

Focused Technical Review:
July 31, 2019 Mid-Kaweah GSA Public Review Draft Groundwater Sustainability Plan

Water Levels

The draft Groundwater Sustainability Plan (GSP) developed by the Mid-Kaweah Groundwater Sustainability Agency (MKGSA) sets the minimum thresholds (MTs) for groundwater levels as the groundwater levels projected through 2040 based on the average groundwater level decline observed over the 2006-2016 time period. Similarly, the MKGSA sets the measurable objectives (MOs) for groundwater levels as the groundwater levels projected through 2030 using the same declining water level trend. This approach is intended to represent continued long-term drought conditions. The draft GSP defines the undesirable result (UR) for chronic lowering of water levels as being when one-third of the representative monitoring sites in the Kaweah Subbasin (subbasin), across all three GSAs, exceed their respective MTs. This approach is consistent with the approach used in the East and Greater Kaweah GSPs and leaves key beneficial users in the subbasin, specifically domestic well users and members of disadvantaged communities (DACs), potentially vulnerable to impacts. While an assistance program is identified in the draft GSP, that program currently lacks key details that would make it a robust mitigation measure for these beneficial users.

- The draft GSP presents water level MTs by: (1) hydrogeologic zones that reportedly share similar groundwater conditions and hydrogeologic behavior (Table 5-2); and (2) by Representative Monitoring Wells (RMWs) (Table 5-3). According to the draft GSP, the hydrogeologic zone MTs are based on the average of the RMW MTs for a particular area. As stated in Section 5.3.1.3, “Consistent with this requirement, the minimum elevation thresholds in this Plan are set at specific levels based on four different hydrogeologic zones as defined herein.” However, well impact analyses are performed based on the MTs developed for each individual RMW, and the MOs are only established at the RMWs (i.e., not by hydrogeologic zones). **Based on the conflicting information presented in the draft GSP, it is not clear which set of MT values will be used for compliance purposes through the GSP implementation phase. Sustainable Management Criteria (SMC), including MTs and MOs, should be clearly identified and applied consistently in the GSP.**
- As shown on **Figure 1**, the MKGSA area includes over 750 domestic wells, three DWR-designated DACs¹ (i.e., Tulare, Matheny Tract, Okieville, and Waukena) with a collective population of over 63,000 people, and two additional small communities adjacent to Tulare that are dependent on groundwater for drinking water purposes (i.e., Soultis Tract, and Lone Oak Tract). The MKGSA also includes 13 community water systems, 11 of which have less than 300 service connections but collectively serve over 5,300 people. Despite this broad and diverse dependence on groundwater for drinking water use, the approach to setting water level MTs/MOs and URs does not explicitly take these drinking water beneficial users into account. As described above, the MTs for each threshold region are set based on an assumed trajectory of decreasing water levels over the next 20 years, without regard to well depths or other potential impacts. The draft GSP acknowledges

¹ Designated at the Census Place and Tract levels.

that impacts to small water systems and domestic wells will be greater than impacts to other well users, but according to the draft GSP, the MTs were determined to be acceptable with the implementation of potential assistance measures (Section 5.3.1.3). **However, according to Section 7.4.8.1 of the draft GSP, none of the identified potential assistance measures for small water systems and domestic wells have been approved by the MKGSA Board and it is not clear how the assistance measures will be implemented or funded. The GSP should describe how this approach is protective of the diverse drinking water users in the MKGSA without a clear implementation plan for the identified assistance measures.**

- Table 1** below identifies the current groundwater elevation and the MO and MTs for RMWs near DACs and other groundwater-dependent communities in the MKGSA. The groundwater level MT in the vicinity of these communities is an average of 118 feet lower than current conditions. In the area of Okieville² (Chart 1 below), the MT is 171 feet lower than current conditions, and in north Tulare, the MT is 192 feet lower than current conditions. Even if groundwater levels are maintained at the proposed MOs, groundwater levels will drop by an average of 87 feet from current water levels in these areas. The draft GSP states that, based on stakeholder input, “the largest impact on declining groundwater levels historically was the dewatering of some wells, forcing homeowners, businesses, farmers, and other groundwater well owners to drill new replacement wells” (Section 5.3.1.2). **Given that the subbasin is in critical overdraft and negative impacts have already been experienced by beneficial users in the MKGSA due to declining water levels, the GSP should explain how a projected additional water level decline of nearly 200 feet in some areas will result in sustainable conditions for beneficial users. The GSP should consider and quantify both the potential dewatering of wells and the increased pumping costs associated with the increased lift at the projected lower water levels.**

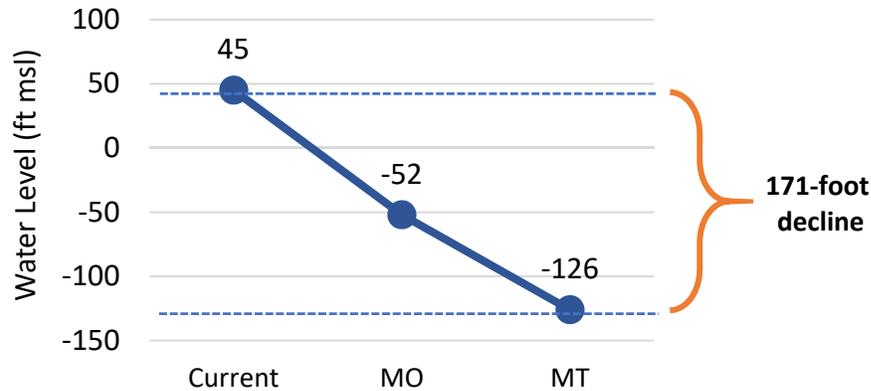
Table 1
Groundwater Elevation Sustainable Management Criteria
Near Selected Communities

Community	Nearby RMW	Current Groundwater Elevation (ft msl)*	MO (ft msl)	MT (ft msl)
Okieville	KSB-1071	45	-52	-126
Waukena	KSB-0922	70	19	-22
Souls Tract/ Lone Oak Tract/ Matheny Tract	KSB-1538	130	83	62
Tulare (mid)	KSB-1695	140	13	72
Tulare (north)	KSB-1628	100	-21	-92
Average Change from Current Elevation (ft)			-87	-118

* ft msl = feet mean sea level; typically 2017-2018 water levels.

² Many members of the Okieville community now receive drinking water from the newly-established Okieville/ Highland Acres Mutual Water Co., which operates a nearly 1,000-foot deep well. However, approximately 20 households in this community and more in the surrounding areas still depend on private wells and thus are at greater risk of impacts from declining water levels.

Chart 1
Groundwater Level Decline Associated with MOs and MTs Near Okieville (RMW KSB 1071)



- The draft GSP includes a limited evaluation of well impacts (Section 5.3.1.3 and Appendix 5c) that compares the known screened intervals of agricultural, public, and domestic wells with the projected 2040 groundwater elevation at each well to estimate the number of wells that would be dewatered. The results of the well impact analyses are categorized by zone and well type. However, this analysis does not appear to actually evaluate the potential well impacts based on either the hydrogeologic zones MTs (Table 5-2) or the RMWs MTs/MOs (Table 5-3). In addition, which wells are within the MKGSA and the locations of these wells that are expected be impacted are not clearly stated or mapped in the draft GSP. **Therefore, the well impact analyses performed in the draft GSP does not appear to actually evaluate the potential impacts to subbasin wells associated with the MTs/MOs developed by the MKGSA. Since the MOs are also based on projected declining water level trends, a well impact analyses should also be performed on the MOs. Furthermore, locations of potentially impacted wells should be provided in order to assess the well impacts specific to DACs, small water systems, and other sensitive users within the MKGSA.**
- Based on the well impact evaluation in Section 5.3.1.3 and Appendix 5C, “18 percent of agricultural wells, 9 percent of public wells, and 21 percent of rural residential wells including domestic wells, would be subject to groundwater levels that would be below their constructed depth” if water levels reach the MTs, as identified at the hydrogeologic zone level. This assessment appears to have been done relative to the bottom of the total well construction depth. However, water supply wells become unusable or subject to decreased performance and longevity as water levels fall within the screened interval, which will occur before water levels reach the bottom of the well. **Therefore, the actual number of domestic wells that would be significantly impacted at the proposed water level MTs would be expected to be higher than represented in the draft GSP.**
- Figure 2** shows the approximate locations of domestic wells and water level RMWs (including the proposed new wells) within the MKGSA area. For purposes of this evaluation, a one-mile radius is shown around each RMW for which ground surface elevations (GSEs) were provided in the draft GSP. Based on available well construction information, the well screens of the domestic wells located within this one-mile radius are compared to the proposed MOs and MTs for the RMWs with

provided GSE data. For purposes of this assessment, a well is identified as *fully dewatered* if the MT is below or at the bottom of the well screen interval and a well is identified as *partially dewatered* at if the MT is below or at the midpoint of the well screen interval. Approximately 30% of domestic wells in the MKGSA are located within the one-mile buffer of RMWs with both MT/MO and GSE data. When water levels reach MTs, approximately 71% of these domestic wells would be expected to be fully dewatered and an additional 15% of these wells would be expected to be partially dewatered. Even at the MO water levels, approximately 64% of these domestic wells would be expected to be fully dewatered and 9% of these wells would be expected to be partially dewatered. These estimates are much higher than the 21% of rural residential/domestic wells identified as being impacted in Section 5.3.1.3 of the draft GSP. We acknowledge that this is a “quick and dirty” assessment of domestic well impacts; however, these results do not appear to be consistent with the analysis presented in the draft GSP. Further, as identified in a previous comment, the draft GSP is not clear on whether MTs are intended to be applied at the RWM-level or the hydrogeologic zone level. Given that the hydrogeologic zone MTs are the average of the RMW MTs, the way the criteria are applied may have a significant difference in the level of impacts experienced at localized areas. **The GSP should present a thorough and robust analysis, supported by maps, that identifies: (1) what domestic wells are likely to be impacted (including partially dewatered) at the MTs and at the MOs, and (2) the location of the likely impacted wells with respect to DACs and other communities and systems dependent on groundwater. Also, pursuant to 23 CCR § 352.4, the GSP should include GSEs for all RMWs.**

- Given that water levels in one-third of all RMWs across all three subbasin GSAs must drop below MTs in order for an UR to be triggered, **significant and unreasonable impacts could occur within significant portions of the subbasin without triggering a subbasin UR. The draft GSP should include a local UR definition that makes it clear that the MKGSA will locally define and address an UR within its service area and protect beneficial users of groundwater.**

Water Quality

The draft GSP sets the MTs for water quality at Maximum Contaminant Levels (MCLs) or the Agricultural Water Quality Objectives (WQOs) at each RMW based on the dominant beneficial use for that monitoring well. The MOs for water quality were set at 75% of the MCLs or WQOs. The draft GSP further defines the UR for degraded water quality as being when one-third of the RMWs in the subbasin exceed an MT. Section 2.2 of the draft GSP identifies arsenic, nitrate, certain volatile organics, and 1,2,3-trichloropropane (TCP) as Constituents of Concern (COCs) for the MKGSA due to concentrations near MCLs or due to increasing trends. The draft GSP further identifies the following constituents to be measured where applicable (Section 3.2.2.4): arsenic, nitrate, chromium-6, dibromochloropropane (DBCP), TCP, tetrachloroethylene (PCE), sodium, chloride, perchlorate, total dissolved solids (TDS). For the reasons identified below, the water quality monitoring network and analysis presented in the draft GSP does not clearly illustrate how the MOs/MTs will be sufficient to ensure that the stated water quality UR of impacting the long-term viability of the groundwater resource, particularly for domestic water users and DACs, will be avoided.

- The draft GSP identifies a methodology used to distinguish between the applicability of either MCLs or agricultural WQOs as the MTs for a given RMW. As stated in Section 5.3.3.3, “If the majority of the beneficial use (greater than 50% of the pumping within a determined area) was agriculture and there were no public water systems (including schools) the minimum threshold would be a host of agricultural water quality constituents” and “If a monitoring well is located within an urban area, or near a public water system (e.g., within a mile), which includes schools, then the minimum threshold would be set at the MCL for drinking water.” However, the draft GSP does not clearly identify on a map or otherwise which RMWs will use MCLs and which will use agricultural WQOs. The document also does not identify which monitoring wells are located within an urban area or near a public water system. **For transparency and completeness, the GSP should clearly identify on maps and in tables which set of MTs/MOs will be applied to which RMWs. These maps should clearly identify the location of DACs, small water systems, and other sensitive users so that the public is able to review and evaluate the proposed sustainability approach. Per 23 CCR §354.28, the draft GSP should provide a detailed explanation as to how the proposed water quality MTs may affect the interests of beneficial uses and users of groundwater or land uses and property interests.**
- **Figure 3** shows the water quality monitoring network identified in Figures 4-6 and 4-7 of the draft GSP, including the new proposed multi-level monitoring wells. The water quality RMWs are focused in the northern and eastern portions of the MKGSA area and the monitoring well density varies by two orders of magnitude across the MKGSA. Specifically, the density of water quality RMWs in the northern portion of the MKGSA area (Visalia area) is approximately two RMWs per square mile, the eastern portion (Tulare and surrounding area) has density of about 0.6 RMWs per square mile, and even with the new proposed wells, the western portion will have a density of about 0.06 RMWs per square mile. Although the western portion of the MKGSA, including the communities of Okieville and Waukena are more sparsely populated than the eastern portion, there are at least 200 domestic wells and several public water systems (including the Okieville/Highland Acres Mutual Water Company, Waukena Elementary School, and Buena Vista School systems) located in this area. **The GSP should clearly demonstrate how the proposed water quality monitoring network in the western portion of the MKGSA area is sufficient to monitor for impacts to beneficial users in this area, given the significant density discrepancy compared to the other portions of the MKGSA area.**
- The draft GSP stated that “An exceedance of any of the MCL or agricultural metrics as defined herein at any representative monitoring sites will trigger a management action within the applicable Management Area or GSA, subject to determination that the exceedance was caused by actions of the GSA” (Section 5.3.3.3). **However, the draft GSP does not identify which management action(s) will be implemented. Additional information is necessary in order to evaluate whether the proposed plan is protective of beneficial users in the subbasin.**
- The draft GSP states that “MKGSA will evaluate groundwater quality degradation by either directly performing groundwater sampling at representative monitoring sites and *[sic]* coordinating with other agencies responsible for the collection and reporting of groundwater quality through other regulatory programs” (Section 5.3.3.3). Appendix 2A of the draft GSP includes a discussion of groundwater quality conditions for the subbasin; however, it is not specific to the MKGSA area and it is difficult to readily understand what parts of this assessment are specifically applicable to the MKGSA. **It is therefore recommended that the GSP include specific discussions of the water quality**

conditions and trends for applicable constituents and uses within the MKGSA area. It is further recommended that this analysis clearly include an evaluation of the change in water quality constituent concentrations relative to change in water levels, particularly over drought periods, to evaluate the potential relationship between water quality and groundwater management activities.³

- The draft GSP identifies RMWs for water quality on Figure 4-6 and Figure 4-7, but does not include well construction information for these wells. Table 4-5 in the draft GSP shows well construction information for a subset of water level RMWs. **Without well construction information for monitoring wells included in the GSP, the public and DWR cannot evaluate if the monitoring wells are: (1) adequate for evaluating water levels relative to the MOs and MTs over the long term, and/or (2) how representative the water quality sampling depths are of the zones used for drinking water purposes by domestic well users and community water systems. Pursuant to 23 CCR § 352.4, this information is required to be provided in the GSP for all monitoring wells.**

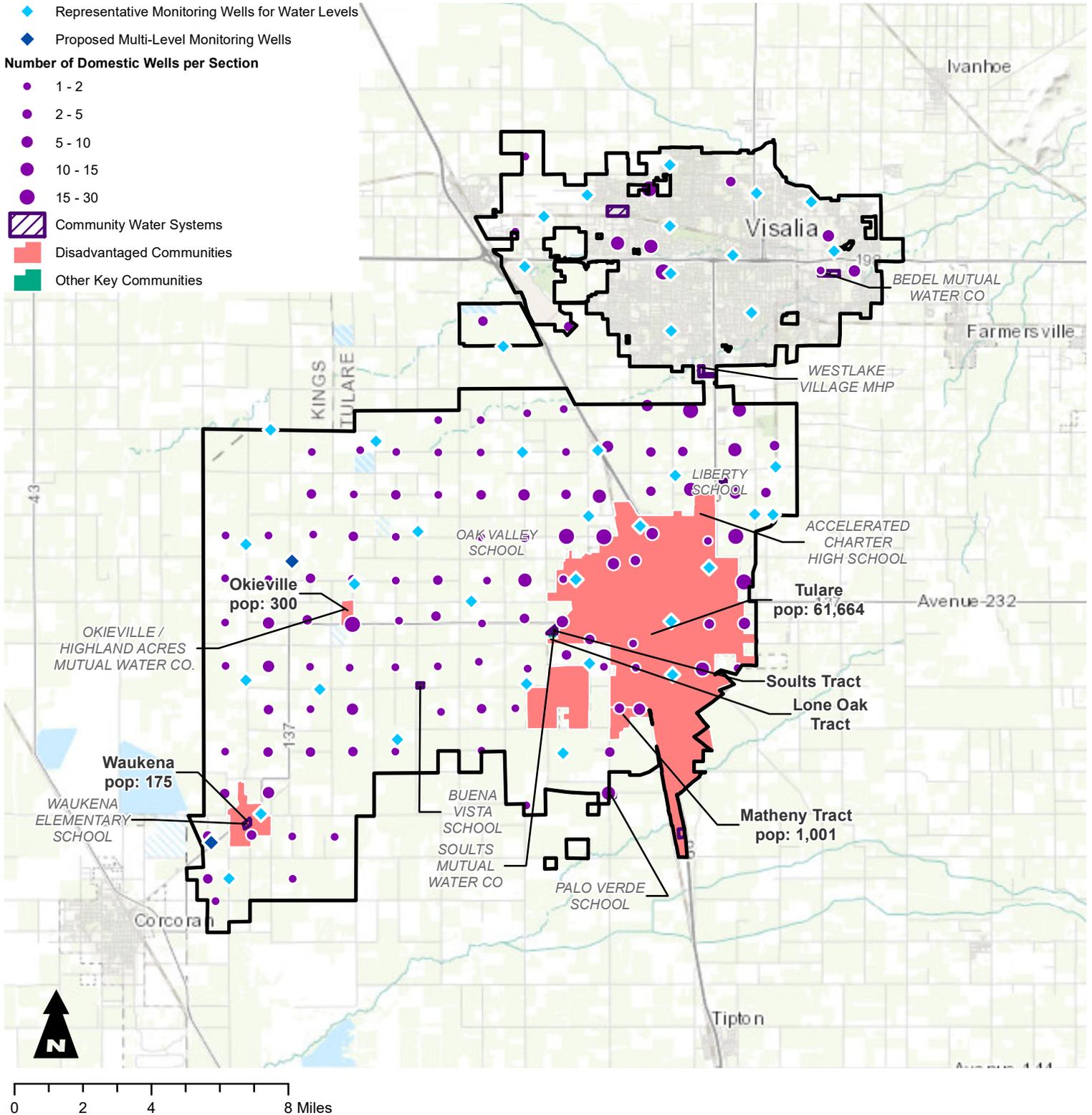
Management Actions

- The draft GSP describes a plan to develop a groundwater extraction allocation program between 2020 and 2025 (Section 7.4.2) and states that “this initial phase of an allocation program shall exclude those well owners who extract less than two AF per year (i.e., de minimis extractors).” Under Section 7.4.8.1, it is acknowledged that the early stages of planning for the assistance program will include “A determination by the GSA to not regulate any de minimis extractor, i.e., any well owner pumping two acre-feet or less annually.” This provision is critical to ensure that drinking water users, including DACs and other domestic well users, will continue to have access to drinking water and **therefore, the GSP should provide stronger clarification that this provision will be included in any allocation program through and beyond the 2025 timeframe.**
- As described above, the draft GSP indicates that it will not impose pumping restrictions on well owners that extract less than two AF per year, but does not address small water systems that may extract over two AF per year, but serve critical drinking water needs, such as the Soult’s Mutual Water Company, Okieville/ Highland Acres Mutual Water Company, and the Waukena Elementary School system. **The GSP should therefore clearly identify how a groundwater allocation program would be designed to protect small water systems and the beneficial users that depend on them.**
- As discussed above, the draft GSP identifies an impact to 21% of rural/domestic wells, and based on our “quick and dirty” evaluation herein, the actual impacts could be much higher. Given these impacts to well owners, the draft GSP identifies assistance measures that are being considered for small water systems and domestic wells (Section 7.4.8.1). **If assistance measures are planned to mitigate impacts to drinking water wells, then the draft GSP should provide clear funding mechanisms and implementation plans for these assistance measures. The GSP should also consider the following in its implementation plan:**

³ Stanford, 2019. *A Guide to Water Quality Requirements Under the Sustainable Groundwater Management Act*, Spring 2019.

- A secure and reliable funding source and mechanism for implementation of any assistance measures needs to be identified. While grant or emergency funding could potentially be available for such a program when needed, the availability of these funds is not certain. A more secure funding mechanism could be the establishment of a reserve fund that is paid into on an annual basis and accrues funds that would then available as water levels drop in the future.
- The implementation of an assistance measure program should be triggered before wells begin to become unusable, so that funding will be available, and the necessary planning and contracting will be completed such that the necessary construction will be implemented without unnecessarily leaving community members without access to drinking water. Thus, the measure should be designed to be proactive, rather than reactive.
- An assistance measure should not be established only in case of emergency, such as the emergency measures implemented in portions of the state during the last drought. Droughts are said to be becoming more and more frequent and severe, and as such should be included as part of the long-term sustainability planning for the subbasin.

**Figure 1 - Representative Monitoring Network for GW Levels Relative to Domestic Wells, DACs, and Community Water Systems
Mid-Kaweah GSA**



Notes
1. All locations are approximate.

- References**
1. Domestic Well Densities: Research to develop the CWC Vulnerability Tool draft as of August 6, 2019.
 2. Disadvantaged community data (place, tract, and block group): downloaded on August 6, 2019 from the DAC Mapping Tool: <https://gis.water.ca.gov/app/dacs/>.
 3. Community Water System data: downloaded on August 6, 2019 from Tracking California: <https://trackingcalifornia.org/water/map-viewer>.
 4. Groundwater level monitoring well information are from Figure 4-4 and Figure 4-7 in Mid-Kaweah GSA GSP - Public Review Draft dated July 2019.

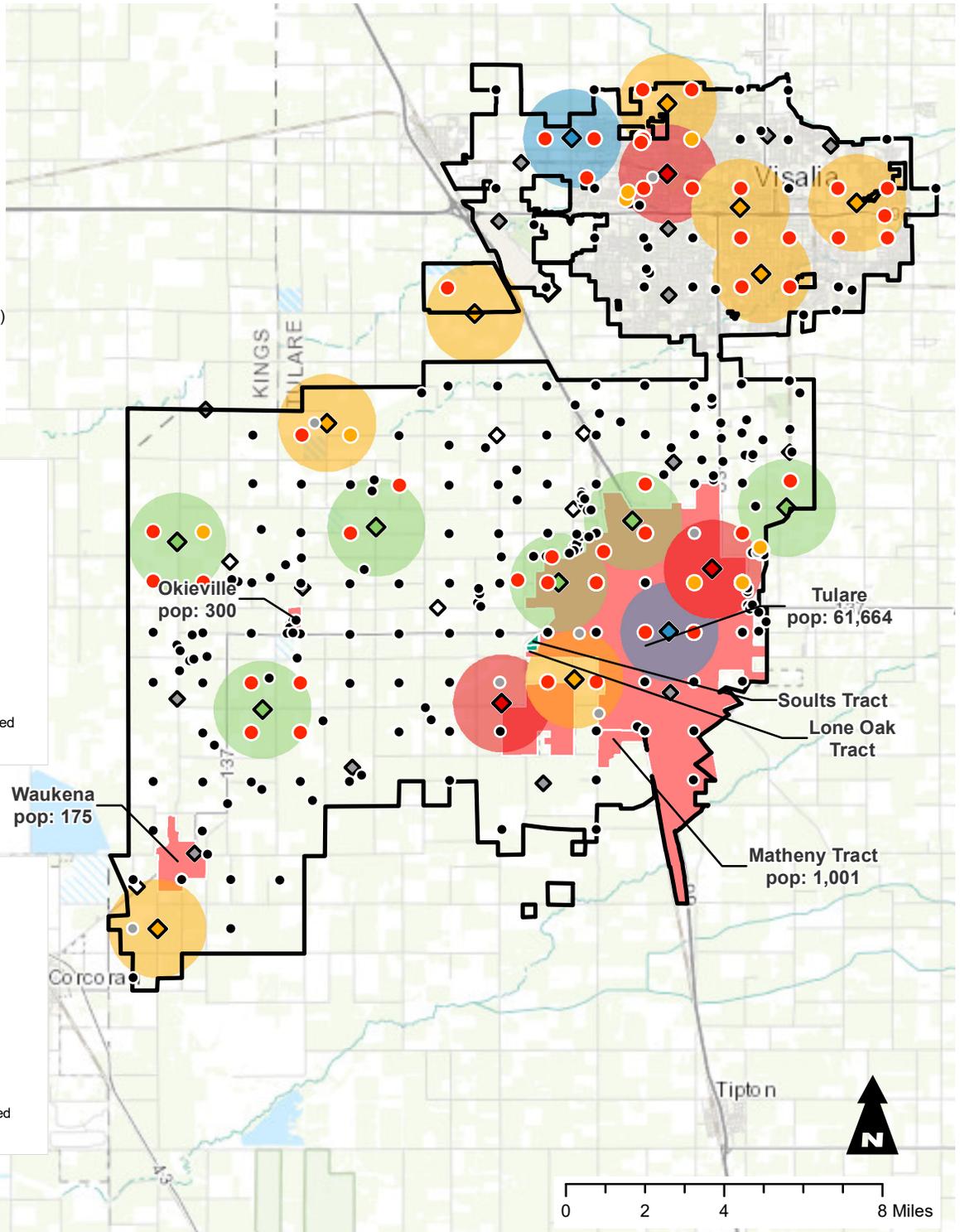
Figure 2 - Water Level Minimum Thresholds and Domestic Wells
Mid-Kaweah GSA

Impact on Domestic Wells at MTs

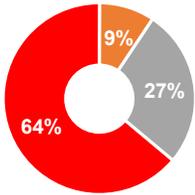
- Fully Dewatered
- Partially Dewatered
- Not Impacted
- Insufficient Data to Evaluate

Water Level MTs (ft bgs)

- ◆ < 200 Shallower
- ◆ 200 - 300
- ◆ 300 - 400
- ◆ > 400 Deeper
- ◇ No MTs/MOs Established (Note 2)
- ◇ No GSE Reported
- Disadvantaged Communities
- Other Key Communities

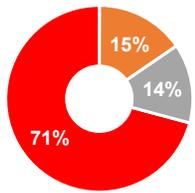


Impact on Domestic Wells at MO Water Level (Note 3 and 4)



- Fully Dewatered
- Partially Dewatered
- Not Impacted

Impact on Domestic Wells at MT Water Level (Note 3 and 4)



- Fully Dewatered
- Partially Dewatered
- Not Impacted

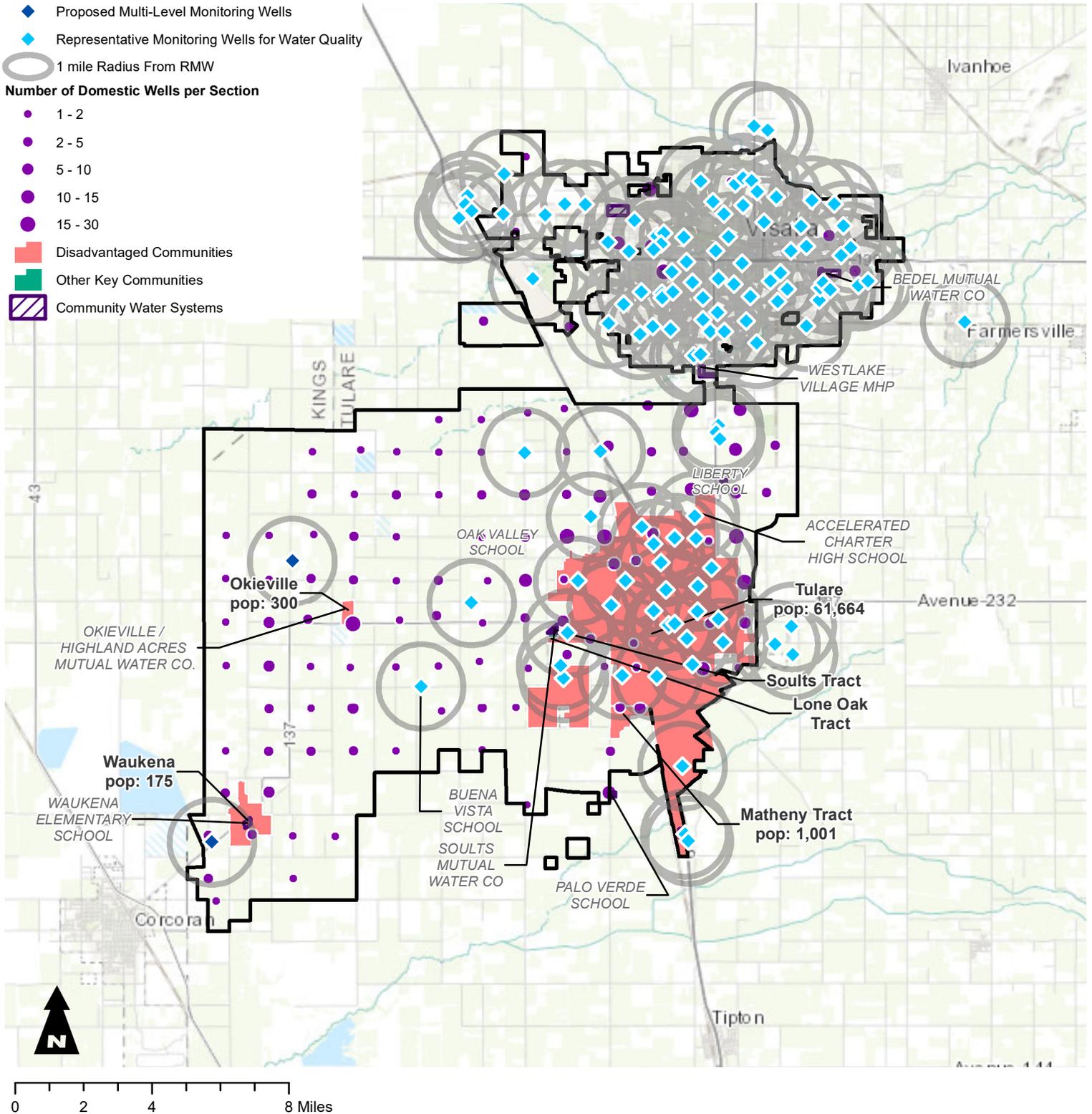
Notes

1. All locations are approximate.
2. There are four recently constructed wells for which MTs and MOs have not been established because "the wells are new and empirical groundwater level data was not available for the period 2006 to 2016", per the draft GSP.
3. For this assessment, the proposed MTs and MOs in ft above sea level presented in Table 5-3 were converted to depth below ground surface values, based on the ground surface elevation (GSE) from Appendix 2A. Approximately half of the monitoring wells do not have GSE reported in the GSP and therefore nearby domestic wells were not evaluated herein.
4. Where available, bottom of screen interval of a domestic well was used for this assessment, and bottom of well depth was used for the remaining domestic wells. A well is identified as fully dewatered if the MT (or MO) is below the bottom of the well screen interval; a well is identified as partially dewatered if the MT (or MO) is below the midpoint of well screen interval.

References

1. Domestic Well Densities: Research to develop the CWC Vulnerability Tool draft as of August 6, 2019.
2. Disadvantaged community data (place, tract, and block group): downloaded on August 6, 2019 from the DAC Mapping Tool: <https://gis.water.ca.gov/app/dacs/>. Last updated in 2016.
3. Groundwater level monitoring well information are from Figure 4-4 in Mid-Kaweah GSA GSP - Public Review Draft dated July 2019. MT and MO values are from Table 5-3 of the draft GSP. GSE values are from Appendix B Table of the draft GSP Appendix 2A.

**Figure 3 - Representative Monitoring Network for GW Quality Relative to Domestic Wells, DACs, and Community Water Systems
Mid-Kaweah GSA**



Notes
1. All locations are approximate.

References

1. Domestic Well Densities: Research to develop the CWC Vulnerability Tool draft as of August 6, 2019.
2. Disadvantaged community data (place, tract, and block group): downloaded on August 6, 2019 from the DAC Mapping Tool: <https://gis.water.ca.gov/app/dacs/>.
3. Community Water System data: downloaded on August 6, 2019 from Tracking California: <https://trackingcalifornia.org/water/map-viewer>.
4. Groundwater quality monitoring well information are from Figure 4-6 and Figure 4-7 in Mid-Kaweah GSA GSP - Public Review Draft dated July 2019.

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GSP Section: Introduction & Plan Area

Description of Plan Area

In order to develop a GSP that addresses the needs of all beneficial users, it is critical that the location and groundwater needs of these communities are explicitly addressed early on in the GSP. In order to improve this section, we recommend the following:

- **Include a map indicating the location of public water systems serving SDACs and/or DACs as well as domestic well communities.** In order to contextualize the subsequent sections of the GSP, it is critical that the geographic locations of these communities be included. Maps overlaying the location of these communities should also be included in subsequent sections of the GSP, including but not limited to when describing management areas, threshold regions, or potential recharge locations.
- **Include a description of the amount of groundwater that each public water system serving SDACs and DACs is dependent on.** In addition to better quantify groundwater usage by each community, include a description of the amount of domestic wells located within the MKGSA and the estimated amount of total groundwater used by domestic well users.

Notice and Communication

Public Engagement, when done well, goes far beyond the usual participants to include those members of the community whose voices have traditionally been left out of political and policy debates¹. It invites citizens to get involved in deliberation, dialogue, and action on public issues that are important to them. More importantly, it helps leaders and decision-makers have a better understanding of the perspectives, opinions, and concerns of citizens and stakeholders, especially the underrepresented ones. This section of the GSP is generally in accordance with SGMA regulations and adequately captures beneficial uses and users of groundwater. Please consider the following recommendations to ensure more effective public engagement:

- **Within the GSP include a high level summary of strategies included in the plan.** The draft GSP currently only mentioned plan goals and requirements and would benefit from a more expanded description.
- **Revise Section 1.5.2 to include water supply for Soult's Tract, Lone Oak Tract, and the water systems of Waukena Elementary, Buena Vista, Oak Valley and Liberty School**
- **Provide more information about stakeholder input and responses from the GSA to address the stakeholder input.**
- **Account for S/DAC outreach, engagement and translation services when applying for state funding, establishing and approving operating budgets and enacting groundwater fees:** In order to ensure proper engagement of underrepresented groundwater users or the next 20 years of GSP implementation, (disadvantaged communities, residents relying on domestic wells and other Spanish speaking users), MKGSA should account for S/DAC outreach, engagement and translation services when applying for state funding, establishing and approving operating budgets and enacting groundwater fees. The GSA should hire qualified consultants who have a record of proven demonstrated success and clear qualifications for working with these

¹ DWR. (2018) Stakeholder Communication and Engagement.

stakeholders. Effective community outreach and engagement includes, but is not limited to, conducting direct community outreach, hosting local community meetings, providing bilingual information, and making interpreting services available at meetings and workshops.

- The current draft GSP provides limited information regarding how communication and updates related Plan implementation will take place and how this will be accomplished. Please consider the following suggestions:
 - **Utilize existing community venues for community meetings, workshops and events to provide information.** For example, consider conducting short presentations during water board and school district board meetings. Venues should be carefully selected in order to meet the needs of the targeted audience.
 - **Identify community social media (Facebook, Instagram, etc.) groups, pages and websites and post information.** Continue to develop media advisories, press releases and work with local media outlets, such as local radio stations, television stations, and local newspapers to captivate a broader audience that are not being reached via the electronic-based outreach currently used.
 - **Identify, and work with key community leaders /trusted messengers to distribute information and encourage community participation.**
 - **Provide bilingual (English and Spanish) information and materials on the website, via email and consider inserting short notices (notices can include key messages, visuals and information that is relevant to the average water user) in water bills and/or community newsletters.** At a minimum, this information should be provided during plan updates, and prior to critical decisions. In particular, the draft GSP released during the formal comment period should include materials highlighting key summaries of the GSP. Critical decision points can also include the adoption of groundwater fees, development and adoption of the potential Assistance Program as well as the Groundwater Allocation Framework, and the Pumping Restriction Program.
 - **Partner with other educational programs to leverage resources and explore opportunities to educate different generational groups.**

GSP Section: Basin Setting

The GSP basin setting requirements are intended to describe the hydrological and groundwater historical changes that have affected the six sustainability indicators. Ultimately, this information is intended to document conditions and quantify the water budget in sufficient detail in order to build local understanding of how it will be used to predict how these same variables may affect or guide future management actions².

The current GSP draft does not include information about local groundwater conditions for MKGSA, yet it encourages the reader to review Appendix 2A to understand the hydrogeologic and groundwater conditions within the context of the entire Subbasin. However, Appendix 2A is not specific to the MKGSA area and it is difficult to readily understand what parts of this assessment are specifically applicable to

² DWR, 2016. Best Management Practices for the Sustainable Management of Groundwater, Modeling (BMP #5), December 2016.

the MKGSA. Moreover, the lack of a summary highlighting the main conditions affecting groundwater use and users within MKGSA boundaries creates a challenge in understanding how the data will be further utilized in other sections of the GSP. It is therefore recommended to:

- **Include specific information of the Basin Setting and trends within the MKGSA area, in particular as it pertains to the groundwater conditions in section 2 of the GSP.** Providing context of local challenges in a single section within the Mid-Kaweah GSP draft GSP would improve the ability of the public to evaluate the basin setting assumptions for reasonableness and completeness to prevent and mitigate for undesirable results.

Hydrogeologic Conceptual Model

In order to better depict the hydrogeologic considerations for vulnerable groundwater users, we recommend the following changes:

- **Summarize and highlight important information for the MKGSA from Appendix 2A.**
- **Include a description of how groundwater quality considerations also impact the potential of recharge suitability under the description of Potential Recharge Areas.**
- **Include the location of SDACs and DACs and domestic wells in Figure 16 and 18 of Appendix 2A.** By adding the spatial distribution of communities, stakeholders will be better able to assess which of these communities could benefit from future recharge projects.

Groundwater Conditions

SHE strongly encourages that the Groundwater Conditions section be improved in order to better achieve the objectives described in the GSP regulations and be more aligned with the guidance provided in DWR's GSP Emergency Regulations Guide. In particular, it is of utmost importance that information specific to the MKGSA area from Appendix 2A is discussed in this section, and that data regarding the water issues affecting groundwater sources of S/DACs and households relying on domestic wells is improved.

As part of GSP Regulations Section §355.4, DWR is required to evaluate whether the interests of the beneficial uses and users of groundwater in the basin, as well as the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered³. S/DACs and rural families relying on shallow domestic wells are extremely vulnerable to changes in groundwater conditions. As such, impacts to their drinking water sources caused by changes in groundwater levels, plume migration, increased degradation of groundwater quality, and subsidence should not be overlooked and these impacts deserve a more in-depth evaluation. A description of the current issues affecting these vulnerable users is key to demonstrating that the MKGSA is taking proactive actions to protect their human right to water. Without adequate characterization of current and historic challenges that communities dependent on groundwater face, MKGSA will not be able to effectively plan to quantify or avoid potential impacts related to groundwater management. Specific recommendations on how this section can be improved are provided in the forthcoming sections.

³ DWR. January 2018. Guidance Document for Groundwater Sustainability Plan Stakeholder Communication and Engagement.

Current and Historical Groundwater Elevation Trends

Changes in groundwater elevation can result in significant impacts to vulnerable communities, including: increased energy costs associated with additional lift pump costs; costs associated with cleaning of the well screen; cost of lowering well pumps; costs of drilling deeper wells; complete dewatering of wells; movement of contaminant plumes; and the financial, emotional, and physical costs associated with having to rely on bottled water. This section can be improved by including a description of the groundwater level conditions in and around S/DACs and by showing whether changing groundwater levels in these communities have led to dry wells or a decrease in water production. SHE recommends the following changes:

- **Include information of the groundwater conditions and trends that are specific to the MKGSA area from Appendix 2A.**
- **Identify communities burdened by or susceptible to changes in groundwater levels.** S/DACs and domestic well owners are extremely vulnerable to changes in groundwater levels. Therefore, it is imperative that the GSP properly identify vulnerable communities that have a higher risk of being affected by changes in groundwater levels to understand: (1) where drinking water wells that are more vulnerable to groundwater level changes are located, and (2) whether changes in groundwater levels may be exacerbated in specific areas by pumping volume or location, conjunctive management or other forms of active management as part of GSP implementation. Based on the Focused Technical Analysis and extensive work with S/DACs, we believe that the following communities are susceptible to changes in groundwater levels with the risk of having their water access impaired:
 - Okieville-Highland Acres: The community of Okieville-Highland Acres consists of approximately 100 homes located in Tulare County, five miles west of the City of Tulare. An unknown number of private wells which serve the remaining 20 homes not connected to the recently constructed water system (based on 3.76 people per household⁴, the population is assumed to be 76) are susceptible to changes in groundwater levels and at risk of having their water access impacted. The depth of these wells are unknown, but typical domestic wells in the area are drilled to a depth of 130 to 225 feet. More recent domestic wells have been drilled to a depth of 360 feet in a preventive effort to declining groundwater levels.
 - Waukena: A severely disadvantaged private well community with a population of 175 residents. Private well communities face unique challenges and are more susceptible than most community water systems to changes in groundwater conditions, drought impacts, and water quality concerns. This is primarily due to the shallow nature of most private wells.
 - High density of domestic wells northwest of the City of Tulare: Similar to other private well communities, families relying on domestic wells face unique challenges and are more susceptible than most community water systems to changes in groundwater

⁴ As indicated by Census data from Tulare County Census Tract 21, Block Group 1 as average household size

conditions, drought impacts, and water quality concerns. This is primarily due to the shallow nature of most private wells.

- Water systems serving Waukena Elementary School, Buena Vista School, Palo Verde School, Liberty School, Sycamore Valley Academy, and Oak Valley School.
- **Include a description of the impacts experienced during the 2012-2016 drought.** Include a description of the successes and challenges experienced by local agencies and stakeholders when addressing impacts of the last drought, including: number of wells that were dewatered; number of households utilizing the interim household water tank program; local cost of emergency drinking water services; amount of grants/loan programs developed and utilized for replacement wells; and an estimated number of homes currently without a sustainable water source. A good understanding of what happened, including what programs and strategies worked well in effectively addressing impacts to drinking water and what strategies could be improved, can aid the MKGSA with the development of management actions that adequately prepares the GSA to prevent and mitigate potential impacts of future droughts. This planning is important for wells that supply drinking water to vulnerable populations that have limited capacity and resources to respond to extreme weather conditions. Based on SHE extensive work with S/DACs in providing water supply emergency assistance, we recommend adding the following information:
 - Drought conditions between Spring 2012 and Spring 2016 lowered the groundwater table, significantly impacting water access for domestic well users. Households reported water supply shortages northwest of the City of Tulare and in Okieville/ Highland Acres, a severely disadvantaged community located 5 miles west of the City of Tulare⁵. During the drought, water levels in Okieville declined from 102 feet below ground surface to 171 feet, a drop of almost 70 feet. A survey of dry wells indicated that 17 wells serving 27 homes went dry. Interim water tanks were installed on 13 properties as a short-term solution while a permanent solution was pursued. Households that met income requirements received bottled water deliveries paired with the water tank program. In 2016, through a cooperative multi-agency effort involving the California State Water Resources Control Board, California Department of Water Resources, and the United States Department of Agriculture, emergency drought relief funding was identified for the construction of a new water system, which included drilling a well, constructing the distribution system including meters. The community secured \$2,081,000 for the construction of the water system. Phase One of the project was completed in the summer of 2019; Phase Two includes construction of a second production well.
- **Include a groundwater surface water elevation map that includes location of vulnerable communities.** It is critical that MKGSA provide maps overlaid with location of DACs, SDACs, domestic wells, public water systems, and any other beneficial users to allow the reader to evaluate how groundwater issues correlate with drinking water supply areas.

⁵ Household Water Supply Shortage Reporting System: <https://mydrywatersupply.water.ca.gov/report/publicpage>

- **Specify well depth information by use type**⁶. We recommend including the minimum, maximum, and average well depth by well type (agricultural, domestic, municipal, etc).

Groundwater Quality

The current characterization of groundwater quality conditions in Appendix 2A fails to recognize that several public water systems within the GSA have experienced challenges remaining in compliance for safe drinking water standards. Further, because of these data gaps in measuring groundwater quality, the extent of groundwater quality contamination for domestic wells or state small water systems is not fully quantified or accounted for in the draft GSP. This section can be improved by including a better description of groundwater quality conditions near or within S/DAC communities as well as an improvement in understanding how potential groundwater management actions could potentially impact the extent of groundwater contamination. We recommend the following changes:

- **Summarize and highlight important information for the MKGSA from Appendix 2A and include local knowledge of the groundwater conditions affecting groundwater use and users in MKGSA area.** This is particularly important considering that Appendix 2A, page 125, states that a “groundwater quality discussion” in the Basin Setting for the context of the entire Subbasin “is largely generalized, although constituents of concern are identified geographically.” As such, the current characterization of groundwater quality conditions fails to adequately provide a narrative of issues affecting the supply and beneficial uses of groundwater as required by GSP Regulations Section §354.16.
- **Include a description of historical groundwater quality conditions for each public water system.** Cities, communities and schools within the MKGSA have historically had challenges meeting safe drinking water requirements. In order to prevent further degradation of groundwater quality conditions, it is important to adequately capture current challenges. At a minimum, consider including in the Mid-Kaweah GSP, section 2, information regarding cities and communities that have fluctuated in and out of compliance. According to the Human Right to Water portal, the water system of Buena Vista School has fluctuated in and out of compliance for Nitrates. The water system of Waukena Elementary School has been in and out of compliance for Uranium and Nitrates. The water system for Oak Valley School has also been in and out of compliance for Arsenic. Moreover, the water well recently drilled for Okieville only found water that meets primary water quality standards at the depth range between 894 ft to 1005 ft. Water depth less than 894 ft exceeds MCLs for Arsenic and Aluminium. Furthermore, SHE recommends providing a summary of the information regarding water quality for the City of Visalia and Tulare, including the city-wide PCE plume in Visalia.
- **Include an assessment of current 10-year average concentrations of contaminants of concern.** The maps depicting current groundwater quality conditions in Appendix 2-E only include individual contaminant concentrations over several different time periods. In order to develop the proposed minimum thresholds and measurable objectives, it is important that the current baseline conditions are established.
- **Include a map of current 10-year average groundwater quality conditions that includes locations of vulnerable communities.** Once current baseline conditions are established, it would

⁶ § 354.16. Current and Historic Groundwater Conditions.

be helpful to include the 10-year average conditions overlaid with location of S/DACs, domestic wells, public water systems, and any other sensitive beneficial users. This is important in order to adequately evaluate how groundwater quality issues correlate with drinking water supply areas.

- **Include an analysis of how groundwater quality concentrations have fluctuated relative to changes in groundwater levels, particularly during drought periods.** The level of concentration of a few contaminants of concern included in the GSP are directly influenced by changes in groundwater levels, both by pumping and recharge.⁷ Appendix 2-E does not include a statistical analysis of the change in contaminant concentrations relative to groundwater levels and groundwater storage. It is important to evaluate the relationship between changes in contaminant concentrations and groundwater management activities, in particular for arsenic.⁸
- **Revise the description of arsenic to include the causes of arsenic mobilization due to over-pumping and compression of clay layers.**⁹ The GSP's description of the chemical properties of arsenic currently attributes the mobility of arsenic to absorption/desorption. The GSP should be revised to include the following ways in which groundwater management can cause arsenic to be mobilized into the aquifer: pumping in areas of the aquifer with low-oxygen conditions and/or with a pH of over 8.5 as well as over-pumping (compression of clay layers). Accurately describing the conditions that result in the mobilization of arsenic is important in order to properly evaluate how potential groundwater management actions could further facilitate its release.
- **Revise the description of the sources and spatial distribution of nitrate to include dairies and other concentrated animal feeding operations as a source of contamination and revise the description of septic systems as a source of contamination.** Dairies are a major contributor to nitrate contamination of groundwater, and thus must be included in the description of the sources of nitrates and how nitrate contamination in the basin will be addressed. Further, the mere existence of septic systems does not necessarily mean they are a source of nitrogen contamination. While poorly maintained, leaky septic systems are a very serious source of localized nitrate contamination, well-maintained septic systems do not pose a similar risk. We appreciate the fact septic systems are called out, and hope that as implementation is carried out, more research and monitoring is conducted to determine what the impact, if any, septic systems are playing in the nitrate contamination within the GSA boundaries.
- **Include a discussion on the impact irrigated agriculture has upon nitrate contamination of groundwater.** Better integration with nitrate regulatory programs must also be included. While

⁷ See Community Water Center "Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act" for more information.

https://d3n8a8pro7vhm.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858

⁸ See Stanford, 2019. A Guide to Water Quality Requirements Under the Sustainable Groundwater Management Act, Spring 2019.

⁹ See Community Water Center and Stanford University factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.

https://d3n8a8pro7vhm.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/WC_FS_GrndwtrQual_06.03.19a.pdf?1560371896

the ILRP and other waste discharge programs are supposed to work on reducing nitrate loading to water sources, many of these dischargers are in still discharging above the MCL. Under SGMA, GSAs are required to address undesirable results, including addressing water quality impacts, that occurred after January 1, 2015. It is likely that in many areas nitrate concentrations have increased since the effective date of SGMA, and thus must be addressed within the GSP.

- **Provide all maps/figures overlaid with location of S/DACs, community water systems, and any other sensitive beneficial users to allow the reader to evaluate how groundwater issues correlate with drinking water supply areas.**

Land Subsidence

The GSP's current evaluation of land subsidence states general impacts, such as impacts to infrastructure, in particular to the Friant Kern Canal, but fails to describe previous and potential impacts to vulnerable communities. Land subsidence could result in many direct and indirect impacts to vulnerable communities. Direct impacts can include damages to community infrastructure including bridges, pipe crossings, roads; collapsing of well casings, that result in well rehabilitation or replacement; and the mobilization and release of arsenic from clay layers into the groundwater aquifer. Indirect impacts can include flooding and long-term environmental effects¹⁰. Since S/DACs, public water systems, and domestic well communities often lack the resources to address these damages, it is important to document and describe previous and potential impacts in order to prevent them from occurring or mitigate impacts if they occur. Please consider the following recommendations:

- **Summarize and highlight important information for the MKGSA from Appendix 2A and include local knowledge of the groundwater conditions affecting groundwater use and users in MKGSA area.**
- **Include a description of possible impacts of land subsidence for S/DACs, public water systems, and domestic well communities.**
- **Include documentation of any historical impacts of land subsidence for S/DACs, public water systems, and domestic well communities in Past Land Subsidence.**

Water Budget

The GSP water budget requirements are intended to quantify the water budget in sufficient detail in order to build local understanding of how historical changes have affected the six sustainability indicators in the basin. Ultimately, this information is intended to be used to predict how these same variables may affect or guide future management actions¹¹. Another important reason for providing adequate water budget information is to demonstrate that the GSP adheres to all SGMA and GSP regulation requirements and can demonstrate the ability to achieve the sustainability goal within 20 years, and maintain sustainability over the 50 year planning and implementation horizon.

¹⁰ Galloway, D., Jones, D, and Ingebritsen, S.E. Land Subsidence in the United States. U.S. Geological Survey Circular 1182.

¹¹ DWR, 2016. Best Management Practices for the Sustainable Management of Groundwater, Modeling (BMP #5), December 2016.

The water budget made available to the public is incomplete, and a full evaluation of the model and assumptions cannot be made at this time. Without a complete GSP draft that thoroughly explains the assumptions and methods used for the development of the water budget, the public is unable to provide meaningful comments and recommendations. The GSP is missing key information that includes all information on data and assumptions used in the development of the water budget. We recommend the following changes:

- **Summarize and highlight important information for the MKGSA from Appendix 2A.**
- **Include a single tabulation of all the sources used.** The sources of data used for the water budget components are identified throughout the text of the Appendix 2-A. However, the discussion and tabulation of all data sources in a single section would improve the ability of the public to assess the data sources and evaluate the water budget assumptions for reasonableness and completeness.
- **Provide additional information detailing how the water budget presented in Table 2-1 was estimated.** Little information is provided in the draft GSP on the methods and assumptions used to estimate groundwater inflow and outflow data presented in Table 2-1. Without a complete GSP draft that thoroughly explains the assumptions and methods used for the development of the water budget, the public is unable to provide meaningful comments and recommendations. Please clarify how data was compiled, including the methods and assumptions used to estimate the small water system and rural domestic water demand.
- **Provide additional information detailing how small water system demand was estimated in Appendix 2A.** No information was provided regarding Small water system demand was reported to be estimated from data in previously published reports. Very little specific information is provided in the draft GSP on the methods and assumptions used to estimate the small water system demand. The annual demand from small water systems is shown to increase throughout the water budget period but it is not possible to determine if the values are reasonable from the information and assumptions provided in the draft GSP.
- **Provide additional information detailing how rural domestic water demand was estimated in Appendix 2A.** Appendix 2A states that rural domestic water demand and consumptive use was estimated using an assumed demand rate of 2 AFY per dwelling and the density of rural domestic dwellings. The draft GSP reports that the density of these dwellings has not changed significantly over time and, therefore, rural domestic pumping has not changed over time. The method and data used to determine the density of these dwellings is not reported and cannot be evaluated and no maps are provided in the Appendix 2A showing the locations of these rural domestic users.
- **Revise percentage of return flow from rural domestic water to address inconsistencies:** Page 99 of Appendix 2-1 states that “Similar to the rural small water system analysis above, a 70 percent portion of the pumped rural domestic water is assumed to return to groundwater via septic system percolation and irrigation return flows (Dziegielewski and Kiefer, 2010). Throughout the Subbasin, an annual total pumpage for rural users was 2,272 AF/WY on average, 30 percent of which returned to groundwater.” The assumed fraction of total rural domestic pumping that returns to groundwater and the calculation of net rural domestic pumping

reported in Appendix 2-A is inconsistent. It is unclear if the assumed fraction of pumping that returns to groundwater is 30% or 70%.

- **Provide additional information regarding the assumptions used to define changes in land use and how that was incorporated into the projected water demand presented in Table 2-1 and Appendix 2A.** Based on the draft GSP, current land use was determined using the 2014 DWR land use survey data. Historical changes in land use area are not reported and, at this time, it cannot be determined if land use changes, including changes in urban areas, were incorporated into the water budget as is required by GSP Regulation Section §354.18.
- **Provide water budget annual component results broken down for each subarea in order to allow for the assessment of the spatial variability of the water budget components.** Section 2.3 presents annual water budget components for water years 1997-2017 for the MKGSA area and Appendix 2-A presents the same information for the subbasin. Components related to urban and rural domestic water use are lumped into two components (wastewater inflow and M&I pumping). The relative contribution of rural domestic and small water system users to these components cannot be evaluated at this scale, thus it would be helpful to provide information to better support the evaluation of the impacts on DACs and community water systems.
- **Include an uncertainty analysis to identify the plausible range in water budget results and an indication of the magnitude of the effects these inherent uncertainties may have on the water budget results.** The draft GSP does not include any discussion of the uncertainty in the data used for the model and its effect on the water budget results, a key requirement as prescribed by GSP Regulations Section §354.12.
- **Include an in depth discussion regarding the forthcoming sustainable yield evaluation and describe the potential implications the sustainable yield, the safe yield, and the water accounting framework could have on drinking water use in the MKGSA.** The draft GSP includes minimal discussion of the sustainable yield of the subbasin or the MKGSA area, but does note that the subbasin is in overdraft and that a groundwater modeling will be used to estimate the sustainable yield through the use of initial thresholds and objectives. A Water Accounting Framework is included, which provides each GSA with a groundwater supply that is the beginning of a potential groundwater allocation, but there is no discussion of how the allocation will impact each GSA or the rural domestic and small water system users. In addition, the discussion of the sustainable yield does not address how to account for undesirable results that occurred between January 2015 and when GSPs are submitted.
- **Include a discussion and analysis in the GSP that evaluates the projected water budget conditions, specifically focusing on climate change impacts for domestic well users, S/DACs, and community water systems.** The adjustments made to the climate change assessment and data sets were made based on guidance and climate change data provided by DWR. However, the draft GSP does not include a discussion of the effects of these changes on the MKGSA water budget and there is no discussion of the impacts to specific areas, such as areas of rural domestic water users or small community water systems. No information is provided on how projected demand will be met or reduced to meet sustainability goals.

Management Areas

The proposed three management areas consist of the respective jurisdictional areas of MKGSA's three Members, i.e., the City of Visalia, City of Tulare, and the Tulare Irrigation District. Our main concern is that the current proposal for management areas and threshold regions has limited consideration for vulnerable communities dependent on groundwater and does not adequately describe how the area will operate under different minimum thresholds. We recommend the following changes:

- **Revise the description of the management areas to describe the S/DACs and number of domestic well users within each boundary.** As described in the draft GSP, management areas are responsible for implementing projects and management actions within their area. Without a clear understanding of the S/DACs and domestic well users within the management area boundaries, the current draft GSP does not adequately describe conditions in these areas as required by Reg 354.20.
- **Consider developing management areas or threshold regions around vulnerable communities.** Vulnerable communities within the MKGSA do not have access to surface water and are dependent on groundwater. In order to develop more protective thresholds for vulnerable communities, it would be important to consider developing a protective buffer, management area, or threshold region around them. This recommendation can also be considered under projects and management actions. Key communities that could benefit of such protection include Okieville and Waukena and the water systems serving Waukena Elementary, Buena Vista, Oak Valley and Liberty School.
- **Revise the description of the Monitoring and Analysis to better describe how the management areas will operate to avoid undesirable results.** As currently drafted, the description of management areas could be improved by better clarifying how the different management areas can operate under different minimum thresholds and measurable objectives without causing undesirable results. The chart indicates which threshold regions are within each management area, but there is no description of how each management area will address the different water surface elevation conditions. Since S/DACs and domestic well users are the most vulnerable beneficial users within the MKGSA, it is important to clearly indicate how undesirable results will be avoided.

GSP Section: Sustainable Management Criteria

Sustainability Goal

The Kaweah Subbasin sustainability goal draft included in the draft GSP focuses on protecting groundwater for industry uses, which does not satisfy SGMA's intention, and does not reflect the collaborative stakeholder-driven process that took place over the course of several MKGSA Advisory Committee and Kaweah Subbasin Management Team meetings. Beginning in November 2018 and continuing over the course of several meetings, the MK Advisory Committee spent a great deal of time discussing what should and should not be included in the Sustainability Goal statement. While perspectives were varied, there was general support among committee members to set a Sustainability Goal that includes a protective stance toward groundwater quality. SHE would like to see more

proactive steps taken to improve groundwater quality and tools necessary. This needs to be clearly stated in the language in the MKGSA final draft. Including human consumption in the language will make the statement stronger and demonstrate to residents that their water needs are a priority. Water quality is another important component to strengthening the Sustainability Goal. This will help the GSP meet SGMA standards. SGMA further requires a transparent and inclusive process; therefore it is critical that all GSAs within the subbasin respect guidance and recommendations previously provided by various stakeholders. Revising the sustainability goal without proper explanation or discussion with the public is not appropriate nor is it in accordance with SGMA.

Additionally, upon reviewing the draft GSP, community participants at a SHE workshop in Okieville brought attention to the lack of mentioning the need for drinking water in the proposed GSP's Sustainability Goal. At the workshop, participants were provided information about SGMA, their local GSA and presented general information about the draft GSP. Participants were asked to share their vision for sustainability and provide recommendations for what should be included in the Subbasin's sustainability goal. Participants primary question if agricultural enterprises should be prioritized over human consumption. Other feedback provided at the workshop included the importance of ensuring preserving drinking water supplies and addressing groundwater quality.

Based on participants' feedback and SHE involvement at several MKGSA Advisory Committee meetings and Kaweah Subbasin Management Team meetings where sustainability goal for Kaweah were discussed, SHE recommends considering the revision of the current Sustainability Goal in order to fully integrate stakeholders' vision for groundwater management. We recommend the following:

- **Adopt the sustainability goal that was previously and extensively discussed during public meetings. The sustainability goal should include language that demonstrates MKGSA's intent to support the protection of the human right to water by "preserv[ing] the viability of cities and existing agricultural enterprises as well as the viability of school districts, smaller communities, and households relying on shallow domestic wells¹²".** As stated by our organizations during several meetings and in written comments, Kaweah Subbasin GSAs should strive for the viability of unincorporated communities and schools, both now as well into the future.
- **Add a clear statement of the efforts the Agency plans to take to address groundwater quality.** From our understanding and based on SGMA's inclusion of UR No. 4, it is clear that water quality degradation must be addressed in a GSP. As DWR will consider the "human right to water" policy when implementing these regulations, we recommend for a clearer statement of how the GSA plans to include and address groundwater quality issues in the area.

¹² Quote from draft Kaweah Subbasin sustainability goal previously developed.

Undesirable Results, Minimum Thresholds, and Measurable Objectives

Chronic Lowering of Groundwater Levels

The Focused Technical Review of the July 2019 Draft MKGSA GSP identified several data gaps and potential significant impacts to public water systems and domestic wells. As expressed by our organizations during MKGSA meetings, the current GSP does not adequately consider the groundwater impacts that may affect the supply and beneficial uses of groundwater as required by GSP Regulations Section 354.16.

Additionally, during the previously mentioned community GSP review workshops, participants were asked to share their opinions and provide recommendations for what should be included in the Subbasin's sustainable management criteria. Participants were concerned with the proposed MT/MOs and what it could mean to their access to water. Feedback provided at the workshop included ensuring preserving drinking water supplies and addressing groundwater quality.

Though we are pleased that MKGSA is considering providing assistance to small-system and domestic well owners without the financial wherewithal to service or replace their pump and well facilities, particularly those that provide potable water, we would like to highlight the following concerns and recommendations:

- **Conflicting information:**

The draft GSP presents water level MTs by: (1) hydrogeologic zones that reportedly share similar groundwater conditions and hydrogeologic behavior (Table 5-2); and (2) by Representative Monitoring Wells (RMWs) (Table 5-3). According to the draft GSP, the hydrogeologic zone MTs are based on the average of the RMW MTs for a particular area. As stated in Section 5.3.1.3, "Consistent with this requirement, the minimum elevation thresholds in this Plan are set at specific levels based on four different hydrogeologic zones as defined herein." However, well impact analyses are performed based on the MTs developed for each individual RMW, and the MOs are only established at the RMWs (i.e., not by hydrogeologic zones). Based on the conflicting information presented in the draft GSP, it is not clear which set of MT values will be used for compliance purposes through the GSP implementation phase. **Please ensure that the Sustainable Management Criteria, including MTs and MOs, be clearly identified and applied consistently in the GSP.**

- **Minimum thresholds are established without regard to well depths or other potential impacts:**

With a collective population of over 63,000 people, communities within the MKGSA area are entirely dependent on groundwater for drinking water purposes. The MKGSA includes 13 community water systems, 11 of which have less than 300 service connections but collectively serve over 5,300 people. Despite the broad and diverse dependence on groundwater for drinking water use, the approach to setting water level MTs/MOs and URs does not explicitly take these drinking water beneficial users into account. The MTs for each threshold region are set based on an assumed trajectory of decreasing water levels over the next 20 years, without regard to well depths or other potential impacts.

The draft GSP includes a limited evaluation of well impacts (Section 5.3.1.3 and Appendix 5c) that compares the known screened intervals of agricultural, public, and domestic wells with the projected 2040 groundwater elevation at each well to estimate the number of wells that would be dewatered. The

results of the well impact analyses are categorized by zone and well type. However, this analysis does not appear to actually evaluate the potential well impacts based on either the hydrogeologic zones MTs (Table 5-2) or the RMWs MTs/MOs (Table 5-3). In addition, which wells are within the MKGSA and the locations of these wells that are expected to be impacted are not clearly stated or mapped in the draft GSP. Therefore, the well impact analyses performed in the draft GSP does not appear to actually evaluate the potential impacts to subbasin wells associated with the MTs/MOs developed by the MKGSA.

Moreover, based on the well impact evaluation in Section 5.3.1.3 and Appendix 5C, “18 percent of agricultural wells, 9 percent of public wells, and 21 percent of rural residential wells including domestic wells, would be subject to groundwater levels that would be below their constructed depth” if water levels reach the MTs, as identified at the hydrogeologic zone level. This assessment appears to have been done relative to the bottom of the total well construction depth. However, water supply wells become unusable or subject to decreased performance and longevity as water levels fall within the screened interval, which will occur before water levels reach the bottom of the well. Therefore, the actual number of domestic wells that would be significantly impacted at the proposed water level MTs would be expected to be higher than represented in the draft GSP.

Lastly, our assessment of the water levels (Focused Technical Review, Figure 2) compared the well screens of the domestic wells located within a one-mile radius of RMWs to the proposed MOs and MTs. Approximately 30% of domestic wells in the MKGSA are located within the one-mile buffer of RMWs with both MT/MO and GSE data. Based on our assessment of the water levels, approximately 71% of these domestic wells would be expected to be fully dewatered and an additional 15% of these wells would be expected to be partially dewatered. Even at the MO water levels, approximately 64% of these domestic wells would be expected to be fully dewatered and 9% of these wells would be expected to be partially dewatered. These estimates are much higher than the 21% of rural residential/domestic wells identified as being impacted in Section 5.3.1.3 of the draft GSP. We acknowledge that this is a quick assessment of domestic well impacts; however, these results do not appear to be consistent with the analysis presented in the draft GSP. Furthermore, as identified in a previous comment, the draft GSP is not clear on whether MTs are intended to be applied at the RWM-level or the hydrogeologic zone level. Given that the hydrogeologic zone MTs are the average of the RMW MTs, the way the criteria are applied may have a significant difference in the level of impacts experienced at localized areas.

It is therefore recommended that the assessment be revised regarding the potential impacts on drinking water users of the minimum thresholds, measurable objectives, and proposed undesirable results. Based on a revised assessment, MKGSA should develop more protective thresholds near vulnerable communities, schools, and high density areas of domestic wells to ensure the protection of these important water sources.

- **Undesirable Results (UR):**

Given that water levels in one-third of all RMWs across all three subbasin GSAs must drop below MTs in order for an UR to be triggered, significant and unreasonable impacts could occur within significant portions of the subbasin without triggering a subbasin UR. The draft GSP acknowledges that “what was evident, from stakeholder input, as the largest impact on declining groundwater levels historically was the dewatering of some wells, forcing homeowners, businesses, farmers, and other groundwater well owners to drill new replacement wells” (Section 5.3.1.2). The draft GSP, however, does not provide

information on how many wells in fact would be considered an undesirable result and does not clearly indicate how the proposed water level URs will preserve the quality of life or support population growth, in particular for domestic well users and S/DACs reliant on groundwater.

We recommend including a definition of a local undesirable result. The definition should clearly indicate how the MKGSA will locally define and address an undesirable result within its service area and protect beneficial users of groundwater.

- **Lack of consideration for drinking water beneficial users:**

The draft GSP acknowledges that impacts to small water systems and domestic wells will be greater than impacts to other well users, but according to the draft GSP, the MTs were determined to be acceptable with the implementation of potential assistance measures (Section 5.3.1.3). However, according to Section 7.4.8.1 of the draft GSP, none of the identified potential assistance measures for small water systems and domestic wells have been approved by the MKGSA Board and it is not clear how the assistance measures will be implemented or funded.

The GSP should describe how this approach is protective of the diverse drinking water users in the MKGSA without a clear implementation plan for the identified assistance measures.

- **Ensure that the coordination agreement with the other neighboring GSAs does not negatively impact the MKGSA's local undesirable results and MTs/MOs.**

Degraded Water Quality

We are pleased that the draft GSP establishes MTs/MOs based on maximum contaminant levels (MCLs) for contaminants of concern for municipal use. However, the water quality monitoring network and analysis presented does not clearly illustrate how the MOs/MTs will adequately ensure that the water quality UR of impacting the long-term viability of the groundwater resource will be avoided, particularly for domestic water users and S/DACs. The proposed MT to allow contaminants to further degrade appears to be inconsistent with state water quality laws and policies. We recommend the following changes:

- **Include an assessment of the concentrations of COCs at all monitoring wells to establish MT baseline conditions.** The draft GSP indicates COC concentrations will be evaluated for compliance with water quality MTs in the future and where MCLs are already exceeded prior to GSP implementation, this will be considered a baseline condition that MKGSA is not responsible for remediating. It is critical that the GSP draft includes an assessment of the current concentrations in order to present the baseline conditions relative to the proposed MOs/MTs.
- **For transparency and completeness, clearly identify on maps and in tables which set of MTs/MOs will be applied to which RMWs. These maps should clearly identify the location of DACs, small water systems, and other sensitive users so that the public is able to review and evaluate the proposed sustainability approach.** The draft GSP identifies a methodology used to distinguish between the applicability of either MCLs or agricultural WQOs as the MTs for a given RMW. As stated in Section 5.3.3.3, "If the majority of the beneficial use (greater than 50% of the pumping within a determined area) was agriculture and there were no public water systems (including schools) the minimum threshold would be a host of agricultural water quality constituents" and "If a monitoring well is located within an urban area, or near a public water

system (e.g., within a mile), which includes schools, then the minimum threshold would be set at the MCL for drinking water.” However, the draft GSP does not clearly identify on a map or otherwise which RMWs will use MCLs and which will use agricultural WQOs. The document also does not identify which monitoring wells are located within an urban area or near a public water system. Per 23 CCR §354.28, the draft GSP should provide a detailed explanation as to how the proposed water quality MTs may affect the interests of beneficial uses and users of groundwater or land uses and property interests.

- **Expand groundwater quality monitoring network near Okieville.** Figure 3 from the Focused Technical Review shows that there are no Representative Monitoring Wells (RMWs) with established water quality minimum thresholds set at the MCL for drinking water near the community of Okieville. We recommend expanding current RMW network to include additional representative monitoring wells both in the confined and unconfined aquifers when applicable, particularly near vulnerable communities and groundwater stakeholders.
- **Provide a detailed explanation of how the proposed water quality MT approach and monitoring network will result in protection of groundwater for DACs and other drinking water beneficial users in the subbasin.** Specifically, the draft GSP indicates that “an exceedance of any of the MCL or agricultural metrics as defined herein at any representative monitoring sites will trigger a management action within the applicable Management Area or GSA, subject to determination that the exceedance was caused by the actions of the GSA” (Section 5.3.3.3). SHE greatly appreciates MKGSA and stakeholder intention to address an exceedance of any of the MCLs or agricultural metrics if the exceedance was caused by the actions of the GSA. However, the draft GSP does not identify which management action(s) will be implemented and provide very limited description on how MKGSA will evaluate and determine if the exceedance was caused by the actions of the GSA or not. Additional information is necessary in order to evaluate whether the proposed plan is protective of beneficial users in the subbasin.
- **Revise MT to prevent further degradation of contaminants.** The draft GSP indicates that where MCLs are already exceeded prior to GSP implementation, this will be considered a baseline condition that MKGSA is not responsible for remediating. SGMA requires the prevention of undesirable impacts to water quality, including degradation of water quality. An undesirable impact is one that is “significant and unreasonable”. Public water systems are required by state law to be in compliance with water quality objectives. Increased contamination levels necessitate water systems to utilize more expensive treatment methods and/or the need to purchase additional alternative supplies as blending may become more difficult or impossible. Further, communities reliant on domestic wells, who are aware of contamination in their water (while also acknowledging that many reliant upon private wells are unaware of the water quality), and use a POU/POE may no longer be able to use their devices if contaminant levels rise beyond levels where water cannot be treated. Increased contamination levels result in unreasonable impacts to safe and affordable water access and is thus inconsistent with SGMA. Therefore, the MT must be revised to prevent impacts to domestic water uses (which is listed as the highest priority use in Water Code Section 106) due to further groundwater degradation. Furthermore, there should be plans as to how to mitigate impacts in the short-term.
- **Develop a warning system that informs MKGSA stakeholders when contaminants of concern have reached 80% of the MCL.** This system is especially important for wells with COC

concentrations less than 80% the MCL that experience impacts due to groundwater management activities. For wells with contaminant levels approaching the MCL, MKGSA could consider taking the following actions: notify nearby domestic well owners and community water systems; undertake an analysis to pinpoint the cause; provide information to groundwater users regarding impacts of groundwater management actions; reassess pumping allocation; and/or if the contaminant is clearly under the purview of another agency, confer with that agency to confirm a plan to address the groundwater quality problem.

- **Clarify how the GSA plans to align the sustainable management criteria with any emerging contaminants of concern and new MCLs.** Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOAs) have been identified as emerging contaminants in the basin. Due to their emergence, it is important that MKGSA includes these contaminants as COCs to be monitored and evaluated. In addition to these two contaminants, the draft GSP would benefit from an explanation of how the plan will be updated to align groundwater monitoring efforts and the sustainable management criteria with any emerging contaminants in the basin and any future new MCLs.
- For contaminant levels that are near, or exceed, existing MCLs and for groundwater quality problems that arose or were exacerbated after January 1, 2015, consider the following approaches¹³ :
 - **Consider aligning monitoring and management actions to allow MKGSA to meet a minimum threshold at 80% the MCL over the 50-year planning and implementation horizon.** This could be accomplished by monitoring groundwater quality trends to ensure that naturally occurring contaminants, like arsenic and uranium, are not exacerbated through groundwater management practices and by working with appropriate agencies to remediate quality issues, where feasible.
 - **Where there is a significant groundwater quality problem that is clearly under the purview of another agency, confer with that agency and to confirm a plan to address the groundwater quality problem.** If such a plan exists, the water quality problem and the plan should be referenced in the GSP reviews.
 - **Where a significant groundwater quality problem is not clearly under the purview of another agency, or the responsible agency is unable to confirm a reasonable plan to address the problem, confer with Regional or State Water Board staff and affected parties, to identify a reasonable plan to address the problem.** If no reasonable plan is identified and remediating the problem is impractical or infeasible, the GSA should include in the Plan an explanation of the problem and the reasons why remediation is impractical or infeasible.
- **Include consideration for the state’s anti-degradation policy into the GSP.** California’s anti-degradation policy (“Policy”) is modeled off the Federal policy. It protects our state’s high quality waters, both surface and groundwater, from degradation. The Policy prohibits the degradation of waters unless there is a finding that it is “...consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of

¹³ Moran, T. and Belin A. (2019) A guide to Water Quality Requirements Under the sustainable Groundwater Management Act. Stanford Digital Repository. Available at: <https://purl.stanford.edu/dw122nb4780>.

such water.”¹⁴ The Policy has been interpreted to mean that best practicable treatment or control is required to protect high quality water (water meeting water quality objectives) and best efforts for already degraded waters. Inclusion of this Policy into the GSP will aid the GSA in achieving the goals of SGMA by creating a baseline for how water quality is considered within the basin.

Land Subsidence

As mentioned previously, land subsidence could have significant impacts on vulnerable community infrastructure. In communities that do not have the financial capacity to address costly infrastructure damages, impacts of land subsidence should be evaluated more closely. We recommend the following changes:

- **Expand the description of potential impacts for S/DAC communities and rural domestic well users under the description of the Potential Impacts on Beneficial Uses and Users .**
- **Clarify the relationship between groundwater quality and land subsidence.** Researchers have found that there is a relationship between land subsidence caused by overpumping and increases in contaminants like arsenic¹⁵. The section on the Relationship for each Sustainability Indicator needs to be revised to clarify that this is not applicable to the MKGSA.

GSP Section: Monitoring Network

Groundwater Levels

Robust monitoring networks are critical to ensuring that the GSP is on track to meet sustainability goals. As currently developed, the monitoring network can be improved to adequately monitor how groundwater management actions related to groundwater levels could impact vulnerable communities. We recommend the following changes:

- **Include drinking water sources susceptible to groundwater level changes as a criteria in selecting wells for the representative groundwater level monitoring program.**
- **Identify which monitoring wells will be used to assess impacts to drinking water wells caused by changes on groundwater levels and describe how that assessment will be conducted.** As required by 23 CCR § 354.28, DWR will evaluate the ability of the proposed monitoring program to properly assess impacts to beneficial users of groundwater and to protect beneficial users within the subbasin. In particular, it is important to clarify how MKGSA plans to monitor and assess drinking water wells at risk of dewatering.
- **Include the location of S/DACs, areas with high density of domestic wells, and GDEs in Figure 4-3 and 4-4.** Maps overlaying the location of these communities will allow stakeholders to evaluate the adequacy of the network to monitor conditions near these beneficial users.

¹⁴ Resolution 68-16.

¹⁵ Smith, R., Knight, R., & Fendorf, S. (2018). Overpumping leads to California groundwater arsenic threat. *Nature communications*, 9(1), 2089. doi:10.1038/s41467-018-04475-3

Water Quality

For the reasons identified below, the water quality representative monitoring wells (RMW) are inadequate for determining if the actions of the MKGSA degrade the beneficial use of water and for ensuring that the stated water quality UR of impacting the long-term viability of the groundwater resource will be avoided —particularly for domestic water users and S/DACs.

GSAs undertaking recharge, significant changes in pumping volume or location, conjunctive management or other forms of active management as part of GSP implementation, must consider the interests of beneficial users, including domestic well owners and S/DACs. For these vulnerable groups, GSAs should avoid disproportionate impacts. The draft GSP lacks representative monitoring wells in areas where drinking water users may be particularly vulnerable to groundwater supply and quality issues, leaving MKGSA with no ability to adequately measure and avoid significant and unreasonable impacts to those users. It is critical that MKGSA develop sufficient monitoring networks, capable of detecting changes in groundwater quality conditions related to groundwater management. We recommend the following changes:

- **Identify which monitoring wells will be used to assess impacts to drinking water wells caused by groundwater quality degradation and describe how that assessment will be conducted.** As required by 23 CCR § 354.28, DWR will evaluate the ability of the proposed monitoring program to properly assess impacts to beneficial users of groundwater and to protect beneficial users within the subbasin. In particular, it is important to clarify how MKGSA plans to monitor and assess drinking water wells at risk of further contamination. In specific:
 - **For transparency and completeness, the GSP should clearly identify on maps and in tables which set of MTs/MOs will be applied to which RMWs.** These maps should clearly identify the location of DACs, small water systems, and other sensitive users so that the public is able to review and evaluate the proposed sustainability approach.
 - **Provide a focused and detailed explanation of how the proposed water quality MT approach and monitoring network will result in the protection of groundwater for S/DACs and other drinking water beneficial users in the subbasin, as required by 23 CCR § 354.28.**
- **Expand groundwater quality monitoring network near Okieville.** Based on the spatial distribution of the wells dedicated to monitoring water quality presented in Figure 4-6 and 4-7 of the draft GSP, the network is not spaced evenly across the area. The water quality RMWs are located in the northern and eastern portions of the MKGSA area and the monitoring well density varies by two orders of magnitude across the MKGSA. Although the western portion of the MKGSA, including the communities of Okieville and Waukena, are more sparsely populated than the eastern portion, there are at least 200 domestic wells and several public water systems, including the Okieville/Highland Acres Mutual Water Company, Waukena Elementary School, and Buena Vista School water systems, located in this area. Figure 3 from the Focused Technical Review shows that there are no RMWs with established water quality minimum thresholds set at the MCL for drinking water near the community of Okieville. SHE recommends expanding the current RMW network to include additional representative monitoring wells, particularly near vulnerable communities and groundwater stakeholders. **Specifically, consider incorporating the**

new well serving Okieville/Highland Acres Mutual Water Company as a RMW with established water quality minimum thresholds and quantifiable measurements of sustainability.

- **Clarify how the GSA plans to align groundwater monitoring efforts with any emerging contaminants of concern and new MCLs.** Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOAs) have been identified as emerging contaminants in the basin. Due to their emergence, it is important that MKGSA include these contaminants as COCs to be monitored and evaluated. In addition to these two contaminants, the draft GSP would benefit from an explanation of how the plan will be updated to align groundwater monitoring efforts with any emerging contaminants in the basin and any future new MCLs.
- **Include well construction information for all RMWs included in the GSP.** The draft GSP identifies 43 RMWs for water levels, but does not include well construction information for these wells as is required for all monitoring wells by 23 CCR § 352.4. This type of information is critical to allow the public and DWR evaluate if the RMWs are adequate in evaluating water levels relative to the MOs and MTs over the long term.

GSP Section: Projects and Management Actions

Projects

Recharge, Injection Wells, and On-farm Recharge Project Types

We are pleased with the inclusion of Okieville Recharge Basin Project. A partnership has been established between Okieville and TID in order to construct the recharge basin upstream from the community that can bring mutual benefits. Indeed, groundwater recharge projects can have multiple benefits such as increasing groundwater storage and levels, as well as diluting contaminant plumes and improving groundwater quality. Carefully designed and implemented recharge projects, dry wells, on-farm recharge and storage projects type can simultaneously provide benefits to communities, farmers, and ecosystems. Moreover, these types of partnerships can enhance community engagement in projects, increase community awareness of the issues being addressed and establish a framework to support communities in their efforts to secure safe and reliable water.

However, if not properly designed, recharge projects may mobilize nitrates, pesticides, and fertilizers, as well as naturally occurring contaminants, and can lead to the further degradation of groundwater quality, impacting drinking water wells. Currently, it is unclear if recharge, injection wells, and on-farm recharge proposed projects include precautions of groundwater quality degradation or if groundwater quality is included in the monitoring plan of these projects. In order to develop recharge projects that move the subbasin towards sustainability, avoid the further degradation of groundwater, and improve drinking water conditions, we recommend the following considerations and changes:

- **Strengthen partnerships between Okieville and other DACs such as Waukena.** MKGSA and TID should continue to partner with communities for the development of projects with multiple benefits that addresses overdraft while ensuring the protection and viability of important drinking water sources. When feasible, MKGSA should continue to prioritize and provide additional recognition for recharge projects near or up gradient to drinking water systems that have shared benefits: increase groundwater baseflow while at the same time addressing drinking supply needs, including improving GW quantity and quality.

- **Include a map that overlays all of the potential recharge projects onto one map and include the location of S/DAC, domestic wells, and public water systems.** As currently described, stakeholders are unable to effectively evaluate the collective potential benefits or impacts of recharge projects for drinking water users in the MKGSA.
- **Develop criteria for recharge projects that prevent unintended impacts to drinking water.** We recommend providing security considerations to ensure that all recharge and storage projects do not cause nor increase groundwater contamination. Attention should be placed on monitoring water quality, avoiding the use of contaminated soils through which water will percolate or use of surface water that is contaminated, and proposing strategies that can avoid/prevent/mitigate for any potential short and/or long term impact to drinking water wells, including domestic wells. For more information please refer to back to the guide Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act ¹⁶.

Management Actions

Groundwater Extraction Allocation Framework

SHE appreciates MKGSA's intent to conduct a full stakeholder outreach program during the development of the Mid-Kaweah Groundwater Extraction Allocation Framework such that well owners will be afforded the opportunity to provide input on the proposed implementation of the program. We are also pleased that MKGSA also plans to exclude those well owners who extract less than two AF per year (i.e., de minimis extractors) at least for this initial phase of an allocation program. Nonetheless, we recommend the GSP provide stronger clarification regarding provisions that the GSA plans to implement and consider to ensure that drinking water users will continue to have access to drinking water. When developing a groundwater allocation framework, consider the following measurements to ensure that the framework is protective of the Human Right to Water (AB 685):

- **Sustainable yield allocation:** In order to best protect drinking water needs we recommend that GSAs establish an allocation amount of groundwater as part of the calculation for the sustainable yield to adequately meet drinking water needs for public health and safety, both now as well into the future. Small water systems serving disadvantaged communities, domestic well owners, and water systems serving schools should be excluded from an allocation program. In order to determine this baseline for drinking water, GSAs will need to work with small community water systems, cities, and/or the county to determine current and future daily drinking water needs.
- **Fees:** The draft GSP indicates that it will not impose pumping restrictions on well owners that extract less than two AF per year. However, it does not address small water systems that may extract over two AF per year and serve critical drinking water needs, such as the Okieville/Highland Acres Mutual Water Company, and the Waukena Elementary School system. When developing a groundwater user fee structure, please consider that small communities

¹⁶ Community Water Center. Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act. https://d3n8a8pro7vnm.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858

have fewer economic resources. Additional fees increase families' water bills that are frequently already above the California water affordability threshold of 1.5% of MHI. Moreover, it is important to recognize and value other ways DACs and low-income residents contribute to the implementation of SGMA. For example, the Kaweah Subbasin, like many others around the State, was granted a DAC waiver and qualified for \$1.5 million in grant funds to offset the costs of developing the GSP. The DAC waiver was granted by demonstrating the number of DACs that are located within the subbasin. Additional grants were obtained to construct monitoring wells and a recharge basin. For these reasons, we recommend exempting small drinking water systems managed by DACs and De Minimis Extractors from any GSAs fees (use permits and penalty fees) to support their efforts to provide affordable safe water.

- **Financial penalties:** Penalties for DAC water providers with limited technical, managerial, and financial capacity have often been found by the SWRCB to be counter-productive. If MKGSA consider implementing a sort of penalty for over-use, at a minimum consider 1) creating a more flexible warning and appeal process with these users, 2) proactively assisting SDWS that may be at risk of over-extraction, and 3) conditional forgiveness and reduction of penalties should be considered. This would encourage transparency and working collaboratively with MKGSA to take corrective actions addressing the underlying causes of overuse. Ideally, we recommend that MKGSA consider exempting SDWS serving DACs be from financial penalties for over-use.
- **Allocation decisions time-frame:** In the context of extreme weather events and given the unique set of factors that play a role in the recharge of the aquifers within the GSAs area, we recommend that allocations decisions are not tied to a time frame but to an adaptive management methodology that can respond timely to undesirable results and adjust allocations accordingly. The adaptive management methodology could guide allocation decisions and be used as a corrective tool to avoid localized drawdown impacts on communities and ecosystems, such as dewatering of shallower wells and streams. Particular attention should be placed on protecting groundwater levels for drinking water beneficial uses in the vicinity of community water systems of all kinds (municipal and unincorporated) and domestic well communities.
- **Banking allocation of groundwater:** Susceptibility to experiencing undesirable results from a given amount of pumping depends on hydrogeologic, climatic, biological, and other factors that can vary significantly within short and long periods. We recommend a short period for banking allocation to avoid significant negative externalities. We also recommend that any allocation period be strictly tied to an adaptive management methodology that can respond timely to undesirable results and adjust allocations accordingly. This is particularly important in the context of changing climate and data uncertainties.
- **Transitional allocations and period:** The following protective measures can be considered if excessive pumping is allowed during the transition period or if transitional buffer allocations are made available to eligible groundwater users:
 - Develop an adaptive management methodology based on SGMA monitoring requirements to guide any allocation decisions and to be used as a corrective tool to avoid impacts of localized drawdown on vulnerable communities and ecosystems.

- Restrict transitional pumping in excess of the sustainable yield near drinking water systems and households relying on private wells if negative impacts are observed through monitoring or if protective thresholds are exceeded.
- Develop mitigation measures that support communities, schools, and drinking water well owners in case negative impacts are observed/experienced.
- **Prolonged droughts:** When developing the MKGSA Groundwater Allocation Framework, clarify how the program will respond or be updated during a long-term drought. Particularly, with respect to the potential significant impacts that domestic well users, S/DACs face during these extreme weather events. We recommend the following:
 - Recognize and appropriately account for negative externalities especially during prolonged droughts by designing allocation rules that support progress toward sustainability and sufficiently address negative impacts.
 - Provide security considerations to support access to safe drinking water for DACs, SDACs, and underrepresented communities within GSA boundaries during prolonged drought periods.
 - Provide security considerations to ensure that allocations during prolonged drought periods do not individually or cumulatively hinder communities and domestic well owners access to water.
 - Develop an adaptive management methodology to be used as a corrective tool to avoid any localized drawdown impacts on communities and ecosystems, such as dewatering of shallower wells and streams.
 - Develop a drought drinking water prevention/mitigation plan that is capable to timely respond to families at risk or impacted by prolonged droughts.

Groundwater Market / Trading Management Actions

There are a number of important foundational steps agencies need to take before considering a groundwater market as a possible tool for groundwater management. Changing where and when groundwater is pumped or the place, method, timing, or purpose of its use, can significantly change the impacts experienced by people and ecosystems. Whether a groundwater market leads to harmful or beneficial impacts all depends on how the market is designed, governed, implemented, and what feedback mechanisms are included and utilized throughout the life of the market. Groundwater markets are not a viable option where the potential impacts of trading are not well understood— which is the case in areas that have significant data gaps and data uncertainties— where trading rules cannot sufficiently address negative externalities, or where the expected benefits of a market do not outweigh the burdens and uncertainties associated with designing and implementing a market¹⁷.

The foundation of a well-designed trading program requires a fair and adequate allocation of groundwater for drinking water uses, an additional margin for future growth prior to allocating water for trading purposes, and trading rules that avoid undesirable results as well as avoid or mitigate potential

¹⁷ Green Nylan, Nell, Michael Kiparsky, Kelly Archer, Kurt Schnier, and Holly Doremus. 2017. Trading Sustainably: Critical Considerations for Local Groundwater Markets Under the Sustainable Groundwater Management Act. Center for Law, Energy & the Environment, UC Berkeley School of Law, Berkeley, CA. 90 pp1

impacts to communities dependent on groundwater supplies. If these components are missing, the market can have significant negative impacts upon a community's drinking water supply. Some impacts include, but are not limited to: localized drying of community and domestic wells, increased contamination levels, or unaffordable water rates. Before considering a groundwater market framework, consider the following:

- **Establish a non-tradeable allocation for drinking water:** A non-tradable allocation amount of groundwater should be included as part of the calculation for the sustainable yield to adequately meet current and future drinking water needs for public health and safety.
- **Ensure that monitoring networks are in place to detect the status and trends of groundwater conditions,** and to ensure that the market is running well and is not resulting in adverse impacts to groundwater quality and/or groundwater levels.
- **Implement an early warning system** utilizing data collected through the monitoring network that helps identify at-risk groundwater users and anticipate potential negative impacts, such as groundwater level declines or worsening groundwater quality. Provide security considerations to ensure that transfers do not individually or cumulatively cause or contribute to violations of water quality standards.
- **Implement interim and long-term solutions to mitigate for negative impacts to drinking water users caused by the groundwater trading.**
- **Outreach and engagement:** Devise ways to help engage, communicate and translate technical information to stakeholders, particularly to rural communities, private well owners, and small farmers.

Assistance to Small Water Systems, Domestic Wells

SHE appreciates MKGSA and stakeholder interest in providing assistance to small water systems and domestic well owners without the financial impacts to service or replace their pump and well facilities.

As the assistance measures described in the draft GSP have not yet been approved to be carried out, we would like to further express the importance in providing such an assistance program to prevent and mitigate for impacts to drinking water users. The draft GSP identifies an impact to 21% of rural/domestic wells and, based on our Focused Technical Review, the actual impacts could be much higher. Moreover, rural domestic and small water system demand does not contribute substantially to the overdraft conditions, yet the risks imposed on these drinking water users are overlooked, creating a disproportionate impact on already vulnerable communities. With the decision of postponing the implementation of a groundwater allocation program or addressing reductions in groundwater pumping, drinking water users could face significant impacts, particularly if the region faces another drought. If MKGSA defines its sustainability criteria in a way that allows for the dewatering of drinking water wells, it is critical that MKGSA develops a robust drinking water assistance program to prevent impacts to drinking water users and mitigate the drinking water impacts that occur.

The draft GSP presents a couple of mitigation measures that are being considered by the GSA's Advisory Committee and Governing Board. We would like to provide a set of additional considerations for establishing such an Assistance Program. Mainly, we recommend that mitigation measurements are tied

back to a monitoring network and an adaptive management framework (trigger system) to evaluate groundwater conditions and predict potential groundwater impacts to drinking water wells. The framework should forecast how groundwater levels and quality could change based on potential project impacts, identify at-risk domestic wells, identify areas for additional monitoring, and determine if monitoring triggers have been met. Please consider the following for the development of an Assistance Program:

i. Drinking Water Wells Monitoring Network: Expand and improve the monitoring network described by the GSP draft to assess impacts to drinking water wells caused by changes on groundwater levels and quality, in particular for groundwater conditions near the Okieville and Waukena communities, areas with high density of private domestic wells, and water systems serving schools. This will allow MKGSA to better comply with GSP regulations section 354.34, which requires GSAs to describe how potential impacts to groundwater users and uses will be monitored, ensure the success of the Assistance Program, and take a proactive approach to protect S/DACs and domestic well owners access to safe and affordable drinking water.

ii. Adaptive Management/Trigger System: Develop a protective warning system, also referred to as an adaptive management approach, which can alert groundwater managers when groundwater levels are dropping to a level that negatively affects drinking water users. Such triggers are essential for groundwater management but can be adjusted to fit the needs of different management actions as well as the basin as a whole. The table below provides an example of what a warning system might look like, using green, yellow, and red light indicators or “triggers”, and some potential corrective actions groundwater managers can take to remedy the problem. Ultimately, this approach allows for evaluating what is happening and responding accordingly to prevent or mitigate negative impacts.

Triggers	Groundwater Status	Potential Corrective Actions
“Green-light”	Groundwater levels are stable.	No action required
“Yellow-light”	Groundwater levels are approaching concerning levels and impacts may occur or are occurring at a low rate. Some corrective actions are needed.	<ul style="list-style-type: none"> - Undertake an analysis to pinpoint the cause - Undertake targeted water quality testing for selected domestic wells as mentioned in the draft GSP as one of the measures being considered by the GSA’s Advisory Committee and Governing Board - Provide support to groundwater users experiencing impacts - Reassess pumping allocation and pumping patterns and consider restricting or limiting groundwater extraction near the triggered area.
“Red-light”	Time to stop and mitigate as significant impacts are imminent or are occurring.	<ul style="list-style-type: none"> - Reassess pumping allocation and pumping patterns and consider further restricting or limiting groundwater extraction near the triggered area. - Provide interim emergency solution while pursuing a permanent solution to impacted groundwater users.

iii. Drinking Water Well Impact Tool/Model: Develop a tool/model tied to the monitoring network and the adaptive management framework (trigger system) to evaluate groundwater levels and predict potential groundwater impacts to drinking water wells. Update model regularly and develop a prediction of the potential groundwater impacts to drinking water wells. The tool/model could be used to: monitor and forecast changes in groundwater levels, monitor and forecast any localized areas for special attention and/or monitoring, attempt to identify domestic wells at risk of impacts, and determine if triggers have been met based on the adaptive management framework. Results of this assessment could be incorporated into the annual SGMA progress report to domestic well owners mentioned in the draft GSP as one of the measures being considered by the GSA's Advisory Committee and governing board.

iv. Mitigation Measurements: Groundwater should be managed to avoid reaching a 'red light' trigger and the implementation of a mitigation program should be implemented before wells begin to become unusable. This will allow communities working with the GSA to access funding, and the planning and contracting will be completed such that the necessary construction will be implemented without unnecessarily leaving community members without access to drinking water. The program should be designed to be proactive, rather than reactive. When mechanical failure or other operational problems are likely to occur, or have occurred, due to declining water levels, mitigation should be provided as described below:

- Define mitigation based on a field inspection to determine static depth to groundwater levels within the well and verify well construction information and pump setting information, if possible;
- Provide short-term water supply while a permanent solution is pursued. Short-term interim solutions serve to address the immediate impacts and ensure access to safe drinking water and water for domestic uses, including health and sanitation. Short-term emergency supplies shall be provided as soon as reasonably possible and can include bottled water, bottled water paired with water tank, or another combination. Since short-term solutions are expensive over a prolonged period of time, it would be important to quickly identify potential long-term solutions. As an example, GEI's feasibility study for East Porterville in 2016 estimated tank and bottled water programs cost \$633,500 per month just for East Porterville at the height of the drought.¹⁸
- Long-term water supply can include: financial and technical support to complete a connection to a nearby public water system/provider; providing funding to lower a well pump; providing an equivalent water supply from an alternate source; providing funding to replace affected well with a deeper well that meets county well ordinance standards; reducing or adjusting pumping near the impacted drinking water well as necessary to avoid the impact, and/or; providing other acceptable mitigation through a collaboration with the affected drinking water well responsible.

¹⁸ California Department of Water Resources. East Porterville Water Supply Project Feasibility Study. 2016. Page 3523.

https://water.ca.gov/LegacyFiles/waterconditions/docs/East%20Porterville%20Feasibility%20Study_Public%20Draft_Rev_060316-1.pdf

- For long-term water supply option, a strong preference for connecting current domestic well users to a public water system should be given whenever possible. Public water systems have an obligation to test water quality for water served, and although some public water systems typically have limited resources, they do have a greater ability to install treatment systems to address water quality impacts, recoup funds for litigated contamination such as 1,2,3-TCP, and apply for and receive grant funding for beneficial projects. Because of this, public water systems, including small community water systems, provide a more reliable drinking water source than privately-owned domestic wells.
- For example, in Okieville-Highland Acres an unknown number of private wells which serve the remaining 20 homes not connected to the recently constructed water system (based on 3.76 people per household¹⁹, the population is assumed to be 76) are more susceptible to changes in groundwater levels and at risk of having their water access impacted. The depth of these wells are unknown, but typical domestic wells in the area are drilled to a depth of 130 to 225 feet. More recent domestic wells have been drilled to a depth of 360 feet in an effort to avoid being impacted by declining groundwater levels. Groundwater levels and the domestic well conditions in Okieville should be closely monitored. If impacts cannot be avoided and a domestic well is at risk of dewatering, MKGSA should implement mitigation measurements before wells become unusable. Mitigation measures should include funding connection fees and work on private property in order to help impacted families connect to the Okieville-Highland Acres water system.

v. Funding: A secure and reliable funding source and mechanism for the implementation of this type of mitigation program needs to be identified. While grant or emergency funding could potentially be available for such a program when needed, the availability of these funds is not certain. A more secure funding mechanism could be the establishment of a reserve fund that is paid into on an annual basis and accrues funds that would then be available as water levels decline in the future. The following are potential sources of funding to also consider:

- Implementing service or land-based fee assessments using Proposition 26 or Proposition 218;
- Utilizing SWRCB programs such as Proposition 1 Groundwater Grant Program and Prop 68 Groundwater Treatment and Remediation Grant Program;
- Utilizing DWR funding programs for groundwater projects and technical assistance programs to aid SGMA implementation;
- Utilizing CV-SALTS project funding: Implementation of a new proposed Central Valley basin plan amendment on salts and nitrates may result in additional funding sources for nitrate contaminated aquifers. If appropriate, MKGSA should consider coordinating with nitrate dischargers forming a Management Zone under CV-SALTS in order to streamline administrative costs and leverage resources.

¹⁹ As indicated by Census data from Tulare County Census Tract 21, Block Group 1 as average household size

Lastly, please consider the **Kern County Well Mitigation Strategy** developed and implemented by Rosedale Rio-Bravo Water Storage District, Kern County Water Agency, Pioneer Project Recovery Participants, and Kern Water Bank Authority. The Kern County Well Mitigation Strategy is designed to prevent, eliminate or mitigate significant adverse impacts caused by the Agencies groundwater banking operations and is an example to consider when developing a drinking water well prevention/ mitigation program. It includes tools for both identifying potential harmful impacts caused by management actions and how to mitigate or rectify those impacts. If a well failure was caused by the District's actions, the District is committed to implementing a combination of the following:

- Providing short term emergency water supply to domestic well owners;
- Providing funds to lower well pump or drill a deeper well;
- Providing funds to connect to a water provider;
- Providing an alternative water supply;
- Reduce recovery pumping as necessary to avoid the impact.

The MKGSA could consider implementing a similar type of mitigation strategy for wells that go dry due to groundwater management activities.

Collaboration with Other Agencies

SHE appreciates MKGSA and stakeholder proposal to further collaborate and partner with other regulatory agencies during GSP implementation to ensure that its minimum thresholds and measurable objectives are maintained and that the water quality objectives of these other entities are achieved. As expressed previously, SHE believes that the strategic governance structure of GSAs can uniquely leverage resources, provide local empowerment, centralize information, and help define a regional approach to groundwater quality management unlike any other regional organization. When implemented effectively, GSAs have the potential to be instrumental in reducing levels of contaminants in their regions, thus reducing the cost of providing safe drinking water to residents. GSAs are the regional agency that can best comprehensively monitor and minimize negative impacts of declining groundwater levels and degraded groundwater quality that would directly impact rural domestic well users and S/DAC within their jurisdictions. When potential projects are proposed, MKGSA should consider taking leadership in coordinating regional solutions.

○

TULARE COUNTY RMA

[Page 1-1]: “It is one of the prime agricultural regions in the Central Valley and home to numerous small towns and communities, as well as the larger cities of Tulare and Visalia.” Should reference a specific map or diagram.

[Page 1-6]: “Urban land use is located within the limits of the cities of Tulare and Visalia and the surrounding unincorporated areas within the sphere of influence for the cities.” General Plan Land Use Diagrams should be referenced or included in the GSP. Tulare County General Plan Land Use Diagram Figure 4-1 (page 4-5) at a minimum should be referenced or included here.

[Page 1-12]: “Each of the two incorporated cities in MKGSA’s area have adopted General Plans. For the areas not within the limits of the incorporated cities, the Tulare County General Plan applies. The General Plans for the cities and the General Plan for the county each have land use elements which address water usage. These elements were considered in this GSP.” General Plan Land Use Diagrams should be referenced or included in the GSP. Tulare County General Plan Land Use Diagram Figure 4-1 (Page 4-5) at a minimum should be referenced here. This statement should describe the specific general plan elements that were reviewed.

[Page 1-12]: “However, the Tulare County 2012 General Plan has a Water Resources Element...” Note that the County’s GP also has other elements that address water. These should be referenced. The Tulare County General Plan includes both policies and implementation measures that address water supply, wastewater treatment, adequate infrastructure, plans, programs, and funding in the following elements:

- Planning Framework (Chapter 2)
- Agriculture (Chapter 3)
- Land Use (Chapter 4)
- Economic Development (Chapter 5)
- Housing (Chapter 6)
- Environmental Resources Management (Chapter 8)
- Health and Safety (Chapter 10)
- Water Resources Chapter 11)
- Public Facilities and Services Chapter 14)

Gen Plan Water Resources Element policies Include:

- Water Supply
 - WR-1.1 Groundwater Withdrawal
 - WR-1.3 Water Export Outside County
 - WR-1.4 Conversion of Agricultural Water Resources
 - WR-1.5 Expand Use of Reclaimed Wastewater
 - WR-1.6 Expand Use of Reclaimed Water
 - WR 1.7 Collection of Additional Groundwater Information
 - WR-1.8 Groundwater Basin Management
 - WR-1.9 Collection of additional Surface Water Information
 - WR-1.10 Channel Modification
- WR-3.1 Develop Additional Water Sources
- WR-3.2 Develop an Integrated Regional Water Master Plan

WR-3.3 Adequate Water Availability
 WR-3.4 Water Resource Planning
 WR-3.5 Use of Native and Drought Tolerant Landscaping
 WR-3.6 Agricultural Irrigation Efficiency
 WR 3.7 Emergency Water Conservation Plan
 WR-3.8 Educational Programs
 WR-3.9 Establish Critical Water Supply Areas
 WR-3.10 Diversion of Surface Water
 WR-3.11 Policy Impacts to Water Resources
 WR-3.12 Joint Water Projects with Neighboring Counties
 WR-3.13 Coordination of Watershed Management on Public Land
 PFS-2.1 Water Supply
 PFS-2.2 Adequate Systems
 PFS-2.3 Well Testing
 PFS-2.5 New Systems or Individual Wells
 Water Quality
 WR-1.2 Groundwater Monitoring
 WR 1.7 Collection of Additional Groundwater Information
 WR-1.8 Groundwater Basin Management
 WR-2.1 Protect Water Quality
 WR-2.2 NPDES Enforcement
 WR-2.3 Best Management Practices
 WR-2.4 Construction site Sediment
 WR-2.5 Major Drainage Management
 WR-2.6 Degraded Water Resources
 WR-2.7 Industrial and Agricultural Sources
 WR-2.8 Point Source Control
 WR-2.9 Private Wells
 PFS-2.1 Water Supply
 PFS-2.5 New Systems or Individual Wells
 Implementation Measures should also be included.

[Page 1-13]: "...the MKGSA will address these issues with the adoption..." Might want to reference the GSA's authority to address these issues here and specifically detail how adoption of the GSP will address these issues.

[Page 1-14]: "...work with the county and other organizations to protect prime farmland and farmland of statewide importance outside the city's Urban Development Boundary..." Should policies from the County General Plan be specifically referenced here? This discussion could reference County Adopted City General Plans (Visalia Area Community Plan) as the appropriate mechanism to coordinate land use and policy decisions within the UAB and UDB. See Tulare County General Plan Planning Framework Chapter 2 Section PF-4 and 4-A. In addition, groundwater recharge is not solely determined by FMMP designations (See Tulare County General Plan Health and Safety Element Figure 10-7 areas for groundwater recharge).

In addition the following County General Plan policies including but not limited to primarily address farmland protection:

- AG-1.1 Primary Land Use
- AG-1.2 Coordination
- AG-1.3 Williamson Act
- AG-1.5 Substandard Williamson Act Parcels
- AG-1.6 Conservation Easements
- AG-1.7 Preservation of Agricultural Lands
- AG-1.8 Agriculture Within Urban Boundaries
- AG-1.9 Agricultural Preserves Outside Urban Boundaries
- AG-1.10 Extension of Infrastructure Into Agricultural Areas
- AG-1.11 Agricultural Buffers
- AG-1.12 Ranchettes
- AG-1.13 Agricultural Related Uses
- AG-1.14 Right-to-Farm Noticing
- AG-1.15 Soil Productivity
- AG-1.16 Agricultural Water Resources
- AG-1.18 Farmland Trust and Funding Sources
- AG-2.8 Agricultural Education Programs
- LU- 1.5 Paper Subdivision Consolidation
- LU-2.1 Agricultural Lands
- LU 2.2 Agricultural Parcel Splits
- LU-2.5 Residential Agriculture Uses
- LU- 2.7 Industrial Development
- RVLP- 1.1 Development Intensity
- RVLP- 1.2 Existing Parcels and Approvals
- RVLP- 1.3 Tulare County Agricultural Zones
- RVLP- 1.4 Determination of Agricultural Land
- RVLP- 1.5 Non Conforming Uses
- RVLP- 1.6 Checklist

[Page 1-17]: “The county is revising their well permit application based on GSA input. The proposed revised application is provided on the following pages.” For clarification purposes, this section could clearly delineate what revisions to the well permitting application are being proposed.

[Page 1-19, Contractor Disclaimers]: This section notes the role for the GSA’s in the process that you may want noted above.

[Page 1-25]: “As shown in Figure 1-2, the MKGSA region includes three areas identified as a Census Designated Place by the 2016 U.S. Census Bureau as disadvantaged or severely disadvantaged. The City of Tulare has been identified as a Disadvantaged Community, while the community of Matheny Tract and Waukena have both been determined as a Severely Disadvantaged Community. The community of Okieville/Highland Acres is located within a 2016 U.S. Census Bureau Disadvantaged Community Tract. Stakeholders in these communities have the opportunity to consult on the plan during the agency’s

Board of Directors and Advisory Committee meetings and during review of this Plan.” Seems to be a repeat of Section 1.5.2.3

[Page 3-3]: “Placement of recharge projects and management of pumping regimes in each GSA/Management Area such that acceleration of contaminant plume migration that impairs domestic and municipal supply well production as induced by GSP projects and management actions is avoided.” this is important for any new community, as well as for existing communities that fall under the County’s purview. Acquisition of property for public purposes may require a General Plan Referral.

[Page 3-5]: “...one-third of the representative monitoring sites in all three GSA jurisdictions combined exceed their respective minimum threshold water level elevations.” Over what time period?

[Page 3-5]: “...a determination has been made that the percentage of wells completely dewatered by 2040 should the minimum thresholds not be exceeded would not constitute an undesirable result.” For clarification should that actual percentage be stated here?

[Page 5-3]: “During this 20-year period, pumping costs will rise due to higher lifts and higher energy pricing, but this condition is considered by the MKGSA as a manageable impact that has been occurring for many years and is comparable to inflationary costs experienced by agricultural businesses, municipalities, and small-system and domestic households.” Can you further detail the costs comparisons?

[Page 6-3]: “Comparing these resulting groundwater inflow assignments to MKGSA to annual groundwater pumping for the same current period (1997-2017), as identified in Table 6-3, results in an imputed water balance surplus for MKGSA of about 38,000 AF on an average basis. Yet, as acknowledged in Section 2 of this Plan, MKGSA, like the balance of the Subbasin, experiences a historical decline in groundwater levels and attendant depletion of groundwater in storage within its jurisdictional region.” This might be a good place to describe the imputed water balance in greater detail to describe the difference from the previous budget.

[Page 6-4]: “Whereas the average water accounting framework water balance is positive, the comparable hydrogeologic water budget is negative by about 13,000 AF. This reduction in storage is to be expected, as water levels decline in the range of 3 feet per year over much of the GSA region. The relative contributions of multiple causes of these declines is the subject of further study and hydrogeologic analyses.” Please provide greater of the detail in regards to the cooperative agreement to help understand why groundwater levels are trending down in the overall Kaweah, even if there is ‘surplus’ according to the budget in the Mid-Kaweah.

[Page 6-4]: “It is the intent of the Subbasin GSAs, as stipulated in the Coordination Agreement, to continue to discuss water balances and groundwater conditions during GSP implementation and, in so doing, manage the location, extent, and financial contributions to projects and management actions of

each.” This would be a good place to discuss the Coordination Agreement? Specific language or chapter/section citations in the coordination agreement should be referenced here.

[Page 7-4]: “As an irrigation district under Division 11 of the California Water Code, TID has authority to manage, regulate, and engage in groundwater recharge operations for the benefit of its landowners.”

Can you state here that the water rights under the existing contracts?

[Page 7-33]: “...a GSA has the authority to regulate groundwater extractions and impose an allocation mechanism.” “...and an arrangement to apportion responsibilities...” Could we say this is achieved through the Coordination Agreement?

[Page 7-41]: “...capped at 55 gallons per capita per day (gpcd) in 2019 and ramped down to 50 gpcd by 2030...” It might be better to say, “May be adjusted back up from 50, based on science.”

[Page 8-3]: “Table 8-1: Sample Groundwater Extraction Summary” May want to add ‘small community water systems’ as a separate line from M&I and Domestic?

September 13, 2019

MKGSA Groundwater Sustainability Plan Public Comments
c/o Tulare Irrigation District
P.O. Box 1920
Tulare, CA 93275

Re: Mid-Kaweah Public Review Draft Groundwater Sustainability Plan

Thank you for the opportunity to comment on the Mid-Kaweah GSP. I appreciate the efforts that have gone into this plan and generally feel like the Plan is heading in a good direction.

I do have some clarifying comments regarding the Project and Management Actions in Section 7 of the Plan. Specifically, the concept of on-farm recharge covered in Section 7.3.4. My comments are as follows:

1. It would be helpful to understand how on-farm recharge water quantities will be credited and accounted for. Will there be any losses applied, or "leave-behind?"
2. Will individual water user accounts be created to manage the credits?
3. In addition to on-farm recharge, I would like to see some further discussion on private water user/landowner recharge projects such as recharge basins and subsurface recharge system projects. With these projects, the same questions outlined above regarding how recharge will be credited and accounted for would be applicable.

It would be beneficial to see these items further defined in the Plan, but if specifics on such Projects and Management Actions cannot be quantified at this time, I would at least like to see the Plan outline a process of how such projects and actions could be developed post Plan, and prior to implementation.

Sincerely,



Brian L. Hauss
Vice President



J. Paul Hendrix
Executive Director
Mid Kaweah Groundwater Sustainability Agency
jph@midkaweah.org

[sent via email]

September 16th, 2019

Re: Comments on Mid Kaweah GSA Draft Groundwater Sustainability Plan

Dear Mid Kaweah GSA Advisory Committee Members and Board Members:

Leadership Counsel for Justice and Accountability works alongside low income communities of color in the San Joaquin Valley and the Eastern Coachella Valley. As is most relevant here, we work in partnership with community leaders in the communities of Matheny Tract, Soult's Tract and Lone Oak Tract to advocate for local, regional and state government entities to address their community's needs for the basic elements that make up a safe and healthy community, including: safe and affordable drinking water, affordable housing, effective and safe transportation, efficient and affordable energy, green spaces, and clean air.

We have been engaged in the Sustainable Groundwater Management Act (SGMA) implementation process because most of the communities with which we work are wholly dependent on groundwater for their drinking water supplies, and many have already experienced groundwater quality and supply issues. Communities we work with have not been included in decision-making about their precious water resources, and their needs are not at the forefront of such decisions. In 2012, California recognized the Human Right to Water for domestic purposes, and required that state agencies consider this human right in their activities. State law also requires that GSAs avoid disparate impacts on protected classes. SGMA's requirements for a transparent and inclusive process, presents an opportunity in the context of groundwater management to meaningfully include disadvantaged communities in decision-making, and to create groundwater management plans that understand their unique vulnerabilities, are sensitive to their drinking water needs, and avoid causing disparate negative impacts on low-income communities of color.

We submit these comments to elevate our concerns that the Mid Kaweah Groundwater Sustainability Agency's (GSAs) Draft of its Groundwater Sustainability Plan (Draft GSP) does not adequately analyze or incorporate input from disadvantaged communities and domestic wells, and will create a disparate impact on protected classes unless modified to effectively protect drinking water resources for disadvantaged communities.

We include herein our comments with respect to deficiencies in the Draft GSP as well as recommendations for improvements. We have also attached a Focused Technical Review of the drinking water impacts of the current Draft GSP. We conducted the Focused Technical Review in collaboration with Self-Help Enterprises, with whom we work closely in the region.

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The Draft GSP is Incomplete, and Must Include Additional Information In Order to be Reviewed by the Public

The Draft GSP omits critical data, and does not give DWR or the public sufficient information to evaluate compliance with state law or the impact of the plan on beneficial users. Specifically, the Draft GSP has not clearly evaluated the impact of the plan on domestic well users and disadvantaged communities, which are likely to cause a disparate impact on protected groups pursuant to state civil rights law. Further, the GSP has not committed to a clear program to address those impacts. The GSP also does not contain sufficient information on groundwater contamination in the GSA area, and does not clearly show how the actions of the other GSAs in the subbasin will achieve sustainability throughout the subbasin. The GSA also does not provide adequate information about the plan for continued public engagement during GSP implementation. More information about each of these gaps in data and information is included below.

The GSP cannot be adopted until this key information is made available to the public. The GSA must incorporate this information into the Draft GSP before the Draft GSP can be effectively reviewed by the public or by DWR.

The Draft GSP Will Have Disparate Impacts on Residents in the MKGSA Subbasin Unless Modified to Protect Domestic Well Users and Disadvantaged Communities

Mid Kaweah GSA must prioritize drinking water as an essential pillar of the proposed groundwater sustainability plan. The Draft GSP will cause significant, unreasonable and disparate impacts on protected groups as a result of the sustainability goals that it has set, and has not committed to a concrete plan to prevent or mitigate those impacts.

Under SGMA, the GSA is tasked with managing groundwater in a way that does not cause “significant and unreasonable impacts” to the beneficial uses and users of groundwater in the subbasin. The GSA’s activities cannot avoid impacts only on certain types of beneficial users; under SGMA it must “consider the interests of” an enumerated list of all types of beneficial users, including domestic well users and disadvantaged communities on domestic wells and community water systems.¹ Furthermore, state law provides that no person shall, on the basis of race, national origin, ethnic group identification, and other protected classes, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination

¹ Water Code § 10723.2.

under, any program or activity that is conducted, operated, or administered by the state.² In addition, the state's Fair Employment and Housing Act guarantees all Californians the right to hold and enjoy housing without discrimination based on race, color, or national origin.³ Lastly, the Department of Water Resources is required to consider the Human Right to Water in its evaluation of the GSA's proposed Groundwater Sustainability Plan, so the drinking water impacts of the GSP are of utmost importance in its approval.⁴

Small disadvantaged communities of color within the San Joaquin Valley are disproportionately impacted by unsustainable groundwater use, falling groundwater tables, dry drinking water wells, subsidence, and water quality degradation.⁵ As described in more detail below, and analyzed in the attached Focused Technical Review, domestic well users are de minimis pumpers in the GSA area, but the policies proposed in the Draft GSP for managing groundwater levels and groundwater quality will likely fully or partially dewater approximately 86% of domestic wells,⁶ creating a disproportionate impact on domestic well users. Water quality will not be monitored in proximity to private domestic wells, since drinking water contaminants will only be tested for compliance where more than 50% of the pumping around a representative monitoring well is for drinking water purposes. Furthermore, the GSA has proposed a potential program to assist domestic well users and small systems with addressing these impacts, but the program is not concrete or detailed and the GSA board has not committed to implementing the program. The negative impacts discussed in this letter, which will be allowed by the Draft GSP and may not be addressed through an effective drinking water protection program, will likely be disproportionately felt by low income communities of color, and are thus discriminatory on the basis of race, color, ancestry, and national origin.

In order to prevent disparate impacts, the Mid Kaweah GSA must reassess the GSP's potential disparate impacts and include robust and proactive policies, projects, and management actions to protect vulnerable disadvantaged communities and the projected 85% of domestic wells from

² Gov. Code § 11135 [“No person in the State of California shall, on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state, or receives any financial assistance from the state.”]; Gov. Code § 65008 [Any discriminatory action taken “pursuant to this title by any city, county, city and county, or other local governmental agency in this state is null and void if it denies to any individual or group of individuals the enjoyment of residence, land ownership, tenancy, or any other land use in this state...”]; Government Code §§ 12955, subd. (l) [unlawful to discriminate through public or private land use practices, decisions or authorizations].

³ Gov. Code § 12900 et seq.

⁴ Water Code § 106.3.

⁵ Feinstein et al., “Drought and Equity in California” (January 2019); Balazs et al., “Social Disparities in Nitrate Contaminated Drinking Water in California’s San Joaquin Valley,” *Environmental Health Perspectives*, 19:9 (September 2011); Balazs et al., “Environmental Justice Implications of Arsenic Contamination in California’s San Joaquin Valley,” *Environmental Health Perspectives*, 11:84 (November 2012); Flegel et al., “California Unincorporated: Mapping Disadvantaged Communities in the San Joaquin Valley” (2013).

⁶ Focused Technical Review, p. 4.

disparate impacts.⁷ The sections below provide recommendations on some ways that the GSA could do so.

Basin Setting Lacks Information on Drinking Water Issues and Groundwater Quality

The SGMA regulations require GSPs to include “[g]roundwater quality issues that may affect the supply and beneficial uses of groundwater, including a description and map of the location of known groundwater contamination sites and plumes.”⁸ The Draft GSP does not contain information about groundwater quality issues, or a map of known groundwater contamination sites and plumes. This information is critical to ensuring that beneficial users are not harmed by increased groundwater contamination resulting from the GSA’s groundwater management activities. This information is particularly important for domestic well owners and small disadvantaged communities on small community water systems, whose drinking water supply is most vulnerable to groundwater contamination. Without such information, the GSA cannot measure the impact of groundwater contamination, and therefore cannot protect the drinking water needs of these vulnerable groups.

To effectively consider the interests of these types of beneficial users, and avoid a disparate impact on protected groups pursuant to state civil rights law, Mid Kaweah GSA must:

- Include information on groundwater quality issues that may affect the supply and beneficial uses of groundwater, including a description and a map of the location of known groundwater contamination sites and plumes.
- Include adequate information regarding past, current and potential drinking water issues affecting small disadvantaged communities and domestic well users in the GSA area, including drinking water contamination, dry wells, and other drinking water supply and quality issues.

Monitoring Network Does Not Monitor Impacts On Domestic Well Users

Pursuant to 23 CCR § 354.34, GSAs must monitor impacts to groundwater for drinking water beneficial users, particularly domestic well users and disadvantaged communities,⁹ and must avoid disparate impacts on protected groups pursuant to state law.¹⁰

The monitoring network as described in the Draft GSP fails to capture drinking water impacts on domestic wells. Representative monitoring wells are the only wells that the GSA will use to measure its compliance with its sustainable management criteria. The Draft GSP establishes two types of representative monitoring wells in the groundwater quality monitoring network: wells that will monitor for only three contaminants of concern that are harmful for agricultural production, and wells that will monitor for ten additional drinking water contaminants. The Draft GSP states that representative monitoring wells will only monitor for agricultural contaminants when over 50% of “pumping” nearby is for agriculture. This means that none of the

⁷ Focused Technical Review, p. 2.

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⁹ Water Code § 10723.2.

¹⁰ Gov. Code § 11135; Gov. Code § 65008; Government Code §§ 12955, subd. (I).

representative monitoring wells will capture groundwater quality or supply impacts to domestic wells outside of public water systems. It is also unclear whether the water quality monitoring wells will capture impacts to domestic wells across the GSA areas because the GSP does not include well construction information for a majority of the water quality representative monitoring wells, so the public and DWR cannot evaluate whether the wells are sampling at the depths of the zones used for drinking water purposes by domestic well users and community water systems in the GSA area.¹¹

The GSA mentions that it may conduct domestic well sampling, which could be added into the groundwater quality monitoring network data. This program, if implemented effectively and if enough wells are tested with adequate frequency, could ensure that domestic wells are also being monitored for compliance with minimum thresholds. In order to avoid drinking water contamination from groundwater management activities, the GSA should include this program in its Management Actions, and provide a clear timeline and strategy for developing and implementing this program.

As the attached Focused Technical Report shows, the water quality monitoring network does not cover a large portion in the west of the GSA area, which includes at least 200 domestic wells and several public water systems for DACs and schools.¹² The GSP must demonstrate how the monitoring network will be able to monitor for impacts to beneficial users in this area.

In developing this monitoring network, the GSA has not considered the interests of this beneficial user group and is likely to cause a disparate impact on the protected groups dependent on domestic wells.

The insufficiency of the monitoring network poses a significant threat to the validity of the Plan at large, and therefore must be addressed immediately. The GSA must do the following:

- Improve groundwater quality monitoring network to include monitoring wells in the western portion of the GSA area, ensuring that impacts to domestic wells and water systems in this area are monitored for compliance with groundwater quality goals.
- Monitor for compliance with drinking water contaminants across all representative monitoring wells.
- All representative monitoring wells for groundwater quality must test for all Title 22 contaminants.
- The GSA must invest in constructing more dedicated monitoring wells and needs to explain how they plan to transition current wells in the monitoring network into dedicated monitoring wells.
- Include a domestic well sampling program in the GSP's Management Actions, and provide a clear timeline and strategy for developing and implementing this program.

¹¹ Focused Technical Report, p. 6.

¹² Focused Technical Report, p. 5.

Management Areas Put Drinking Water Resources for Disadvantaged Communities and Domestic Well Users at Risk

The SGMA regulations allow GSAs to establish Management Areas “based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors,” for the purpose of identifying “different minimum thresholds, measurable objectives, monitoring, or projects and management actions.”¹³ However, it may not do so in a way that causes disparate impacts on a group protected by state civil rights law, or has not adequately “considered the interests of” all types of beneficial users.

The Management Areas that the GSA proposes to establish will likely have disproportionately negative impacts on domestic well users and disadvantaged communities. The Draft GSP states that the GSA will establish Management Areas along to the borders of local water and irrigation districts within the GSA, so that each district can manage groundwater its own jurisdiction. However, some districts are only accountable to the needs of agricultural pumping, and do not have representation of drinking water users on their boards. For example, Tulare Irrigation District will be managing a wide area that includes small communities and domestic well owners; however, the irrigation district’s board and clientele only reflect agricultural pumping needs. Additionally, East Tulare Villa, a disadvantaged community that depends on drinking water from the City of Tulare, is not included in the same management area as the City of Tulare, which does not allow effective protection of the community’s water resources. Therefore this division of Management Areas means that all beneficial users’ interests will not be considered in the management of areas where drinking water and agricultural pumping interests are present, and will likely lead to disparate impacts on protected groups.

Instead, a tool for protecting drinking water for disadvantaged communities and domestic wells is creating Management Areas around clusters of domestic wells and around disadvantaged communities, with a buffer around the area where the vulnerable drinking water users are located, and setting more protective groundwater quality and groundwater levels minimum thresholds in those areas. This ensures that there are no localized impacts to drinking water resources from groundwater levels dropping or from contaminant plumes being drawn towards large quantities of groundwater pumping.

Therefore, we recommend that the GSA:

- Form Management Areas around clusters of domestic wells and around disadvantaged communities in the GSA area, with a buffer around the area where the vulnerable drinking water users are located, and set groundwater quality and groundwater levels minimum thresholds that will protect drinking water resources in those areas.

¹³ 23 CCR § 351

Sustainability Goal Does Not Comply with SGMA

GSA must establish a sustainability goal that “culminates in the absence of undesirable results within 20 years.”¹⁴ Undesirable results are the point at which there are “significant and unreasonable impacts” from the six sustainability indicators set out in SGMA: chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, depletions of interconnected surface water.¹⁵ Also fundamental to SGMA is the obligation that GSAs must “consider the interests of” an enumerated list of beneficial users, including “holders of overlying groundwater rights, including...domestic well owners” and “disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems.”¹⁶ Therefore, the sustainability goal must be based on impacts from the six sustainability indicators, particular with respect to the impacts that they will have on beneficial users.

However, instead of basing on impacts from any of the six sustainability indicators on beneficial users, the Kaweah subbasin sustainability goal focuses primarily on “the viability of existing enterprises of the region,” the “water needs of existing enterprises,” and local plans that create “economic and population growth.” This sustainability goal focuses on water for industry, is counter to the intent of SGMA, and frustrates the goals of the law because it does not take into account the needs of or “significant and unreasonable” impacts on all types of beneficial users in the GSA area.

This sustainability goal should not focus on economic growth, but rather must consider the interests of all beneficial user groups in the GSA area. The sustainability goal therefore must have co-equal goals of preserving water resources for many uses, including drinking water, environmental, urban, and agricultural.

Their discussion of the Sustainability Goal also focuses on augmenting supply, and only implementing Management Actions “where necessary.” Even if all projects are implemented and sustainable management criteria are complied with in the plan, many vulnerable drinking water users will still be impacted, and the GSA has not committed to implementing its domestic well and small systems management action. Instead, the GSA should focus simultaneously on projects and management actions to ensure sustainability and protect drinking water resources.

Furthermore, the means by which the GSA states it will achieve this sustainability goal, through a “glidepath” approach, is geared towards protecting agricultural interests, and is likely to have severe impacts on the drinking water resources of domestic well users.

The sustainability goal states that it will be reached by the combined efforts of all three GSAs. However, the coordination agreement does not clearly show how the sustainability goal will be achieved, or how actions by other GSAs in the subbasin could impact the Mid Kaweah GSA area. However, given that 86% of domestic wells are already at risk of full or partial dewatering from the GSA’s proposed minimum thresholds, we know that groundwater users in the Mid

¹⁴ 23 CCR § 354.24

¹⁵ Water Code § 10721(w).

¹⁶ Water Code § 10723.2.

Kaweah GSA cannot afford to be further impacted by overpumping in neighboring GSAs. Therefore, we recommend that the We further recommend that the Mid Kaweah GSA set a clear sustainability goal for its own local GSA area, and ensure that the coordination agreement with the other Kaweah subbasin GSAs does not negatively impact its sustainability goal.

In order to have a sustainability goal that complies with SGMA and avoids disparate impacts on protected groups under state law, the Mid Kaweah GSA must:

- Agree on a subbasin-wide sustainability goal that protects all types of beneficial users equitably, avoiding disparate impacts on protected groups.
- Work with Kaweah Subbasin GSAs to clearly define how their combined actions will achieve sustainability, and include a thorough explanation of this collective effort in the coordination agreement or each GSP.
- Set a clear sustainability goal for its own local GSA area.
- Ensure that the coordination agreement with the other Kaweah subbasin GSAs does not negatively impact the Mid Kaweah GSA's local sustainability goal.
- Use the numerical groundwater model to evaluate the change in water levels at representative monitoring wells through 2040, both with and absent of the proposed Projects and Management Actions, and relative to the proposed measurable objectives and minimum thresholds.
- Use the above analysis to show how all types of beneficial users in the GSA area will be impacted by the proposed glidepath approach.
- Ensure that projects and management actions are implemented simultaneously, in order to equitably protect all beneficial users' groundwater needs.

The Draft GSP's Sustainable Management Criteria for Groundwater Levels are not Adequate

The sustainable management criteria for groundwater levels must be made after considering the interests of all beneficial user groups, including domestic well users and disadvantaged communities.¹⁷ These policy decisions must also avoid disparate impacts on protected groups pursuant to state and federal law.¹⁸

The GSA has not shown how they have considered the interests of beneficial users including domestic well owners and disadvantaged communities. The resulting impact from the proposed sustainable management criteria will likely lead to disparate impacts on protected groups pursuant to state and federal law.

¹⁷ Water Code § 10723.2.

¹⁸ Gov. Code § 11135; Gov. Code § 65008; Government Code §§ 12955, subd. (I).

Furthermore, the Draft GSP does not show how the sustainable management criteria for groundwater levels will comply with the sustainability goal to “preserve the quality of life or support population growth.”

Undesirable Result

Undesirable results are the point at which “significant and unreasonable” impacts on beneficial users caused by declining groundwater levels. The SGMA regulations require GSAs to justify their undesirable results by including the “[p]otential effects on the beneficial uses and users of groundwater.”¹⁹ GSAs must also describe the “processes and criteria relied upon to define undesirable results.”²⁰

The Draft GSP’s undesirable results for groundwater levels are inadequate because significant and unreasonable impacts will occur without triggering an undesirable result. The Draft GSP states that “one-third of the representative monitoring sites in all three GSA jurisdictions combined exceed their respective minimum threshold water level elevations.”²¹ Violating one-third of the minimum thresholds of the entire subbasin’s representative monitoring wells would have unreasonably severe impacts on domestic well users, particularly given that reaching the minimum thresholds in the Mid Kaweah GSA alone would dewater 71% of domestic wells in the Mid Kaweah GSA area and partially dewater an additional 15% of domestic wells.²² The Draft GSP acknowledges the serious financial impact of having to drill deeper wells, well failures, and the increased energy costs of pumping water from lower depths, but the undesirable result for groundwater levels does not prevent either of these impacts.²³ Furthermore, the vast majority of wells the GSA would allow to go dry before triggering plan failure would be overwhelmingly upon domestic well users and disadvantaged communities, causing a disparate impact in violation of state law. In order to avoid these disparate impacts, the GSA must change the undesirable result or define its own local undesirable result to prevent widespread drinking water impacts to protected groups in the GSA area.

In order to avoid a violation of state civil rights law and avoid causing significant and unreasonable impacts as required by the SGMA, the GSA must:

- Include a local undesirable results definition that makes it clear that the GSA will locally define and address an undesirable result within its service area and protect beneficial users of groundwater.

Minimum Thresholds

The groundwater levels sustainable management criteria set by the GSAs must be the point that, “if exceeded, may cause undesirable results.”²⁴ Therefore it must have the purpose of avoiding

¹⁹ 23 CCR § 354.26.

²⁰ 23 CCR § 354.26.

²¹ Mid Kaweah GSA Draft GSP p. 3-5, dated July 2019.

²² Focused Technical Report, p. 4. Our analysis shows a much larger impact on domestic wells than the evaluation of well impacts in the Draft GSP.

²³ Mid Kaweah GSA Draft GSP p. 3-8, dated July 2019.

²⁴ 23 CCR § 354.28.

“significant and unreasonable” impacts on beneficial users caused by declining groundwater levels.²⁵ For groundwater levels specifically, GSAs must place minimum thresholds for each monitoring site at the level “that may lead to undesirable results.”²⁶ Under the SGMA regulations, the GSA should provide a description of “the information and criteria relied upon to establish minimum thresholds,” an explanation of how the proposed minimum thresholds will “avoid undesirable results,” and “how minimum thresholds may affect the interests of beneficial uses and users of groundwater.”²⁷ The GSA must also consider that drinking water use has been recognized as the “highest use of water” by the California legislature, and should consult with stakeholders to ensure that the minimum threshold is set in such a way as to guarantee the human right to drinking water to all individuals in the subbasin.²⁸

The Mid Kaweah GSA’s approach to setting minimum thresholds does not “consider the interests of” drinking water beneficial users. The GSA’s proposed minimum thresholds would allow the current rate of pumping (established by the trend from 2006 to 2016) to continue at least until 2040, and possibly after 2040. The GSA contains an evaluation of well impacts that shows that 21% of wells will go dry, but our analysis shows a much larger impact: taking into account well screen intervals on domestic wells in the GSA, the attached Focused Technical Report shows that 71% of the domestic wells in the GSA will be fully dewatered at the minimum threshold, and an additional 15% will be partially dewatered.²⁹ The GSA has therefore chosen to allow large amounts of pumping to occur at the potential expense of up to 86% of the domestic wells in the GSA area. Since domestic well users are de minimis pumpers and are not part of this aquifer-depleting pumping, this will be a disproportionately negative impact on domestic users, the majority of whom belong to a group protected by state civil rights law. This therefore will cause a disparate impact in violation of state civil rights law.

In order to show that it has considered impacts on domestic well users and disadvantaged communities, and ensure that it is not causing a disparate impact on groups protected from such impact by state civil law, the GSA must conduct an analysis of how many wells will be impacted by reaching this minimum threshold, in particular domestic wells and small community system wells in disadvantaged communities. It should also quantify the increased pumping costs associated with the increased lift at the projected water levels. Then, it must measure whether the impacts to wells and household finances are “significant and unreasonable” by consulting with domestic well owners and disadvantaged communities. If its current choice of minimum threshold will cause a disparate impact or cause significant and unreasonable impacts to these beneficial user groups, it must modify its minimum threshold to comply with its legal obligations.

The Mid Kaweah GSA must set minimum thresholds that consider the interests of drinking water beneficial users and do not create a disparate impact on protected groups by doing the following:

²⁵ 23 CCR § 354.26.

²⁶ 23 CCR § 354.28.

²⁷ 23 CCR § 354.28.

²⁸ Water Code § 106.

²⁹ Focus Technical Report, p. 4.

- Accurately evaluate the number of wells that will be impacted should water levels reach the proposed minimum thresholds, taking into account their well screen depth, and the increased pumping costs associated with the increased lift at the projected water levels.
- Consider drinking water impacts in shaping minimum thresholds, and ensuring that protected groups are protected from disparate and disproportionately negative impact.
- The GSA must show how it has considered the needs of all beneficial users, including drinking water users, in setting its minimum thresholds, by publishing the above analysis in the GSP and showing how it consulted with domestic well users and disadvantaged communities to set a minimum threshold that avoids significant and unreasonable impacts to their beneficial user groups.
- In order to protect drinking water users, the GSAs should place the minimum threshold at a level above where the shallowest domestic well is *screened* in each Threshold Area.
- Provide a robust drinking water protection program to prevent impacts to drinking water users and mitigate drinking water impacts that occur.

Measurable Objectives

The SGMA regulations require the GSA to set measurable objectives and interim milestones that “achieve the sustainability goal for the basin within 20 years of Plan implementation and to continue to sustainably manage the groundwater basin over the planning and implementation horizon.” Measurable objectives must be more ambitious than the minimum thresholds, and must be the point at which the GSA has determined that it will not exceed its sustainable yield, and therefore avoid “significant and unreasonable” impacts on beneficial users.

The GSA has taken the 2006-2016 trend line and set the measurable objective for 2040 at the groundwater elevation reached by the trend line in 2030. The GSA has not evaluated how this groundwater elevation will affect domestic well users and disadvantaged communities, whose critical drinking water resources will be impacted by a decline in groundwater levels. In fact, the attached Focused Technical Report shows that approximately 64% of domestic wells in the GSA area will be dewatered if groundwater levels reach the measurable objectives, and an additional 9% of domestic wells will be partially dewatered. The GSA cannot therefore have considered the interests of this beneficial user group in determining its measurable objectives, and is likely to have a disparate impact on a protected group if it pursues this course of action.

In order to show that it has considered impacts on domestic well users and disadvantaged communities, and ensure that it is not causing a disparate impact on groups protected from such impact by state civil law, the GSA must conduct a complete analysis of how many wells will be impacted by this measurable objective, in particular domestic wells and small community system wells in disadvantaged communities. It should measure whether the impacts to wells are “significant and unreasonable” by consulting with domestic well owners and disadvantaged communities. If its current measurable objective will cause a disparate impact or cause

significant and unreasonable impacts to these beneficial user groups, it must modify its measurable objective to comply with its legal obligations.

It is also unclear how the measurable objectives will achieve the sustainable yield. The GSA must clarify how achieving the measurable objectives at all representative monitoring wells will cumulatively result in attaining the sustainable yield for the GSA area.

The GSA must include the following in its Draft GSP to bring its measurable objectives into compliance with law:

- The GSA must clarify how its measurable objectives will achieve the sustainable yield.
- The GSA must analyze how many wells will be fully or partially dewatered at the groundwater elevation of the proposed measurable objective.
- The GSA must show how it has considered the needs of all beneficial users, including drinking water users, in setting its measurable objectives, by publishing the above analysis in the GSP and showing how it consulted with domestic well users and disadvantaged communities to set a measurable objective that avoids significant and unreasonable impacts to their beneficial user groups.

The Draft GSP Fails to Adequately Address Groundwater Quality

SGMA charged GSAs with the responsibility to protect water quality through groundwater management,³⁰ and requires that the GSA consider the interests of all beneficial users including domestic well users and disadvantaged communities.³¹ This Draft GSP fails to incorporate performance measures and management criteria with respect to contaminants that impact human health including those contaminants with established primary drinking water standards, and in doing so, fails to conform with the requirements of SGMA. The Draft GSP leaves drinking water users in the subbasin vulnerable to increased drinking water contamination from the GSA's groundwater management activities or from the lack of adequate groundwater management in the subbasin. The GSA has not shown how it has considered the interests of beneficial users including domestic well owners and disadvantaged communities in shaping groundwater quality sustainable management criteria.³² Furthermore, as described in more detail below, the monitoring network for groundwater quality does not monitor or manage groundwater impacts for any domestic wells. The resulting impact from the proposed sustainable management criteria, will likely lead to disparate impacts on protected groups, in conflict with state and federal law.³³

Minimum Threshold

GSAs must place groundwater quality minimum thresholds for each monitoring site at the level “that may lead to undesirable results.”³⁴ Under the SGMA regulations, the GSA should provide a

³⁰ Water Code § 10721(w)(4); 23 CCR § 354.28(c)(4).

³¹ Water Code §§ 10727.2(d)(2); 10721(x)(4)

³² Water Code § 10723.2.

³³ Gov. Code § 11135; Gov. Code § 65008; Government Code §§ 12955, subd. (l).

³⁴ 23 CCR § 354.28.

description of “the information and criteria relied upon to establish minimum thresholds,” an explanation of how the proposed minimum thresholds will “avoid undesirable results,” and “how minimum thresholds may affect the interests of beneficial uses and users of groundwater.”³⁵ The GSA must also consider that drinking water use has been recognized as the “highest use of water” by the California legislature,³⁶ and should consult with stakeholders to ensure that the minimum threshold is set in such a way as to guarantee the human right to drinking water to all individuals in the subbasin.

The Draft GSP does not protect domestic wells from drinking water contamination resulting from groundwater management activities. The Draft GSP states that the number of contaminants of concern (COC) monitored at each representative monitoring well will vary by the “dominant use” of groundwater around each representative monitoring well, and that the “dominant use” is measured as “more than 50% of the pumping” around the well. Since agricultural pumping will always dominate domestic well pumping, this means that no representative monitoring wells outside of cities and community water systems will monitor for drinking water contaminants. This leaves the vast majority of domestic wells in the GSA area unmonitored and unprotected from groundwater quality impacts. This policy decision has not considered the interests of this beneficial user type, and will cause a disparate impact on protected groups pursuant to state civil rights law. The GSA should instead monitor for drinking water contaminants at all representative monitoring wells.

Another concern is that there are only 4 representative monitoring wells detecting contamination from groundwater management activities outside of the cities of Tulare and Visalia.³⁷ This will allow for contamination to occur undetected in these areas, where domestic well users and disadvantaged communities depend on groundwater for their vital drinking water resources. The GSA must immediately increase the number of representative wells in these areas of the GSA in order to avoid a disparate impact on protected groups

Also, the proposed minimum threshold is not sufficient to protect against significant and unreasonable impacts to drinking water, because it does not protect against all primary drinking water contaminants. The GSA only proposes to monitor for compliance with MCLs for six drinking water contaminants of concern “where applicable”: arsenic, nitrate, chrome-6, DBCP, 123-TCP, and PCE.³⁸ The GSA does not present a rationale to justify why these six drinking water contaminants were chosen, and why it chose not to monitor for other drinking water contaminants. This Draft GSP allows the GSA to conduct groundwater management in a way that contaminates domestic wells, and allows the GSA to cause increased contamination from other drinking water contaminants. It also allows the GSP to cause increased contamination in other drinking water contaminants known to increase from groundwater management activities, such as uranium.³⁹ As written, the groundwater quality minimum threshold puts all drinking

³⁵ 23 CCR § 354.28.

³⁶ Water Code § 106.

³⁷ Draft GSP, p. 4-14.

³⁸ Draft GSP, p. 3-6

³⁹ Smith et al., “Overpumping Leads to California Arsenic Threat,” *Nature Communications* (June 2018) [arsenic discharge from clay correlated with overpumping]; Jurgens et al., “Effects of Groundwater Development on

water at risk of contamination from drinking water contaminants that are not included in the six contaminants of concern. The impacts of this contamination will be particularly felt by domestic wells, which are most vulnerable to drinking water contamination, and are not going to be monitored for compliance with any drinking water contamination that may result from the GSA's groundwater management activities.

The GSA must therefore monitor for compliance with drinking water contaminants in all areas where drinking water wells are present, including domestic wells. The GSA must monitor for compliance with MCLs for all primary drinking water contaminants, hexavalent chromium and PFOSs/PFOAs (both of which are known to cause serious health impacts but do not have MCLs currently), as well as for contaminants that are known to increase due to groundwater pumping and groundwater management activities such as uranium.⁴⁰

It is unclear when groundwater quality minimum thresholds will be triggered. We know that another GSA in the subbasin requires ten years of data before a minimum threshold for groundwater quality will be triggered. The Mid Kaweah GSP seems to communicate that a minimum threshold at a representative monitoring well will be triggered when a contaminant violates the MCL, and the GSA finds that its groundwater management activities were the cause of the increased contamination, and that the GSA will “coordinate [its] activities such that they do not result in an exceedance of any MCL.”⁴¹ The GSP must clarify how these minimum thresholds will be triggered, and must require an immediate response to an MCL violation. If the GSA waits ten years to find a minimum threshold violation, that policy will likely result in communities experiencing many years of severe drinking water contamination before the GSA corrects groundwater pumping that is pulling a contaminant plume into their drinking water supply, halts recharge or irrigation activities causing uranium discharges or nitrate flushing, or curbs groundwater pumping that is causing an increase in groundwater contamination (e.g., arsenic discharge from clay).⁴² The communities most vulnerable to these types of drinking water impacts are domestic well owners and disadvantaged communities, and this policy will likely result in a disparate impact on protected groups under state civil rights law. Therefore the GSA must ensure that a minimum threshold violation will be found when a single test finds an MCL violation, and a correlation is found with the GSA's groundwater management activities.

To bring the groundwater quality minimum thresholds into compliance with SGMA and state civil rights law, the GSA must:

- Monitor for compliance with all established primary drinking water standards, hexavalent chromium, and PFOSs/PFOAs, at *all* representative monitoring wells, as well as

Uranium” (November 2010) [strong correlation between high bicarbonate irrigation and recharge water and leaching of uranium from shallow sediments to groundwater].

⁴⁰ Id.

⁴¹ Draft GSP, p. 5-12.

⁴² Smith et al., “Overpumping Leads to California Arsenic Threat,” Nature Communications (June 2018) [arsenic discharge from clay correlated with overpumping]; Jurgens et al., “Effects of Groundwater Development on Uranium” (November 2010) [strong correlation between high bicarbonate irrigation and recharge water and leaching of uranium from shallow sediments to groundwater].

contaminants that are known to increase with groundwater management activities, such as uranium.

- Ensure that all representative monitoring wells are measuring for concentrations of the contaminants of concern, including all drinking water contaminants, every month.
- Ensure that minimum thresholds will be triggered after one test shows a violation of the MCL, and clarify this trigger process in the GSP.
- Immediately plan for, fund and construct new representative monitoring wells or evaluate existing wells to ensure that representative monitoring wells are monitoring for impacts to domestic well users outside of the cities of Tulare and Visalia.
- Implement a Drinking Water Observation Plan to trigger GSA action when contamination spikes occur. Please see more information about the types of projects that could be implemented when a Drinking Water Observation Plan is triggered in our comments about Projects and Management Actions.

The Proposed Undesirable Result for Groundwater Quality is Inadequate

Undesirable results are the point at which “significant and unreasonable” impacts on beneficial users caused by degraded groundwater quality. The SGMA regulations require GSAs to justify their undesirable results by including the “[p]otential effects on the beneficial uses and users of groundwater.”⁴³ GSAs must also describe the “processes and criteria relied upon to define undesirable results.”⁴⁴ The undesirable result cannot have a disparate impact on protected groups pursuant to state civil rights law.

The Mid Kaweah GSA has defined a groundwater quality undesirable result as “one-third of all Subbasin designated water quality monitoring sites exhibit a minimum threshold exceedance, and those exceedances are all associated with GSA actions.”⁴⁵ Like the groundwater levels minimum threshold, this definition of undesirable results is inadequate because significant and unreasonable impacts will occur without triggering an undesirable result. Violating water quality standards in one-third of the minimum thresholds of the entire subbasin’s representative monitoring wells would have unreasonably severe impacts on drinking water users. Furthermore, the vast majority of wells the GSA would allow to become contaminated before triggering plan failure would be overwhelmingly upon domestic well users and disadvantaged communities, causing a disparate impact in violation of state law. The GSP states that the GSA discussed these impacts with Advisory Committee members, but it cannot have held an informed discussion because it did not have data on the actual potential impact to beneficial users. In order to avoid these disparate impacts, the GSA must change the undesirable result or define its own local undesirable result to prevent widespread drinking water impacts to protected groups in the GSA area.

⁴³ 23 CCR § 354.26.

⁴⁴ 23 CCR § 354.26.

⁴⁵ Draft GSP, p. 3-6.

In order to comply with SGMA and state civil rights law, the GSA must:

- Define its own local interpretation of the subbasin’s undesirable result.
- Consider the impact of its undesirable impact on all types of beneficial users in the GSA area by evaluating the potential groundwater quality impact to beneficial users. Publish this analysis in the GSP, and show how it was used to define the undesirable results.
- Ensure that this undesirable result does not cause a disparate impact on protected groups under state civil rights law.

Projects and Management Actions

The GSA must consider the interests of beneficial users including domestic well owners and disadvantaged communities⁴⁶ and avoid disparate impacts on protected groups.⁴⁷ In light of the impacts on domestic well users and disadvantaged communities from the policy decisions discussed above, the GSP must therefore include Projects and Management Actions that protect domestic well users and disadvantaged communities from the drinking water impacts that will occur from the GSA’s policy decisions. As noted above and on the attached Focused Technical Report, the minimum thresholds for groundwater levels put more than 86% of domestic wells in the GSA area at risk of full or partial dewatering, and the groundwater quality sustainability goals leave domestic wells unprotected from increased contamination. Furthermore, the GSP cannot create a disparate impact on protected groups pursuant to state law. Without proactive policies and projects to mitigate forthcoming disparate impacts, communities and homes belonging to protected groups based on race, national origin and ethnicity will experience a disproportionately negative impact in violation of state civil rights law. Because the GSP as written will cause a disparate impact on protected groups, and does not consider the interests of domestic well users or disadvantaged communities, the GSP must include projects to prevent and mitigate those impacts.⁴⁸

The Draft GSP’s chapter on Projects and Management Actions contains two projects that may help protect against disparate impacts, but those projects as written are not sufficient to prevent disparate impacts. The recharge basin next to Okieville is a positive step in the right direction towards protecting Okieville’s drinking water supply and quantity.

The Small Systems/Domestic Well Owner Assistance program could help prevent disparate impacts and show that the GSA has considered the interests of domestic well owners and small systems, but the GSA’s Board of Directors has not committed to doing this program, and does not define how the assistance measures will be implemented or funded. Before adoption, the Mid Kaweah GSA must clearly commit to projects and management actions to prevent disparate impacts on vulnerable water users, and have defined timelines for those projects.

The Draft GSP’s potential groundwater extraction allocation program also raises

⁴⁶ Water Code § 10723.2.

⁴⁷ Gov. Code § 11135; Gov. Code § 65008; Government Code §§ 12955, subd. (I).

⁴⁸ Gov. Code § 11135; Gov. Code § 65008; Government Code §§ 12955, subd. (I).

concerns from the perspective of domestic well users and disadvantaged communities. Such a scheme could negatively impact critical drinking water resources if the GSA does not ensure that small systems, in addition to domestic wells, are exempt from pumping restrictions.

In order to prevent disparate impacts on protected groups, and show that it has considered the interests of all beneficial users including domestic well users and disadvantaged communities, the GSA should consider the following projects and management actions:

- ***Clearly Commit to a Drinking Water Protection Program for the Mid Kaweah GSA Service Area:***
 - The GSP contains a potential program to assist domestic well owners and small water systems obtain solutions to drinking water issues in the GSA area. This is a step in the right direction, but needs a more solid commitment and a defined scope and proposed activities. We recommend some parameters for a potential program below, and are glad to work with the GSA on shaping an effective program for preventing drinking water impacts from declining groundwater levels, increased groundwater contamination, and subsidence.
 - We recommend that the GSA consider the following factors in approving such a program:
 - Eligible activities in the program should include: drilling of new wells or deepening wells if homes' wells go dry due to declining groundwater levels, increased energy costs from pumping from deeper depths,⁴⁹ assistance in connecting to larger water systems.
 - Any project funded by the program must be guided by the residents or communities that are recipients of program benefits. Community input into a project will ensure project success, by learning from resident experience and knowledge to shape a project that will best suit their drinking water needs.
 - The GSA must ensure that the program is accessible for all residents who may need its assistance. The program should work with local agencies and organizations to spread information about the program, should not require residents to opt in to the program, and the GSA must provide translated materials regarding the program.⁵⁰
 - Such a program must be proactive, rather than reactive. We recommend that Mid Kaweah GSA implement a Drinking Water Observation Plan (DWOP) that will serve as a warning system so that the GSA is aware of when wells are going dry, or when wells are going to become

⁴⁹ Recent research has concluded that "in the Tulare Lake area, with an average well depth of 120 feet, pumping would require 175 kWh per acre-foot of water. In the San Joaquin River and Central Coast areas, with average well depths of 200 feet, pumping would require 292 kWh per acre-foot of water."

⁵⁰ Gov. Code, §§ 7293, 7295

contaminated from groundwater management activities, so it can take action to prevent drinking water impacts before they occur. This DWOP should trigger proactive measures wherein the GSA should act before wells lose production capacity or before wells become contaminated, to ensure that community members are not left without access to safe and reliable drinking water.

- Wherever possible, and whenever it is the community's preference, the GSA should strive to assist residents on domestic wells and small community water systems with connecting to larger drinking water systems. If consolidation is not possible, the GSAs should support the deepening of wells, installation of treatment facilities or POE/POU treatment in homes and offset the increased energy costs for pumping water from a lower level. In the interim, the GSA should collaborate with local and state agencies to provide emergency bottled water for consumption and sanitary purposes.
- **Recharge Basins In or Near Disadvantaged Communities and Domestic Well Clusters:** The Mid Kaweah GSA should replicate projects like the Okieville project throughout the GSA area wherever DACs and clusters of domestic wells exist. The GSA should opt for these kinds of recharge projects with health co-benefits over on-farm recharge, which is likely lead to accelerate groundwater contamination.
- **Require Basin-Wide Metering, Particularly for Large-Scale Production Wells:** The GSP establishes that one of the Management Actions that it will undertake is a study on different options to measuring groundwater extraction. We recommend that the GSA prioritize basin-wide metering of all extractors that are not de minimis extractors. In order to ensure achievement of the GSA's sustainability goal by 2040, and compliance with its sustainable management criteria, GSAs are prescribed the authority to meter all production wells in the subbasin,⁵¹ and metering is the only mechanism by which the GSA can procure accurate groundwater extraction data. Without this precise data, the GSA cannot create an accurate water budget. Therefore, the GSA must utilize the authority vested by the state to meter non-de minimis pumpers, fill data gaps and protect vulnerable domestic water users from groundwater decline.⁵²
- **Establish Pumping Buffer Zones:** For areas vulnerable to declining water levels and loss of production capacity, Mid Kaweah GSA should adopt management actions that establish geographical protection areas (buffer zones) by establishing bans, pumping limitations or community-specific management areas around disadvantaged communities

⁵¹ California Water Code section 10727.4 states that "a groundwater sustainability plan shall include, where appropriate and in collaboration with the appropriate indices" include "efficient water management practices...for the delivery of water and water conservation methods to improve the efficiency of water use."

⁵² Section 10725.8 (a) - A groundwater sustainability agency may require through this groundwater sustainability plan that the use of every groundwater extraction facility within the management area of the groundwater sustainability agency be measured by a water-measuring device satisfactory to the groundwater sustainability agency."

and domestic well clusters. In order to implement this policy, the Mid Kaweah GSA can consider incentivizing or requiring the fallowing of fields around disadvantaged communities, or protective water conservation projects. This practice will protect shallow or vulnerable wells from the impacts of over-pumping and cones of depression. Furthermore, this buffer must be protective enough to ensure that disadvantaged communities and residents reliant on domestic wells do not experience localized impacts from nearby pumping activities. This action should not be used to allow more pumping elsewhere in the subbasin, and needs to be coupled with a strong demand reduction policy across the basin.

- ***Support Water System Consolidations:*** The GSA must help fund a consolidation projects to connect nearby residents on wells to a larger water system that can treat the water, or pay for other water filtration solutions.

Broad Considerations for Projects and Management Actions

The following elements must be incorporated into the Projects and Management Actions section of the GSP in order to avoid a disparate impact on protected groups in the GSA area:

- ***Timelines:*** Projects benefiting disadvantaged communities must contain specific timelines and commitments to ensure achievement of sustainability and protection of drinking water resources for disadvantaged communities. Implement projects to benefit disadvantaged communities in a reasonably timely manner, and concurrently with projects that benefit other beneficial users, so as to avoid disparate impacts on groups protected under state civil rights law.
- ***Information Accessibility:*** Detailed information on projects must be available to the public online, as appendices to the GSP, and in a public workshop during a public comment period. In reading the shortlist projects descriptions, we had several questions about project details, which could be easily answered by providing more information on the projects. In order to better inform stakeholders on these projects and why they are being prioritized over others, more information on these projects needs to be made available, both in the plan and through more opportunities for in-person public comment.
- ***Multi-Benefit Projects:*** Encourage multi-benefit projects such as wetlands restoration or stormwater drainage ponds that would eliminate flooding and increase groundwater recharge in disadvantaged communities.
- ***Funding Projects:*** Although there are multiple short-term funding sources to leverage for SGMA-related projects, the Mid Kaweah GSA operating budget must be a reliable source of funding over the long-term of GSP implementation, and the GSA cannot rely on grant funding for long-term projects and programs that benefit disadvantaged communities. Furthermore, any proposed assessments that will pay for projects may not place a disproportionate financial burden on disadvantaged communities.

Draft GSP Does not Contain Adequate Plans for Community Engagement in Plan Implementation

Public outreach has been a critical part of the SGMA implementation process and will continue to be critical in implementing the GSP. The first chapter of the Draft GSP contains a brief description of community engagement during GSP implementation, stating that the GSA will continue notifying the public through email, postings, and social media about GSA board and committee meetings, and the GSA will do additional presentations as resources allow. does not contain adequate information regarding the plan implementation schedule and public process, annual reporting, or the potential to make amendments to the GSP. In the annual report outline proposed by the GSA, public outreach is not included in any of the key sections. Additionally, in the initial GSP implementation budget, there is no budget set aside for public outreach. This engagement is not enough to ensure that all beneficial user groups are considered, or that a wide diversity of stakeholders are included in GSP implementation decisions.

The GSP must establish processes by which it will seek and incorporate feedback from the public on an ongoing basis through direct outreach to disadvantaged communities and public workshops that are held at convenient locations and times and accessible in multiple languages. Additionally, proposed reconsiderations must be publicly noticed and circulated for public review and comment prior to final adoption.

To ensure that the GSP is implemented properly, the GSA must do the following:

- The GSA must include a plan for public outreach for the GSP implementation process. This plan should include translation services in order to meaningfully consult with and consider the interest of all beneficial users. Workshops and meetings must be at an accessible time and locations for all stakeholders
- The GSA must include public outreach as part of the annual reporting.
- The GSA must budget for public outreach. The budget should include translation services in order to meaningfully consult with and consider the interest of all beneficial users.
- Clarify in the GSP that the plan may be modified as data becomes available, and that the GSA will seek and accept feedback from the public on an ongoing basis throughout plan implementation.
- Clarify that any modification to the GSP must be in writing, noticed and provide sufficient time for public review and feedback.

Other Legal Considerations

The Draft GSP Threatens to Infringe on Water Rights

In enacting SGMA, the legislature found and declared that “[f]ailure to manage groundwater to prevent long-term overdraft infringes on groundwater rights.”⁵³ The test of SGMA further notes

⁵³ AB 1739 (2014).

that “[n]othing in this part, or in any groundwater management plan adopted pursuant to this part, determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights.”⁵⁴ As discussed in detail above, the Draft GSP allows continued overdraft above the safe yield of the basin, such that drinking water wells (especially domestic wells) will continue to go dry, infringing on the rights of overlying users of groundwater. The GSP must be revised to protect the rights of residents of disadvantaged communities and/or low-income households who hold water rights to groundwater.

The Draft GSP Conflicts with the Reasonable And Beneficial Use Doctrine

The “reasonable and beneficial use” doctrine, to which SGMA expressly must comply,⁵⁵ is codified in the California Constitution. It requires that “the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.” (Cal Const, Art. X § 2; *see also United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 105 [“...superimposed on those basic principles defining water rights is the overriding constitutional limitation that the water be used as reasonably required for the beneficial use to be served.”].)

The reasonable and beneficial use doctrine applies here given the negative impacts of the Draft GSP on groundwater supply and quality, which are likely to unreasonably interfere with the use of groundwater for drinking water and other domestic uses. As the Draft GSP authorizes waste and unreasonable use, it conflicts with the reasonable and beneficial use doctrine and the California Constitution.

The Draft GSP Conflicts with the Public Trust Doctrine

The “public trust” doctrine applies to the waters of the State, and establishes that “the state, as trustee, has a duty to preserve this trust property from harmful diversions by water rights holders” and that thus “no one has a vested right to use water in a manner harmful to the state’s waters.”⁵⁶

The “public trust” doctrine has recently been applied to groundwater where there is a hydrological connection between the groundwater and a navigable surface water body.⁵⁷ In *Environmental Law Foundation*, the court held that the public trust doctrine applies to “the extraction of groundwater that adversely impacts a navigable waterway” and that the government has an affirmative duty to take the public trust into account in the planning and allocation of

⁵⁴ Water Code § 10720.5(b).

⁵⁵ Water Code § 10720.1(a).

⁵⁶ *United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 106; *see also Nat’l Audubon Soc’y v. Superior Court* (1983) 33 Cal.3d 419, 426 [“before state courts and agencies approve water diversions they should consider the effect of such diversions upon interests protected by the public trust, and attempt, so far as feasible, to avoid or minimize any harm to those interests.”].

⁵⁷ *Environmental Law Foundation v. State Water Resources Control Bd.* (2018) 26 Cal.App.5th 844, 844.

water resources.⁵⁸ The court also specifically held that SGMA does not supplant the requirements of the common law public trust doctrine.⁵⁹ In contrast to these requirements, the Draft GSP does not consider impacts on public trust resources, or attempt to avoid insofar as feasible harm to the public's interest in those resources.

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The GSP must protect the area's most vulnerable drinking water users, and we welcome the opportunity to discuss our recommendations to ensure compliance with state law. We hope to continue to collaborate with GSA staff and consultants to ensure that the Mid Kaweah GSA's final GSP protects drinking water for disadvantaged communities and domestic well owners in the GSA area. We are also in communication with the Department of Water Resources about current GSP development activities in the San Joaquin Valley, and hope to successfully work with GSAs, communities and DWR to ensure that groundwater management is equitable and sufficiently protective of vital drinking water resources.

Sincerely,

/s/

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Leadership Counsel for Justice and Accountability

CC:

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Encl:  
Focused Technical Review

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<sup>58</sup> *Id.* at 856-62.

<sup>59</sup> *Id.* at 862-870.