) fees could range between $10 and $100 per AF per year. To meet the funding needs of the GSP, fees would be lower when pumping is higher, such as current pumping levels, and higher when pumping is lower, such as when sustainable pumping levels are achieved. Although this funding approach would meet the financial needs of the GSP and GSAs, it may discourage pumping reductions due to cost. The financing plan developed by the GSAs would evaluate how to balance the need for funding with encouraging pumpers to commit to compliance with desired groundwater pumping reduction goals.
- **Assessments:** Assessments would charge a fee based on land areas. There are two methods for implementing an assessment based on acreage. The first option would assess a fee for all acres in the Subbasin outside of those in federal lands, which would cost approximately $5 to $10 per acre per year. This option would not distinguish between land use types. The second option would be to assess a fee only on irrigated acres. Based on current irrigated acreage, the assessment would be $10 to $50 per acre per year. Similar to the pumping fee approach, assessment based on irrigated acreage could affect agricultural operations and contribute to land use conversions, which could affect the assessment amount or ability to fully fund GSP implementation.
- **Combination of fees and assessments:** This approach would combine pumping fees and assessments to moderate the effects of either approach on the economy in the Basin. This approach would likely include an assessment that would apply to all acres in the Basin, rather than just to irrigated acreage. It would be coupled with a pumping fee to account for those properties that use more water than others.

During development of a financing plan, the GSAs would also determine whether to apply fees across the Subbasin as a whole or just within certain Management Areas. Prior to implementing any fee or assessment program, the GSAs would complete a rate assessment study and other analysis consistent with the requirements of Proposition 218.

The GSAs member agencies will pursue grants and loans to help pay for project costs to the extent possible. If grants or loans are secured for project implementation, potential pumping fees and assessments may be adjusted to align with operating costs of the GSAs and ongoing GSP implementation activities. A potential hurdle to the utilization of state grant funding is that delays in payment by the state can cause hardships for disadvantaged communities. Therefore, it would be appropriate to expedite payments associated with grant funding by DWR.

9.2.2. Projects and Management Actions

Costs for the Projects and MAs are described in **Chapter** Error! Reference source not found.~~8~~**: Projects and Management Actions** of this GSP. Financing of the projects and MAs would vary depending on the activity. Potential financing options for projects and MAs are provided in **Table 9-2**~~**Table 9-2**~~, though other financing may be pursued as opportunities arise or as appropriate.

Table 9-2: Financing Options for Proposed Projects, Management Actions, and Adaptive Management Strategies

Project/Activity	Responsible Entity	Potential Financing Options
Projects		
Project 1: Growth Realization of Surface Water Treatment Plant Phase II	City of Modesto/MID	City of Modesto Operating Costs Grants and Loans
Project 2: Advanced Metering Infrastructure Project (AMI)	City of Modesto	City of Modesto Operating Costs Grants and Loans
Project 3: Storm Drain Cross Connection Removal Project	City of Modesto	City of Modesto Operating Costs Grants and Loans
Project 4: Waterford/Hickman Surface Water Pump Station and Storage Tank	City of Waterford	City of Waterford Operating Costs
Project 5: Modesto Irrigation District In-lieu and Direct Recharge Project	NDE Areas	Grants and Loans Participating NDE landowners
Project 6: Oakdale Irrigation District In-lieu and Direct Recharge Project	NDE Areas	Grants and Loans Participating NDE landowners
Project 7: Tuolumne River Flood Mitigation and Direct Recharge Project	NDE Areas	Grants and Loans Participating NDE landowners
Project 8: Dry Creek Flood Mitigation and Direct Recharge Project	Stanislaus County/NDE Areas	Grants and Loans Participating NDE landowners
Project 9: Stanislaus River Flood Mitigation and Direct Recharge Project	NDE Areas	Grants and Loans Participating NDE landowners
Project 10: Retention Basin Standards Specifications Update	City of Modesto	Grants and Loans City of Modesto Operating Costs
Project 11: Recharge Ponds	NDE Areas	Grants and Loans Participating NDE landowners
Project 12: OID Irrigation and Recharge to Benefit City of Oakdale	OID/City of Oakdale	Grants and Loans City of Oakdale Operating Costs
Project 13: Modesto Irrigation District Flood-MAR Projects	MID	Grants and Loans MID Operating Costs
Management Actions		
MA 1: Groundwater Allocation Program~~MA 1: Voluntary Conservation and/or Land Fallowing~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies
MA 2: Groundwater Extraction and Surface Water Accounting Reporting Program~~MA 2: Conservation Practices~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies
MA 3: Groundwater Extraction Fee~~MA 3: Groundwater Extraction and Surface Water Accounting Reporting Program~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies
MA 4: Groundwater Pumping Credit Market and Trading Program~~MA 4: Groundwater Allocation Program~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies
MA 5: Voluntary Conservation and/or Land Fallowing~~MA 5: Groundwater Extraction Fee~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies
MA 6: Conservation Practices~~MA 6: Groundwater Pumping Credit Market and Trading Program~~	GSAs	Grants and Loans GSA Operating Funds GSA Member Agencies

9.3. ANNUAL REPORTS

Annual reports must be submitted by April 1 of each year following GSP adoption per California Code of Regulations. Annual reports must include three key sections as follows:

- General Information
- Basin Conditions
- Plan Implementation Progress

An outline of what information will be provided in each of these sections in the annual report is included below. Annual reporting will be completed in a manner and format consistent with Section 356.2 of the SGMA regulations. As annual reporting continues, it is possible that this outline will change to reflect Subbasin conditions, priorities of the GSAs, and applicable requirements.

9.3.1. General Information

General information will include an executive summary that highlights the key content of the annual report. As part of the executive summary, this section will include a description of the sustainability goals, provide a description of GSP projects and their progress as well as an annually updated implementation schedule and map of the Subbasin. Key components as required by SGMA regulations include:

- Executive Summary
- Map of the Basin

9.3.2. Basin Conditions

Basin conditions will describe the current groundwater conditions and monitoring results. This section will include an evaluation of how conditions have changed in the Subbasin over the previous year and compare groundwater data for the year to historical groundwater data. Pumping data, effects of project implementation (e.g., recharge data, conservation, if applicable), surface water flows, total water use, and groundwater in storage will be included. Key components as required by SGMA regulations include:

- Groundwater elevation data from the monitoring network
- Hydrographs of elevation data
- Groundwater extraction data
- Surface water supply data
- Total water use data
- Change in groundwater in storage, including maps

9.3.3. Plan Implementation Progress

Progress toward successful plan implementation would be included in the annual report. This section of the annual report would describe the progress made toward achieving interim milestones as well as implementation of projects and MAs. Key components as required by SGMA regulations include:

- Plan implementation progress
- Sustainability progress

This section may include updates to the projects and management actions list, as new project ideas are presented or existing projects are phased out, completed, or found not to be feasible.

9.4. ~~Five-Year~~Periodic Evaluation ~~Report~~

SGMA requires evaluation GSPs regarding their progress toward meeting approved sustainability goals at least every five years. SGMA also requires developing a written assessment and submitting this assessment to DWR. An evaluation must also be made whenever the GSP is amended. A description of the information that will be included in the ~~five-year report~~periodic evaluation is provided below and would be prepared in a manner consistent with Section 356.4 of the SGMA regulations.

9.4.1. Sustainability Evaluation

This section will contain a description of current groundwater conditions for each applicable sustainability indicator and will include a discussion of overall Subbasin sustainability. Progress toward achieving interim milestones and measurable objectives will be included, along with an evaluation of groundwater elevations (i.e., those being used as direct or proxy measures for the sustainability indicators) in relation to minimum thresholds. If any of the adaptative management triggers are found to be met during this evaluation, a plan for implementing adaptive management described in the GSP would be included.

9.4.2. Plan Implementation Progress

This section will describe the status of project and ~~MA~~management action implementation, and report on whether any adaptive ~~MA~~management action triggers had been activated since the previous ~~five-year report~~periodic evaluation. An updated project implementation schedule will be included, along with any new projects that were developed to support the goals of the GSP and a description of any projects that are no longer included in the GSP. The benefits of projects that have been implemented will be included, and updates on projects and MAs that are underway at the time of the ~~five-year report~~periodic evaluation will be reported.

9.4.3. Reconsideration of GSP Elements

Part of the ~~five-year report~~periodic evaluation will include a reconsideration of GSP elements. As additional monitoring data are collected during GSP implementation, land uses and community characteristics change over time, and GSP projects and ~~MAs~~management actions are implemented, it may become necessary to revise the GSP. This section of the ~~five-year report~~periodic evaluation will reconsider the Basin setting, management areas, undesirable results, minimum thresholds, and measurable objectives. If appropriate, the ~~five-year report~~periodic evaluation will recommend revisions to the GSP. Revisions would be informed by the outcomes of the monitoring network, and changes in the Basin, including changes to groundwater uses or supplies and outcomes of project implementation.

9.4.4. Monitoring Network Description

A description of the monitoring network will be provided in the ~~five-year report.~~periodic evaluation. Data gaps, or areas of the Subbasin that are not monitored in a manner commensurate with the requirements of Sections 352.4 and 354.34(c) of the SGMA regulations will be identified. An assessment of the monitoring network's function will also be provided, along with an analysis of data collected to date. If data gaps are identified, the GSP will be revised to include a program for addressing these data gaps, along with an implementation schedule for addressing gaps and how the GSAs will incorporate updated data into the GSP.

9.4.5. New Information

New information that becomes available after the ~~last five-year~~previous evaluation or GSP amendment would be described and evaluated. If the new information warrants a change to the GSP, this would also be included.

9.4.6. Regulations or Ordinances

The ~~five-year report~~periodic evaluation will include a summary of the regulations or ordinances related to the GSP that have been implemented by DWR since the previous report, and address how these may require updates to the GSP.

9.4.7. Legal or Enforcement Actions

Enforcement or legal actions taken by the GSAs or its member agencies in relation to the GSP will be summarized in this section along with how such actions support sustainability in the Subbasin.

9.4.8. Plan Amendments

A description of amendments to the GSP will be provided in the ~~five-year report~~periodic evaluation, including adopted amendments, recommended amendments for future

updates, and amendments that are underway during development of the ~~five-year report~~periodic evaluation.

9.4.9. Coordination

The Modesto Subbasin GSAs will continue to work collaboratively to ensure implementation of the GSP to reach sustainability in the Subbasin by 2042. The GSAs will also coordinate with neighboring Subbasins including Eastern San Joaquin, Turlock, Delta-Mendota, and Tracy as needed, or any other land use agencies or entities for project implementation. This section of the ~~five-year report~~periodic evaluation will describe coordination activities between these entities, such as meetings, joint projects, or data collection efforts.

9.5. DATA GAP ANALYSIS

As documented in **Table 3-7**, data gaps have been identified that would support sustainable groundwater management. Those data gaps include improved monitoring and analysis for the Western Lower Principal Aquifer, Eastern Principal Aquifer, interconnected surface water, and GDEs. In addition, the analysis in **Section 2.3.3** identified data gaps for domestic wells. Each of these data gaps are described in the sections below.

9.5.1. Improvements to Monitoring Network

The current GSP monitoring network described in **Chapter 7** meets monitoring objectives for initial tracking and evaluation of sustainable groundwater management criteria in each principal aquifer across the Subbasin. Nonetheless, there are data and knowledge gaps that could improve local monitoring and management. Monitoring improvements targeted for early GSP implementation are summarized below. These improvements will be made over time based on priorities and funding. As mentioned above, a comprehensive assessment of the monitoring network will be conducted as part of the ~~five-year GSP~~periodic evaluation.

9.5.1.1. Western Lower Principal Aquifer

As noted in **Table 3-7**, an insufficient number of monitoring wells are screened solely in the Western Lower Principal Aquifer to monitor groundwater levels and flow. **Figure 7-2** shows the five existing monitoring sites for this aquifer and illustrates the need for additional wells in the west. As noted on the figure, these wells support monitoring for chronic lowering of groundwater levels, reduction of groundwater in storage, and land subsidence. Additional wells would provide better coverage for development and tracking of sustainable management criteria and development of groundwater elevation contour maps. In turn, these improvements would allow better protection against future land subsidence, assist with water budgets and model calibration, and provide a better understanding of groundwater quality data in the Subbasin.

As part of this process, the GSAs will prioritize unmonitored areas of the aquifer and identify district-owned or other available lands where new monitoring wells might be sited in the future. To expedite collection of key data in the short-term, GSAs will explore the use of

existing, properly- screened wells from cooperative private well owners. If available, the GSAs would use grant funding for additional monitoring well installations in the future. Two of the existing five monitoring sites were recently installed with a Sustainable Groundwater Management grant funded by Proposition 68.

9.5.1.2. Eastern Principal Aquifer

As noted in **Table 3-7** and described in **Section 7.1.1**, the Eastern Principal Aquifer in the Non-District East Management Area represents a critical data gap for both historical and current data on groundwater levels and flow. As documented throughout the technical analyses in **Chapters 3**, **5**, and **6**, groundwater in this area has had the largest rates of decline and continuing overdraft – conditions that have the greatest potential to lead to undesirable results.

Proposition 68 provided an opportunity to install additional monitoring wells in this area to provide more information on local groundwater conditions. However, existing wells are insufficient for development and tracking of sustainable management criteria in key areas of the Non-District East Management Area. It is anticipated that new wells will be installed as part of project implementation by the Non-District East Management Area. Grant funding will be used for these new wells, as available.

In addition to new monitoring wells, there are data gaps with respect to the existing agricultural wells that need to be better understood. Construction and extraction data from active irrigation wells in this area are unknown. Using available well records and working directly with Non-District East Management Area landowners, the GSAs will work to fill these data gaps, providing more accurate assessments of groundwater conditions in the future. These new data will be incorporated into the water budget analyses as available, which will be provided in annual reports (see **Section 9.3**).

9.5.1.3. Interconnected Surface Water

As indicated in **Table 3-7** and illustrated on **Figure 7-5**, data gaps exist for monitoring and management of interconnected surface water along the Subbasin river boundaries. The Proposition 68 grant provided the opportunity to install five new wells along the Tuolumne and Stanislaus rivers to support GSP monitoring of interconnected surface water. However, given the long river boundaries and other priorities for monitoring, the current network is incomplete. Since the GSP was submitted in 2022, the GSAs have completed an analysis and have identified potential locations of new monitoring wells along the rivers. The GSAs may seek future grant opportunities to provide funding for the additional wells. Additional wells would also assist with monitoring GDEs.

GSAs in the neighboring subbasins, including the Eastern San Joaquin, Turlock and Delta-Mendota subbasins, are currently planning additional wells along the shared river boundaries of the Stanislaus, Tuolumne, and San Joaquin rivers. Consistent with the Modesto Subbasin Sustainability Goal, the GSAs will coordinate with neighboring GSAs to site and install wells that are capable of generating useful data for the shared surface water resources.

9.5.2. Analyses of Groundwater Dependent Ecosystems

The dataset of Natural Communities Commonly Associated with Groundwater (NCCAG) provided by DWR were published after the GSP work plan and grant application had been completed. As such, it was difficult to include anything more than a high-level screening of potential GDEs in the initial GSP using periods of high and low groundwater elevations (**Section 3.2.8**). Following this screening, more than 70 percent of the original NCCAG polygons were retained as potential GDEs for future analyses.

As explained in **Section 3.2.8**, Moore Biological Consultants reviewed the potential GDEs within Mapes Ranch, a private property near the San Joaquin River. Using both a desktop study and field survey, Moore Biological Consultants concluded that 56 potential GDE polygons within Mapes Ranch are not GDEs. Given this, there may be more potential GDEs in the Subbasin that are not actually GDEs.

Because of the large number of potential GDE polygons, it was unreasonable to incorporate field surveys for all of these areas in the initial GSP assessment. As noted in **Section 6.8**, MTs were set at 2015 levels along the interconnected surface water to be protective of the GDEs along the rivers (where most of the potential GDE polygons occur). Monitoring data will be used to consider potential impacts on GDEs and shared publicly in annual reports.

In addition, the GSAs will continue to investigate potential GDEs and conduct additional analyses going forward. As an initial step, the GSAs will seek technical consultants with expertise to assist in developing a plan for additional GDE analyses.

9.5.3. Domestic Well Data

During the analysis of impacts to domestic wells, it was determined that significant data gaps exist. As noted in **Table 6-2** (**Section 6.3.1.1**), 159 domestic wells failed during 2015-2017 drought conditions (see also **Figures 2-15** and **6-1**). However, recent records of well permits also indicate that many of the failed wells appear to have since been replaced. Although more than 3,000 domestic wells are included in the DWR Well Completion Report database, hundreds of those lack either completion date, construction data or complete location information and there is no indication of which wells have since been destroyed or taken offline. In addition, the well use is not documented for many additional wells in the DWR database, which could represent unknown domestic wells.

The technical team worked with the GSA representative from the City of Modesto to test the DWR database in a rural neighborhood outside of the city where domestic wells are known to be located. Even in that small area, many wells could not be correlated to DWR data and/or did not have construction or other key data in the DWR dataset.

Although production from these wells is likely to be de minimis (less than 2 AFY/well) as defined by SGMA, it would be helpful to better understand the number, location, and status of ~~active~~ domestic wells. As part of GSP implementation, GSAs will consider how best to

improve domestic well datasets. Areas where domestic wells are concentrated or vulnerable to declining water levels will be prioritized (see **Figures 2-14**, **2-17**, and **6-1**). An additional resource for domestic well data includes the Nitrate Control Program (NCP), where ongoing monitoring for nitrate and other constituents is focused on domestic wells (see **Sections 2.4.4**, **6.6.2.1.1**, **6.6.2.2**, and **7.1.4**); access to well data will be coordinated through the Valley Water Collaborative, which is implementing the NCP in the Modesto Subbasin. Outreach and well registration activities being applied in other subbasins will also be considered for the Modesto Subbasin.

9.6. CLOSING

The GSP implementation activities are designed to identify and document steps for successful implementation. Collectively, the sustainable management criteria, monitoring networks, and projects and management actions are anticipated to achieve the Modesto Subbasin sustainability goal. Although it is recognized that more information and actions will be needed over time, the GSAs will incorporate an adaptive management approach to prioritize activities based on best available information and document those activities and data through continued outreach and annual reporting.