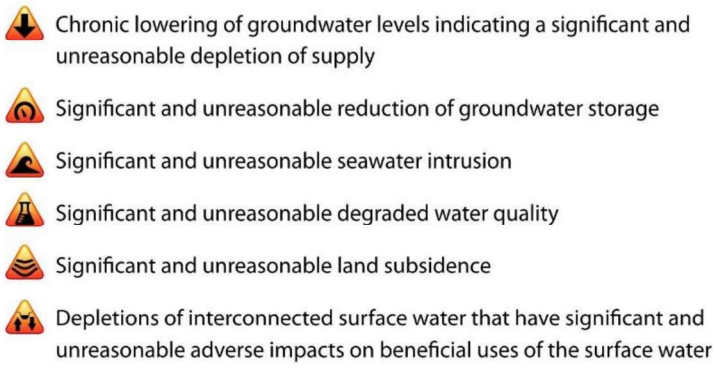
Executive Summary

Chapter 1 - Introduction

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act of 2014 (SGMA), which is codified in Section 10720 et seq. of the California Water Code. This legislation created a statutory framework for groundwater management in California that must be achieved during the planning and implementation horizon from 2020 to 2040 and sustained into the future without causing undesirable results. SGMA requires that the following six sustainability indicators must be considered:



The James GSA was formed under a Memorandum of Understanding (MOU) made effective December 17, 2015 between the James Irrigation District (James ID) and Reclamation District No. 1606 (RD 1606). The City of San Joaquin (City), located in the center of the James GSA area, is not a party to the MOU but the City is included in the GSA area because the boundaries of Reclamation District No. 1606 also includes lands within the City limits. The City of San Joaquin is not in the James Irrigation District (JID) service area. The City of San Joaquin was invited to participate in the MOU but declined.

Under the terms of the MOU, the James GSA is governed by a board comprised of five directors. Four directors are appointed by James ID and one director is appointed by RD 1606. The directors may be elected officials, appointed officials, agency employees, landowners, or residents of the respective appointing agencies. James ID serves as the coordinator for the parties acting jointly under the MOU. Also, the James GSA Board of Directors has appointed an Executive Director and had delegated the management authority to implement the Plan to the Executive Director.

The sustainability goal of the Kings Subbasin and this GSA is to ensure that by 2040 the basin is being managed in a sustainable manner to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results. This goal will be met by balancing water demand with available water supply and stabilizing the long-term trend of declining groundwater levels without significantly or unreasonably impacting groundwater storage, water quality, land subsidence, or interconnected surface water.

Chapter 2 - Plan Area

The James GSA area (Plan Area) is located in western Fresno County and consists primarily of agricultural land but contains one municipal area. The Plan Area is dominated by agricultural lands. The predominant crops grown on agricultural lands include, in descending order of acreage for 2018 production, almonds, cotton, seed alfalfa, pistachios, grapes, onions, and tomatoes. Lands with native and riparian vegetation comprise the next highest land use and are located primarily in floodways. Urban lands within the

Plan Area are primarily within the City of San Joaquin. A significant percentage of the land use within the Plan Area also includes lands utilized for groundwater recharge. There are no state, federal, or tribal lands within the Plan Area.

Agricultural water demands are met through a combination of available surface water and groundwater. The source of surface water for agricultural use are the Kings River, the San Joaquin River, and the Central Valley Project via the Delta-Mendota Canal and Mendota Pool. James ID and RD 1606 have water rights on the Kings River and San Joaquin Rivers. Landowners within James ID and RD 1606 also have riparian rights to both the Kings River and San Joaquin River but receive water from those sources under contractual arrangements through either James ID or RD 1606. James ID also imports groundwater from lands to the east of the Plan Area. Municipal, industrial, and rural domestic water demands are met solely by groundwater.

Chapter 3 - Basin Setting

Hydrogeologic Conceptual Model

The Hydrogeologic Conceptual Model (HCM) provides a description of the general physical characteristics of the regional hydrology, geology, geologic structure, water quality, principal aquifers, and principal aquitards in the basin setting. The HCM is a written description accompanied by graphical representations of the hydrologic and hydrogeologic conditions that lay the foundation for development of water budgets, monitoring networks, and identification of data gaps. The narrative HCM description provided in Chapter 3 describes the Kings Subbasin, followed in each section by description applicable specifically to the James GSA. The HCM has been prepared utilizing published studies and existing resources and will be periodically updated as data gaps are addressed and new information becomes available.

The Kings Subbasin is an alluvial basin bounded north and south by the San Joaquin and Kings Rivers respectively, the Sierra Nevada mountains on the northeast, and the Westside and Delta-Mendota Subbasins to the west-southwest. The aquifer system is comprised of unconfined and confined groundwater in the western parts of the subbasin where lacustrine clay beds exist. East of the lacustrine clays, locally significant clay beds separate shallower unconfined groundwater from deeper confined groundwater. The Kings Subbasin is dominated by six major geomorphic features including the alluvial fans of the Kings and San Joaquin Rivers, dune sands, compound fans of intermittent streams between the Kings and San Joaquin Rivers, a compound fan south of the Kings River, and an area termed overflow lands near the topographic axis of the valley. The major geomorphic features are closely related to the surficial deposits, which in turn relate to soil types. **Figure ES-1** is a soil map of the James GSA area based on the Natural Resource Conservation Service (NRCS) textural classification of soils. In general, coarser materials exist in the eastern half of the GSA and finer grained soils are found in the western parts of the GSA area.

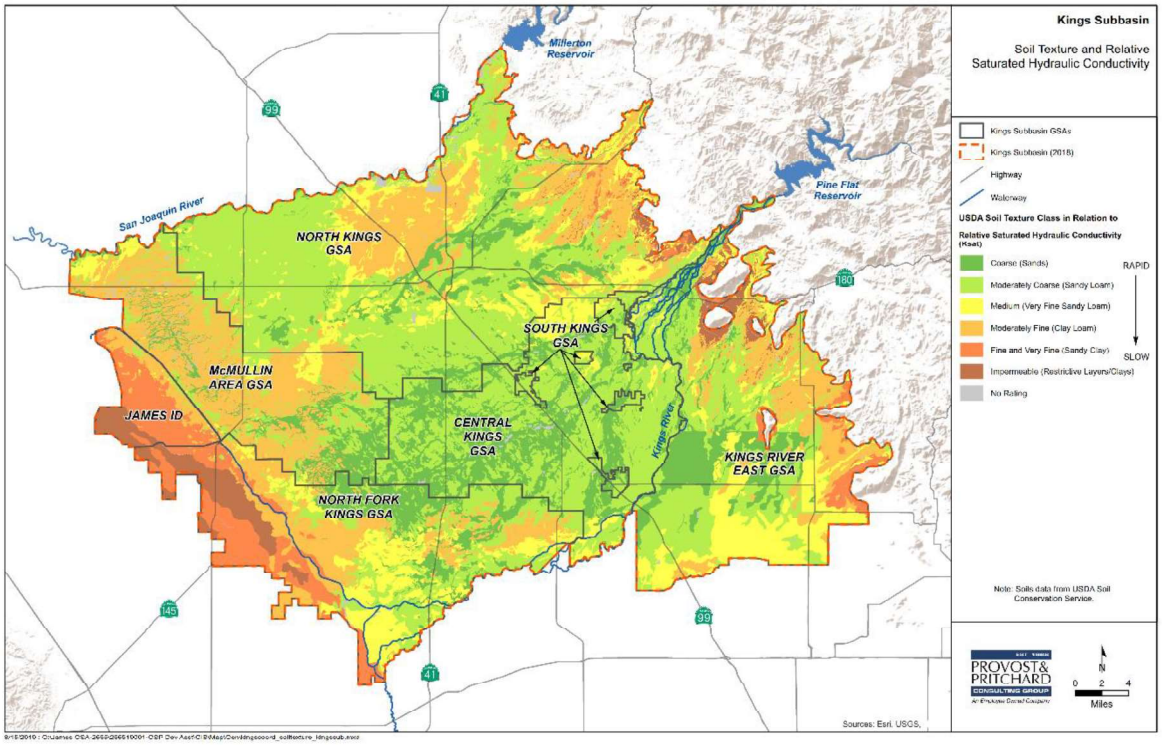


Figure ES-1 James GSA Soil Texture and Saturated Hydraulic Conductivity

The Plan Area aquifer has a series of semi-confining and confining clay formations that vary in depth and lateral extent throughout the aquifer. Various United States Geological Survey (USGS) reports have mapped the general extent of the clay layers in the area, as shown in **Figure ES-2**, as well as the depth of the clay layers. The three most prevalent subsurface clay formations that have historically been studied and delineated in the James GSA area within the San Joaquin Valley are known as the A-Clay (generally at a depth of 50-70 feet), C-Clay (generally at a depth of 210-260 feet), and E-Clay or Corcoran Clay (generally at a depth of 400-550 feet). The A-Clay is no longer a confining layer but does impact vertical movement of water. The C-Clay is considered semi-confining through most of the area with water levels fluctuating above and below the C-Clay at various times and locations. The Corcoran Clay is a confining layer throughout the entire Plan Area. The Corcoran Clay divides the unconfined and confined aquifer within the GSA.

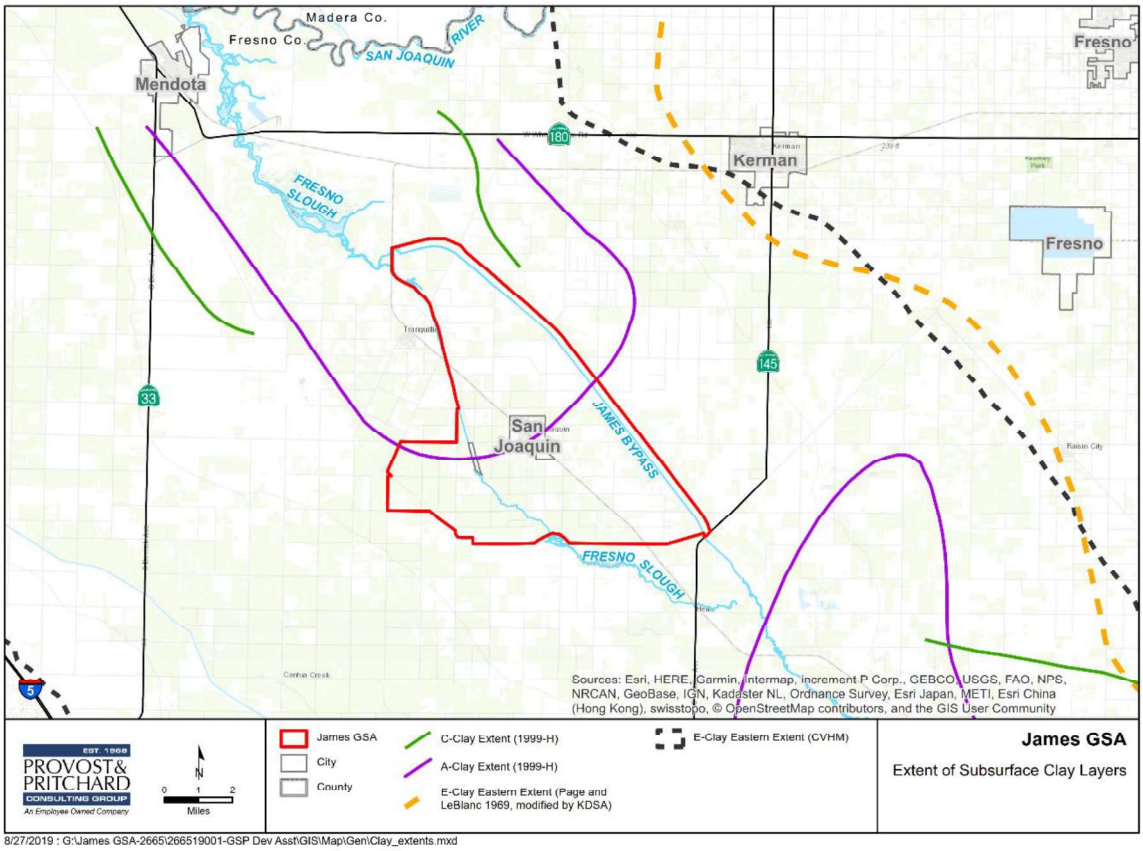


Figure ES-2 Extent of Subsurface Clay Layers

Groundwater Conditions

The natural direction of groundwater flow generally follows the topography from northeast to southwest, sloping from the Sierra Nevada Mountains on the east to the trough of the Valley at the western edge of the Kings Subbasin. In general, groundwater flow is to the southwest within nearly the entire subbasin with a few notable exceptions where municipal and irrigation pumping in parts of the Kings Subbasin have influenced the direction of groundwater flow or the influence of recharge from basins and the major rivers can be seen. Unconfined groundwater conditions extend across essentially the entire Kings Subbasin. Insufficient available surface water supplies have led to heavy agricultural pumping in the region, which has influenced the natural groundwater flow.

Insufficient available surface water supplies in the McMullin Area GSA and the North Fork Kings GSA have caused agricultural users in those area to rely heavily on groundwater pumping. This pumping has created a groundwater elevation depression and has caused groundwater to flow away from the trough of the valley towards the depression. On groundwater elevation maps, the center of the depression appears in various locations between Raisin City and Helm within either the MAGSA or NFKGSA plan areas.

Groundwater in the northern and eastern areas of the James GSA generally travels from northwest to southeast as shown in **Figure ES-3.** Groundwater flows in the western portion of the James GSA appear to

flow slowly in an easterly direction. In the southern area of the James GSA, groundwater appears to flow in an easterly direction. The groundwater flows in the easterly direction are substantial.

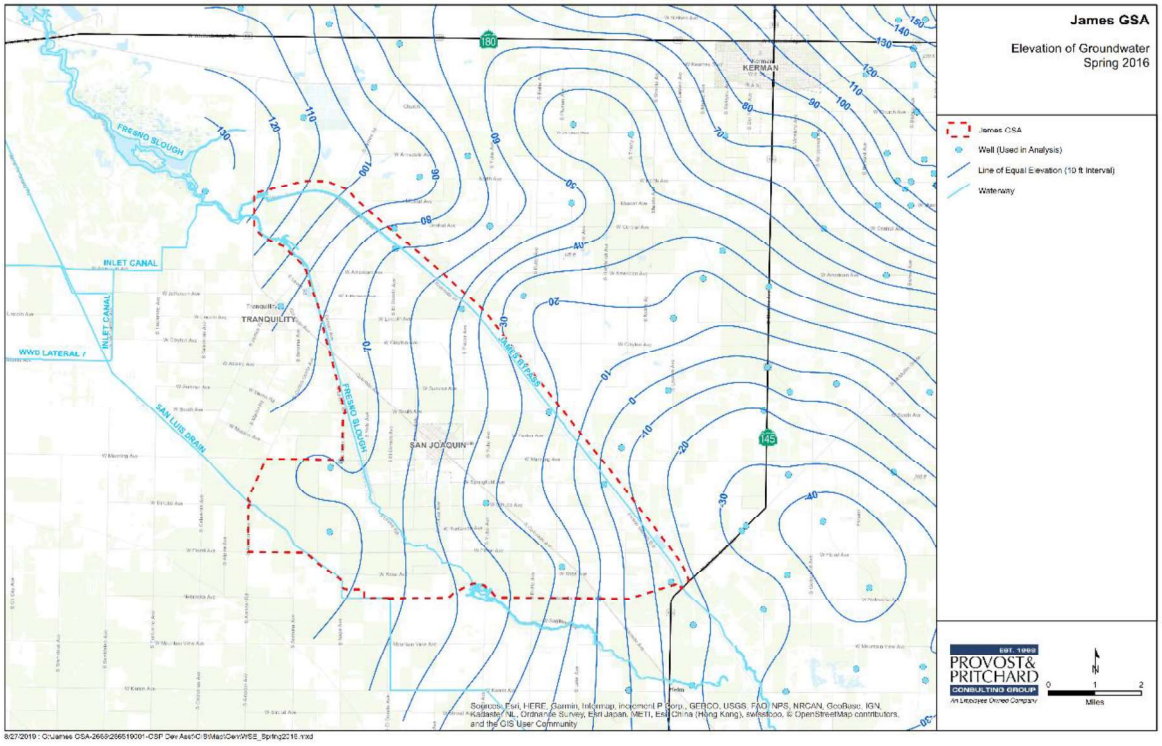


Figure ES-3 Elevation of Groundwater Spring 2016

Groundwater Levels

Groundwater levels in the James GSA saw a considerable decline from 1929 to 1963 as agricultural land development progressed in the Kings Subbasin and the Westside Subbasin. There was a noticeable reversal in the trend in 1963 which is attributed to the delivery of Central Valley Supplies. The period from 1963 to 1990 experienced a continual increase in groundwater elevations. This trend of increasing groundwater levels stopped in 1990 and a period of decline ensued. The decline is attributed to a substantial reduction in Central Valley Project water supply allocations. There is a current declining trend in groundwater levels but occasional increases are noted after wet hydrologic periods. A typical well hydrograph is shown in **Figure ES-4.**

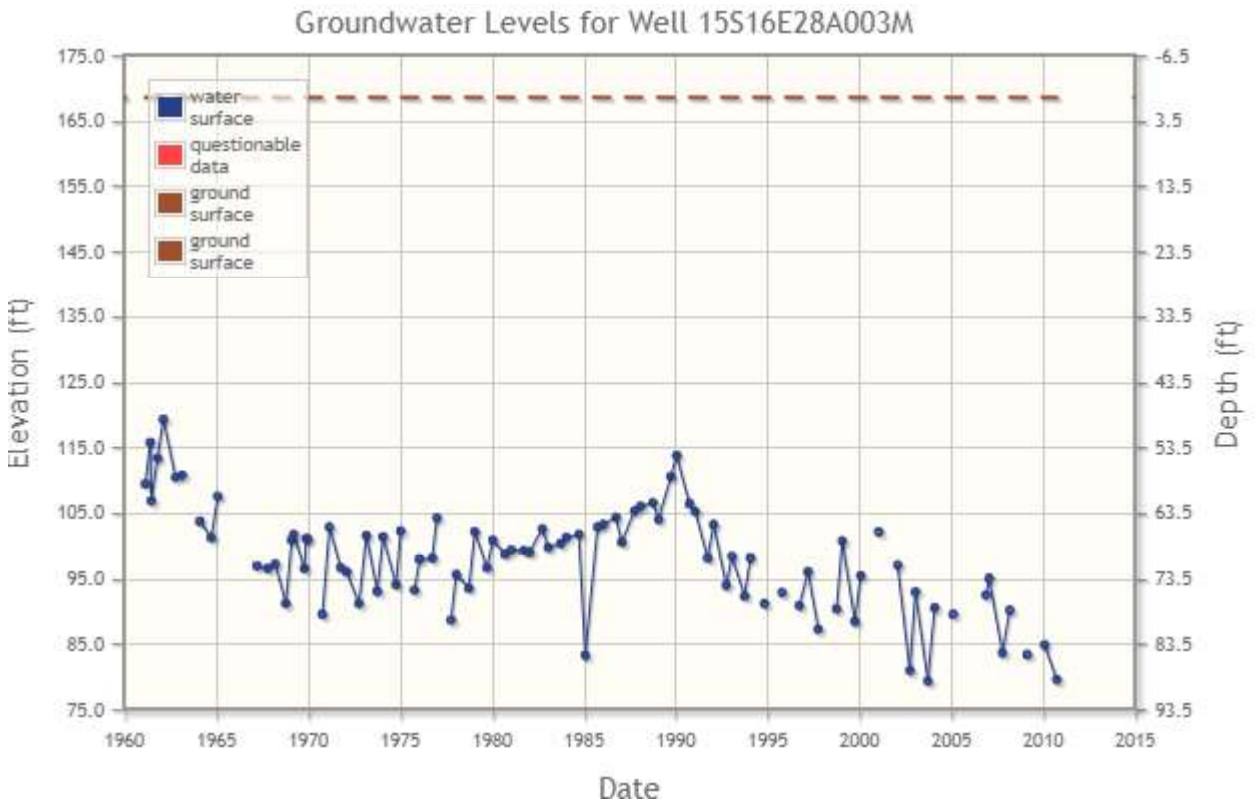


Figure ES-4 Typical James GSA Well Hydrograph

Groundwater Quality

Groundwater within the James GSA area is used to meet agricultural and domestic demands. The groundwater quality assessment for the James GSA Plan Area has been prepared using the available information obtained from the California Groundwater Ambient Monitoring and Assessment (GAMA) Program database, which includes water quality information collected by the California Department of Water Resources (DWR), State Water Resources Control Board, Division of Drinking Water (SWRCB & DDW), and the USGS.

Water quality constituents of concern within the Plan Area is shown in **Table ES-1**. For the area containing municipal drinking water wells, only manganese has incidences of exceeding the United States Environmental Protection Agency (USEPA) public water system quality maximum contaminant levels (MCLs) or Health Advisory Levels. In other areas where rural domestic users rely on groundwater, gross alpha and uranium exceed MCLs. Total dissolved solids and boron do not pose concerns for municipal or rural domestic water users but occur at levels that may impact certain agricultural uses.

Table ES-1 Chemicals of Concern and California MCLs

Chemical of Concern	California Primary MCL	California Secondary MCL	Lifetime Health Advisory Level
Arsenic	10 µg/L	-	-
Chromium (Total)	50 µg/L	-	-
Fluoride	2,000 µg/L	-	-
Gross Alpha	15 pCi/L	-	
Lead *	15 µg/L	-	-
Nitrate	10 mg/L (as N)	-	-
1,2,3-Trichloropropane	0.005 µg/L	-	-
Uranium	20 pCi/L		
Manganese	-	50 µg/L	-
Total Dissolved Solids	-	500 mg/L to 1,000 mg/L	
Boron **	-	-	6,000 µg/L

* The USEPA regulates the concentration of lead in drinking water by an Action Level, which is similar to an MCL but requires additional testing at customer services.

** The State of California has adopted a Notification Level of 1,000 µg/L.

Land Subsidence

Land subsidence was first monitored in the 1920s, then occasionally through the 1970s during periods when there was less access to surface water in portions of the San Joaquin Valley. The frequency of subsidence monitoring decreased after the 1970s, by which time access to surface water had increased due to the canals and water storage projects built in California, allowing less reliance on groundwater in the 1970s and 1980s to meet water demands in areas outside the James GSA. Subsidence monitoring increased again in the 2000s due to more-frequent drought conditions, environmental regulations that resulted in lower surface water allocations to State Water Project (SWP) and Central Valley Project (CVP) contractors, and local farmers and cities increasing reliance on groundwater. Recent monitoring has indicated increased subsidence in portions of the James GSA as a result of the recent drought and heavy reliance on groundwater pumping, as indicated by NASA InSAR (satellite) data showing the change in land surface elevation from May 2015 through April 2017 (**Figure ES-5**).

Generally, there appears to be minimal subsidence occurring in the Plan Area with the exception of the northwestern portion of the Plan Area near Tranquillity. From May 2015 through April 2017, subsidence in the northwestern corner of the Plan Area was measured using NASA InSAR data from 10 to 15 inches (or 5 to 7.5 inches per year) while other areas of the Plan Area only subsided 2 to 3 inches (1.0 to 1.5 inches per year). Subsidence rates increase along the eastern boundary of the Plan Area adjacent to areas that rely exclusively on groundwater. There are no wells that extract groundwater from the confined aquifer within the Plan Area and subsidence rates within the Plan Area are almost exclusively influenced by groundwater pumping in adjacent GSAs or subbasins.

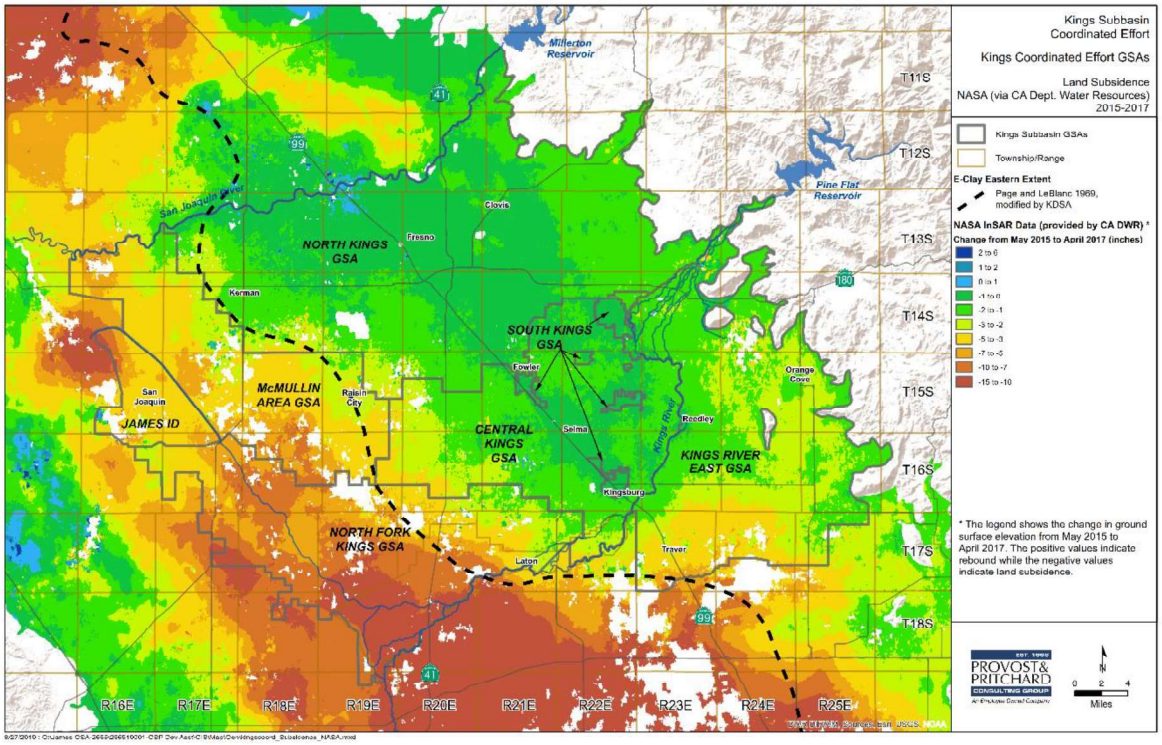


Figure ES-5 Land Subsidence in James GSA and Surrounding Area

Water Budgets

A water budget is an accounting of all the water that flows into and out of a specified area and describes the various components of the hydrologic cycle. A water budget includes all the water supplies, demands, modes of groundwater recharge, and non-recoverable losses, making it possible to identify how much water is stored in a system and changes in groundwater storage during a given period. Aggregated water budgets have been prepared for the entire Kings Subbasin as well as detailed water budgets for the James GSA.

Water budgets were prepared for a historical period (1997-2011), current period (2016-2017), and future periods (2040 and 2070). The historical water budget covers a hydrologically average period based on Kings River diversions and was developed to help calibrate the water budget process. The future water budgets are based on numerous assumptions related to climate change, population growth, and water use. These assumptions will likely change over time resulting in different conclusions. There is uncertainty in several aspects of the water budget; the results should be viewed as guidelines rather than precise values.

The estimated annual decline in groundwater storage for the aquifer underlying the James GSA during the historic period was approximately 4,700 acre-feet. The estimated annual decline under current conditions assuming that no managed groundwater recharge activities are implemented is 5,600 acre-feet. In the early-future (2040) scenario, the James GSA will have to implement projects and management actions to generate 6,800 acre-feet annually of managed recharge. In the late-future (2070) scenario, this amount increases to 7,800 acre-feet annually due to impacts of growth and climate change on water supplies and demands. The amounts are considered conservative as actions taken by other Kings Subbasin GSAs will halt and reverse declining groundwater levels and reduce groundwater flows leaving the James GSA.

Chapter 4 - Sustainable Management Criteria

SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results. The avoidance of undesirable results is important to the success of the GSP. Several requirements from GSP regulations have been grouped together under the heading of Sustainable Management Criteria, including a Sustainability Goal, Undesirable Results, Minimum Thresholds, and Measurable Objectives for various indicators of groundwater conditions. Development of these Sustainable Management Criteria is dependent on basin information developed and presented in **Chapter 3**.

The goal of the Kings Subbasin and this GSA is to correct and end the long-term trend of a declining water table understanding that water levels will fluctuate based on the season, hydrologic cycle and changing groundwater demands within the basin and its proximity.

The conditions when the basin and this GSA will be considered sustainable are:

- The basin is continuously operated within its sustainable yield.
- The current rate of decline of the groundwater table within the basin monitoring network indicator wells has been corrected and the multi-year trend of water elevations in these wells has been stabilized.
- Groundwater levels are maintained to prevent Undesirable Results of the applicable sustainability indicators.

The seven GSAs within the Kings Subbasin have been coordinating for several years on how to reach and maintain sustainability. As described in the **Chapter 3** - Basin Setting, the Kings Subbasin includes significantly varied geologic conditions, water supplies, and land uses that lead to different conditions and obligations within each GSA. The Kings Subbasin setting describes the trend of declining groundwater levels within the Kings Subbasin and this GSA. The degree of decline varies by location based primarily on land use and available surface water supplies. The basin setting information, including historic groundwater conditions, surface water supplies, groundwater flows, land use, and other information were used to establish the water budgets, estimates of storage change within each GSA, and sustainable yield. Coordination efforts between the GSAs have resulted in concurrence of the initial quantities of storage change responsibility for each GSA to correct in order to achieve sustainability. These quantities and each GSAs respective obligation will continue to be monitored and evaluated as additional information is gathered.

Each GSA in the Kings Subbasin is responsible for implementing the projects and management actions necessary to reach sustainability and meet its initial mitigation requirements for storage change. Each GSA has identified measures that will be implemented to ensure the Kings Subbasin will be managed within the sustainable yield, as identified in **Chapter 6–** Projects and Management Actions to Achieve Sustainability. Collectively, these projects and programs have been identified to ensure the Kings Subbasin reaches sustainability by 2040. The projects and programs include technical data and estimates of project benefit; the total of these benefits meet the initial estimates for reaching sustainability within the Kings Subbasin.

The Kings Subbasin has agreed to a phased approach of increasing mitigation to achieve sustainability. The basin has set incremental targets for correcting the overdraft of 10% by 2025, 30% by 2030, 60% by 2035, and 100% by 2040. Each GSA in the Kings Subbasin is planning to implement projects and management actions in accordance with the agreed mitigation targets. The GSAs will continue to meet regularly to review data to ensure all GSAs are meeting their milestones and progress is being made toward sustainability.

Groundwater Levels

The GSAs within the Kings Subbasin have defined the Undesirable Result for groundwater levels to be significant and unreasonable when either the water level has declined to a depth that a new productive well cannot be constructed, or the water level has declined to a depth that water quality cannot be treated for beneficial use. **Figure ES-6** shows a typical well hydrograph and incremental overdraft mitigation to reach the measurable objective and sustainability in 2040. The measurable objective will include an extension of a current hydrograph gradually stabilizing, and a minimum threshold defined as the depth of groundwater predicted if a historic 5-year drought occurred.

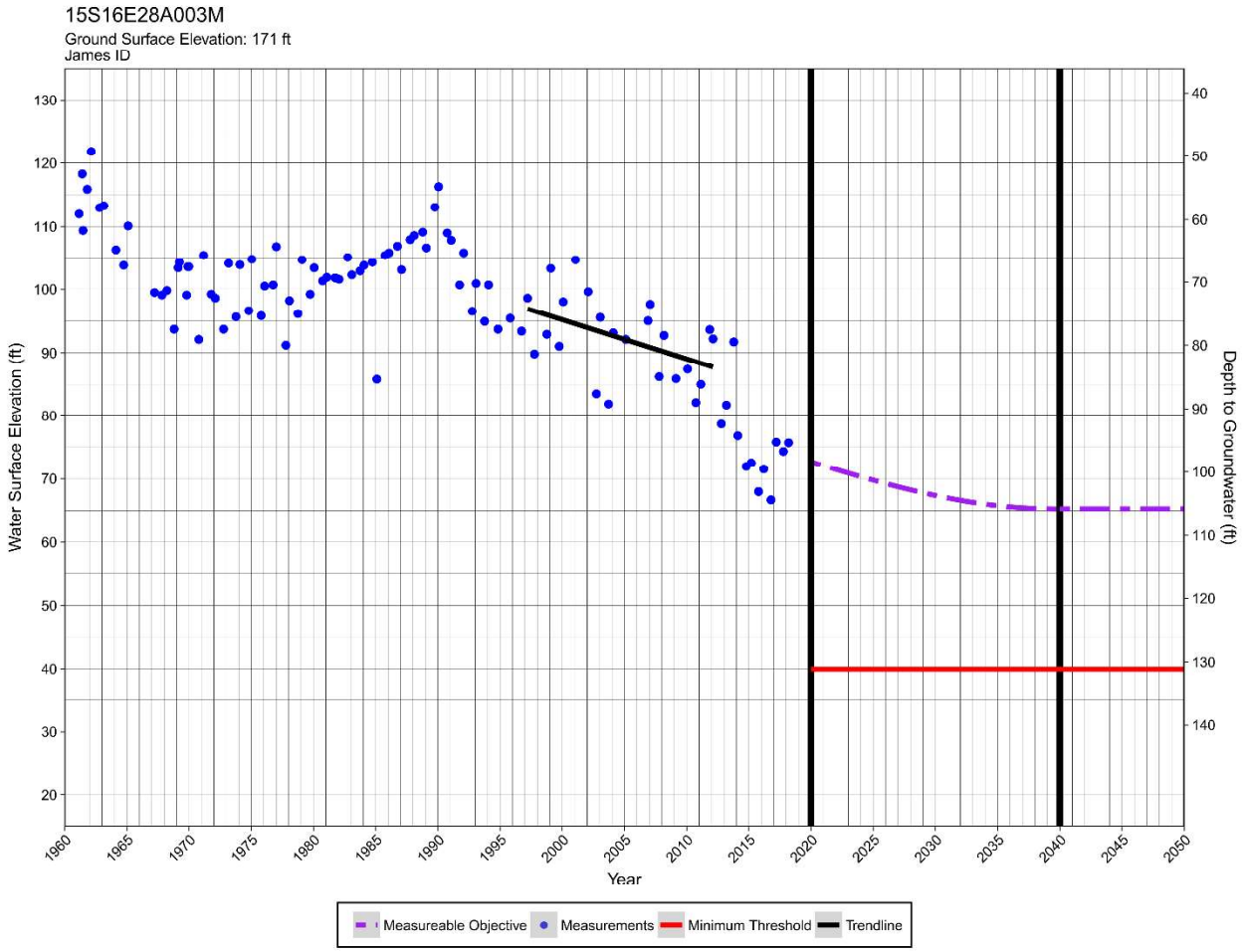


Figure ES-6 Typical James GSA Well Hydrograph with Phased Mitigation to Reach Sustainability

Storage Change

As part of the coordination of GSAs within the Kings Subbasin, a common method was used to estimate the change in groundwater storage for the entire subbasin and within each GSA during the hydrologic average base period, identified as the 15-year period from October 1996 to September 2011 based on Kings River surface water diversion into the area. The calculation of estimated groundwater storage change within the Kings Subbasin upper unconfined aquifer zone was approximately -1.8 MAF during the hydrologic average base period from spring 1997 to spring 2012, or an average of about -122,000 AF/year. Estimating storage change in the lower confined aquifer zone is not possible at this time due to limited or absent data from confined wells in the area. In addition, groundwater pumped from the confined portions of the aquifer is captured as storage change in the unconfined aquifer due to downward leakage through wells and aquitards. The 2040 goal is to stabilize, over the long-term, changes in groundwater storage. The goal will be to prevent

groundwater storage from falling below the overall storage represented by groundwater level measurable objectives, and to never allow groundwater storage to fluctuate below the storage value represented by the groundwater level minimum thresholds.

Water Quality

Groundwater quality monitoring and reporting by community water systems is a requirement of California Title 22 Code of Regulations. With the powers provided by SGMA, a GSA can only regulate and manage groundwater pumping and recharge efforts. Groundwater pollution characterization and mitigation are typically enforced by local agencies and state level programs. The MCL values, which are protective of human health, will be relied upon as the primary criteria for defining minimum thresholds and undesirable results when related to groundwater pumping policies and recharge projects for the constituents of concern in the area. These constituents of concern will be the focus of the SGMA monitoring effort. Groundwater monitoring results from representative community and non-community wells within the James GSA monitoring network will be reviewed annually for compliance with State MCL values and changes from historical values, especially tracking trends in water quality. The measurable objective is to maintain water quality at potable water standards, below MCLs for the constituents of concern. In situations where monitoring network wells (either existing or future wells) have a history of being above MCLs for constituents of concern, the measurable objective is for the wells to maintain stable or improving groundwater quality trends so there is no degraded water quality from groundwater management activities.

Land Subsidence

The Minimum Threshold for the annual land subsidence rate in the Plan Area has been established as 6 inches per year over an area of 4 square miles with a maximum cumulative land subsidence of 36 inches over 20 years. The Measurable Objective was established as 3 inches per year over an area of 4 square miles with a maximum cumulative land subsidence of 24 inches over 20 years.

Surface Water and Groundwater Interaction

This sustainability indicator applies to portions of the Kings Subbasin. It does not apply to the area within James GSA because the waterways in the Plan Area, specifically the James Bypass and Fresno Slough, are either disconnected from their water source or flow only occasionally and are disconnected from groundwater through an unsaturated zone. Portions of these waterways that are inundated year-round are inundated artificially by the Mendota Dam. However, the James GSA has proposed establishing a shallow groundwater monitoring network along inundated reaches of the Fresno Slough and James Bypass to monitor for impacts and changes in near-river gradients and potential impacts to other water users.

Seawater Intrusion

This sustainability indicator does not apply to the Kings Subbasin.

Chapter 5 - Monitoring Network

This chapter describes the monitoring networks being developed by the James GSA that will collect data to determine short-term, seasonal, and long-term trends in groundwater and related surface conditions. This information will yield information necessary to support: 1) the implementation of this Plan, 2) evaluation of the effectiveness of this Plan, and 3) decision making by the James GSA management. The results and data from historical monitoring efforts are discussed in **Section 3.2**. The Monitoring Network chapter describes the current and proposed monitoring programs, identifies data gaps, and describes the plans to fill data gaps for each sustainability indicator.

The GSAs within the Kings Subbasin have established three monitoring networks within each GSA for groundwater level, groundwater quality, and land subsidence. The objectives of the various monitoring programs include:

1. Establish a baseline for future monitoring.
2. Provide warning of potential future problems.
3. Use data gathered to generate information for water resources evaluation.
4. Help to quantify annual changes in water budget components.
5. Develop meaningful long-term trends in groundwater characteristics.
6. Provide comparable data from various locales within the Plan Area.
7. Demonstrate progress toward achieving measurable objectives described in the Plan.
8. Monitor changes in groundwater conditions relative to minimum thresholds.
9. Monitor impacts to the beneficial uses or users of groundwater.

The primary challenge in developing the water level monitoring network was utilizing available data and navigating through the obstacles and limitations of the three general data gap types: temporal, spatial, and insufficient quality of data. Because of the unique geology and multiple primary clay layers within the James GA, well construction information including perforated intervals is required to identify which aquifer zone is being monitored. Publicly available groundwater level data is limited in terms of high quality monitoring points. These ideal monitoring points must have known construction information, not be composite, have adequate measurement history and frequency, and provide sufficient spatial coverage across the Plan Area.

The James GSA intends to expand its groundwater level network as additional well construction information is obtained for existing wells and as new dedicated monitoring wells are installed. The groundwater elevation measurements will be collected every March and October to provide data on the seasonal high and low groundwater conditions. The groundwater level data will be provided to the Kings Subbasin Plan Manager for inclusion in the Data Management System and annual reports. These wells along with additional future wells will be used for groundwater storage calculations.

The groundwater quality monitoring network will rely on the publicly available groundwater quality data from selected representative wells that will be obtained annually and evaluated against sustainable management criteria. Locations were selected to be representative of large and small communities dependent on groundwater and to spatially cover the GSA. The representative groundwater quality monitoring network will be evaluated and revised as needed.

Land subsidence will be primarily monitored using KRCD's land subsidence monitoring program. The monitoring network includes benchmark surveying on an approximate seven-mile grid network with records dating back to 2010. This spatial and temporal network is adequate and designed with the flexibility to increase or decrease measurement frequency and/or benchmark spacing if more or less data is warranted. NASA InSAR remote sensing data will be used to verify any observed subsidence and fill in gaps between the surveyed benchmarks.

Chapter 6 - Projects and Management Actions

Each GSA within the Kings Subbasin has identified projects and management actions that may be used in order to achieve groundwater sustainability within the basin. The James GSA has identified twenty-one projects, three programs (or programmatic management actions), and four management actions. Projects identified include 10 projects within the GSP plan area and 11 projects outside of the GSP plan are but within the subbasin. The projects and management actions are listed in **Table ES-2**.

Each of the projects, programs, and management actions were analyzed. The expected benefits from all of the projects listed was determined to be far more than is necessary to meet the needs of the James GSA in achieving groundwater sustainability within the Kings Subbasin.

Figure ES-7 shows the planned James GSA phased mitigation of overdraft to reduction to achieve groundwater sustainability.

Various aspects of the projects were reviewed to assess whether entities within the James GSA have an adequate water supply to implement the planned projects, programs, and management actions. All of the projects except three are demonstrably feasible. The three projects that are not demonstrably feasible are conceptually feasible but are not required to achieve sustainability.

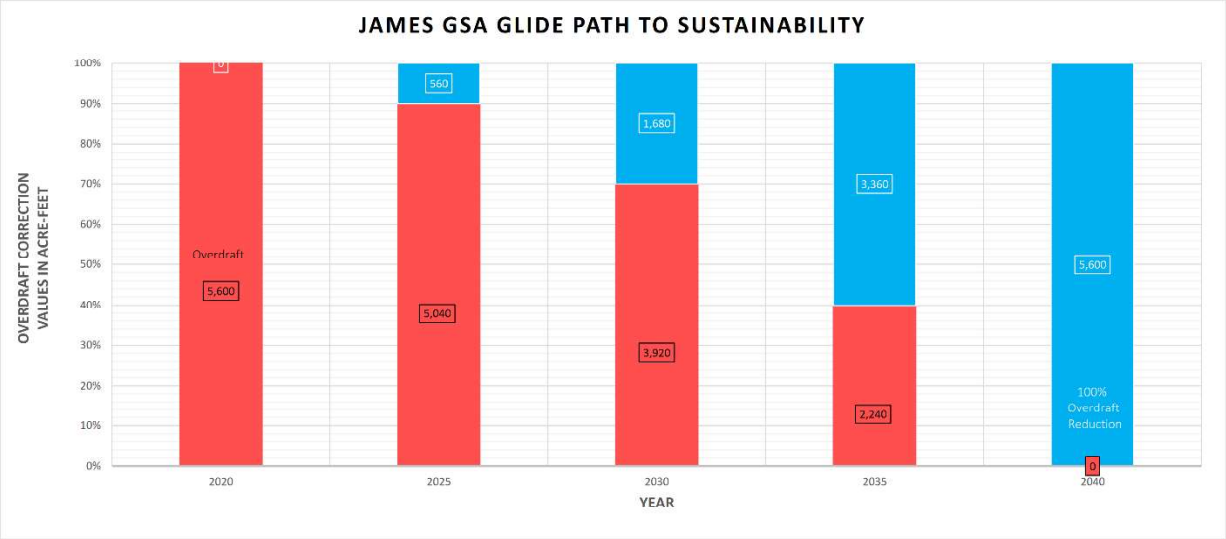


Figure ES-7 James GSA Phased Mitigation of Overdraft Reduction to Reach Sustainability

Table ES-2 Projects, Programs, and Management Actions

Projects	
1	K-Basin Groundwater Recharge
2	Basins 1 and 2 Storage and Recharge
3	Basin 3 Floodwater Capture and Recharge
4	Floodway Recharge and Spreading
5	Distribution System Recharge
6	City of San Joaquin Storm Water Pond Recharge
7	McMullin On-Farm Flood Capture and Recharge
8	Southwest Groundwater Banking
9	Carmichael Slough Recharge
10	James Main Canal Spreading
11	Fresno Slough Recharge
12	Mud Dam Spreading and Recharge
13	James Bypass Floodwater Utilization
14	Lassen Avenue Floodwater Utilization
15	McMullin Grade Floodwater Utilization
16	Distributed Recharge Basin
17	McMullin Master Plan
18	James Ranch Recharge Basin
19	Wildlife Habitat Restoration
20	Mendota Pool Water Quality Monitoring
21	Lake Avenue Canal
Programs	
1	Fallow Land Recharge
2	Flood and Excess Water
3	Central Valley Project Water Banking
Management Actions	
1	Water Management Planning
2	Metered Agricultural Water Deliveries
3	Metered Groundwater Extractions
4	Mendota Pool Water Quality Engagement

Chapter 7 - Plan Implementation

The adoption of the GSP will be the official start of the Plan Implementation for James GSA. After GSP adoption, the GSA will continue its efforts to engage the public and secure the necessary funding to successfully monitor and manage groundwater resources within the area in a sustainable manner. While the GSP is being reviewed by DWR, the GSA will coordinate with various stakeholders and beneficial users to improve the monitoring network, fill data gaps, and begin the implementation of both projects and management actions.

The James GSA will implement projects, programs, and management actions based on subbasin and Plan Area conditions as well as monitoring of the sustainability indicators established by this plan and other plans covering the subbasin. Each project, program, or management action will influence sustainability differently. In general, projects, programs, and management actions will be selected for implementation based on a number of factors including capital cost, operating cost, water supply considerations, and benefits. An implementation schedule was prepared and used as an initial roadmap to determine costs associated with implemented projects, programs, and management actions.

Costs to implement needed projects, programs, and management actions to achieve groundwater sustainability were estimated. The total cost in 2020 dollars to implement the Plan are estimated to be TBD.

Funding alternatives for this cost were reviewed and the James GSA Board of Directors, through consultation and agreement with the James ID Board of Directors and the RD 1606 Board of Trustees, determined that it will fund the James Groundwater Sustainability Agency through direct contributions by underlying districts. The schedules and estimates presented in the GSP are initial estimates and will likely change as the plan is implement and periodically evaluated.

Successful implementation of this GSP over the planning and implementation horizon (2020-2040) will require ongoing efforts to engage stakeholders and the general public in the sustainability process, communicating the statutory requirement, the objectives of the GSP, and progress toward each identified measurable objective. The James GSA will report the result of the Kings Subbasin and Plan Area operations including current groundwater levels, extraction volume, surface water use, total water use, groundwater storage change, and progress of GSP implementation to the public and DWR on an annual basis, in cooperation with the other GSAs in the Subbasin. The Kings Subbasin has developed a Data Management System to help store and evaluate groundwater related data. In addition, the James GSA will provide updated information and amend the GSP at least every five years. The update will include the results of the Kings Subbasin operations and progress in achieving sustainability including current groundwater conditions, status of projects or management actions, evaluation of undesirable results relating to measurable objectives and minimum thresholds, changes in monitoring networks, summary of enforcement or legal actions, and agency coordination efforts to the public and DWR.