

June 26, 2023

Mitigation Plan to Address Groundwater Levels, Land Subsidence and Groundwater Quality Impacts

Version 1.0

Prepared for:

Mid-Kaweah Groundwater Sustainability Agency

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Attachments

Attachment 1. MKGSA's Drinking Water Well Registration Form (NOT INCLUDED YET)
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1 INTRODUCTION

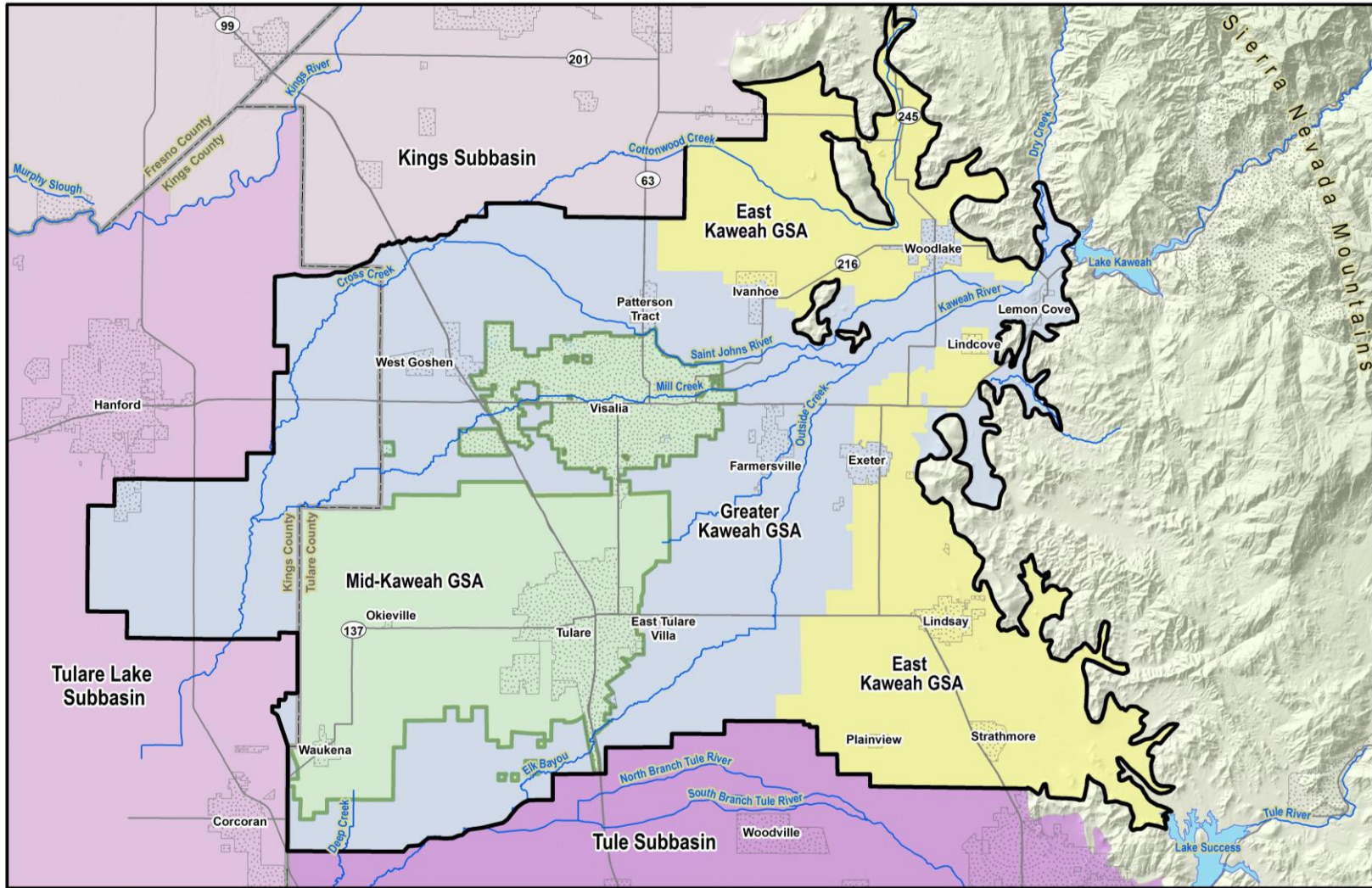
1.1 Sustainable Groundwater Management Act Background

The 2014 Sustainable Groundwater Management Act (SGMA) set forth a statewide framework to help protect groundwater resources over the long-term. SGMA is comprised from a three-bill legislative package, including AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), and subsequent statewide Regulations. SGMA required local agencies to form groundwater sustainability agencies (GSAs) for high and medium priority basins. GSAs have the responsibility to develop and implement groundwater sustainability plans (GSPs) to avoid undesirable results and mitigate overdraft within 20 years of submitting a GSP. The Kaweah Subbasin has until January 2040 to achieve sustainability. GSAs are not responsible for groundwater impacts occurring prior to SMGA becoming effective on January 31, 2015.

1.2 Mid-Kaweah Groundwater Sustainability Agency Background

The City of Visalia, the City of Tulare, and the Tulare Irrigation District (TID) formed the Mid-Kaweah Groundwater Sustainability Agency (MKGSA) through a Joint Powers Authority (JPA) Agreement. Under the JPA Agreement, the MKGSA was granted the authority to “do all acts necessary for the exercise of all the powers authorized under SGMA as necessary to satisfy the requirements of SGMA while allowing the Members of the GSA to maintain control and autonomy over the surface and groundwater assets to which they are currently legally entitled”.

The MKGSA is located entirely within the Kaweah Subbasin, as defined in DWR Bulletin 118, in the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin (Figure 1). The Kaweah Subbasin is bounded by the Kings River Subbasin to the north, the Tulare Lake Subbasin to the west, the Tule Subbasin to the south, and the Sierra Nevada Mountains to the east. The MKGSA’s jurisdictional area is roughly bisected by California State Highway 99. The MKGSA’s area is 163 square miles and represents approximately 23% of the area within the Kaweah Subbasin (696 square miles).



EXPLANATION

- | | | | |
|---|--|--|--|
|  Kaweah Subbasin |  Counties |  Greater Kaweah GSA |  Tulare Lake Subbasin |
|  Rivers |  Cities and Communities |  East Kaweah GSA |  Tule Subbasin |
|  Lakes |  Mid-Kaweah GSA |  Kings Subbasin | |



Figure 1. Mid-Kaweah Groundwater Sustainability Agency Boundary within the Kaweah Subbasin

1.3 Mitigation Plan Purpose

The Subbasin has been in overdraft for many years, resulting in significantly lowered regional and local groundwater levels. The MKGSA GSP includes projects and management actions that allow for the Subbasin to reach sustainability by 2040. However, until sustainability is achieved, continued groundwater level declines and land subsidence are expected in areas of the Subbasin during the time the GSAs implement projects and management actions to achieve sustainability by 2040. The Kaweah Subbasin GSAs are each managing their areas to achieve sustainability, however, until then, groundwater levels in parts of the Subbasin will continue to decline and land subsidence will continue to occur while the GSAs implement projects and management actions to achieve sustainability by 2040. Declining groundwater levels created by allowable overdraft during the implementation phase of the GSPs may also induce unintended, post-2015¹ groundwater quality impacts. Therefore, the Kaweah Subbasin GSAs are committed to mitigating such impacts.

Recognizing the importance of mitigation, the three Kaweah Subbasin GSAs committed to a Mitigation Framework that was included in Section 6 of the Kaweah Subbasin Coordination Agreement contained in the MKGSA First Amended GSP (July 2022). The 2022 Mitigation Framework coordinates the development of individual GSA mitigation plans. In the First Amended GSP, the MKGSA committed to developing a Mitigation Plan by June 30, 2023. Included in the commitment was the creation of an Interim Well Mitigation Program by December 31, 2022, which the MKGSA established by providing \$50,000 in funding to provide replacement water between January 1, 2023 and for the completion and adoption of the full Mitigation Plan.

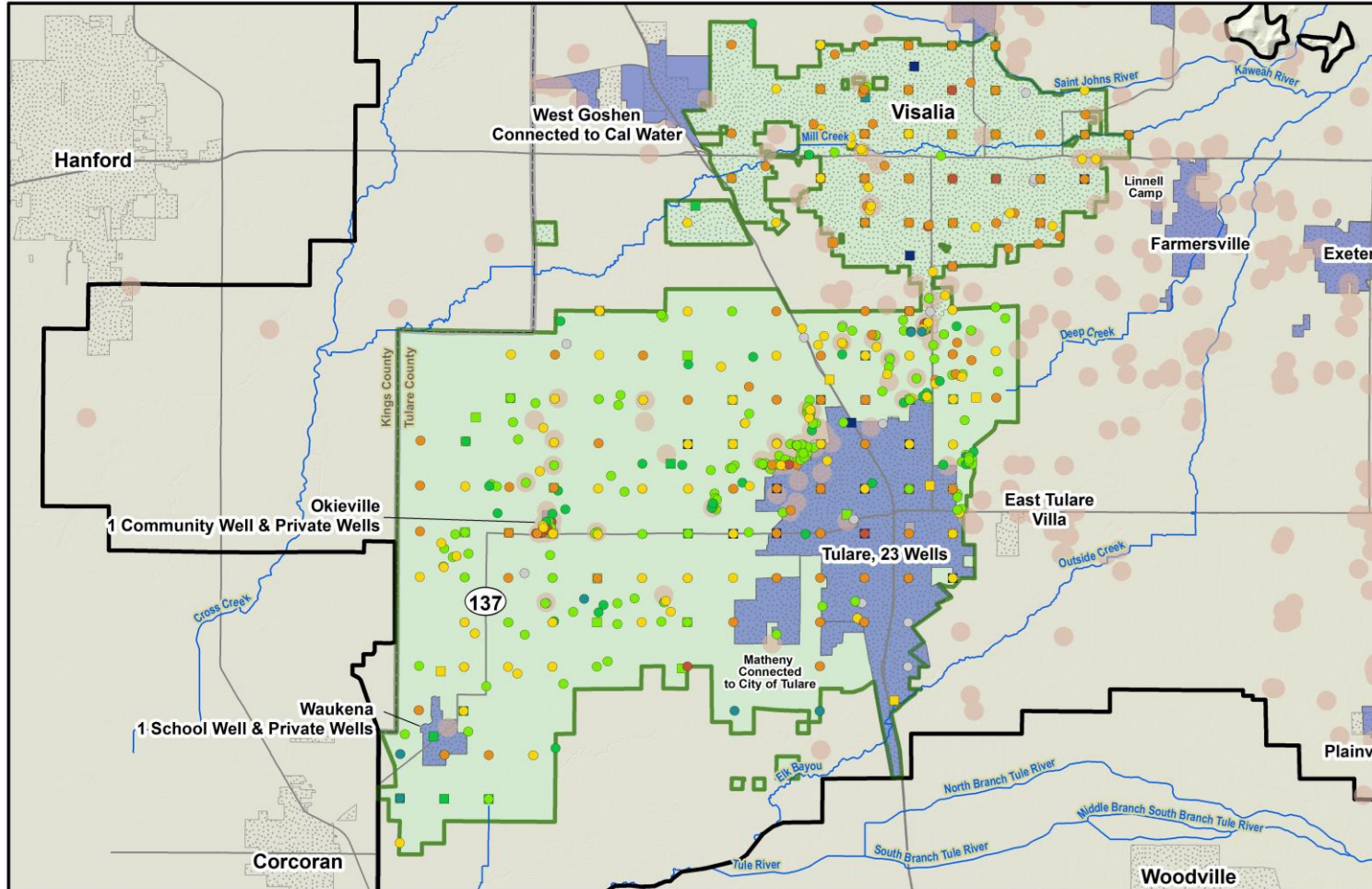
A Kaweah Subbasin Mitigation Program was developed jointly by the Kaweah GSAs in June 2023 as an amendment to the 2022 Mitigation Framework to provide clarification on the process, funding opportunities, and role of the GSAs in the Program. The Mitigation Program is a component of larger efforts that the Kaweah Subbasin GSAs have accomplished and are engaged in to achieve sustainability and avoid significant and unreasonable impacts induced by unsustainable groundwater conditions. This program compliments the GSAs' groundwater extraction allocations, groundwater recharge projects, on-farm recharge, and a water marketing program which have all shown promising contributions to achieving the Kaweah Subbasin's sustainability goal.

The purpose of the MKGSA Mitigation Plan (Plan) is to mitigate impacts on domestic and small community water system wells adversely affected by declining groundwater levels, land subsidence, and degraded groundwater quality caused while MKGSA is implementing its GSP. Domestic well owners and small community water systems reliant on groundwater are the most

vulnerable groundwater users in the MKGSA since their wells are generally shallower than municipal, industrial, and agricultural wells.

1.4 Drinking Water Well Vulnerabilities

The distribution of drinking water wells (domestic, small community water system, and municipal supply wells) are shown on Figure 2. Well data available to the MKGSA is from the California Department of Water Resources (DWR) Well Completion Report (WCR) dataset. The WCR dataset relies on requirements of California Water Code Section 13751 that anyone who constructs, alters, or destroys a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well must file with the DWR a report of completion within 60 days of the completion of the work. Where available from WCRs, the depths of individual wells are shown on Figure 2. It is acknowledged that that not all existing and active drinking water wells may be documented in available resources from DWR. To be able to better identify all drinking water wells, the Mitigation Plan includes voluntary well registration along with outreach within the MKGSA's communities. Mitigation Plan outreach and registration are described in Section 3.



EXPLANATION

- | | | | | |
|-------------------------|---|--|---|--|
| Kaweah Subbasin | Mid-Kaweah GSA | Domestic Well Total Completion Depth, feet <=100 | 401 - 500 | Public Well Total Completion Depth, feet 401 - 500 |
| Rivers and Creeks | Counties | 101 - 200 | 501 - 600 | 501 - 600 |
| Lakes | Reported Dry Wells | 201 - 300 | 601 - 1350 | 601 - 990 |
| Cities and Communities | Domestic Wells - no Well Completion Depth | 301 - 400 | Public Wells - no Well Completion Depth | |
| Disadvantaged Community | | | | |

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Figure 2. Distribution of Domestic, DAC, and Municipal Public Supply Wells within the Mid-Kaweah Groundwater Sustainability Agency Boundary

2 POTENTIAL IMPACTS TO WELLS

2.1 Groundwater Level Impacts

When groundwater levels fall close to the level of the pump, lack of submergence may damage the pump. When groundwater levels fall below the well's pump intake, water can no longer be pumped. The well is considered dry once the groundwater level is below the intake of a pump that cannot be lowered anymore.

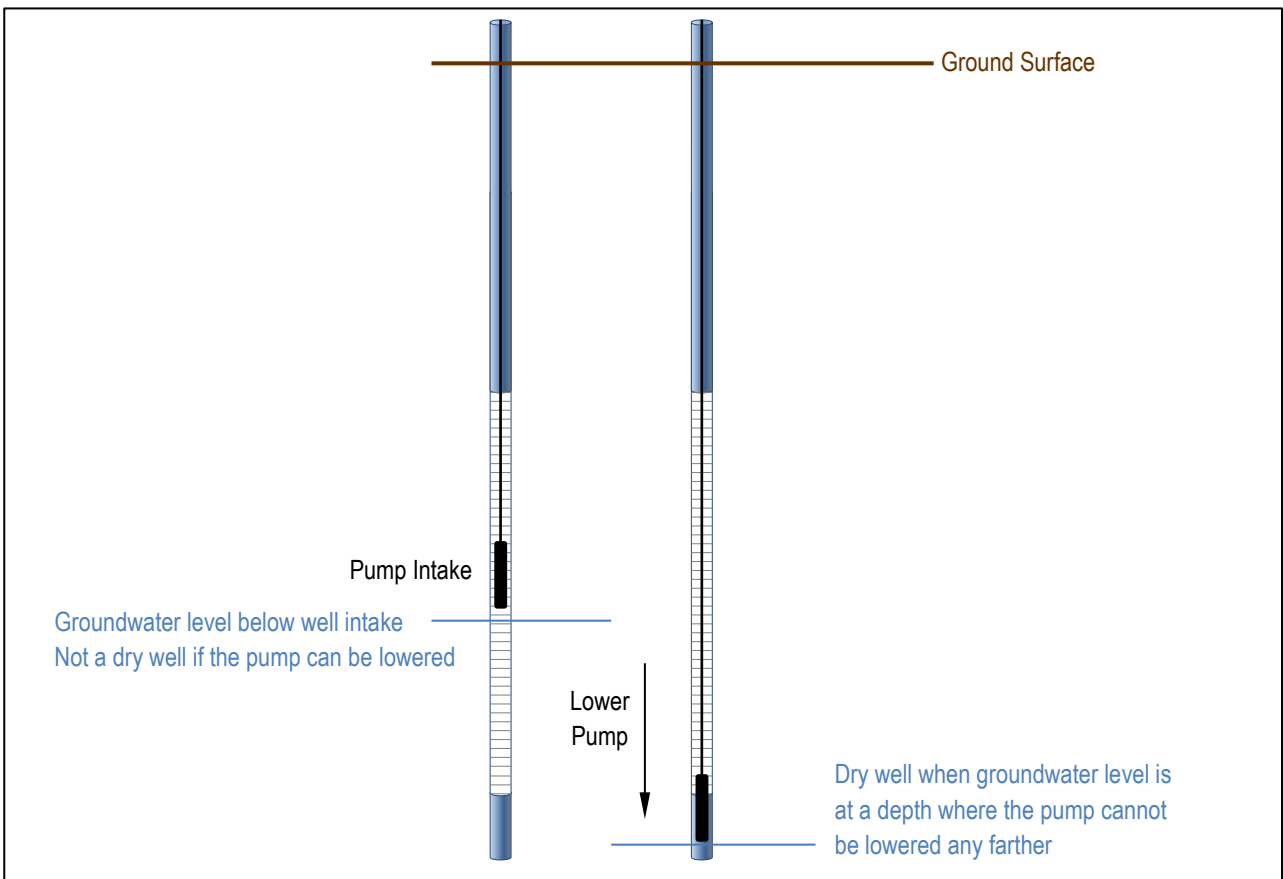


Figure 3. Groundwater Levels Relative to Pump Intake and Bottom of Well

2.2 Subsidence Impacts

The most common subsidence-related impact to wells is well casing failure. Subsidence occurs when groundwater overdraft decreases pressure in subsurface clay layers, causing the clays to permanently collapse. Wells installed across subsiding clay layers are subject to compressive forces that can deform and eventually break well casing. Potential damage from subsidence

shown on Figure 4 includes breaks or ruptures in casing, spiraling casing, ovaling or out of round casing, and rippling casing. A well can be destroyed by subsidence, but in some less severe cases the damage can be repaired. Often wells can be repaired by installing a sleeve to patch the damaged area, commonly called swaging.

During the development of the MKGSA GSP, discussions with locals and amongst the MKGSA Advisory Committee identified well collapse as a significant impact to infrastructure.

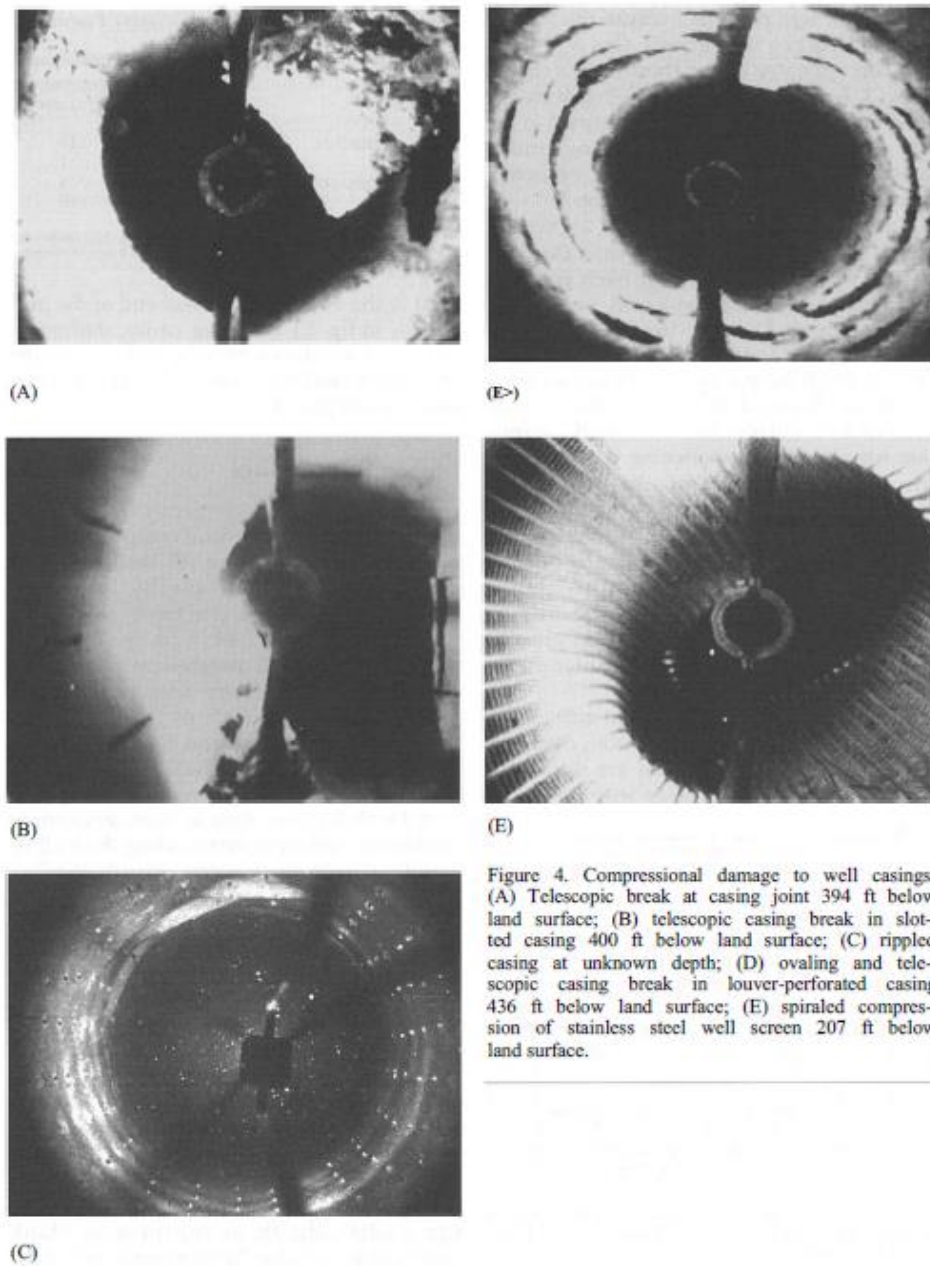


Figure 4. Well Damage Attributed to Subsidence (Borchers et al., 1998)

2.3 Groundwater Quality Impacts

While most groundwater in the MKGSA area meets drinking water standards, some groundwater can contain high concentrations of nitrate, arsenic, uranium, pesticides and other contaminants. Declining groundwater levels may cause degradation of groundwater quality by moving poorer quality water either vertically or horizontally towards water supply wells. In the Central Valley, there are reported cases of episodic groundwater quality degradation during drought where increased pumping draws shallow, contaminated groundwater down to depth zones tapped by long-screened production wells (Levy et al., 2021). Additionally, pumping may lower groundwater levels to the point where they may induce horizontal contaminant plume movement towards water supply wells. Water quality impacts are all health related and do not damage wells.

Nitrate is the most common groundwater quality constituent found at concentrations higher than regulatory standards in parts of the shallow aquifer. Nitrate application in fertilizer is widespread and it is also released from dairy operations and septic systems throughout the MKGSA. Shallow wells or wells with sanitary seals less than 250 feet tend to have higher nitrate concentrations. High nitrate concentrations can cause health problems for infants that results in a dangerous condition called methaemoglobinaemia, also known as “blue baby syndrome”. State primary drinking water standards are 10 mg/L for nitrate as nitrogen (N); 10 mg/L for nitrate plus nitrite as N; and 1 mg/L for nitrite as N.

Arsenic and uranium are naturally occurring constituents of concern found in the southern San Joaquin Valley’s deeper sediments.

- Arsenic at concentrations between 0.005 and 0.010 mg/L is more likely to occur in wells deeper than 250 feet (Burton, et al., 2012) and in wells below the Corcoran Clay. The drinking water standard for arsenic is 0.010 mg/L. Drinking water with arsenic above the drinking water standard is a known human carcinogen, and ingestion of arsenic has been reported to increase the risk of cancer in the liver, bladder, kidney, lungs, and skin.
- Generally found above the Corcoran Clay, Uranium may be elevated but generally does not exceed the drinking water standard of 20 pCi/L or 0.025 mg/L. Effects of uranium in drinking water above drinking water standards includes increased cancer risk and kidney damage.

In Visalia, there is a city-wide tetrachloroethylene (PCE) plume related to discharges associated with dry cleaning facilities. Cal Water and Department of Toxic Substances (DTSC) have worked together since 2007 to ensure nearby Cal Water wells do not spread the PCE plume. The drinking water standard for PCE is 0.005 mg/L. Long-term exposures in drinking water above

the drinking water standard can cause adverse effects to the liver, kidneys, and central nervous system. Prolonged skin exposure can cause irritation, dryness, and dermatitis.

Contaminants of concern related to farming include dibromochloropropane (DBCP) and 1,2,3-Trichloropropane (TCP). Similar to nitrate, these constituents impact shallow aquifers since they are introduced into the ground by land application.

- DBCP is a banned nematicide that is still present in soils and groundwater due to runoff or leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit. If there are DBCP detections, they are typically below the drinking water standard of 0.0002 mg/L. Ingestion of DBCP results in gastrointestinal distress and pulmonary edema. Potential health effects from long-term exposure above the drinking water standard include reproductive difficulties and an increased risk of cancer.
- TCP in California's Central Valley is believed to be from an impurity in certain 1,3-D soil fumigants used to kill nematodes. TCP is a highly stable compound, which makes it resistant to degradation. Its drinking water standard is 0.000005 mg/L and a known animal and probable human carcinogen.

3 WELL MITIGATION PLAN

3.1 Well Mitigation Plan Overview

The Mitigation Plan starts with outreach to communities and individuals at risk of having detrimental impacts to their wells from declining groundwater levels. Also part of outreach is voluntary registration of drinking water supply wells in the MKGSA area to be able to improve knowledge of where drinking water supply wells are located and to provide baseline information on the well condition. Mitigation Plan outreach and registration will continue throughout GSP implementation.

To notify the MKGSA of an impacted well, the well owner (Claimant) will complete and file a claim application. The MKGSA will review the claim application to first determine if the claimant pre-qualifies for mitigation, provides an interim water supply if requested, and then investigates whether the impact is attributed to allowable continued overdraft conditions expressed as declining groundwater levels, land subsidence, and/or degraded groundwater quality, and what the most suitable mitigation solution may be.

3.2 Mitigation Plan Outreach

The MKGSA will conduct a significant outreach program to promote the MKGSA Mitigation Plan to individuals and communities. Phase 1 outreach for the Mitigation Plan will begin prior to approval of the Plan with a 60 day public comment period. Phase 2 outreach will disseminate information on the final Mitigation Plan including when and how to submit a claim and will encourage registration of domestic and small community water system drinking water supply wells. During this more intensive outreach phase, a minimum of two public workshops will be held: one for City of Tulare and the other for the communities of Okieville and Waukena.

In addition to the workshops, the MKGSA will have a dedicated webpage on their website that outlines the Kaweah Subbasin Mitigation Program and provides detailed information on the MKGSA Mitigation Plan, accessible in both English and Spanish. The webpage may be used to register drinking water wells or to file a claim. For those who don't have access to the internet, forms and assistance filling out the forms will be provided by the MKGSA.

The initial outreach effort will take place in July and August 2023. Stakeholder outreach will continue throughout GSP implementation. In accordance with the Kaweah Subbasin Mitigation Program, continued outreach will also include:

The MKGSA's advisory committee will hold an agenda item to discuss Mitigation Plan implementation every quarter.

The MKGSA will develop a notification-trigger criteria and system, intended to notify well users of groundwater conditions nearing the possibility of potential impacts to their wells.

The MKGSA will keep the Mitigation Plan webpage updated on their website. Materials explaining the process, mitigation and the application will be housed on this website page and accessible in English and Spanish.

1. The MKGSA will provide updates on mitigation efforts in the Kaweah Subbasin Annual Reports submitted on April 1st of each year.

3.3 Drinking Water Well Registration

The purpose of registering drinking water wells is to create a baseline record for each well in the event of a future claim. Registration will require the well owner to provide information on well construction, water quality, and well maintenance history. Attachment 1 is a sample of the MKGSA's Drinking Water Well Registration Form. Having a well registered is not a prerequisite for mitigation qualification, but it should speed up the MKGSA's investigation of the claim because there is already background information on the well. If a well is registered with the MKGSA it may be possible to apply for mitigation in advance of the well going dry.

3.4 Well Claims Process

The claim process for wells within the MKGSA boundary is summarized in the graphic below:

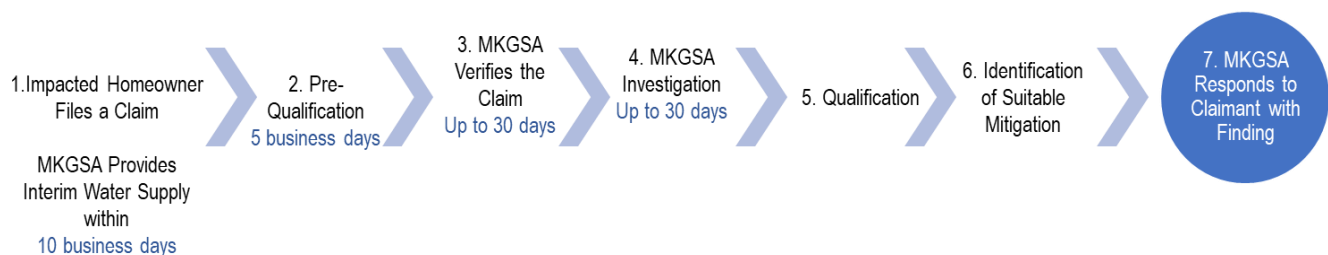


Figure 5. Mitigation Claims Process Summary

1. **Owner of impacted well (Claimant) files a claim application (Attachment 2).** The application requires the Claimant to provide information on the well's construction and current conditions in the well, including water quality and groundwater levels. In the event the landowner cannot provide this information, the MKGSA shall provide assistance in obtaining this information through tools and information within the capacity of the MKGSA.

Upon request by the Claimant in the claim application, **MKGSA will provide an interim water supply** while the claim is investigated and prior to implementing a long-term solution. Short-term emergency supplies shall be provided as soon as reasonably possible, but in all

cases within 14 days of notification to the MKGSA of such needs and a MKGSA preliminary conclusion that the GSA may be responsible for the water supply issue.

Based on information provided in the claim form, the MKGSA will **pre-qualify the Claimant**, with full qualification pending a detailed investigation of the claim. Pre-qualification is described in greater detail in Section 3.5.

MKGSA data collection to **verify the claim**. If there is insufficient data provided by the Claimant to evaluate the claim, MKGSA may collect supplemental data provided the Claimant agrees to allow MKGSA or its contractor access to the well. This may include pulling the pump to measure the pump intake depth, depth to the bottom of the well, and static groundwater level, as necessary; modify the wellhead to install the sounding port to measure static and pumping groundwater levels; modify the wellhead to install a flow meter; or conduct a downhole video survey of the well.

An **MKGSA investigation of the claim** will be conducted to determine whether the well impact is attributed to allowable continued overdraft conditions expressed as declining groundwater levels, land subsidence, and/or degraded groundwater quality. The investigation may extend beyond the subject well to determine both historic and current groundwater conditions in the area and anticipated future conditions.

Qualification for mitigation requires that the well has been impacted by overdraft conditions expressed as declining groundwater levels, land subsidence, and/or degraded groundwater quality. It is described in greater detail in Section 3.5.

Identification of suitable long-term mitigation. Potential mitigation measures will be evaluated by the MKGSA for each claim that is determined to be attributable to GSP-/GSA-approved or authorized activities. Mitigation measures are anticipated to be developed on a case-by-case basis. Potential long-term mitigation actions are described in Section 3.6.2

Respond to Claimant with finding. A Mitigation Agreement will be provided for signature for successful claims that requires the Claimant to indemnify the GSA after mitigation has been completed. An appeals process will be available for well owners who dispute the GSA's finding.

A detailed flow chart of the claims process is shown on Figure 6.

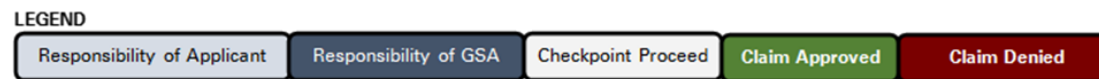
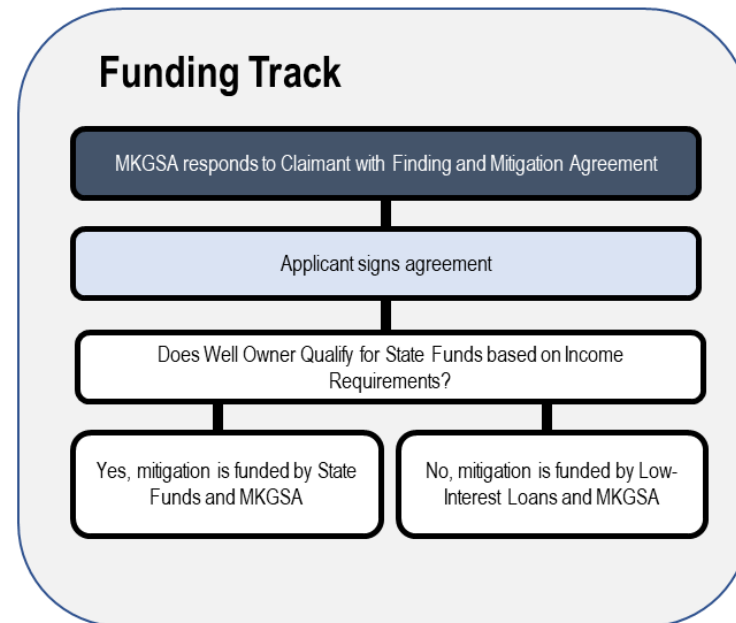
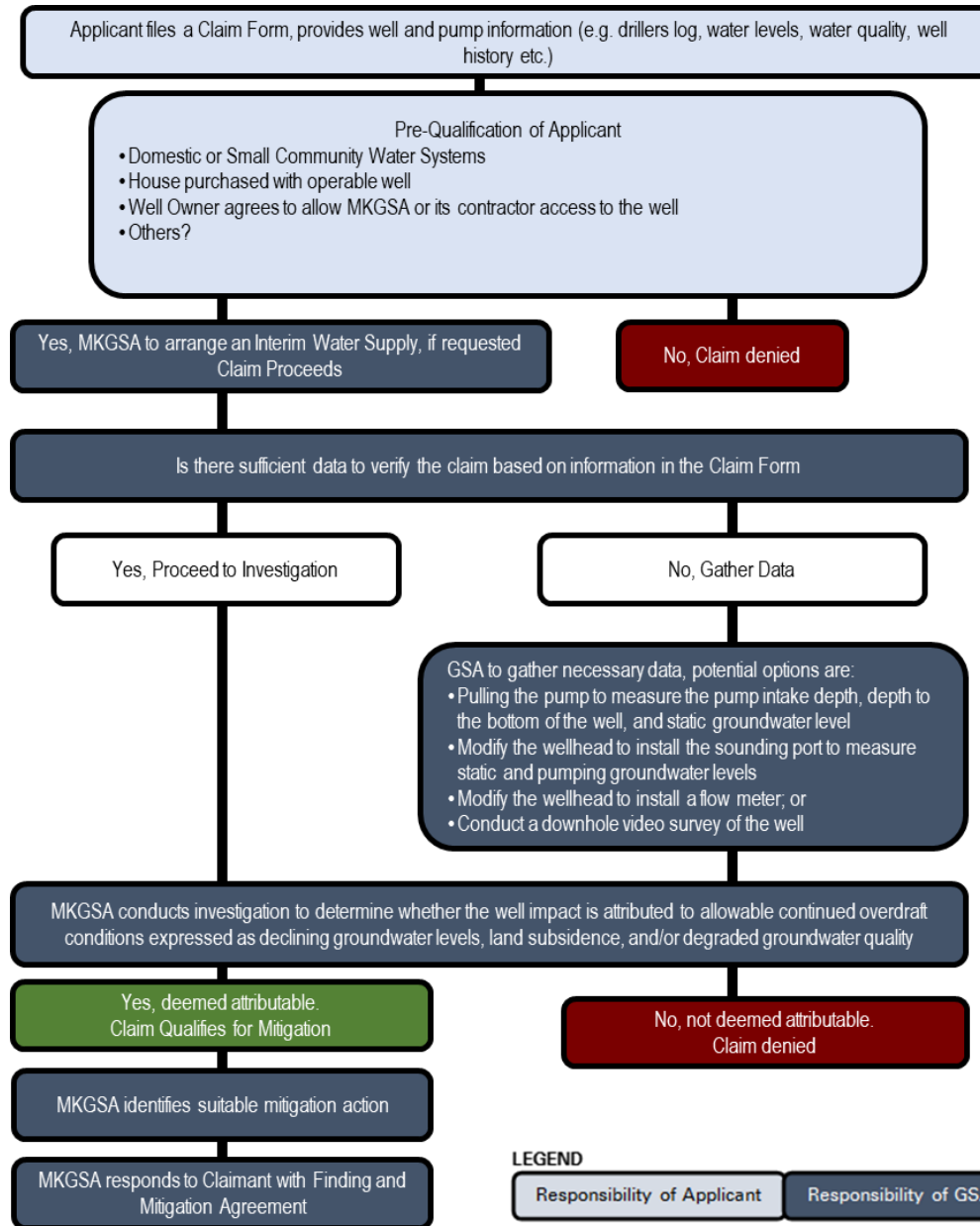


Figure 6. MKGSA Claims Process

3.5 Well Mitigation Qualification

The MKGSA will use information provided by the Claimant to pre-qualify the claim. This process allows for early identification of claims that do not qualify because:

- The well is not used for domestic purposes by individuals or small community water systems
- The well was dry when a house was purchased
- The well owner does not agree to allow MKGSA or its contractor access to the well for claim verification purposes
- The well was impacted before January 2015

If the Claimant pre-qualifies, the MKGSA will verify the well conditions reported by the well owner. The MKGSA may need to collect supplemental data such as pulling the pump to measure the pump intake depth, depth to the bottom of the well, and static groundwater level, as necessary; modify the wellhead to install the sounding port to measure static and pumping groundwater levels; modify the wellhead to install a flow meter; or conduct a downhole video survey of the well. Table 1 lists information the MKGSA will use to inform if a well qualifies for mitigation.

Table 1. Well Mitigation Qualification Considerations

Kaweah Subbasin Mitigation Qualifications Considerations Questionnaire Each GSA may expand on the questions listed below
All Impacted Well Considerations
Have you replaced a well since GSP Implementation (2020)?
Are there records available on the well (including maintenance, pump company)? If so, provide to GSA.
Has there been a notable change in production capacity? If so, since when? If so, provide records to GSA
Does the impacted well extract from a hard rock/fissure well?
Do neighboring ¹ wells extract from the same aquifer?
Has the impacted well been active within the last 6-months?
Has the well undergone significant updates (deepened, casing replacement, lowering pump)?
When was the impacted well installed and operational?
Does the impacted well have a history of water quality issues? Provide water quality analysis if available.

Is the impacted well located within 50-feet of any sewer (sanitary, industrial, or storm; main or lateral)? ³
Is the impacted well located within 100-feet of a watertight septic tank or subsurface sewage leaching field? ³
Is the impacted well located within 100-feet of animal or fowl enclosure? ³
Is the impacted well located within 100-feet of a cesspool or septic pit? ³
Do neighboring ¹ wells have a history of water quality issues?
Has the well user received or is expected to receive financial assistance from a third party to mitigate noted well issue? Third-party must not be GSA staff or GSA's SGMA consultants.
Impacted Domestic Well Considerations
Is the well serving a low-income household (or located in a S/DAC ²)?
Have there been requests/attempts to consolidate well with nearby municipality?
Have there been requests/attempts to consolidate well with a new small community water system?
If GSA elects to include Critical Infrastructure, the following may be considered:⁴
Are there records available on infrastructure maintenance? If so, provide to GSA.
Are there records on operational/flow history (for water conveyance infrastructure)? If so, provide to GSA.
Has the infrastructure owner received or is expecting to receive financial assistance from a third party to mitigate noted infrastructure impact? Third-party must not be GSA staff or GSA's SGMA consultants.
Does the impacted infrastructure pose a flood risk (directly or indirectly)?
Has there been a notable loss in conveyance capacity? If so, since when? (for water conveyance infrastructure)?
When was the infrastructure built and when did operation begin?

¹Neighboring is defined as any wells within a 1,000-foot radius of the impacted well. This is based on industry standard of well impact analyses in the San Joaquin Valley.

²The GSAs will use the current years' definition of low-income household as defined by the State of California's Department of Housing and Community Development. S/DAC represents Severely Disadvantaged Community or Disadvantaged Community. As of June 2023, this includes households with an income less than 80% of the state's median household income.

³Based on California Well Standards, Part II Water Well Construction, Section 8. Well Location with Respect to Contaminations and Pollutants. <https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Standards/Combined-Well-Standards/Water-Construction>

⁴ Critical infrastructure within the Kaweah Subbasin includes the Friant-Kern Canal, other non-native water conveyance infrastructure (such as canals, pipelines, and irrigation structures), railways, and county roads.

Once the MKGSA has verified the well's condition and investigated whether the well has been impacted by allowable overdraft conditions expressed as declining groundwater levels, land subsidence, and/or degraded groundwater quality, the final finding on the claim can be made. Part of the qualification process will include determining whether to provide full or partial well mitigation based on a user's compliance with the GSA's GSP, Rules & Regulations, other laws

or regulations. For example, a user whose own pumping has caused or contributed to overdraft or damage to their own well may not qualify for mitigation under the Program.

3.6 Well Mitigation Actions

3.6.1 Interim Well Mitigation Actions

This Well Mitigation Plan provides for emergency temporary drinking water, while a long-term solution is implemented. MKGSA staff will work with the Claimant upon notification that Interim Well Mitigation is requested. Measures may include:

- Bottled water
- Household tank supplies
- Temporary consolidation to community wells
- Reverse osmosis point of use or whole-house systems

Table 2 lists organization and contact information to obtain immediate relief for dry wells and water service interruptions for domestic users.

Table 2. Drinking Water Assistance for Households

Organization	Services Provided	Contact Information
Tulare County	Bottled water	Contact: Sandra Sabin Email: Bottled waterssabin@tularecounty.ca.gov Phone: (559) 624-7071
Self-Help Enterprises	Bottled water, tanks/hailed water, domestic well assessment / repair / replacement	Bottled water, tanks/hailed water, domestic well assessment / repair / replacement. Dry domestic wells: (559) 802-1685 Bottled water, tanks/hailed water, domestic well assessment / repair / replacement. Bottled water: (559) 802-1284 Bottled water, tanks/hailed water, domestic well assessment / repair / replacement. Well repair/replacement/connection: (559) 802-1289 Bottled water, tanks/hailed water, domestic well assessment / repair / replacement. General drought support: (559) 802-1685 Website: https://www.selfhelpenterprises.org/programs/emergency-services
Kaweah Water Foundation	Bottled water, kiosks fill stations	Address: 2975 Farmersville Rd. Farmersville, CA 93223 Email: admin@kaweahwater.org Phone: (559) 325-4463 Website: kaweahwater.org

Organization	Services Provided	Contact Information
Okieville	water kiosks fill stations	

Note: Impacted well users should file a claim with the MKGSA regardless of if they obtain assistance from other organizations.

Dry Well Tank Replacement: A storage tank and hauled water can be provided as an emergency short-term solution to households whose private wells have gone dry. Income qualification applies for the drinking water assistance program. Applicants to this program are also eligible for the bottled water program described below and will be provided with additional information about funding options for a replacement well or another water source. Property owners (not tenants) can apply for this program. Call Self-Help Enterprises at (559) 802-1685 or email droughtsupport@selfhelpenterprises.org.

Bottled Water: This program is available for households that are experiencing dry wells and/or contamination in their water and meet income qualifications. Qualifying households will receive a total of 60 gallons of bottled water delivered to their home monthly to use for drinking and cooking. Note: Residents living in communities with a population larger than 1,000 must request assistance from the SWRCB directly and are not eligible for the Tulare County Bottled Water Program (i.e., Earlimart and Richgrove). Impacted residents, whether they are tenants or property owners, can apply for this program. Call Tulare County Resource Management Agency at (559) 624-7071 or email bottledwater@tularecounty.ca.gov.

Kiosks: This program provides drinking water kiosks that are open to everyone because of a nitrate settlement between the SWRCB and nitrate dischargers. Residents must take their own refillable containers (up to 5-gallon bottles) to the kiosks and service themselves. Available drinking water kiosks are in:

- Okieville on the corner of Road 48 & Avenue 229
- Hanford at the transit station
- Farmersville at the Kaweah Delta Conservation District at 2975 N Farmersville Blvd, Farmersville, CA 93223

CV SALTS Management Zones Drinking Water: Communities impacted or threatened by nitrate can access a free program that includes nitrate well testing and safe drinking water via bottled water (subject to eligibility). No income qualification applies. Residents are also able to access drinking water kiosks as previously described. The Safe Drinking Water Program Inquiry Form for the Tule Basin Management Zone is available at <https://www.tulemz.com/>.

The MKGSA may seek funding from existing programs including but not limited to those listed above to cover the cost of interim water supply. If an affected party is not eligible to receive funding from an existing program (e.g., income qualifications), then the MKGSA may provide funding for interim emergency water supply to affected parties (e.g., domestic users) for up to 60 days based on an initial determination of a filed claim. If the MKGSA determines that the claim is not a result of MKGSA-approved or authorized activities, then MKGSA may cease funding of the interim emergency water supply. Domestic users will have no obligation to reimburse costs for emergency water supply up to 60 days. If it is determined by subsequent investigation that the issue is not attributable to MKGSA-approved or authorized activities than the GSA would have no further financial obligation. MKGSA may extend the duration of interim emergency water supply beyond 60 days at its discretion if it is determined that additional time is required to make a determination regarding a claim.

3.6.2 Long-Term Well Mitigation Actions

Mitigation measures for impacted wells could include one or more of the following:

1. Well casing and/or screen repair. Depending on the age of the well and the type of impact, damaged wells may be repaired, either by cementing or placing a swage across failed intervals.
2. Lowering of well pump. If there is adequate separation between the pump intake and the bottom of the well, the pump may be lowered. However, if the groundwater level falls below 20 feet from the bottom of the well, there will not be enough submergence for the pump to operate optimally.
3. Pump repair/replacement. Provided the well pump has been damaged by allowable continued overdraft conditions resulting in declining groundwater levels and/or land subsidence.
4. Drilling a replacement well. Where repair of the casing or screen is not possible, a new replacement well may be drilled and constructed. Where land subsidence has compressed the casing, replacement, the well design must include at least 1 compression sleeve across significant fine grained geologic layers encountered during drilling, or thick walled, high strength casing.
5. Deepening a well by re-drilling within the impacted well to a deeper depth. Where space for a new well is limited, re-drilling a well to a deeper depth within the impacted well may be the only option of accessing groundwater. Where land subsidence has compressed the casing, replacement, the well design must include at least 1 compression sleeve across significant fine grained geologic layers encountered during drilling, or thick walled, high strength casing.

6. Complete a permanent connection to a municipal or community water system, if that source of supply is feasible.
7. With the consent of the affected landowner, provide an equivalent water supply from an alternate permanent source.
8. With the consent of the affected landowner, provide other acceptable mitigation.

Mitigation measures for degraded groundwater quality impacted wells could include one or more of the following:

1. Guidance on which existing programs the well user may qualify for.
2. Representation support with the Kaweah Basin Water Quality Coalition;
3. Coordinate consolidation with an existing water system;
4. In significant circumstances where consolidation opportunities are unavailable, the GSA may elect to either:
 - a) provide financial and technical assistance for wellhead treatment,
 - b) facilitate the establishment of a new small community water system,
 - c) provide funding to lower the well pump and/or deepen well, or
 - d) install a reverse-osmosis filter (can be an interim measure).
5. Grant writing and submittal assistance for water treatment, consolidation, or establishment of a new small community water system; or
6. With the consent of the affected user, providing other acceptable means of mitigation.

3.7 Indemnification

Use Self Help Enterprise's language

4 MITIGATION FUNDING AND ANTICIPATED COSTS

Funding mitigation of domestic and small community water system well impacts will be obtained through a combination of MKGSA and state/federal funds. Another source of funds are from MKGSA's JPA membership.

4.1.1 Interim Well Mitigation Funding

The MKGSA is responsible for funding interim water supply and should a claim be determined to be attributable to GSP-/GSA-approved or authorized activities, the MKGSA is responsible for funding mitigation. The MKGSA will seek as appropriate funding from existing or future federal, State and County programs to cover or supplement interim water supply and mitigation of domestic and small system wells. Existing programs that provide funding for impacted domestic wells include the California State Water Resources Control Board's Safe and Affordable Funding for Equity and Resilience (SAFER). This program has funding available for projects that address either drought-related urgent drinking water needs or long-term resilience.

4.1.2 Long-term Well Mitigation Funding

The source of funding for long-term mitigation will depend on whether the well owner of the approved claim qualifies for state funds which are typically income based. If the well owner qualifies for state funds, mitigation will be funded by MKGSA and state funds. If the well owner does not qualify for state funds, mitigation will be funded by MKGSA and low-interest loans. Figure 6 depicts the funding track options.

5 REFERENCES

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- Levy, Z. F., Jurgens, B. C., Burow, K. R., Voss, S. A., Faulkner, K. E., Arroyo-Lopez, J. A., & Fram, M. S. 2021. Critical aquifer overdraft accelerates degradation of groundwater quality in California's Central Valley during drought. *Geophysical Research Letters*, 48, e2021GL094398. <https://doi.org/10.1029/2021GL094398>

6 ACRONYMS & ABBREVIATIONS

bgsbelow ground surface

gpmgallons per minute