June 3, 2020
California Department of Water Resources
901 P Street, Room 213
Sacramento, CA 94236
Submitted electronically to: Craig Altare
Online submission: https://sgma.water.ca.gov/portal/#gsp

Re: Comments on the Lower Tule River Irrigation District Groundwater Sustainability Plan (LTRIDGSA GSP)

Dear Department of Water Resources:

The Community Water Center recommends that DWR find that the Groundwater Sustainability Plan (GSP), submitted by the Lower Tule River Irrigation District Groundwater Sustainability Agency (LTRIDGSA) on January 31, 2020, is incomplete per 23 CCR §355.2(e)(2) and require that the all of the deficiencies identified in this comment letter are cured or addressed within 180 days, or otherwise we urge DWR to reject the plan as inadequate.

We note a few exceptions to the 180-day cure period and for those issues recommend DWR require the GSA during the 180-day cure period to develop a plan, including timelines and funding sources, for how it will resolve these deficiencies prior to its 5-year update. If the GSA refuses to cure the deficiencies, DWR should find the plan inadequate per 23 CCR §355.2(e)(3). This will allow DWR the ability to measure the GSA’s progress towards implementing the solution. We discuss these timelines in our detailed individual recommendations for each section of the GSP.

We Believe the GSP Will Result in Significant Negative Impacts to Safe Water Access for Vulnerable Communities and Domestic Well Owners Unless Changes Are Made to the GSP:

The comments and recommendations contained in this letter are provided to DWR in an effort to protect the drinking water sources of the vulnerable, and often underrepresented, groundwater users that CWC works with. These beneficial users of groundwater include: domestic well owners, public water systems, state small water systems and severely disadvantaged (SDAC) or disadvantaged communities (DAC). We hope these comments will ensure that the GSP will:

1. Understand DAC’s unique vulnerabilities and adequately address their drinking water needs.¹
2. Avoid developing groundwater management actions that are likely to cause negative impacts to drinking water supplies or cause a disparate impact on low-income households and communities of color.
3. Achieve the objectives required by the Sustainable Groundwater Management Act (SGMA) regulations and California’s Human Right to Drinking Water law (HR2W) which recognizes that “every human being has the right to safe, clean, affordable, and accessible water adequate for

¹ See Water Code §10723.2 “The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater...including... Disadvantaged communities.”
human consumption, cooking, and sanitary purposes.” While we recognize that the GSAs themselves are not subject to the HR2W, the Department is and must consider how the GSP impacts access to safe, clean, and affordable drinking water.

4. Achieve the goals required by SGMA without negatively affecting the implementation of the Newsom Administration’s newly passed Safe and Affordable Drinking Water Fund, by limiting or preventing further contamination of drinking water sources or the dewatering of wells that serve low-income communities of color.

CWC’s Substantial Involvement in the LTRIDGSA Planning Process:

Community Water Center is a 501(c)(3) nonprofit that acts as a catalyst for community-driven water solutions through organizing, education, and advocacy. CWC seeks to build and enhance leadership capacity and local community power around water issues, create a regional movement for water justice in California, and enable every community to have access to safe, clean, and affordable drinking water.

CWC has been deeply involved in reviewing several GSPs submitted within the San Joaquin Valley and on the Central Coast. CWC conducted our own in-depth technical reviews of the draft and final GSPs in parallel with the community outreach described above. Our technical review focused on whether or not the submitted GSP complied with the letter and legislative intent of the SGMA statute as well as whether it violated any California law, case law, or regulations. We also undertook a drinking water well impact analysis that looked critically at the minimum thresholds (MTs), measurable objectives (MOs), and undesirable results (URs) in the then draft-GSP.

CWC Submitted All the Comments in this Letter to the GSA Directly as Part of the GSP Review Process:

Through the work described above we identified numerous deficiencies in the draft GSP and submitted a comment letter detailing our findings and recommendations to the LTRIDGSA on December 13, 2019. LTRIDGSA responded to very few of our comments, and failed to add their responses to the GSP as required by SGMA. Instead, they placed a list of their responses on their website.3

CWC Recommends that DWR Find the GSP to be Incomplete and Require Changes or Else Find it Inadequate:

We recommend that DWR find the LTRIDGSA GSP incomplete pending the adoption of the recommendations in this comment letter. Underlying each of our recommendations is a legal, equitable, and/or technical deficiency that we believe will imperil access to clean, safe, and affordable drinking water for communities within the LTRIDGSA boundaries.4 Based on the immediacy of the danger to access and the time it would reasonably take to adopt or implement the recommendation, we assigned a deadline by which DWR should require LTRIDGSA compliance:

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2 Water Code §106.3.
4 Where we did not feel a deficiency actually imperiled access to clean, safe, and affordable drinking water we did not make a comment.
• **For deficiencies that immediately imperil access and can be cured within the 180-day cure period:** DWR should find the plan incomplete per 23 CCR §355.2(e)(2)(B) and require the GSA to resubmit the GSP with the adopted recommendation within the 180-day cure period. If the GSA fails to do so, DWR should find the plan inadequate. We assigned this deadline to most of our recommendations, either because (1) the deficiency itself immediately imperils access to groundwater for drinking purposes, (2) the deficiency represents bad or incomplete data that in turn leads to an immediate imperilment of access, or (3) the deficiency is a GSA policy decision that will harm access if implemented.

• **For deficiencies that immediately imperil access and cannot be reasonably cured within the 180-day cure period:** When a deficiency immediately imperils access to groundwater for drinking purposes but a particular recommendation cannot reasonably be adopted or implemented within the 180-day cure period (e.g., the GSA must conduct analysis which requires lengthy data collection), we urge DWR to find the plan incomplete per 23 CCR §355.2(e)(2)(B) and require the GSA to resubmit the GSP acknowledging the deficiency along with a plan for resolving it as quickly as possible, no later than the Plan’s 5-year update; this should include identifying a funding source for the solution where appropriate. If the LTRIDGSA fails to acknowledge the deficiency and adopt a solution within the 180-day cure period DWR should find the plan inadequate per 23 CCR §355.2(e)(3)(C).

• **Deficiencies that will take 5 or more years to fix whether or not they immediately imperil access:** Our technical review of the LTRIDGSA GSP did not identify any deficiencies that would reasonably take longer than 5 years to cure. That said, a GSP containing such a deficiency must be found inadequate under 23 CCR 355.2(e)(3)(C), because the issue would not be solved, or a plan as to how to solve it created, within the 180-day cure period, and the LTRIDGSA is not located in a low or very low priority basin that would allow for a longer timeframe. Furthermore, in many cases such a long timeframe would render the underlying issue too speculative; the GSP would not be in substantial compliance under CCR §355.4(b) such that DWR could evaluate the likelihood of the plan to achieve the GSA’s sustainability goals.\(^5\) Note that this effectively creates a 5-year deadline for any GSA adopted plan to cure a deficiency beyond the 180-day cure period, whether or not the deficiency immediately imperils access. We recommend that if DWR discovers such a deficiency – whether or not the GSP includes a detailed plan for resolving it – during its independent analysis it should find the GSP inadequate.

**Summary of Some Major Lower Tule River Irrigation District GSP Deficiencies and Recommendations**

Although any deficiency in a GSP that imperils access to drinking water is unacceptable, we would like to draw DWR’s attention to the sections of the GSP that contain the most critical issues that we have identified and expand upon in our substantive comments following this cover letter:

• **Widespread Inconsistencies:** Because of the structure of the LTRIDGSA GSP, key information for the GSP is spread across four different documents. This has resulted in numerous ambiguities and inconsistencies pertaining to the Subbasin Setting and Sustainable Management Criteria (SMCs), Monitoring Network, Water Budget, and Projects and Management Actions (P&MA)s.

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\(^5\) See 23 CCR §355.4(b).
- **Sustainable Management Criteria, Groundwater Levels:** The MOs and MTs selected by the GSA will likely cause many wells in the GSA boundary area to be partially or completely dewatered, yet the GSA chose these sustainability indicators without doing a drinking water well impact analysis to justify them. CWC conducted its own analysis which suggested significant impacts and our concerns were included in our comments to the GSA. We believe the GSA’s missing study materially affects the ability of DWR to evaluate the likelihood of the Plan’s success, because it does not contain the “sufficiently thorough and reasonable analysis,” necessary to place the plan in substantial compliance with 23 CCR 355.4(b). This failure by LTRIDGSA report also makes it impossible for DWR to ascertain if the Plan as a whole is sufficiently protective of diverse drinking water users per the enumerated considerations found in 23 CCR 355.4(b). We recommend that DWR critically review the MOs, MTs, and URs for groundwater levels chosen by the GSA. The SMCs also suffer for the inconsistencies between documents already described.

- **Sustainable Management Criteria, Groundwater Quality:** The groundwater quality SMCs are fatally marred by inconsistencies between the Plan’s multiple components. In our comments on this section we identify two dozen inconsistencies between different sections of the GSP as well as clear errors in applying the SGMA regulations. Both MOs and MTs will allow groundwater quality to degrade relative to “10-yr baseline conditions,” without regard for regulatory maximum contaminant levels (MCLs) for drinking water. This implies that ever-increasing contaminant concentrations will remain within the MTs as long as the rate of increase stays within a 15% increase over the running average. The GSP does not explain how ever-increasing water quality concentrations are sustainable and protective of beneficial users and uses.

- **Water Budget:** The GSA must revise the water budget to address inconsistencies between documents and to clarify if MOs/MTs were accurately developed. The P&MAs identified in the LTRIDGSA GSP are not consistent with those identified in the Tule Subbasin Setting document which serve as the basis for the future water budget projections and development of water level MOs and MTs. Therefore, it is unclear if the projected MOs/MTs are accurately represented in the documents. We identified numerous other sections that needed clarification or revision in order to create a usable basin setting. Once again, this lack of clear information belies any notion that the GSA is substantially compliant per 23 CCR 355.4(b).

- **Projects and Management Actions:** There are multiple inconsistencies between the GSP and the Tule Subbasin Setting that must be reconciled by the GSA before the Plan can be reviewed adequately per the regulations. Because the actions described in the GSP may have negatively impacted drinking water users, we strongly suggested that the GSP be updated to contain a robust mitigation program with an identified funding structure to protect these groundwater users. We continue to believe that failure to include a mitigation program could lead to widespread violations of Water Code §106 and the HR2W if drinking water users are negatively affected by P&MAs. Further, this failure could lead to threatening the success of the State Water Board’s SAFER program, which was not designed to be a SGMA backstop for GSPs which fail to address impacts to drinking water sources.

- **Plan Area:** DWR should require the GSA to work with Tulare County to adopt a drinking well permitting program to ensure that future wells do not imperil either the goals of SGMA or the SAFER Program.
Monitoring Network: In addition to the ubiquitous inconsistencies across documents, the proposed monitoring network has gaps in coverage that may harm rural domestic users who lived outside of the service areas of public water systems.

Thank you for reviewing this letter and for the consideration of our comments on the submitted LTRIDGSA GSP. We urge you to act to protect access to drinking water for vulnerable communities that will be impacted by this GSP by either deeming the plan incomplete and requiring the deficiencies identified in this comment letter to be cured within 180 days, or otherwise fail the plan. Please do not hesitate to contact us with any questions or concerns. We would also welcome the opportunity to meet to further discuss these important sets of issues.

Sincerely,

Zach N. Haydt

CC:

The Honorable California Governor Gavin Newsom
The Honorable Senate Pro Tem Toni Atkins, California State Senate
The Honorable Speaker Anthony Rendon, California State Assembly
The Honorable Secretary Jared Blumenfeld, California Environmental Protection Agency
The Honorable Secretary Wade Crowfoot, California Natural Resources Agency
The Honorable Board Chair E. Joaquin Esquivel, State Water Resources Control Board
Deputy Cabinet Secretary Christine Hironaka, Governor’s Office
Deputy Secretary and Special Counsel for Water Policy Kristin Peer, California Environmental Protection Agency
Deputy Secretary for Environmental Justice, Tribal Affairs and Border Relations Yana Garcia, California Environmental Protection Agency.
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Beneficial Users of Groundwater

The LTRIDGSA GSP is complex, and contains a large number of individual deficiencies that this comment letter will discuss. In many instances a single statute, regulation, or legal theory is implicated by multiple sections of the GSP. To avoid repetition in the presentation of these comments, we have organized some of the most broadly applicable legal arguments into this section. What all of these arguments have in common is that they show either a misapprehension or willful violation of the correct priority of beneficial users under established California law. In plain language, these are deficiencies that require DWR censure because the LTRIDGSA GSP favors agricultural interests over the interests of groundwater users for drinking water purposes.

Priority of Beneficial Users

The “reasonable and beneficial use” doctrine, to which SGMA expressly must comply, 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.” DWR and the State Water Board must ensure that GSP’s water management is consistent with the reasonable and beneficial use doctrine. In doing so, DWR and the Board must follow the Legislature’s directive to prioritize beneficial users of water for domestic purposes over beneficial users for irrigation.

This prerogative is expressed in Water Code §106, which makes it the, “established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.” The reasonable and beneficial use doctrine applies here given the negative impacts of the 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 LTRIDGSA GSP authorizes unreasonable use (in that water will go to lower priority users first), it conflicts with the reasonable and beneficial use doctrine, California Constitution, and Water Code §106.

Disparate Impacts

The disproportionate negative outcomes for DACs and domestic well users compared to other users (e.g., agriculture) caused by the LTRIDGSA GSP’s sustainability management criteria (not only the sustainability goal, but also the MOs, MTs, and URs) are suggestive of a civil rights violation under a theory of disparate impact.

6 Water Code §10720.1(b).
7 Cal Const, Art. X § 2.
8 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 legal concept of disparate impact protects people of color and other protected classes from rules and regulations that are discriminatory in their effect, even when those rules and regulations were made without discriminatory intent. This protection applies to individuals in multiple contexts: the best known are housing, education, and employment. However, disparate impacts is a legal theory with broad applicability, and could easily encompass the willful regional dewatering of drinking water wells that disproportionately affects communities of color, DAC residents, and rural domestic well owners compared to agricultural well operators. There are defenses to a disparate impact claim, such as demonstrating that a policy is the only possible method for achieving a certain goal. LTRIDGSA justifies their sustainability goal and sustainable management criteria based upon the localized decision-making authority it has under SGMA, yet these criteria result in unjustified disparate impacts. LTRIDGSA must demonstrate that the goals of SGMA can be achieved while avoiding disparate impacts to the most vulnerable populations in the GSP area.

The GSP regulations clearly establish that a failure to consider all beneficial uses and users of groundwater undermines the likelihood that a basin will reach its sustainability goal. Civil rights-based class actions caused by region-wide well dewatering would indeed endanger the GSP’s future legal viability.

The Human Right to Water

DWR is bound by Water Code §106.3, the Human Right to Water (HR2W) when it reviews GSPs, both upon initial review and at each 5-year periodic review. The HR2W creates a human right to safe, clean, affordable, and accessible water for domestic purposes, and requires state agencies to consider this right when, “revising, adopting, or establishing policies, regulations, and grant criteria when those policies, regulations, and criteria are pertinent to the uses of water described in this section.” The plain text of §106.3(b) makes it unquestionable that the GSP review process is an act by DWR that falls under the auspices of the HR2W. As such, this right must be given consideration by DWR when it reviews the GSP. If DWR cannot articulate how the dictate of §106.3 is embodied in the approved GSP, DWR must find the plan incomplete and identify the deficiency and require it to be resolved before approving the final plan. As this comment letter will show, there are numerous deficiencies across the LTRIDGSA GSP that conflict with the HR2W and therefore must be cured in order to comply.

As a final note, a GSP may not be approved by DWR if it fails to comply with SGMA requirements. In all of its actions, a GSA must, “consider the interests of,” an enumerated list of types of beneficial users, including disadvantaged communities and all drinking water users (those reliant on domestic wells and community water systems). This is a freestanding requirement within SGMA that is itself grounds for DWR to decline to approve a plan. This consideration must encompass California law, at a minimum, and thus it must acknowledge Water Code §106’s prioritization of domestic water users as described

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11 23 CCR §355.4(b)(4).
12 Water Code §106.3(a).
13 Water Code §106.3.
14 Water Code §106.3(b).
15 23 CCR §355.2(e)(3)(B).
16 23 CCR §355.4.
17 Water Code §10723.2; 23 CCR §355.4(b).
18 Water Code §10723.2; 23 CCR §355.4(b).
above. This is also grounds for finding the plan incomplete or inadequate.

**Coordination Agreement**

The Tule Subbasin Coordination Agreement (Coordination Agreement) includes the Tule Subbasin Setting and Tule Subbasin Monitoring Plan documents developed by the seven Groundwater Sustainability Agencies (GSAs) within the Tule Subbasin (subbasin), including Eastern Tule GSA (ETGSA), Tri-County Water Authority GSA (TCWA GSA), Pixley Irrigation District GSA (PID GSA), Lower Tule River Irrigation District GSA (LTRIDGSA), Delano-Earlimart Irrigation District GSA (DEID GSA), Alpaugh GSA, and Tulare County GSA. The seven GSAs have in turn prepared six individual Groundwater Sustainability Plans (GSPs).

Because of the document structure, key information for each GSP is spread across four documents. This includes information pertaining to the Subbasin Setting and Sustainable Management Criteria (SMCs), Monitoring Network, Water Budget, and Projects and Management Actions (P&MA); this information is presented in multiple documents and is often inconsistent. Thus, in order to review the content of the LTRIDGSA GSP, the public and DWR must review four individual documents (which collectively amount to over 2,100 pages), and attempt to reconcile the differences between the documents in order to parse the GSA’s intended plans. GSPs are intended to be public documents that can be reviewed and understood by a broad audience, with an emphasis on “plain language” descriptions (23 CCR § 351(w); § 354.4; § 354.8).

The Community Water Center (CWC) performed a review of the draft LTRIDGSA GSP and appendices and provided specific, constructive comments to the best of our ability given the constraints of the complex document structure and the conflicting information presented therein.

CWC identified and raised the issue of the unwieldy structure to the GSP in our public comments submitted on the draft GSP. Very few of our numerous comments were addressed, including those pointing out simple errors in the document (e.g., incorrectly indicating µm/cm [micrometers per centimeter] as the unit for measuring conductivity), and nothing was done to make the document consistent or user-friendly. The LTRIDGSA’s lack of meaningful response to public comment does not reflect well on the GSP development process and does not provide confidence that the concerns raised by CWC and other commenters were taken seriously.19

As currently written, we do not believe the imperfectly joined documents that make up the LTRIDGSA GSP lay out a clear plan to achieve or maintain sustainability in the subbasin based on the consideration of all beneficial uses and users. It is difficult to offer a particular recommendation for curing the global defects caused by the inherent structure of the GSP without suggesting a complete rewrite, but this is unfortunately an option that DWR should consider. We hope that DWR will give added weight to all of the following recommendations, as each one represents an incremental improvement from the current state of affairs.

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19 This issue should be considered by DWR when making the determination of “whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan,” pursuant to 23 CCR § 355.4(b)(10)."
GSP Section 1: Introduction to the LTRIDGSA GSP

Plan Area

**SGMA and Regulatory Requirements**

Water Code §10723.2 requires that a GSA, “shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following...(i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems.”

Furthermore, 23 CCR §354.8 requires the Plan Area section of a GSP to contain, “a description of the geographic areas covered[...].”

**The LTRIDGSA GSP**

While the LTRIDGSA GSP Plan Area section mostly complies with the SGMA statute, two critical considerations are missing that should result in the Plan being ruled incomplete by DWR pending adoption of our recommendations. First is a map showing the location of public drinking water wells. The second is a plan for coordinating with Tulare county regarding the county’s well permitting programs.

**Recommendations for DWR**

In order to develop a GSP that addresses the needs of all beneficial users, it is critical that the location of DACs and domestic well communities, and their water needs, are explicitly addressed early on in the GSP. Not only is this information critical to be able to adequately understand the basin, it is a requirement of the GSP regulations. The regulations require GSPs to include a map that shows a distribution of “…agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater.”²⁰ A GSP with a flawed Plan Area section will necessarily contain flawed analysis of appropriate SMCs, so that a failure to define an adequate Plan Area has a cascading effect across the GSP. The same effect will hamper all efforts to make adjustments to other parts of the GSP. The use of plan language as required by DWR regulations also makes it easier for the public to read and understand the document. For all of these reasons the GSP should include a map showing the locations of public supply wells within the GSA boundaries.

The GSA responded to this and our other requests in a manner unique amongst the GSAs we have reviewed. Instead of including their responses in the GSP as an appendix, LTRIDGSA created a document

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²⁰ 23 CCR §354.8(a)(5).
for its website that contains those community comments they felt were specific enough to respond to substantively (those which were not deemed specific enough in their substance were ignored). This document contains suggestions to the GSA’s board of directors from staff for changes to be made to the GSP. Although the document does not appear to be targeted at the commenters themselves, in certain places it seems to directly address them.

The GSA notes within this document that the S/DAC communities within the GSA boundaries entered into MOUs with LTRIDGSA, and have therefore always been at the forefront of the GSA’s intentions while working on the GSP. If true, this is laudable, however it misses the point. The GSP is a public document, and it should be intelligible to a lay-person with an interest in reading the document to determine what their elected officials are doing. This is not an inconvenience but a requirement of SGMA and DWR’s regulations specifically in this part of the GSP.

We also recommend that DWR find the GSP incomplete pending the adoption of a framework for communicating with Tulare County regarding their well permitting and replacement processes. Because well permitting in Tulare County uses a ministerial system for approving new wells and well replacements, new wells can be sunk in the aquifer without any consideration for the effects of those wells on beneficial users. This is a critical weakness in the GSP, because the GSP does not explain how it will curtailing pumping that threatens to cause groundwater levels to reach MTs or cause URs. The GSP contains no explanation of when it would consider taking action to end groundwater pumping that threatens the sustainability goal; thus, the amount of water pumped in the GSA is dependent in great part on the number of new wells approved by the counties. How the GSA works with the country to control new wells and re-drilling of old wells is absolutely essential to achieving its sustainability goal.

The danger posed to sustainable groundwater management by unlimited permitting of new wells has recently been acknowledged by the Legislature. Water Code §13807 (SB 252) was enacted in 2017, and required cities and counties overlying critically overdrafted basins to make information on new well permits available both to the public and to GSAs. The information made public includes the location, depth, capacity, estimated pumping rate, and anticipated pumping schedule of the well, amongst numerous other characteristics needed to quantify the effect of the new well on the aquifer. The statute acknowledges that, “greater transparency is needed to provide existing pumpers and water users in critically overdrafted basins with important information about the use of shared groundwater resources, specifically regarding applications for new well permits.” The statute was expressly written to support GSAs achieve sustainability in the management of groundwater and to protect these efforts against widespread permitting of new wells.

A lack of coordination with the county on well permitting makes estimates of future pumping speculative. This violates the GSA’s duty to all of the enumerated users of Water Code §10723.2, because all of their water use is impacted by potential future well licenses, and ignoring this fails to give


22 23 CCR § 351(w); §354.4 (“Each Plan shall include the following general information: (a) An executive summary written in plain language that provides an overview of the Plan and description of groundwater conditions in the basin.”); §354.8.

23 Water Code §13807 is inoperative as of January 30, 2020, but will not be repealed until January 1, 2021.

the due “consideration” required by the statute. Furthermore, the lack of information or even consideration of future well licensing places the GSA outside of substantial compliance under 23 CCR §355.4(b) for two reasons. First, the potential for unlimited future well licensing makes the Plan unlikely to attain its sustainability goal. And second, the lack of clarity about future well licensing, and therefore pumping volume, materially affects DWR’s ability to analyze the likelihood of success for the GSP. Both of these theories are independently grounds for finding the GSP incomplete or inadequate.

In light of the above, we recommend that DWR find the LTRIDGSA GSP incomplete pending the adoption of the following changes to the LTRIDGSA GSP. If DWR finds that that these recommendations cannot be reasonably adopted within the 180-day period, DWR should require that revisions to the GSP be included within the 180-day cure period committing the LTRIDGSA to address these shortcomings within the first five years of the Plan, and laying out a clear plan to accomplish that goal. If these changes cannot be completed within 180 days or LTRIDGSA fails to make them, we recommend that DWR reject the Plan as incomplete:

- **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.

- **Revise §2.3.4 to include a plan for improving the well permitting and replacement process.**
  - Some additional permitting criteria that could achieve this goal are the following:
    - **Require an additional drinking water impact assessment prior to the construction of new wells with high production capacity.** This analysis would include an assessment of potential adverse impacts to drinking water supplies, such as the analysis of how the proposed high production well pumping would influence long-term groundwater level fluctuations and the identification of the zone of influence of the pumping well.
    - **Requiring coordination with the counties to revise well construction policies that would prevent new domestic wells from being constructed in areas with significant groundwater quality contamination.** If new domestic wells are allowed to be constructed in areas with known quality contamination, the counties should require that these wells be drilled deep enough to access the highest quality water by avoiding contamination of the vadose zone and other shallow aquifers that may be contaminated. Both of these strategies can prevent new domestic well owners from being impacted by contaminated drinking water.
    - **Require coordination with the counties to revise well construction policies that would limit or prevent new wells from being constructed in areas where there are drinking water wells in danger of going dry if pumping in the area increases.** Such policies would be developed after the assessment of potential adverse impacts to drinking water supplies. There may be areas within the GSA which cannot handle additional demands placed upon it without causing URs. These policies may be temporary in nature pending P&MAs that result in rising groundwater levels, if such an outcome is even feasible.
Notice and Communication

SGMA and Regulatory Requirements

Per 23 CCR §354.10, a GSP must contain a public outreach plan.

Per 23 CCR §354.10(b), the Plan must include, “a list of public meetings at which the Plan was discussed or considered by the Agency.”

Per 23 CCR §354.10(c), the GSP must include, “comments regarding the Plan received by the Agency and a summary of any responses by the Agency.”

Per 23 CCR §354.10(d), the public outreach plan shall include:

1. An explanation of the Agency's decision-making process.
2. Identification of opportunities for public engagement and a discussion of how public input and response will be used.
3. A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.
4. The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.

The LTRIDGSA GSP

The LTRIDGSA GSP only partially complies with the letter of the SGMA statute and regulations. Certain regulatory requirements have been entirely ignored by the GSA.

In violation of 23 CCR §354.10(b), the Plan lacks a list of public outreach meetings that were held. The section of the GSP that addresses this regulation points to Appendix 6-A of the LTRIDGSA GSP, which does not contain the required list, but a prospective outreach plan for future meetings without any specific dates, minutes, comments, or feedback from stakeholders.25

In violation of 23 CCR §354.10(c) the Plan lacks the responses to public comment made by the GSA. These are located in a document on the GSA’s website instead.26 The statute does not require that every response be included in detail, but there must be a summary of “any” responses by the Agency. These responses or a summary of them should have been included in the GSP. We have included them as an appendix to this comment letter for the convenience of DWR staff.

In violation of 23 CCR §354.10(d)(3), the GSA failed to encourage the active involvement of diverse social, cultural, and economic elements of the population within the basin. The GSA attempted to outsource this required public outreach by entering into an MOU with the special districts in the GSA’s boundaries, but provided no follow up to ensure that the special districts were in fact communicating with their constituents or even if they had told their constituents about SGMA at all. One of these

25 LTRIDGSA GSP, §1.5.2, pg. 48.
special districts later wrote a letter outlining concerns they had with the SMCs proposed by the GSA. At the same time, the GSA’s made great efforts to communicate with powerful local agricultural interests.

**Recommendations to DWR**

The deficiencies noted above violate SGMA, and each must be resolved before DWR can approve the Plan. But merely pointing out the deficiencies will not necessarily improve Plan implementation, nor aid LTRIDGSA in doing better in the future – which is the ultimate goal of this comment letter. Despite the failings noted above, in our personal conversations with LTRIDGSA staff they seemed genuinely surprised that we did not find their outreach efforts laudable. At the heart of this impasse appears to be a paradigm in the Tule subbasin that agricultural interests are of the greatest importance, and water for domestic users is second. From this misapprehension of California law every other issue follows.

This is seen clearly in the communication and outreach plan’s discussion of DAC outreach, which is included in the GSP and reproduced in its entirety below:

**Overriding Concerns, Major Concerns or Challenges**

> Throughout the preliminary discussions with stakeholders in the LTRIDGSA boundary, the major concerns, challenges or overriding concerns are fixated [sic] around the economic impacts to the agricultural industry, which will have a direct impact on the Disadvantage Communities (DACs). The economic impact could include major loss of jobs and loss of tax generated revenue due to the decrease of land values of fallowed land. Decrease in water budget could likely inhibit agriculture work from thriving, thus affecting the socio-economics around the LTRID boundary. DACs may confront increased costs of agricultural products and byproducts due to reductions in cropped acres and diminished farm incomes. LTRID will focus on ways to engage with agricultural industries and the DACs for which they are the most impacted by the implementations of SGMA.

Although it is true that the rising cost of food would impact DAC residents (“increased cost of agricultural products and byproducts”), this will not be their first concern when their drinking water wells begin to go dry or become contaminated due to the LTRIDGSA’s aggressive SMCs. This passage, and the entirety of the LTRIDGSA’s communication plan, presents a deeply rooted vision for groundwater that inverts California’s priority system. We also note that this section appears to be written from the perspective of industrialized agriculture imagining what DAC residents’ concerns are. This is deeply troubling, and although we have searched the GSP to disprove this interpretation of this section, we can find no evidence that any DAC residents were contacted about their concerns for their groundwater other than the board members of the special districts signatory to the MOU. Whether or not they intended it, this attitude of “Ag first,” disenfranchised the most vulnerable communities in the GSA area: residents of S/DACs, rural domestic well owners, and small system users.

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27 LTRIDGSA GSP, Appendix 6-A, pg. 297.
28 See Water Code §106; see also §106.3(HR2W).
This disenfranchisement was effectuated by GSA’s decision to outsource their responsibility under 23 CCR §354.10(d)(3) to the special districts (PUDs and CSDs) within the GSA boundary area: Tipton CSD, Poplar CSD, and Woodville PUD. As part of the MOU these special districts were given a non-voting seat on the GSA’s Groundwater Planning Commission, which was filled by one representative chosen amongst the three special districts. Apparently believing that the special districts operative in DACs could stand as a proxy for the engagement of the DAC residents they served, the GSA felt this satisfied their requirements under 23 CCR §354.10(d)(3). This ignores the fact that special districts are legal entities entirely apart from their customers; they do not represent their customers like a legislative body. Having made this choice the GSA made no other efforts to conduct outreach amongst DAC residents, except to notice GPC meetings through the special districts’ mailings. Finally, the LTRIDGSA recognized that outreach to domestic well communities is “difficult,” due to data gaps in the existing permitting and tracking records. They plan to fill these gaps, “as an item of future development,” meaning that outreach to these beneficial users was not adequately considered during GSP drafting.

Evidence that the GSA felt this was a satisfactory solution to public outreach can be found at their website in the list of their responses to public comments. In these comments they defend the lack of community outreach by stating that, “notice of the Groundwater Planning Commission meetings and Irrigation District Board of Director meetings were sent to the CSDs and PUDs for distribution to their customers.”

There are several problems with this plan. First, it is not clear that this notice was sent to every DAC resident or customer; many DAC residents are renters, and the bills are often handled by landlords who may live outside of the DAC. Second, there were several months during which the notice for GPC meetings did not go out, and so the community was not informed of these meetings.

Also, merely signing an MOU with the special districts does not relieve the GSA of its responsibility under 23 CCR §354.10(d)(3). In fact, the MOU did not even ensure that the special districts themselves were properly engaged. Strong circumstantial evidence of this is the fact that Woodville PUD sent their own comment letter to the GSA expressing profound concern over the lack of communication between the special district board members and the GSA regarding the ramifications of the adopted SMCs, which had clearly not been sufficiently explained to the board members. This shows that the GSA was not fully aware of how informed the special district board members were about the policies that LTRIDGSA was planning to adopt, let alone the residents of DACs.

The GSA’s public engagement efforts failed when it came to scheduling public meetings that were accessible to members of the community. LTRIDGSA’s public meetings were held during mid-morning

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29 LTRIDGSA GSP, §1.4.8.2, pg. 30.
30 LTRIDGSA GSP, §1.4.8.2, pg. 30.
31 See Item 5, http://www.ltrid.org/wp-content/uploads/_pdf/sgma/LTRID_matrix_comment_letters.pdf. As noted above, these responses to public comment should be in the GSP per 23 CCR §354.10(b).
32 LTRIDGSA GSP, Appendix C, pg. 2131.
33 We also note that in the online response to public comment the GSA is not even aware of how the special districts picked their non-voting representative for the GPC. See Item 4, http://www.ltrid.org/wp-content/uploads/_pdf/sgma/LTRID_matrix_comment_letters.pdf. This further indicates that the special districts on which the GSA’s relied for public outreach were held at arm’s length during this process.
hours on weekdays, which are not accessible for most community members, many of whom work at that time or who have to take care of children.

Many of these meetings lacked adherence to Brown Act requirements. The GSA admits as much in its response to comments:34

_All of the multitude [sic] meetings held over the past two years have been open to the public and conducted in a manner than [sic] encouraged public participation. Although many meetings may not have had a segmented portion of the meeting devoted to public comment, where no such segmented portion was provided, public comment was instead invited and encouraged throughout the entire meeting, and members of the public were never discouraged from offering comments._

This lack of process violated not only the Brown Act itself and SGMA (which requires compliance with other California laws). The GSP states its intention to comply with Brown Act requirements going forward, but its history of violating public notice and hearing requirements casts doubt on the seriousness of this intention.35 As far as informal opportunities to speak are concerned, we would note that while many farmers and other agricultural representatives felt comfortable interjecting during these meetings, these comments were made as among economic equals. The residents of DACs are often the employees of the men who make up the board of directors of the LTRIDGSA, and in many cases are not native English speakers. It is simply not equitable to expect DAC residents to assert themselves against the economic interests of their employers in a highly public sphere without some basic rules in place. This is, of course, one of the primary purposes of the Brown Act.

Ultimately, the paucity of actual community participation in the GSP-drafting process speaks to the failure of the LTRIDGSA to engage in useful outreach. This lack of outreach is reflected in the obvious outcomes of the GSP’s SMCs: the massive dewatering of wells used for drinking water purposes by low-income communities of color. Per 23 CCR §355.4(b)(1) the SMCs must be found “reasonable” by DWR before it can approve them. A plan that will dewater upwards of 72% of domestic wells, impacting over 1,700 residents36 before taking any measure to curtail pumping is perhaps reasonable to the agricultural industry but it is manifestly not reasonable to all beneficial users, including farmworker communities whose domestic wells are dewatered. Given the current economic uncertainty surrounding


35 See LTRIDGSA GSP, §5.2.1.4, pg. 249: “Public noticing, engagement, and involvement will continue to occur following adoption of this Plan during the Board of Directors and Plan meetings as required under the Ralph M. Brown Act.”


At the MTs, it is estimated that 66-72% of domestic wells will be fully or partially dewatered for a total of 121-132 wells impacting 1,345-1,731 residents. At the MOs, it is estimated that 52-59% of domestic wells will be fully or partially dewatered for a total of 95-108 wells, impacting 1,037 1,214 residents. See tables 2a, 3a, and 4a.
the COVID-19 pandemic response, this aggressive setting of water levels would seem even less reasonable for many residents residing within the LTRIDGSA boundaries. In this sense, the lack of public engagement is reflected in the starkly unreasonable nature of the SMCs.

Therefore, we recommend that DWR should find the Plan incomplete pending the adoption of the following changes to the GSP within the 180-day cure period. Ideally these changes will go into effect quickly, so that the community can be more engaged with other substantive changes to the sustainability indicators that DWR should also require. If the GSA refuses to make these changes DWR should rule the plain inadequate:

- **Include the responses to public comment as required by 23 CCR §354.10(c).** These responses can easily be added by copying the webpage into the GSP as another appendix.

- **Include a retroactive list of all public meetings, to include public outreach and GPC meetings held during the GSA drafting process, as required by 23 CCR §354.10(b).**

- **In compliance with Brown Act requirements, properly notice all public meetings, including the Groundwater Planning Commission, and send out both agendas and all meeting materials within 72 hours of the proposed meeting.** Throughout the development of the Draft GSP, there were several months where the Groundwater Planning Commission did not release an agenda or properly notice the meetings. As this was a public meeting space for both LTRIDGSA to develop policy recommendations for their GSP, it was an important meeting for stakeholders to be aware of and be able to participate in. Through several exchanges, CWC urged LTRIDGSA to release agendas for these meetings and though they were eventually sent out, this is an issue that should not have taken months to correct. In addition to not sending out agendas for these meetings, materials for several meetings were only released to those on the advisory committee even after several stakeholders requested copies. Without properly noticing meetings or sharing meeting materials or draft documents, the public was not able to meaningfully engage in this important process.

- **Ensure there is a public comment period at minimum at the beginning of all public meetings.** The Groundwater Planning Commission was structured in a way where there were no public comments taken either at the beginning of the meeting or during key decision making points. It is critical to ensure that the public has a space to voice their concerns or recommendations and properly participate in this process.

- **Engage domestic well owners and the small community water systems by offering presentations and holding community meetings to share information about the GSP development process and solicit feedback from key beneficial users of groundwater.** Though LTRIDGSA did hold several landowner meetings for agricultural stakeholders within the irrigation district boundaries, the GSA did not hold any meetings to meaningfully receive feedback from drinking water users. Additionally, these meetings took place during work hours when many community members are not able to participate. The Community Service Districts (CSD) and Public Utilities Districts (PUDs) were also not adequately engaged through this process.

- **Mandatory bilingual (English and Spanish at a minimum) information and materials.** The Dymally-Alatorre Bilingual Services Act requires that public agencies serving over 10% of
non-English speaking constituents provide appropriate translation services. At a minimum, translation should be provided when Plan updates are under consideration, and prior to critical decisions (e.g., adoption of groundwater fees or the approval of new groundwater projects and management actions).38

- **Live interpretation at board meetings and community outreach events.** Given the large number of Limited English Proficiency (LEP) residents in the LTRIDGSA area, the GSA should commit to providing these residents with live interpretation during meetings, as required by appropriate California law and SGMA.

- **Host GSP workshops and public outreach meetings in the evening so that more community members are able to attend.** Weekdays between 6PM and 8PM was identified by residents as a convenient time to attend a public meeting.

- **Utilize existing community venues for community meetings, workshops, and events to provide information.** For example, the GSA could hold educational workshops during local water board and school district board meetings, or after church services. Venues should be carefully selected in order to meet the needs of the targeted audience.

- **Identify social media channels, websites, and other media outlets, including ones in other languages such as Spanish, that are readily accessible to the community.** The GSP should be revised with a policy requiring a broader outreach effort in the future.

- **Identify and work with key community leaders/trusted messengers to distribute information and encourage community participation.** These could include churches, civic groups, clubs, non-profit organizations, and schools.

- **Actively seek partnerships with other educational programs to leverage resources and explore opportunities to educate different generational groups.**

### GSP Section 2: Tule Subbasin Setting

#### SGMA and Regulatory Requirements

Each GSP must contain a, “description of the basin setting,” per 23 CCR §354. The description of the basin setting must contain a hydrogeologic conceptual model, a summary of groundwater conditions, a water budget, and a description of management areas.39

The water budget provides, “an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current and projected water budget conditions, and the change in the volume of water stored. Water budget information shall be reported in tabular and graphical form.”40

#### The LTRIDGSA GSP

The water budget section of the GSP was reviewed to identify approaches and assumptions used in the water budget development that may not be protective of DACs, rural domestic water users, and small

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37 California Government Code §7290.
38 This policy should be adopted as soon as possible during the 6-month cure period, so that non-English speaking community members can meaningfully take part as regards to the other DWR-ordered changes to the GSP.
40 23 CCR §354.18.
community water systems. Water budget data and methodologies for the entire subbasin are described in the Coordination Agreement. It appears that the water budget was developed using both a spreadsheet approach and the GFM. Water budgets were developed for historical conditions (1987-2017), current conditions (2017), and projected future conditions (2020-2070).

**Recommendations to DWR**

For the reasons identified below, the description of the water budget in the GSP (and Coordination Agreement) is not fully transparent and therefore unclear if it meets all requirements of 23 CCR §354.18, and it is not clear how drinking water users will be protected when sustainable yield allocations are implemented. Per 23 CCR §354.18(a), “water budget information shall be reported in tabular and graphical form;” however, as identified below, many water budget components and assumptions are not presented in transparent tabular format. Without the additional detail and clarifications identified below, it does appear that the public and DWR can make the required determination of “whether the Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present,” per 23 CCR §355.4(b)(6).

We recommend that DWR find the LTRIDGSA GSP to be incomplete pending the adoption of the following recommendations to improve the Water Budget portion of the Basin Setting. If DWR finds that one of our suggestions cannot reasonably be made in 180 days, DWR should require that revisions to the GSP be included within the 180-day cure period committing the LTRIDGSA to address these shortcomings, and laying out a clear plan to accomplish the goal, to including a funding mechanism if appropriate. If the GSA fails to comply with these recommendations, DWR should find the Plan inadequate.

- **If different methods were used to develop the historical water budget than the GFM-projected water budget, the Coordination Agreement and/or GSP should clearly identify how the two methods relate to each other in terms of common assumptions, uncertainties, and inherent differences.** The Coordination Agreement is not clear regarding the method used to develop the historical water budget. That is, it does not specify whether a spreadsheet model, the numerical GFM, or another method used to develop the historical water budget.

- **Per 23 CCR §354.18(a), “water budget information shall be reported in tabular and graphical form,” and therefore the GSP should clearly present summary information on land use and crop evapotranspiration information so that the validity of the crop demand can be assessed. It is further recommended that the GSP detail how the irrigation efficiency value was determined over the various model time periods.** Crop water demand was calculated using LTRID annual crop surveys, consumptive use estimates from the Irrigation Training and Research Center (ITRC), and irrigation efficiency. This is a common and accepted method for estimating agricultural pumping in areas where pumping data are not available. An average irrigation efficiency of 0.79 was used for the water budget. Irrigation efficiency values can generally range from 0.60 (surface irrigation methods) to greater than 0.90 (drip irrigation methods). The value used for estimating crop water demand is a reasonable average for current irrigation methods in the San Joaquin Valley but irrigation efficiencies were likely lower during the earlier periods of the historical water budget. The GSP notes that irrigation efficiency varies by crop and year, but no information is provided on how the value used was determined or its uncertainty and effects on water budget uncertainty.
Per 23 CCR §354.18(b)(3), as part of the assessment of groundwater extraction, the GSP should include a discussion of the water use by livestock operations and other public water systems and how they are represented in the water budget. A review of publicly available aerial photos shows that there are numerous livestock operations such as dairies in the LTRIDGSA area. However, the GSP does not include a discussion of the magnitude of the water demand for these operations or if these operations have a significant impact on the water budget.

It is recommended that the GSP include an expanded discussion of how subsurface flow was determined and the level of uncertainty inherent in its estimation. The GSP acknowledges that there is uncertainty in many of the water budget components. §2.3.1 of the Tule Subbasin Setting notes that there is a 0.2% difference in average annual surface water inflows and outflows leading to a conclusion that the surface water budget is a good representation of actual conditions. However, there is no discussion of uncertainty in the groundwater budget. The groundwater budget includes estimates of subsurface inflow and outflow and two methods used to estimate this flow component are described. However, it is not clear which of the two described methods were used in the water budget.

Per 23 CCR §354.18(b)(3), as part of the assessment of groundwater extraction, it is recommended that either the projected water budget include an estimated increase in M&I pumping or that the GSP include a justification for maintaining the M&I pumping at a constant rate. The projected future water budget was developed using the GFM that incorporated planned P&MA and the effects of climate change. The hydrology and land use time series used for the projected water budget is not described. A constant value of 1,900 AFY was specified for the M&I pumping in the projected water budget. The M&I pumping in the historic water budget increased from 1,400 AFY to 1,900 AFY, which implies that M&I pumping will continue to increase in the future.

The GSP should include information on the range of model inputs that were varied in these uncertainty runs. The projected future water budget was used to estimate sustainable yield for the entire subbasin. To address uncertainty in the projected water budget and the underlying numerical model, the model was run multiple times with variations in aquifer properties, consumptive use, and mountain front recharge. Of the 240 model runs, 175 model runs resulted in a projected average annual change in storage of no more than 5,000 AFY (i.e., sustainable or nearly sustainable condition). (§2.3.2.6 of the Coordination Agreement). The time period of 2040-2050 was used to estimate sustainable yield because all P&MA are expected to have been implemented at that time. Sustainable yield was estimated as the median value from the 175 runs with sustainable or nearly sustainable conditions.

The GSP should be revised to clearly describe how sustainability will be achieved by 2040 and clarify discrepancies between the proposed pumpage reductions described in the P&MA and the increase in pumping shown in the projected water budget pursuant to 23 CCR §355.4(b)[5], in order for DWR to evaluate “whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.” The projected water groundwater budget for the LTRIDGSA area shown in Table 4, Appendix A, Attachment 2 of the Coordination Agreement (Tule Subbasin Setting) shows a reduction in annual groundwater storage decline over the 2020-2040 implementation period. However, in 2040, the year in which groundwater sustainability must be achieved, there is a loss of groundwater storage of 11,000 AF and annual decreases in groundwater storage.
continue through 2070. Table 5.1 in the GSP and Table 2-7 in the Tule Subbasin Setting identify a planned transitional reduction in groundwater pumping during GSP implementation. This is in contrast to the projected water budget which shows an increase in groundwater use during the 2020-2040 implementation period.

- **The GSP should be revised to include information on the causes of the changes in the water level gradient and subsurface flow between the LTRIDGSA and the adjacent GSAs, which is necessary for DWR to make a determination of “whether the Plan will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal” per 23 CCR §355.4(b)(7).** The future water budget for the LTRIDGSA presented in Table 4 of the Coordination Agreement Appendix A shows total projected pumping increasing through 2039. The water budget reflects an overall reduction in annual groundwater storage decline, primarily as a result of a decrease in subsurface groundwater outflow (groundwater exports) to adjacent GSAs within the subbasin. The water budget shows 49,000 AFY of net subsurface outflow from the LTRIDGSA to adjacent GSAs in 2020, as compared to 6,000 AFY of net subsurface inflow into the LTRIDGSA from adjacent GSAs by 2040. This implies that the water level gradient between the LTRIDGSA and the adjacent GSAs changes direction and that the LTRIDGSA will benefit from the P&MAs in the adjacent GSA areas. The LTRIDGSA’s projected water budget is the only GSA water budget in the subbasin that does not show a projected decline in pumping through 2040.

- **The GSP should be revised to clearly and consistently define and describe the sustainable yield estimates within the subbasin and within the LTRIDGSA.** There are significant discrepancies between the GSP and the Coordination Agreement regarding the reported subbasin sustainable yield value. The Tule Subbasin Setting (§ 2.3.2.6) reports that the sustainable yield is 130,000 AFY. In contrast, the GSP reports that the sustainable yield is 258,000 AFY based on the historical period 1987-2017, which was a period when groundwater levels were declining and does not represent sustainable conditions. The Tule Subbasin Setting discussion of the allocation of the sustainable yield says the allocations will be based on the proportion of the subbasin represented by each GSA (§ 2.3.2.6). The GSP should also include a description of how the sustainable yield value will affect M&I and rural groundwater drinking water users in the LTRIDGSA area. These clarifications will support the ability of the public and DWR to make the determinations per 23 CCR §355.4(b)(5) and §355.4(b)(6).

**GSP Section 3: Sustainable Management Criteria**

**Chronic Lowering of Groundwater Levels,Degraded Water Quality**

**SGMA and Regulatory Requirements**

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41 23 CCR §354.18(b)(7).
42 These statutes and regulations will be discussed throughout this section. To avoid repetition, please refer back to this section for the regulatory language. When additional regulations will aid the reader, they are located in the specific section below.
The SMCs listed in 23 CCR §355.22 are: the sustainability goal, minimum thresholds, measurable objectives, and undesirable results. These criteria are used to define conditions that constitute sustainable groundwater management for the basin.43

Sustainability indicators represent six groundwater conditions that must be avoided by the GSP in order to achieve sustainable groundwater management. The six sustainability indicators are: lowering groundwater levels, reduction of storage, degraded quality, land subsidence, and surface water depletion.44

SGMA defines a “sustainability goal” as “the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield.”45

Minimum thresholds, “quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site ...the numeric value used to define minimum thresholds shall represent a point in the basin that, if exceeded, may cause undesirable results.”46

Undesirable results occur, “when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the basin,” and the description must include “The criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator. The criteria shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.”

Measurable objectives are quantified values, “including interim milestones in increments of five years, to 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.”48

Sustainable groundwater management is defined as, “the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.”49

The LTRIDGSA GSP

The SMCs for both water level declines and water quality adopted by the LTRIDGSA are deeply problematic and warrant in-depth analysis by DWR.

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43 23 CCR §355.22.
44 Water Code §10721(x).
45 Water Code §10721(u).
46 23 CCR §354.28.
48 23 CCR §354.30.
49 Water Code §10721(v).
Chronic Lowering of Groundwater Levels

Because the SMCs for chronic lowering of groundwater levels involve a number of complex deficiencies, each is considered in turn for the sake of clarity. A list of specific recommendations follows at the end of this section.

**Recommendations to DWR**

1. Analysis of the LTRIDGSA decision process for its choice of MOs and MTs.

The MOs and MTs for the groundwater levels sustainability indicator adopted by LTRIDGSA warrant detailed and critical review by DWR.

The LTRIDGSA area includes over 230 domestic wells, and three DWR designated DACs (Woodville, Tipton, and Poplar) with a collective population of over 7,700 people. The LTRIDGSA area also includes seven public water systems, including five small community water systems that serve over 6,500 people. Despite this broad and diverse dependence on groundwater for drinking water use, the approach to setting water level MOs and MTs does not explicitly take these drinking water beneficial users into account but is instead the result of an arbitrary formula.

The MOs are set equal to the projected water levels in 2040 based on the Groundwater Flow Model output at each RMW, incorporating climate change effects and assuming that all P&MAs in the subbasin are implemented on the timeframes and scales presented in Tables 2-6 and 2-7 of the Tule Subbasin Setting. Interim Milestones (IMs) are set as the water levels projected by the GFM in 2025, 2030, and 2035. The MTs are set by taking the change in groundwater elevation observed during the recent 10-year drought period (2007-2016) at each RMW, and applying that water level decline to the lowest elevation of either the 2025 or 2030 IMs for each RMW. The result of this are SMCs which represent an extreme loss of groundwater.

Across the ten LTRIDGSA water level RMWs, water levels would be expected to drop by an average of nearly 70 feet from current conditions if water levels teach the MOs and by approximately 110 feet if water levels reach the MTs. Table 1 below identifies this information for selected RMWs near DACs in the LTRIDGSA area. The groundwater level MTs in the vicinity of these communities are an average of approximately 150 feet lower than current conditions. In the area of Poplar (Chart 1 below), the MT is nearly 170 feet lower than current conditions; in the Tipton area (Chart 2), the MT is nearly 160 feet lower than current conditions; and in the Woodville area (Chart 3), the MT is nearly 120 feet lower than current conditions. Even at their MOs, these wells would experience approximately 130, 45, and 70 feet of water level decline from current conditions, respectively (Figure 2A).

| Table 1 |
| Groundwater Elevation Sustainable Management Criteria |
| Near Selected Communities |

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50 LTRIDGSA, §3.5.1.1.1, pg. 191.
51 LTRIDGSA, §3.5.1.1.1, pg. 191.
52 LTRIDGSA, §3.5.2.1, pg. 200.
<table>
<thead>
<tr>
<th>Community</th>
<th>Nearby RMW</th>
<th>Current Groundwater Elevation (ft msl)*</th>
<th>MO (ft msl)</th>
<th>MT (ft msl)</th>
<th>Estimated Water Level Decline to Reach MT (ft)</th>
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<tr>
<td>Poplar-Cotton Center</td>
<td>21S26E34</td>
<td>240</td>
<td>110</td>
<td>73</td>
<td>167</td>
</tr>
<tr>
<td>Tipton</td>
<td>01Q01</td>
<td>5</td>
<td>-39</td>
<td>-154</td>
<td>159</td>
</tr>
<tr>
<td>Woodville</td>
<td>32A01</td>
<td>200</td>
<td>131</td>
<td>83</td>
<td>117</td>
</tr>
<tr>
<td><strong>Average Decline from Current Elevation for all Selected RMWs near DACs (ft)</strong></td>
<td></td>
<td><strong>-81</strong></td>
<td><strong>-148</strong></td>
<td><strong>148</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average Decline from Current Elevation for all 10 RMWs (ft)</strong></td>
<td></td>
<td><strong>-69</strong></td>
<td><strong>-111</strong></td>
<td><strong>111</strong></td>
<td></td>
</tr>
</tbody>
</table>

* ft msl = feet mean sea level; for RMWs screened through the Upper aquifer, current groundwater elevations are based on Figure 2-18 of the Tule Subbasin Setting (Fall 2017 Upper Aquifer Groundwater Elevation Contours); for RMWs screened through other aquifer, current groundwater elevations are read from hydrographs provided in the GSP.

**Chart 1**
Groundwater Level Decline Associated with MOs and MTs Near Poplar (RMW 21S26E34)

**Chart 2**
Groundwater Level Decline Associated with MOs and MTs Near Tipton (RMW 01Q01)
The Sustainable Groundwater Management Act (SGMA) requires GSAs to consider how the MTs may affect the interests of beneficial uses and users of groundwater or land uses and property interests, but the GSP lacks any assessment of these impacts for drinking water users.\textsuperscript{53}

Nevertheless, the Water Foundation funded a study to estimate costs to mitigate the anticipated impacts to domestic wells as a result of the water level MOs and MTs within the San Joaquin Valley (Domestic Well Impact Study or “Study”).\textsuperscript{54} The Domestic Well Impact Study evaluated the number of domestic wells expected to be dewatered, the population dependent on the wells that would be expected to be impacted, the estimated costs to repair and replace impacted wells, and the estimated increased operational costs for domestic wells under MO and MT conditions. Based on the findings of the Study, the impacts to domestic well users and the costs to mitigate these impacts within the LTRIDGSA are expected to be substantial. Due to data limitations, the study evaluated only a portion of the domestic wells identified within the LTRIDGSA. If water levels reach the MOs, 52% to 59% of the

\textsuperscript{53} 23 CCR §354.28.

\textsuperscript{54} The Water Foundation Whitepaper, April 2020: “Estimated Numbers of Californians Reliant on Domestic Wells Impacted as a Result of the sustainable management criteria Defined in Selected San Joaquin Valley Groundwater Sustainability Plans and Associated Costs to Mitigate Those Impacts.”

domestic wells included in our study will be partially or fully dewatered, impacting the drinking water source for approximately 1,000 to 1,200 people. The costs to mitigate these impacts, including increased operations and maintenance costs and the replacement of failed wells, is estimated to be on the order of $2.8 million and $3.6 million. If water levels reach the MTs within the LTRIDGSA, it is estimated that 66% to 72% of the domestic wells included in the study will be partially or fully dewatered, impacting the drinking water source for approximately 1,300 to 1,700 people. The costs to mitigate these impacts are estimated to be on the order of $2.8 million to $3.6 million.

The GSA is required by 23 CCR §354.28(b)(4) to assess how their MTs will affect beneficial users. By way of complying with this regulation, LTRIDGSA included the following in the GSP:

> Each minimum threshold established for the various sustainability indicators considered the avoidance of unreasonable impacts to the beneficial users. The Agency stakeholders developed projects and management actions to balance the economic impacts while achieving sustainability, specifically as follows:

- **Well failures** (e.g. collapsed casing due to excessive groundwater level decline or land subsidence): Minimum Thresholds established for groundwater levels to minimize loss of existing wells.
- **Increased operational costs for groundwater extraction**: With the lowering of groundwater levels, the cost to pump groundwater will increase. The minimum thresholds for groundwater levels were established to minimize increase in pumping costs.

The GSA here claims to have set its MTs to minimize the effects of falling groundwater levels. However, we know that this is not true; the MTs were chosen based on the rotely applied mathematical formula described, which precludes taking the effects of its outcomes into consideration. In other words, this verbiage is simply provided to DWR in the hopes that a regurgitation of this critical regulation will be overlooked by DWR during its review.

While SGMA gives great deference to local control, this prerogative does not extend to DWR, which must review the Plan under the stricter rules and regulations found in SGMA itself, the regulations, and other California law. In particular, 23 CCR §355.4(a) requires that a GSP follow the letter of the SGMA statute and regulations. This has not happened, in that the GSP violates 23 CCR 354.8(b)(4) as described.

Furthermore, 23 CCR §355.4(b)(4) requires DWR to consider, “whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered,” when making its determination on whether the GSP is likely to succeed in achieving its sustainability goal. In relevant part, the LTRIDGSA’s

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55 Id. at Table 2a
56 Id. at Table 4a.
57 Id at Table 6a.
58 Id. at Table 3a.
59 Id. at Table 4a.
60 Id. at Table 6a.
61 LTRIDGSA GSP, §3.5.2.5.3, pg. 206.
It is further the goal of the Tule Subbasin GSAs that coordinated implementation of their respective Groundwater Sustainability Plans will achieve sustainability in a manner that facilitates the highest degree of collective economic, societal, environmental, cultural, and communal welfare and provides all beneficial users and users the ability to manage the groundwater resource at least cost.

Without any study to determine the effects of the SMCs on groundwater users, the GSP cannot accomplish LTRIDGSA’s sustainability goal, and thus the Plan fails to satisfy the requirements for review under 23 CCR 355.4(b).

2. LTRIDGSA’s response to our report did not satisfy the regulatory requirements.

23 CCR 355.4(b)(10) requires DWR to determine whether the GSA has, “adequately responded to comments that raise credible technical or policy issues with the Plan.” In this case, LTRIDGSA did not acknowledge our request that they explain their rationale for choosing such aggressive SMCs. We believe that this silence is because the SMCs were set arbitrarily, not based on science or outcomes for communities, but for the benefit of values so low that the GSA will never face a decision over curtailing pumping by irrigators.

3. GSA’s choice of SMCs results in disparate impacts.

The aggressive approach adopted by the LTRIDGSA to setting the SMCs for groundwater levels is not protective of all beneficial users within the basin, particularly DAC residents who do not have the financial resources to address well impacts by themselves. In addition to not having the resources to construct deeper wells, low-income communities also do not have the resources to implement water treatment systems that require expensive operation and maintenance costs. Moreover, deeper wells and water treatment systems result in a significant increase in energy, operation, and maintenance expenses that can increase water bills in small water systems above the California water affordability threshold of 1.5% of MHI. Based on the LTRIDGSA GSP water budgets, rural domestic and small water system demand is very low compared to agricultural water uses and thus does not contribute substantially to the overdraft conditions. Nonetheless, the risks imposed on these drinking water users are overlooked and neglected, creating a disproportionate outcome.

This disproportionate outcome likely represents a disparate impact upon DACs and domestic well users. The legal concept of disparate impacts protects people of color and other groups from rules and regulations that are discriminatory in their effect, even when those rules and regulations were made without discriminatory intent. This protection applies to individuals in multiple contexts: the best known are housing, education, and employment. Disparate impact is a legal theory so its applicability is expansive, and could easily encompass willful regional dewatering that disproportionately affects

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62 LTRIDGSA GSP, §3.2, pg. 186 (emphasis added). This language is confusing because of its reference to, “Tule Subbasin GSAs.” The specific language is copied by the GSA verbatim from the Tule Subbasin Setting, and is included in the section of the LTRIDGSA GSP proper that defines the sustainability goal for the GSA. It is clearly meant to be part of the LTRIDGSA’s sustainability goal, although the difficulties caused by the complex structure of the Tule Subbasin GSAs are once again evident.

63 Affordability threshold from the State Water Board’s Drinking Water State Revolving Fund.
communities of color, DAC residents, and rural domestic well owners compared to agricultural well operators. There are defenses to a disparate impact claim, such as demonstrating that a policy is the only possible method for achieving a certain goal. But given the seemingly arbitrary nature of the SMCs chosen by the LTRIDGSA (as discussed below, this critique applies not only to the sustainability goal, but also to the MTs, MOs, and URs), and the heavy reliance the LTRIDGSA has placed on its subjective localized decision making authority under SGMA in justifying their criterias, it will be difficult to prove that the criteria chosen are the only way to achieve the goal of SGMA.

The regulations clearly establish that a failure to consider all beneficial uses and users of groundwater undermines the likelihood that a basin will reach its sustainability goal. Civil rights-based class actions caused by region-wide well dewatering would indeed endanger the GSP’s future legal viability.

4. The GSA’s choice of SMCs ignores Water Code §106 priorities, violates the Human Right to Water, and threatens the successful implementation of the Safe and Affordable Funding for Equity and Resilience (SAFER) program.

The cavalier treatment of dewatering of shallow water wells more likely used by domestic users upends the priority system in California as expressed in Water Code §106, which lists water use for domestic purposes as having the “highest priority,” with irrigation second. Also, the potential dewatering of wells used for domestic purpose would result in myriad violations of the HR2W, which states that, “it is the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Although the LTRIDGSA does not have to comply with the HR2W, DWR must consider this right when, “revising, adopting, or establishing policies, regulations, and grant criteria when those policies, regulations, and criteria are pertinent to the uses of water [for domestic uses].” The plain language of the HR2W makes it clear that DWR may not approve the LTRIDGSP until the GSA justifies its choice of SMC in light of this right and the danger of well dewatering.

Finally, this approach shifts the burden of protecting domestic water users and mitigating the impacts of continued groundwater overdraft conditions from the GSA, which has been empowered by the Legislature to curtail groundwater pumping, to individual and community water users and the State Water Resources Control Board, through the Safe and Affordable Funding for Equity and Resilience (SAFER) program (SB200). This shift in responsibility is inappropriate in light of the Legislature’s intent when it enacted SGMA. It also threatens the success of the SAFER program, which is being treated, via implication, as a backstop to the GSP.

5. Specific Recommendations for DWR.

We recommend that DWR find the LTRIDGSA GSP to be incomplete pending the adoption of the following recommendations. If DWR finds that one of our suggestions cannot reasonably be made in 180 days, DWR should require that revisions to the GSP be included within the 180-day cure period

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64 23 CCR §355.4(b)(4).
65 Water Code §106.3(a).
66 Water Code §106.3(b).
67 Water Code §10726.4.
committing the LTRIDGSA to address these shortcomings, and laying out a clear plan to accomplish the goal, to including a funding mechanism if appropriate. If the GSA fails to comply with these recommendations, DWR should find the Plan inadequate:

- **Perform an impact analysis to evaluate the potential impacts to wells associated with the water level MOs/MTs and presented in the GSP, and adopt new SMCs based on this analysis.** The LTRIDGSA GSP states that “Each minimum threshold established for the various sustainability indicators considered the avoidance of unreasonable impacts to the beneficial users” and that the economic impacts (such as well failures, increased operational costs for groundwater extraction, increased capital costs to wells, degradation of water quality, land subsidence, and reduction of prime agricultural farming) were balanced by the LTRIDGSA stakeholders in the development of P&MAs.” However, the GSP does not clearly and transparently present an assessment of these identified impacts, including and in particular, the impacts of the proposed MOs/MTs on domestic wells, small water systems, and DACs. Per 23 CCR §354.28, these assessments should be included in the GSP in order for the public and DWR to fully evaluate the ability of the proposed SMCs and monitoring program to protect beneficial users within the LTRIDGSA area.

- **Re-draft the UR for the LTRIDGSA area.** The Coordination Agreement defines the UR for chronic lowering of water levels as “if there is basin-wide loss of well pumping capacity, which cannot be remedied.” This definition implies that it is feasible for beneficial users to continuously install new wells until essentially the bottom of the basin is reached, and that any condition short of that does not constitute an UR. For the reasons discussed above this is unacceptable and must be re-drafted.

- **Include the SMCs for all identified RMWs.** The GSP should also clearly and consistently identify the locations and aquifer designations of the RMWs throughout the document. Figures A1-2, A1-5, and 2-34 in the Coordination Agreement collectively identify a total of 12 water level RMWs within the LTRIDGSA area. However, only 10 of them are assigned MOs/MTs in the LTRIDGSA GSP (Tables 3-2 and 3-7). Furthermore, Figure 4-1 of the GSP shows eight of the RMWs, but only seven of them are listed in Table 4-1, and the aquifer designations for at least one well are inconsistent between Table 4-1 and Figure 4-1 (i.e., RMW 01Q01).

- **The locations of potentially impacted wells should be identified and presented in maps in the GSP so that the public and DWR may assess the well impacts specific to DACs and other sensitive users within the LTRIDGSA area.** This will aid the public in determining how policies adopted by LTRIDGSA will affect their groundwater.

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68 LTRIDGSA GSP, §3.5.2.5.3, pg. 206.
69 LTRIDGSA GSP, §4.3.1.1, pg. 355.
70 LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure A1-2, pg. 418.
71 LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure A1-5, pg. 421.
72 LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure 2-34, pg. 787.
73 LTRIDGSA GSP, Table 3-2, pg. 192.
74 LTRIDGSA GSP, Table 3-7, pg. 201.
75 LTRIDGSA GSP, Table 4-1, pg. 237.
76 LTRIDGSA GSP, Figure 4-1, pg. 236.
Groundwater Quality

Recommendations to DWR

The LTRIDGSA GSP’s groundwater quality section has many deficiencies, but the most troubling is the large number of errors and inconsistencies which, taken individually and as a group, make it difficult to determine the GSA’s intent. We note that many of these errors are traceable to the unwieldy structure and length of the GSP in general. We have broken out this section by topic for ease of navigating our comments.

1. Numerous inconsistencies and statutory deficiencies make this section of the GSP un-reviewable as currently written.

The complex structure of the LTRIDGSA GSP makes parsing the often contradictory information in its numerous appendixes difficult. Per 23 CCR 355.4(b), DWR may not approve a plan if discrepancies in the Plan, “materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal.” With this in mind, the following items are not our recommendations for this section, but are discrepancies and missing data that must be resolved and/or filled in before the Plan can be reviewed by DWR to determine if it satisfies 23 CCR 355.4(b):

- The lists of the water quality RMS appear to be inconsistent between certain tables and figures in the GSP. Figure 3-1\(^7\) of the GSP shows five water quality RMS wells, and only one of them appears to match the RMS wells listed in Table 4-2\(^7\). §4.2.2.2 of the LTRIDGSA GSP\(^8\) states that locations of RMS in the subbasin are provided in Figure A1-7\(^9\) of the Tule Subbasin Monitoring Plan, however, Figure A1-7 shows the water quality monitoring network for the subbasin, and includes at least 16 wells within the LTRIDGSA area. For purposes of our comments below, we have presumed the LTRIDGSA water quality monitoring network is consistent with the three RMS wells and three water system CCRs listed in Table 4-2 of the GSP. That said, the GSP should clearly and consistently identify the number and location of the water quality RMS within the LTRIDGSA area.

- Tables 3-5\(^10\) and 3-9\(^11\) of the GSP list the water quality RMS and their associated SMCs for the LTRIDGSA area. The RMWs include three wells in addition to the Consumer Confidence Reports (CCRs) for the Tipton Community Services District (CSD), Polar CSD, and Woodville Public Utilities District (PUD). The water quality analysis included in CCR reporting is based on drinking water served to the public after treatment, rather than the raw water extracted from the ground. The GSP does not specify the treatment level for these water systems, and therefore it is unclear how the data presented in the CCRs represents the water quality conditions of the groundwater.

\(^7\) Our actual recommendations follow at the bottom of this section.

\(^8\) LTRIDGSA GSP, Figure 3-1, pg. 189.

\(^9\) LTRIDGSA GSP, Table 4-2, pg. 239.

\(^10\) LTRIDGSA GSP, §4.2.2.2, pg. 233.

\(^11\) LTRIDGSA GSP, Figure A1-7, pg. 423.
23 CCR § 354.34(g)(1) requires that the GSP include the “scientific rationale for the monitoring site selection process.” Therefore, the GSP should provide an explanation of whether and how the CCR data are representative of groundwater conditions and further obtain and include raw water contaminant levels.

- The water quality SMCs presented in Tables 3-5\textsuperscript{84} and 3-9\textsuperscript{85} of the GSP are not consistent with the processes for determining IMs, MOs, and MTs described in §§3.5.1.3.1\textsuperscript{86} and 3.5.2.3.1\textsuperscript{87} of the GSP. The text of the document states that the MOs are “a change above the baseline groundwater quality to not exceed 10% of long term 10 year running average,”\textsuperscript{88} and the MTs are “a change above the baseline groundwater quality to not exceed 15% of long term 10 year running average.”\textsuperscript{89} However, the majority of SMC values presented in Tables 3-5\textsuperscript{90} and 3-9\textsuperscript{91} are not calculated based on this method. For nitrate as N, conductivity (except for two RMWs), and pH, the presented MT and MOs are equal to each other and appear to be based on the Basin Plan Objectives listed in Table 2 of the Tule Subbasin Monitoring Plan. Based on the discrepancies in the GSP, it is not clear what method was used to develop the water quality SMCs and what the LTRIDGSA intends to use to define water quality sustainability. As such, the GSP does not include a complete description of “The information and criteria relied upon to establish and justify the minimum thresholds for each sustainability indicator”, as required by 23 CCR § 354.28(b)(1).

- The MO and MT methods identified in §§3.5.1.3.1\textsuperscript{92} and 3.5.2.3.1\textsuperscript{93} of the GSP specify that the SMCs are calculated for “each RMS well.” However, based on Tables 4-2\textsuperscript{94}, 3-5\textsuperscript{95}, and 3-9\textsuperscript{96}, the GSA intends to use water system CCRs as RMS in addition to the three identified RMS wells. In addition to the inconsistencies identified above, it is further unclear how the LTRIDGSA intends to establish SMCs for RMS not identified as specific wells.

- The Coordination Agreement defines the URs for degraded water quality as “unreasonable long-term changes of groundwater quality above the minimum thresholds at greater than 50% of GSA Management Area RMS wells caused by groundwater pumping and/or groundwater recharge.”\textsuperscript{97} Given that the LTRIDGSA has identified several non-well RMS, it is unclear based on this definition how URs will be applied within the LTRIDGSA area. Further, if using CCRs from public water systems as a means to track water quality concentrations, this figure is likely to be further skewed to appear as if fewer wells are impacted by contaminant concentrations above the MCL than there actually are.

\textsuperscript{84} LTRIDGSA GSP, Table 3-5, pf. 196.
\textsuperscript{85} LTRIDGSA GSP, Table 3-9, pg. 203.
\textsuperscript{86} LTRIDGSA GSP, §3.5.1.3.1, pg. 193.
\textsuperscript{87} LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
\textsuperscript{88} LTRIDGSA GSP, §3.5.1.3.1, pg. 193.
\textsuperscript{89} LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
\textsuperscript{90} LTRIDGSA GSP, pg. 196.
\textsuperscript{91} LTRIDGSA GSP, pg. 203.
\textsuperscript{92} LTRIDGSA GSP, §3.5.1.3.1, pg. 193.
\textsuperscript{93} LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
\textsuperscript{94} LTRIDGSA GSP, Table 4-2, pg. 239.
\textsuperscript{95} LTRIDGSA GSP, Table 3-5, pg. 196.
\textsuperscript{96} LTRIDGSA GSP, Table 3-9, pg. 203.
\textsuperscript{97} LTRIDGSA, Tule Subbasin Coordination Agreement, §4.3.3.2, pg. 357.
Table 3-4 identifies “Nitrogen as N” as a COC.\(^{98}\) However, Tables 3-5 and 3-9 list, “Nitrate as N” as a COC.\(^{99}\) Therefore, it is not clear which form of nitrogen will be monitored for purposes of compliance with the SMCs.

The Coordination Agreement identifies nitrate, pesticides, 1,2-dibromo-3-chloropropane (DBCP), and 1,2,3-trichloropropane (TCP) in the upper aquifer as COCs and arsenic, manganese, and hydrogen sulfide as COCs for the lower aquifer.\(^{100}\) However, the GSP includes a shorter list of COCs for the LTRIDGSA (Table 3-4\(^{101}\)) and does not provide an explanation of how this list of COCs was determined for the LTRIDGSA area. The GSP should include a discussion of how the COC list was determined for the LTRIDGSA area. Detailed discussion about any other COCs, if present, should be discussed and SMCs should be established for these additional COCs, to facilitate evaluation by the public and DWR of groundwater quality conditions within the LTRIDGSA area.\(^{102}\)

\(^2\).6.4 of the LTRIDGSA GSP discusses aquifer water quality, and states, “while the majority of these sites are associated with leaking underground storage tanks [LUSTs], there is [sic] two National Priority List [NPL] sites within the GSA; one in the community of Tipton and the other being in the community of Woodville. Problems associated with point source contamination sites are highly localized.”\(^{103}\) However, the COCs related to the two NPL sites near the DACs within the LTRIDGSA area are not discussed in the GSP, and the only water quality constituent examined in the GSP is nitrate. The GSP should include a more comprehensive discussion of water quality related to the two NPL sites, including those issues that may impact drinking water beneficial users, including DACs.

§5.3 of the Tule Subbasin Monitoring Plan lists the data sources included in the Data Management System (DMS), including the DWR Water Library, California Statewide Groundwater Elevation Monitoring (CASGEM), Groundwater Ambient Monitoring & Assessment (GAMA), California State Water Resource Control Board (SWRCB) Drinking Water Branch, Regional Water Quality Control Board (RWQCB) Annual Reports, DWR Groundwater Information Center Interactive Map Application (GICIMA), and Tule Basin Water Quality Coalition (TBWQC).\(^{104}\) However, based on Figure 2-15 of the Tule Subbasin Setting that shows nitrate concentrations, TBWQC is the only data source used in the analysis.\(^{105}\) The GSP should fully consider all available water quality data in its analysis of groundwater conditions and the hydrogeologic conceptual model.

The GSP does not include an analysis of the change in water quality constituents relative to the change in water levels, as required by 23 CCR § 354.16(d). Given the relationship between the dewatering of the Corcoran clay and arsenic concentrations, and the subsidence due to dewatering of the clay observed in the subbasin, the change in water quality constituent concentrations should be analyzed relative to change in water levels, particularly over drought

\(^{98}\) LTRIDGSA GSP, Table 3-4, pg. 195.
\(^{99}\) LTRIDGSA GSP, Tables 3-5 and 3-9, pgs. 195, 203 (respectively).
\(^{100}\) LTRIDGSA GSP, Appendix 1, pg. 697 (§2.1.7.4 of the Tule Subbasin Setting).
\(^{101}\) LTRIDGSA GSP, Table 3-4, pg. 195.
\(^{102}\) 23 CCR § 355.4 (b)(1).
\(^{103}\) LTRIDGSA GSP,(pg 162.
\(^{104}\) LTRIDGSA GSP, Tule Subbasin Monitoring Plan, §5.3, pg. 413.
\(^{105}\) LTRIDGSA GSP, Figure 2-15, pg. 768.
periods, to evaluate the potential relationship between water quality and water levels and groundwater management activities for arsenic and other COCs.

- As shown on Figure 2-25 of the Tule Subbasin Setting, land subsidence from 2015 to 2018 is more significant in the LTRIDGSA area than the rest of the subbasin, ranging as it does from -2.75 ft to -1.5 ft, which corresponds to the presence of Corcoran Clay.\textsuperscript{106} Based on the Tule Subbasin Setting, “as the aquitards are compressible, the release of pore pressure caused by the lowering of groundwater levels also results in compression of the low permeability layers... This permanent compression of subsurface layers results in land surface subsidence, which has been observed in the Tule Subbasin prior to 1970 (Ireland et al., 1984) and between 2007 and 2011 (Luhdorff and Scalmanini, 2014).”\textsuperscript{107} In addition to causing water quality impacts, subsidence can have adverse impacts including damaging well infrastructure and buildings. Per 23 CCR §354.28(c)(5)(A), GSPs are required to identify, “land uses and property interests that have been affected or are likely to be affected by land subsidence in the basin, including an explanation of how the Agency has determined and considered those uses and interests, and the Agency’s rationale for establishing minimum thresholds in light of those effects.” In addition to water quality and water level impacts, the GSP should evaluate the potential impacts of subsidence on DACs, community water systems, and domestic well users.

- Based on §4.2.3.4 of the GSP, degraded water quality will be monitored as described in the Tule Subbasin Monitoring Plan.\textsuperscript{108} However, the Tule Subbasin Monitoring Plan states that, “annual water quality monitoring of the wells shown on Figure A1-7\textsuperscript{109} will include laboratory analysis for nitrate as N only (see Table A1-5\textsuperscript{110}),” and, “every five years, samples from the wells shown on Figure A1-7 will be analyzed for an expanded list of analytes. In addition to nitrate, samples will be analyzed for total dissolved solids (TDS) and major cations and anions (see Table A1-5).”\textsuperscript{111} Table A1-5 shows the constituents that will be monitored for groundwater quality trends. Other COCs identified to be monitored in Table 3-4 of the GSP\textsuperscript{112}, such as arsenic and chromium, are not included in the annual sampling or five-year sampling list in the Tule Subbasin Monitoring Plan. The inconsistencies between the GSP and the Tule Subbasin Monitoring Plan should be clarified, and the document should include a clear description of the monitoring schedule for all COCs identified in the GSP. Further, given that the MOs and MTs may be applied based on a 10-year average concentration, each RMS should be sampled for all COCs at least annually.

- As stated in the Tule Subbasin Setting, “Nitrate (NO3) concentrations in the GSA area range from less than 6 mg/L [milligrams per liter] to greater than 101 mg/L with higher concentrations in the northwestern portion of the GSA (see Figures 2-15, Tule Subbasin Setting).”\textsuperscript{113} The Tule Subbasin Setting further acknowledges that, “while nitrate is not an issue for agricultural irrigation or dairy supply, elevated nitrate in groundwater from small domestic supply wells
could limit the beneficial use of water where these wells are impacted.”

As shown on the 2018 isocontour map for nitrate as in Exhibit 3-2 of the GSP, high nitrate as N concentrations (＞10 mg/L) are present within and in close proximity to Woodville (a DAC). However, despite this identified risk to drinking water beneficial users, the GSP does not include analysis of potential nitrate impacts to beneficial users of groundwater, particular DACs and small community systems. GSPs are required to include the best available information on “groundwater quality issues that may affect the supply and beneficial uses of groundwater,” per 23 CCR§ 354.16(d). The GSP should therefore include specific discussions of the water quality conditions and trends for applicable constituents that could affect use of groundwater for drinking water purposes, including by domestic well users. This analysis should 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. [23 CCR § 354.34 (c)(4)].

- As stated in §4.2.3.4 of the GSP, “The Agency will evaluate groundwater quality conditions using data collected under separate groundwater quality regulatory programs. These programs include public water systems, for compliance with the requirements of Title 22 Consumer Confidence Reports (CCR), Tule Basin Water Quality Coalition (TBWQC) for compliance with the requirements of General order R5-2013-0120 and other sources that would provide additional representation of groundwater quality conditions.”

As shown in Table A1-1 of the Tule Subbasin Monitoring Plan, a number of existing monitoring wells lack owner information. It appears that a number of these water quality RMWs are owned by small community water systems or a private owner. These systems often have limited resources and can be less consistent with their water quality and other reporting, despite the regulatory requirements in place. These systems are also more prone to significant changes such as closure or acquisition and consolidation into larger systems. The GSP should specifically identify the RMW owners and operators and identify a plan to obtain adequate monitoring data, should for any reason the well owners not obtain and make this data available to the GSA.

- Tables 3-5 and 3-9 of the GSP list conductivity in units of µm/cm micrometers per centimeter]. This is not a valid unit for conductivity. We have assumed that the GSA intended to use micro Siemens per centimeter (µS/cm).

2. The SMCs adopted by the GSA contain numerous inconsistencies and regulatory deficiencies.

In addition to the more issues listed above, our analysis of the specific SMCs adopted by LTRIDGSA at specific RMS wells identified a number of inconsistencies and regulatory deficiencies. To make our findings more usable by DWR, we have created a table that presents the GSA’s adopted water quality MOs and MTs from Tables 3-5 and 3-9, respectively, of the LTRIDGSA GSP. This table also presents the 2018 baseline values presented in Table 3-5 plus 15%, which is consistent with the method for

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114 LTRIDGSA GSP, Appendix 1, pg. 729 (§2.2.4 of the Tule Subbasin Monitoring Plan).
115 LTRIDGSA GSP, Exhibit 3-2, pg. 219.
116 LTRIDGSA GSP, §4.2.3.4, pg. 238.
118 LTRIDGSA GSP, Tables 3-5 and 3-9, pgs. 195, 203 (respectively).
119 See LTRIDGSA GSP, Tables 3-5 and 3-9, pgs. 195, 203 (respectively).
determining MTs described in §3.5.2.3.1. At the bottom of the table, we have listed the California maximum contaminant levels (MCLs) for drinking water. The values shown for conductivity are the recommended and upper secondary MCLs.

### Comparison of Water Quality MOs and MTs Presented in the GSP

<table>
<thead>
<tr>
<th>RMS</th>
<th>Conductivity (µS/cm)</th>
<th>pH</th>
<th>Nitrate as N (mg/L)</th>
<th>Arsenic (ppb)</th>
<th>Chromium (µg/L)</th>
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<tr>
<td><strong>2018 Baseline (per Table 3-5) plus 15%</strong></td>
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<tr>
<td>E0090245</td>
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<tr>
<td>Poplar CSD CCR</td>
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<td>N/A</td>
<td>6.9</td>
<td>No Data</td>
<td>No Data</td>
</tr>
<tr>
<td>Woodville PUD CCR</td>
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<td>N/A</td>
<td>9.8</td>
<td>2.6</td>
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</tr>
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<td></td>
<td></td>
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<td>E0090245</td>
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<td>≤10</td>
<td>N/A</td>
<td>N/A</td>
</tr>
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</table>

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120 See LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
The issues we identified based on the adopted SMCs and the methodology behind their selection are as follows:

- The methods for developing SMCs described in §§3.5.1.3.1 and 3.5.2.3.1 to calculate values relative to a baseline and for RMS separately have not been uniformly applied. That is, they appear to only have been applied in the case of conductivity MOs for RMW E0090245 and E0047650 and the conductivity MT for RMW E0047650.
- The baseline methodology says the outline steps are for setting MT and MO, “values at individual RMS wells related to Groundwater Quality,” but does not specify if this method applies to the water system CCR RMS or if another method is to be used.
- Because pH is not measured as a concentration of chemicals, the baseline methodology for MOs and MTs should not be applied in the same manner. The GSP should clarify how this method will be applied to pH.
- No MOs or MTs are set for conductivity for the three water system CCR RMS. Conductivity can have an effect on non-health based characteristics of drinking water quality, and thus secondary MCLs have been established. It is recommended that SMCs for conductivity be applied across all RMS.
- Based on the 2018 baseline data presented, insufficient data are available to calculate a baseline and thus SMCs for arsenic for the Poplar CSD and chromium at all three CSD/PUD sites. While the GSP indicates that 2020 water quality data will be included in a future calculation of the MOs/MTs, the plan does not describe how much data will be considered sufficient for purposes of calculating the 10-year baseline.
- The GSP does not describe how the baseline methodology will be applied when the baseline values are non-detect (i.e., below reportable detection limits).
- It appears that water quality SMCs will be applied for different COCs based on management areas (i.e., LTRID management area, municipal management area, and County Memorandum of Understanding [MOU] management area). However, the GSP does not explain how managing for selected COCs in agricultural areas will be protective of drinking water users, and vice versa. In the Master Responses to Comments Received by LTRIDGSA, the responses for Water Quality – Disadvantaged Communities (topic 4) states that “None of the PUD/CSDs elected to propose a

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121 LTRIDGSA GSP, §3.5.1.3.1, pg. 193
122 LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
The GSP also does not explain how the proposed SMCs will be protective of drinking water users located in agricultural areas, specifically rural residential domestic well users.

- The MO and MT values presented in the GSP are exactly the same for pH, nitrate as N, arsenic, and chromium.
- The MT value of conductivity for RMW E0090245 is lower than its MO value. The GSP should clearly explain why the goal for maintenance or improvement of water quality (MO) can be higher than the numeric value (MT) to define undesirable results.

3. The groundwater quality SMCs are not sufficiently quantified and should be rejected.

The LTRIDGSA GSP sets water quality MOs, “at each RMS well” as “a change above the baseline groundwater quality to not exceed 10% of long term 10 year running average.”. As stated in §3.5.2.3.1 of the GSP, the water quality MTs are defined “at each RMS well” as a “change above the baseline (2020) groundwater quality to not exceed 15% for two consecutive years” (emphasis added). The Coordination Agreement defines the URs for degraded water quality as “unreasonable long-term changes of groundwater quality above the minimum thresholds at greater than 50% of GSA Management Area RMS wells caused by groundwater pumping and/or groundwater recharge.”

Please, note, that for contaminants such as nitrate which have acute health impacts, any exceedance over the MCL presents a significant public health concern. Infants fed formula prepared with water with elevated levels of nitrate are at an immediate risk of blue baby syndrome, which if not treated quickly can result in death. Thus, allowing an exceedance of a contaminant such as nitrate for two years, and within more than 50% of RMS, is likely to result in a public health crisis.

The purpose of MTs is to delineate, “the point in the basin that, if exceeded, may cause undesirable results.” This makes setting MTs a critical function for measuring progress towards sustainable groundwater management and avoiding significant and unreasonable impacts. In all cases, MTs and MOs for water quality must be quantified at each monitoring site or representative monitoring site.

Given that the method used to determine MOs and MTs uses a 10-year running average, this implies that the MOs and MTs will be recalculated for each reporting period and thus ever-increasing water quality concentrations will remain within the MTs as long as the rate of increase stays within a 15% increase over the running average.

This choice by itself violates the requirements of SGMA because it does not provide a clearly defined quantitative MT, nor does it clearly define which constituents of concern (COC). 23 CCR §354.28(a), expressly requires the assignment of a numerical value at each monitoring site for each COC.

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124 LTRIDGSA GSP, §3.5.1.3.1, pg. 194.
125 LTRIDGSA GSP, §3.5.2.3.1, pg. 202.
126 LTRIDGSA GSP, Coordination Agreement, §4.3.3.2, pg. 357.
127 23 CCR §354.28(a).
128 23 CCR §354.28(a).
The LTRIDGSA 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 lack of quantified MTs violates SGMA, and the non-quantified Water Quality SMCs must be rejected. DWR should also ensure that the GSA provides the current concentrations for chemicals of concern at each monitoring site. A failure to include this data will place the Plan outside of substantial compliance per §355.4(b), as it would materially affect the ability of DWR to evaluate the likelihood of the Plan’s success. It would also fail to satisfy review under §355.4(b)(1), which requires that SMCs be, “reasonable and supported by the best available information and best available science.” DWR should find the Plan incomplete pending the adoption of our recommendations on the water quality SMCs.

4. The monitoring network is not protective of rural domestic well users.

23 CCR §354.38(e) requires that a GSA, “adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances that include the following...(3) Adverse impacts to beneficial uses and users of groundwater.”

Figure 3-1 of the LTRIDGSA GSP shows the locations of the water quality RMS (based on GSP Table 4-2), DACs, public water systems, and domestic wells in the LTRIDGSA. The RMS are generally located near DACs and community water systems, but provide minimal coverage for the domestic well users that are distributed across the LTRIDGSA area. The GSP should clearly demonstrate how the proposed water quality monitoring network is sufficient to monitor for impacts to domestic well users in the LTRIDGSA area. The failure to do this violates the letter of the SGMA statute, and thus is in violation of 23 CCR §355.4(a). It also places the GSA outside of substantial compliance with 23 CCR 355.4(b), because it materially affects DWR’s ability to analyze the likelihood of success of the Plan to achieve its sustainability goal.

5. The LTRIDGSA should conduct an economic impact assessment prior to selecting their new SMCs.

In addition to the above, this section requires more clarity to assess whether the LTRIDGSP has adequately considered potential impacts to drinking water beneficial users with regards to water quality. In particular, an evaluation of the economic impacts of groundwater quality SMCs is missing from the GSP. Because public water systems are required by state law to be in compliance with water quality objectives, increased contamination levels or the appearance of new contaminants will cause water systems to utilize more expensive treatment methods or have to invest in developing new cleaner replacement sources of water. If treatment is not feasible they may need to blend or arrange for bottled water deliveries. This danger also applies to the owners of domestic wells and state small water systems, both of which are not required to test, nor do the users of these sources of water often have the resources to conduct regular testing for COCs. Residents may become exposed to hazardous contaminants without even knowing it, posing a significant public health issue. Further, households and communities already utilizing point of use/point of entry (POU/POE) filtration systems may no longer be able to use them if contaminant levels rise too high.

129 LTRIDGSA GSP, Figure 3-1, pg. 162.
These increased expenses are unreasonable barriers to safe, affordable, and accessible drinking water and therefore would be inconsistent with SGMA and the Human Right to Water. They also impact the viability of the SAFER program, which is treated, by implication, as a backstop to the Plan. Finally, the disproportionate effect of these expenses on protected classes may represent a civil rights violation under a theory of disparate impact, as described earlier in this comment letter.

6. Specific Recommendations for DWR.

We recommend that DWR find the LTRIDGSA GSP to be incomplete pending the adoption of the following recommendations. If DWR finds that one of our suggestions cannot reasonably be made in 180 days, DWR should require that revisions to the GSP be included within the 180-day cure period committing the LTRIDGSA to address these shortcomings, and laying out a clear plan to accomplish the goal, to including a funding mechanism if appropriate. If the GSA fails to comply with these recommendations, DWR should find the Plan inadequate:

- The adoption of new language as necessary to fix the numerous errors and inconsistencies in this section of the GSP, as detailed above.
- The expansion of the RMW network to protect rural domestic well owners.
- Include an economic impact study that will identify the impacts on drinking water users caused by the SMCs at each RMW.
- The adoption of SMCs that comply with the SGMA statute and regulations.
- Revise the Undesirable Results for groundwater quality as follows:
  - Any degradation above the MCL; or
  - If under the MCL, a degradation of more than 25%, or approaching 75% of the MCL
  - If over the MCL and any further degradation

The above criteria are to be measured at least annually and apply where 15% of monitoring wells exceed criteria for two consecutive years at the same wells. Any UR that is determined to be a health hazard by a county, State or Federal agency should be immediately addressed even if it does not meet the above criteria.

GSP Section 4: Monitoring Networks

SGMA and Regulatory Requirements

Each basin is required by 23 CCR 354.33 to, “have a monitoring network that shall be developed for each basin, including monitoring objectives, monitoring protocols, and data reporting requirements.” The monitoring network must, “promote the collection of data of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions that occur through implementation of the Plan.”

The LTRIDGSA GSP

130 23 CCR §354.33; Water Code §10733.2.
As currently developed, the monitoring network proposed in the submitted LTRIDGSP does not adequately monitor how groundwater management actions related to groundwater levels could impact vulnerable communities. Furthermore, the GSP lacks clarity surrounding the LTRIDGSA’s access to groundwater samples for determining quality.

**Recommendations to DWR**

Robust monitoring networks are critical to ensuring that the GSP is on track to meet sustainability goals. 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.

The deficiencies in the Monitoring Network are varied in nature, but taken individually and together they show that this section of the GSP is not in substantial compliance per 23 CCR §355.4(b) for two reasons. First, the lack of robust monitoring in and of itself makes the Plan unlikely to attain its sustainability goal because it prevents the GSA from knowing whether or not its actions are making progress towards achieving sustainable groundwater management. For example, the lack of information makes it impossible for DWR to determine if URs have occurred relative to the geographical location of subgroups of beneficial users. And second, the data gaps caused by the deficiencies in the monitoring network materially affect DWR’s ability to analyze the likelihood of success for the GSP. Both of these theories are independently grounds for finding the GSP incomplete or inadequate.

In light of this, we recommend that DWR find the LTRIDGSP to be incomplete pending the adoption of the following recommendations. If DWR finds that one of our suggestions cannot reasonably be made in 180 days, DWR should require that revisions to the GSP be included within the 180-day cure period committing the LTRIDGSA to address these shortcomings, and laying out a clear plan to accomplish the goal, to including a funding mechanism if appropriate. If the GSA fails to comply with these recommendations, DWR should find the Plan inadequate:

- **Provide an explanation of whether and how the CCR data are representative of groundwater Conditions.** The RMWs include three wells in addition to the Consumer Confidence Reports (CCRs) for the Tipton CSD, Polar CSD, and Woodville PUD (Tables 3-5 and 3-9). The water quality analysis included in CCR reporting is based on drinking water served to the public after treatment, rather than the raw water extracted from the ground. The GSP does not specify the treatment level for these water systems, and therefore it is unclear how the data presented in the CCRs represents the water quality conditions of the groundwater. In order to better understand and monitor groundwater quality conditions in the GSA, additional sampling to understand raw water quality conditions are needed.

- **Evaluate and demonstrate how the proposed water quality monitoring network is sufficient to monitor for impacts to domestic well users in the LTRIDGSA area and expand the monitoring network to address these gaps.** The RMS are generally located near DACs and community water

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131 Some of our recommendations in this section have already been discussed above in the section on Groundwater Quality SMCs, due to the overlapping nature of the problems presented by the GSA’s adopted policies. We repeat them here for the sake of clarity in presentation.

132 LTRIDGSA GSP, Table 3-5, pg. 196.

133 LTRIDGSA GSP, Table 3-9, pg. 202.
systems, but provide minimal coverage for the domestic well users that are well distributed across the LTRIDGSA area. The proposed network of water quality and water level RMWs appear to be insufficient to monitor impacts to groundwater for drinking water beneficial users, particularly domestic well users. Without adequate monitoring that captures shallow aquifer impacts for both levels and quality, domestic well users may be vulnerable to lack of access to safe water. This monitoring is required by 23 CCR §354.34, therefore, LTRIDGSA should develop plans to fill the data gaps for these sensitive communities and specify where the location of these new RMW will be located and if they will be used for groundwater level or quality MTs/MOs.

- **Revise the GSP to consistently identify the number and location of the water quality RMS within the LTRIDGSA area.** The lists of the water quality RMS appear to be inconsistent between certain tables and figures in the GSP. Figure 3-1 of the GSP\textsuperscript{134} shows five RMS wells, and only one of them appear to match the RMS wells listed in Table 4-2.\textsuperscript{135} In addition, Table 4-2 identifies the CCRs for three water systems as RMS, but the locations of these systems are not reflected in Figure 3-1. Figure 4-2 of the GSP identifies four water quality RMWs, while only three of them are listed in Table 4-2. Figure A1-7 of the Tule Subbasin Monitoring Plan\textsuperscript{136} shows the water quality monitoring network for the subbasin, and includes at least 16 wells within the LTRIDGSA GSP area.

- **Revise the GSP to include maps of the proposed monitoring network overlayed with the three communities (Tipton, Woodville, and Poplar) and domestic well locations.** Without adequate maps, DWR and the public will not be able to adequately review monitoring gaps. See CWC Figures in the Attachments of this letter for examples of monitoring maps we developed to evaluate this GSP.

- **Revise the GSP to clarify and correct inconsistencies between the GSP and the Tule Subbasin Monitoring Plan, include a clear description of the monitoring schedule for all COCs identified in the GSPs, and revise the monitoring schedule to sample all COC for each RMS at least annually.** Based on §4.2.3.4 of the GSP, degraded water quality will be monitored as described in the Tule Subbasin Monitoring Plan.\textsuperscript{137} However, the Tule Subbasin Monitoring Plan states that, “annual water quality monitoring of the wells shown on Figure A1-7\textsuperscript{138} will include laboratory analysis for nitrate as N only (see Table A1-5),” and, “every five years, samples from the wells shown on Figure A1-7 will be analyzed for an expanded list of analytes. In addition to nitrate, samples will be analyzed for total dissolved solids (TDS) and major cations and anions (see Table A1-5\textsuperscript{139}).”\textsuperscript{140} Table A1-5 shows the constituents that will be monitored for groundwater quality trends. Other COCs identified to be monitored in Table 3-4\textsuperscript{141} of the GSP, such as arsenic and chromium, are not included in the annual sampling or five-year sampling list in the Tule...

\textsuperscript{134} LTRIDGSA GSP, Figure 3-1, pg. 189.

\textsuperscript{135} LTRIDGSA GSP, Figure 4-2, pg. 239.

\textsuperscript{136} LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure A1-7, pg. 423.

\textsuperscript{137} LTRIDGSA GSP, §4.2.3.4, pg. 238

\textsuperscript{138} LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure A1-7, pg. 423.

\textsuperscript{139} LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Figure A1-5, pg. 421

\textsuperscript{140} LTRIDGSA GSP, Appendix 1, pg. 729 (§2.4.1 of the Tule Subbasin Monitoring Plan).

\textsuperscript{141} LTRIDGSA GSP, Table 3-4, pg. 195.
Subbasin Monitoring Plan. The inconsistencies between the GSP and the Tule Subbasin Monitoring Plan should be clarified, and the document should include a clear description of the monitoring schedule for all COCs identified in the GSP. Further, given that the MOs and MTs may be applied based on a 10-year average concentration, each RMS should be sampled for all COCs at least annually.

- **Clarify how the LTRIDGSA intends to establish SMCs for RMS not identified as specific wells.** The MO and MT methods identified in §§3.5.1.3.1 and 3.5.2.3.1 of the GSP specify that the SMCs are calculated for “each RMS well.” However, based on Tables 4-2, 3-5, and 3-9, the GSA intends to use water system CCRs as RMS in addition to the three identified RMS wells.

- **Clarify how URs will be evaluated within the LTRIDGSA area given that there are several non-well RMS.** The Coordination Agreement defines the URs for degraded water quality as “unreasonable long term changes of groundwater quality above the minimum thresholds at greater than 50% of GSA Management Area RMS wells caused by groundwater pumping and/or groundwater recharge.” This section should clarify that URs are the same for the RMS wells if that is the case.

- **Clarify which form of nitrogen will be monitored for purposes of compliance with the SMCs.** Table 3-4 identifies “Nitrogen as N” as a COC. However, Tables 3-5 and 3-9 list “Nitrate as N” as a COC.

- **Develop long-term access agreements for RMWs owners and operators and identify who the owners are in §4.2.3.4.** It is understood that the LTRIDGSA will be mostly relying on water quality data collected by others for purposes of its long-term sustainability monitoring and compliance, in particular, a number of the water quality RMWs are owned by small community water systems or a private owner. As shown in Table A1-1 of the Tule Subbasin Monitoring Plan, a number of existing monitoring wells lack owner information. Small water systems often have limited resources and can be less consistent with their water quality and other reporting, despite the regulatory requirements in place. Small water systems are also more prone to significant changes such as closure or acquisition and consolidation into larger systems. Collecting data from private wells is also not a reliable approach due to access challenges, lack of well construction information, and unreliable accounting of pumping or non-pumping measurements. The GSP should specifically identify the RMW owners and operators, include signed long-term access agreements, and identify a plan to obtain adequate monitoring data, should for any reason the well owners not grant access to the wells or provide associated data to the LTRIDGSA. In order to maintain consistency for future sustainability analyses, the

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142 LTRIDGSA GSP, §3.5.1.3.1, pg. 193.
143 LTRIDGSA GSP, §3.5.1.3.1, pg. 202.
144 LTRIDGSA GSP, Table 4-2, pg. 239.
145 LTRIDGSA GSP, Table 3-4, pg. 196.
146 LTRIDGSA GSP, Table 3-9, pg. 203
147 LTRIDGSA GSP, Tule Subbasin Coordination Agreement §4.3.3.2, pg. 357.
148 LTRIDGSA GSP, Table 3-4, pg. 195.
149 LTRIDGSA GSP, Table 3-5, pg. 196.
150 LTRIDGSA GSP, Table 3-9, pg. 203.
151 LTRIDGSA GSP, Tule Subbasin Monitoring Plan, Table A1-1, pg. 427.
LTRIDGSA could also consider conducting its own water quality analysis of wells and establish access agreements to water quality RMWs.

- **Clarify how pH will be measured.** Because pH is not measured as a concentration of chemicals, the baseline methodology for MOs and MTs should not be applied in the same manner.

- **Clarify how much data will be considered sufficient for purposes of calculating the 10-year baseline and describe what methodology will be used if baseline values are nondetect.** Based on the 2018 baseline data presented, insufficient data are available to calculate a baseline and thus SMCs for arsenic for the Poplar CSD and chromium at all three CSD/PUD sites. While the GSP indicates that 2020 water quality data will be included in a future calculation of the MOs/MTs, the plan does not describe what will be considered sufficient.

- **Clarify how the GSA plans to align groundwater monitoring efforts and the sustainable management criteria with any emerging contaminants of concern and new MCLs.**

### GSP Section 5: Projects and Management Actions

#### Specific P&MA Recommendations

**Drinking Water Well Mitigation Program**

**Policy Suggestions:** Recharge Projects, Efficiency Improvements, Groundwater Allocation Framework, Groundwater Market / Trading, Fees and Incentives, Groundwater Pumping Restrictions

#### Specific P&MA Recommendations

**SGMA and Regulatory Requirements**

The GSA must describe the “criteria for projects and management actions to be included in a Plan to meet the sustainability goal for the basin in a manner that can be maintained over the planning and implementation horizon.”

**The LTRIDGSA GSP**

The Proposed Projects and Management Actions (P&MA) sections lay out the key management decisions, adoptions of policies, and implementation of projects which the GSA intends to undertake in order to achieve the monitoring objectives and determine progress toward the SMCs presented in the previous sections.

**Recommendations to DWR**

We reviewed the P&MA in the GSP to identify those that may not be protective of or have not fully considered all beneficial users. The P&MA proposed in the GSP include agency groundwater

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152 23 CCR §354.42 and Water Code §10733.2.
accounting, existing water optimization projects, surface water development projects, managed aquifer recharge and banking projects, and agricultural land retirement (fallowing) projects.

Pursuant to 23 CCR §355.4(b)(4) and 23 CCR §355.4(b)(5), DWR must make a determination of “whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered and “whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.” However, for the reasons identified below, we do not believe that the GSP includes sufficient detail regarding P&MAs in order for DWR to make such determinations.

In light of this, we recommend that DWR find the LTRIDGSP to be incomplete pending the adoption of the following recommendations. If DWR finds that one of our suggestions cannot reasonably be made in 180 days, DWR should require that revisions to the GSP be included within the 180-day cure period committing the LTRIDGSA to address these shortcomings, and laying out a clear plan to accomplish the goal, to including a funding mechanism if appropriate. If the GSA fails to comply with these recommendations, DWR should find the Plan inadequate:

- **Clearly identify how and under what conditions pumping restrictions could be implemented.** §5.2.6 of the Plan states that “the CSDs and PUDs were developed as a separate management area and subject to the local control and management of the public entities that provide water service” and acknowledges that, “these areas are Severely Disadvantaged Communities and a reliable water supply for these communities is vital.”\(^{153}\) This section also identifies quarterly data collection and analysis by and/or for the water systems, including that, “the water use will be reviewed through periodic updates to the Plan and compared to the available sustainable yield for the community and pumping limits acceptable to the Agency, as allowed under the regulatory code of SGMA.”\(^{154}\) This implies that the LTRIDGSA may implement pumping restrictions on the water systems however, the GSP does not clearly identify how and under what conditions pumping restrictions could be implemented.

- **Clarify whether a reduction in pumping is anticipated, and by how much.** Table 2-7 of the Tule Subbasin Setting (excerpted below) presents the, “Planned Transitional Pumping” for LTRIDGSA that was incorporated into the projected water budget for the subbasin and GFM.\(^{155}\) Based on this, there will be a decrease of 0.5 acre-feet/acre (AF/ac) in pumping every five years through 2040, until the sustainable yield is met. The same proposed reduction in groundwater use during plan implementation is shown in Table 5-1 of the GSP.\(^{156}\) However, Table 4 in Appendix A of the Tule Subbasin Setting, which provides the projected future groundwater budget for the LTRIDGSA, shows that groundwater pumping will actually increase during this period.\(^{157}\) If groundwater pumping is estimated to increase, the documents should further describe how this contributes to reaching groundwater sustainability, given the severely overdraft conditions of the subbasin.

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\(^{153}\) LTRIDGSA GSP, §5.2.6, pg. 273.

\(^{154}\) Id.

\(^{155}\) LTRIDGSA GSP, Appendix A, pg. 747 (Tule Subbasin Setting).

\(^{156}\) LTRIDGSA GSP, §5.2.1.6, pg. 250.

\(^{157}\) LTRIDGSA GSP, Appendix A, pg. 796 (Tule Subbasin Setting, Appendix A).
• Include all details required by the regulations for the P&MA identified in the Plan and explicitly describe how risks to water quality will be evaluated and monitored as a part of the development of the specific recharge projects. The GSP identifies Managed Aquifer Recharge (MAR) and Banking projects as a P&MA, and provides examples of the types of projects that could be implemented by the LTRIDGSA or individual landowners. Pursuant to 23 CCR §354.44, GSPs must include, “the status of each project and management action, including a time-table for expected initiation and completion, and the accrual of expected benefits,” and, “an explanation of the benefits that are expected to be realized from the project or management action, and how those benefits will be evaluated,” among other detailed information. The GSP does not identify specific locations, anticipated size of recharge projects, estimated volume of storage and other benefits, or estimated costs for such projects, and thus limited information is available for the public to review regarding these P&MAs. The GSP also does not include a discussion of potential water quality impacts that can result from these projects. It is important to consider that, depending on the source water used, recharge projects have the ability to improve or degrade groundwater quality. In addition, recharge projects have the potential to mobilize contaminants, including by mobilizing surface and shallow soil contaminants through percolation, spreading existing contaminant plumes by altering the groundwater flow gradient, and mobilizing naturally occurring compounds through changes in geochemistry due to the introduction of a different water type, among other mechanisms. As recommended in the 2019 Stanford publication, A Guide to Water Quality Requirements Under the Sustainable Groundwater Management Act, “in addition to complying with any regulatory requirements, GSAs undertaking recharge or other active management actions should consider developing a sufficient understanding of the interactions between subsurface geology, geochemistry and GSP projects in their basin. The development of sufficient monitoring networks, capable of detecting changes in groundwater quality conditions related to active management, will be critical to understanding these interactions.”

As future specific projects are developed, the details of these should be clearly communicated to the public through an active stakeholder outreach and communication process that proactively seeks to include members of DACs.

• The GSP should discuss any uncertainties that may affect the P&MAs and the effect this would have on LTRIDGSA’s ability to reach sustainability by 2040 and to maintain water levels pursuant to the SMCs. This is especially important because the method used to develop water level MOs and MTs relies on the GFM-projected future water levels that assume implementation of the P&MAs.

• Fix inconsistencies about what P&MAs are planned that exist between the Plan and the Tule Subbasin Setting. The P&MA identified in the LTRIDGSA GSP are inconsistent with those identified in Table 2-6 of the Tule Subbasin Setting (excerpted below). The P&MAs identified in Table 2-6 of the Tule Subbasin Setting were reportedly incorporated into the Groundwater Flow Model to develop the projected water budget, which was used as the basis for establishing sustainable yield estimates and water level MOs and MTs.

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158 LTRIDGSA GSP, Appendix A, pg. 745 (Tule Subbasin Setting, Appendix A).
The Tule Subbasin Setting Table 2-6 identifies three projects; however, of these, the only project mentioned in the GSP is the Success Reservoir Enlargement Project (SREP), which is identified as an example surface water development project that may be considered. In addition, the GSP identifies many “example” projects under each category (i.e., agency groundwater accounting, existing water optimization projects, surface water development projects, managed aquifer recharge and banking projects, and agricultural land retirement (fallowing) projects), but does not clearly identify what projects are anticipated for implementation and their expected benefits.

**Drinking Water Well Mitigation Program**

- **Include a Drinking Water Well Mitigation Program.** A GSP which lacks a mitigation program to prevent and mitigate the short-term effects and long-term impacts of P&MA’s on the residents of S/DACs as to the safety, quality, affordability, or availability of domestic water, violates both the Human Right to Water and SGMA itself.

The Human Right to Water makes it, “the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Although the HR2W is a relatively new law, the intent behind it is not; the California legislature has recognized that water used for domestic purposes has priority over all other uses since 1913. Reserving top priority for domestic water use was first codified in 1943, in Water Code §106, which declares it, “established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.” In 1989, §116270 (a) was added to the California Health and Safety Code, establishing that, “every citizen of California has the right to pure and safe drinking water.” And then in 2012, the HR2W added Water Code §106.3. Even more recently the passage of the Safe and Affordable Drinking Water Act by Governor Newsom indicates a clear State-level interest in protecting the drinking water access of California’s most vulnerable residents.

Taken as a body, these laws represent a century-long prerogative of protecting water used for domestic purposes against competing uses, with the HR2W representing only one of the most recent and strongest statement of this support.

To ensure compliance with the Legislature’s long established position, the HR2W requires that agencies, including the Department of Water Resources, must consider HR2W when “revising,  

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160 LTRIDGSA GSP, § 5.2.3.1, pg. 259.
161 Water Code §106.3 (a).
162 Senate Floor Analysis, AB 685, 08/23/2012.
163 This policy is also noted in the Legislative Counsel’s Digest for AB 685.
adopting, or establishing policies, regulations, and grant criteria,” when those criteria are “pertinent” to domestic water users. A failure to include a drinking water well mitigation program to protect drinking water users from the side effects of P&MAs also violates SGMA itself. SGMA authorizes a GSA to undertake projects and perform management actions of the sort that will lead to groundwater degradation only when “necessary or proper” to carrying out its statutory mission. The limiting language “necessary or proper” greatly restricts the authority of the GSA when planning projects and management actions. It is not “proper” to implement P&MAs in a way to cause significant harm to a class of beneficial users to the benefit of another. This language requires a mitigation program to comply with other California laws.

The limiting term “necessary” invites a narrow legal interpretation, therefore most P&MAs that a GSA proposes and undertakes must be a “proper” exercise of its authority. Although “proper” is undefined in SGMA, a court would almost certainly find the term precludes the adoption of a P&MA that will violate another California law, such as the HR2W and correlative rights. Because the HR2W is not limited by the sustainability deadline of SGMA, if the result of a proposed project or management action is to temporarily reduce access to clean, safe, and affordable water for domestic use, the HR2W is still violated whether or not the sustainability goal will be met post hoc. This would apply both to Water Code §106.3 (a) and (b). Such a P&MA would not be a proper exercise of the GSA’s authority, and if it is not truly necessary (that is, rule “necessary” by a court), then the GSA could not authorize the project or management action.

However, if the GSA has in place a mitigation program that prevents the reduction in quality, affordability, and accessibility guaranteed by the HR2W, and has necessary mitigation programs to ensure should negative impacts do occur, that people are not left without safe and affordable drinking water, both in the short- and long-term, then there is no violation of residents’ rights, and the GSA action would be “proper”, even if not “necessary.” Since the action must only be, “necessary or proper,” to be allowed by SGMA.

Furthermore, in choosing this language the Legislature clearly did not intend to authorize GSAs to “pass the buck” to other programs such as SAFER, the Central Valley Basin Plan Amendments, or State Water Board enforcement actions when its P&MAs create drinking water issues that

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164 Water Code §106.3 (b).
165 Water Code §10726.2: Additional Authorities of Groundwater Sustainability Agency Relating to Acquisitions; Augmentation of Local Water Supplies; Transfers and Exchanges of Water; and Treatment: “A groundwater sustainability agency may do the following . . . (b) Appropriate and acquire surface water or groundwater and surface water or groundwater rights, import surface water or groundwater into the agency, and conserve and store within or outside the agency that water for any purpose necessary or proper to carry out the provisions of this part, including, but not limited to, the spreading, storing, retaining, or percolating into the soil of the waters for subsequent use or in a manner consistent with the provisions of §10727.2… (f) Transport, reclaim, purify, desalinate, treat, or otherwise manage and control polluted water, wastewater, or other waters for subsequent use in a manner that is necessary or proper to carry out the purposes of this part.” (Note: “Part,” as used here in the Water Code, refers to the SGMA statutes as a whole as incorporated into the Code.)
those programs and authorities must fix. For a GSP to be a “proper” exercise of a GSA’s authority under SGMA, it must respect the HR2W within the GSP document itself, and not rely on the possibility of an outside program stepping in to prevent or mitigate the harm. DWR must review the GSP on its own for HR2W compliance, not the GSP plus unidentified backstop programs. This requires a mitigation program for declining water levels and/or the degradation of water quality caused by P&MAs authorized by the GSP.

A drinking water well mitigation program could include a combination of different strategies such as: replacing impacted wells with new deeper wells, connecting domestic well users to a nearby public water system, or in the short-term, providing bottled and/or tanked water. Note, short-term solutions such as bottled or tanked water must be followed-up with a long-term solution, such as new wells or consolidation. Short-term interim solutions such as these are not cost-effective over the long-term, and communities should not be forced to reside indefinitely without safe drinking water coming out of the taps in their homes.

DWR should require the GSA to have a mitigation program in place before engaging in any P&MAs, and we look forward to working with LTRIDGSA to develop the plan.

Recharge Projects

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, on-farm recharge and storage projects type can provide benefits to communities, farmers, and ecosystems. 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. Further, the recharge projects may result in benefits only to certain beneficial users, rather than DACs who lack the resources to drill new deeper wells. Currently, these proposed projects do not 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:

- **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.** Including these communities on relevant maps will allow stakeholders to effectively evaluate the collective potential benefits or impacts of recharge projects for drinking water users in the LTRIDGSA.
- **Prioritize funding for recharge projects near or upgradient to drinking water systems.** These types of projects can strategically deliver multiple benefits, including increased groundwater levels and the improvement of groundwater quality.

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166 That said, financing from other programs should be considered when designing a mitigation program. For instance, compliance with the HR2W will raise the priority for funding projects under Prop. 68. But a GSP that allows the degradation of drinking water supplies without a mitigation program in place would still violate the HR2W.
1. When selecting sites for on-farm recharge projects, GSAs can work with growers who are implementing some or all of the following in order to minimize the mobilization of pesticides and fertilizers:
   - Using best management practices that optimize chemical use so residuals do not enter recharge water;
   - Growing crops that require fewer fertilizers (e.g. legumes);
   - Recharging during winter months (when less/no fertilizer is being used);
   - Minimizing fall applications of fertilizers and pesticides;
   - Not surrounded by dairy operations.

2. When implementing on-farm recharge projects, recharge on the same plot of land annually for a consecutive number of years in order to most effectively flush out and dilute residual contaminants (especially nitrate) left behind from previous applications. Continued flushing will also help reduce bicarbonate, calcium, and organic carbon transport which will limit their impact on the dissolution and release of uranium and/or arsenic.

3. Prior to implementing any recharge project, identify all nearby drinking water wells (both public supply and private wells). Additional monitoring wells that collect groundwater quality samples may need to be installed in key areas to protect public health.

4. Prior to implementing any recharge project, collect data to characterize the upper soil zone and groundwater quality, including the amount of fertilizer applied and any naturally occurring contaminants present in the soil. Monitor and adjust the quality of water being recharged in order to limit the mobilization of naturally occurring contaminants (e.g. monitoring oxygen, pH, electrical conductivity, and nitrate levels).

5. Consider recharging through excavated points, ditches/canals, and other designated recharge basins in order to bypass soil layers with naturally occurring contaminants, pesticides, and/or nitrate.

Efficiency Improvements

We appreciate LTRIDGSA’s intent to potentially adopt projects that increase water efficiency within the area. However, LTRIDGSA is on the brink of a major transition as it seeks to balance its groundwater resources through policies that will likely affect all groundwater users. As noted previously, the risks imposed on rural domestic and small water systems are significant and currently overlooked and neglected in the GSP. With the challenges ahead and the potential impacts to important drinking water

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sources, projects that minimize water waste should be a priority and should be implemented sooner rather than later. We recommend the following:

- **Require when technically and financially feasible, efficiency improvements in irrigation practices and industrial water use.** With scarce groundwater resources, farmers should adjust their irrigation practices and ultimately extract only enough groundwater to meet the crop demand. Incentives should be made available to farmers with limited resources to implement such efficiency improvements.

### Groundwater Allocation Framework

Although the LTRIDGSA has not officially decided to create a groundwater allocation framework, some GSAs are considering adopting or creating these management tools. We provide the following information to help DWR inform and influence the considerations of GSAs while they make these determinations.

The foundation of a well-designed groundwater allocation framework requires a fair and adequate allocation of groundwater for drinking water uses, an additional margin for future growth, and rules that avoid or mitigate potential impacts to communities dependent on groundwater supplies. If these components are missing, the allocation framework can have significant negative impacts upon a community’s drinking water supply. When developing a groundwater allocation framework, LTRIDGSA should consider appropriate measurements to ensure that the framework is protective of the Human Right to Water (AB 685, 2012). We recommend the following:

- **Sustainable yield allocation:** In order to best protect drinking water needs for communities, we recommend that GSAs establish a non-tradable allocation amount of groundwater as part of the calculation for the sustainable yield to adequately meet drinking water needs for public health and safety, including for drinking, cooking, and sanitary purposes, both now as well into the future. In order to determine this baseline for drinking water, the GSA will need to work with small community water systems, cities, and/or the county to determine current and future daily drinking water needs.

- **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. We are concerned that allowing allocations to be bankable for more than 1 year could result in 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 LTRIDGSA Groundwater Allocation Framework (if GSA decides to do so), 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 of timely responding to families at risk or impacted by prolonged droughts.

**Groundwater Market / Trading**

As noted above, the LTRIDGSA has not officially decided to create a groundwater market, however, some GSAs are considering adopting or creating these management tools. We provide the following information to help DWR inform and influence the considerations of GSAs while they make these determinations.
There are a number of critical foundational steps agencies need to take before even 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 market.\(^\text{168}\)

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 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-tradeable allocation amount of groundwater should be included as part of the calculation for the sustainable yield to adequately meet drinking water needs for public health and safety, including for drinking, cooking, and sanitary purposes.
- **Work with local communities to establish a buffer for community growth in groundwater allocation:** 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.
- **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 prevent further lowering of groundwater and adverse water quality impacts to protect drinking water users from any negative effects of groundwater trading.** The GSA will also need to reevaluate the rules that govern the groundwater market to ensure that future impacts are avoided or mitigated.

● Evaluate mechanisms that can be built into the system that allow for flexibility to adjust over time, to account for changing climatic conditions, and incorporate learning.

● Devise ways to help engage, communicate and translate technical information to stakeholders, particularly to rural communities and private well owners.

Fees and Incentives

● When developing fee structure for the implementation of GSP activities, we recommend exempting small drinking water systems managed by S/DACs and domestic well users from GSAs fees, including use permits and penalty fees. Small, rural S/DACs have limited economic resources and often have water bills that are normally already above the California water affordability threshold of 1.5% of MHI. Considering their small usage of groundwater overall, exempting vulnerable communities from groundwater fees supports efforts to ensure access to safe and affordable drinking water.

Additionally, S/DACs and low-income residents have contributed to the implementation of SGMA through other methods. For example, the Kaweah Subbasin, like many others around the state, was granted an S/DAC waiver and qualified for $1.5 million in grant funds to offset the costs of developing the GSP. The S/DAC waiver was granted by demonstrating the number of S/DACs located within the subbasin. Additional grants were also obtained to construct monitoring wells and a recharge basin.

Conclusion

We thank you for your consideration of these comments related to the LITRIDGE GSP. Please reach out to us with any questions or comments concerning the identified issues or any suggestions made for its improvement.
## GSP Remedies: Summary Table

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Cure Period</th>
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<tbody>
<tr>
<td><strong>Plan Area</strong></td>
<td></td>
</tr>
<tr>
<td>Include a map indicating the location of public water systems serving SDACs and/or DACs as well as domestic well communities.</td>
<td>180 days</td>
</tr>
<tr>
<td>Revise §2.3.4 to include a plan for improving the well permitting and replacement process.</td>
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<tr>
<td><strong>Notice and Communication</strong></td>
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<tr>
<td>Include the responses to public comment as required by 23 CCR §354.10(c).</td>
<td>180 days</td>
</tr>
<tr>
<td>Include a retroactive list of all public meetings, to include public outreach and GPC meetings held during the GSA drafting process, as required by 23 CCR §354.10(b).</td>
<td>180 days</td>
</tr>
<tr>
<td>In compliance with Brown Act requirements, properly notice all public meetings, including the Groundwater Planning Commission, and send out both agendas and all meeting materials within 72 hours of the proposed meeting.</td>
<td>180 days</td>
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<tr>
<td>Ensure there is a public comment period at minimum at the beginning of all public meetings.</td>
<td>180 days</td>
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<tr>
<td>Require an additional drinking water impact assessment prior to the construction of new wells with high production capacity.</td>
<td>180 days</td>
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<tr>
<td>Engage domestic well owners and the small community water systems by offering presentations and holding community meetings to share information about the GSP development process and solicit feedback from key beneficial users of groundwater.</td>
<td>180 days</td>
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<tr>
<td>Mandatory bilingual (English and Spanish at a minimum) information and materials.</td>
<td>180 days</td>
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<tr>
<td>Live interpretation at board meetings and community outreach events.</td>
<td>180 days</td>
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<tr>
<td>Host GSP workshops and public outreach meetings in the evening so that more community members are able to attend.</td>
<td>180 days</td>
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<tr>
<td><strong>Utilize existing community venues for community meetings, workshops, and events to provide information.</strong></td>
<td>180 days</td>
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<tr>
<td><strong>Identify social media channels, websites, and other media outlets, including ones in other languages such as Spanish, that are readily accessible to the community.</strong></td>
<td>180 days</td>
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<tr>
<td><strong>Identify and work with key community leaders/trusted messengers to distribute information and encourage community participation.</strong></td>
<td>180 days</td>
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<tr>
<td><strong>Actively seek partnerships with other educational programs to leverage resources and explore opportunities to educate different generational groups.</strong></td>
<td>180 days</td>
</tr>
</tbody>
</table>

**Tule Subbasin Setting**

| **If different methods were used to develop the historical water budget than the GFM-projected water budget, the Coordination Agreement and/or GSP should clearly identify how the two methods relate to each other in terms of common assumptions, uncertainties, and inherent differences.** | 180 days |
| **Per 23 CCR §354.18(a), “water budget information shall be reported in tabular and graphical form,” and therefore the GSP should clearly present summary information on land use and crop evapotranspiration information so that the validity of the crop demand can be assessed. It is further recommended that the GSP detail how the irrigation efficiency value was determined over the various model time periods.** | 180 days |
| **Per 23 CCR §354.18(b)(3), as part of the assessment of groundwater extraction, the GSP should include a discussion of the water use by livestock operations and other public water systems and how they are represented in the water budget.** | 180 days |
| **Per 23 CCR §354.18(b)(3), as part of the assessment of groundwater extraction, it is recommended that either the projected water budget include an estimated increase in M&I pumping or that the GSP include a justification for maintaining the M&I pumping at a constant rate.** | 180 days |
| **The GSP should include information on the range of model inputs that were varied in these uncertainty runs.** | 180 days |
| **The GSP should be revised to clearly describe how sustainability will be achieved by 2040 and clarify discrepancies between the proposed pumpage reductions described in the P&MA.s and the increase in pumping shown in the** | 180 days |
projected water budget pursuant to 23 CCR §355.4(b)(5), in order for DWR to evaluate “whether the projects and management actions are feasible and likely to prevent undesirable results and ensure that the basin is operated within its sustainable yield.”

The GSP should be revised to include information on the causes of the changes in the water level gradient and subsurface flow between the LTRIDGSA and the adjacent GSAs, which is necessary for DWR to make a determination of “whether the Plan will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal” per 23 CCR §355.4(b)(7).

<table>
<thead>
<tr>
<th>Chronic Lowering of Groundwater Levels</th>
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<tbody>
<tr>
<td>Perform an impact analysis to evaluate the potential impacts to wells associated with the water level MOs/MTs and presented in the GSP, and adopt new SMCs based on this analysis.</td>
</tr>
<tr>
<td>Re-draft the UR for the LTRIDGSA area.</td>
</tr>
<tr>
<td>Include the SMCs for all identified RMWs. The GSP should also clearly and consistently identify the locations and aquifer designations of the RMWs throughout the document.</td>
</tr>
<tr>
<td>The locations of potentially impacted wells should be identified and presented in maps in the GSP so that the public and DWR may assess the well impacts specific to DACs and other sensitive users within the LTRIDGSA area.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Groundwater Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>The adoption of new language as necessary to fix the numerous errors and inconsistencies in this section of the GSP, as detailed above.</td>
</tr>
<tr>
<td>The expansion of the RMW network to protect rural domestic well owners.</td>
</tr>
<tr>
<td>Include an economic impact study that will identify the impacts on drinking water users caused by the SMCs at each RMW.</td>
</tr>
<tr>
<td>The adoption of SMCs that comply with the SGMA statute and regulations.</td>
</tr>
</tbody>
</table>
Revise the Undesirable Results for groundwater quality as follows:

- Any degradation above the MCL; or
- If under the MCL, a degradation of more than 25%, or approaching 75% of the MCL
- If over the MCL and any further degradation

The above criteria are to be measured at least annually and apply where 15% of monitoring wells exceed criteria for two consecutive years at the same wells. Any UR that is determined to be a health hazard by a county, State or Federal agency should be immediately addressed even if it does not meet the above criteria.

<table>
<thead>
<tr>
<th>Monitoring Networks</th>
<th>180 days</th>
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<tbody>
<tr>
<td>Provide an explanation of whether and how the CCR data are representative of groundwater Conditions.</td>
<td>180 days</td>
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<tr>
<td>Evaluate and demonstrate how the proposed water quality monitoring network is sufficient to monitor for impacts to domestic well users in the LTRIDGSA area and expand the monitoring network to address these gaps.</td>
<td>180 days</td>
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<tr>
<td>Revise the GSP to consistently identify the number and location of the water quality RMS within the LTRIDGSA area.</td>
<td>180 days</td>
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<tr>
<td>Revise the GSP to include maps of the proposed monitoring network overlayed with the three communities (Tipton, Woodville, and Poplar) and domestic well locations.</td>
<td>180 days</td>
</tr>
<tr>
<td>Revise the GSP to clarify and correct inconsistencies between the GSP and the Tule Subbasin Monitoring Plan, include a clear description of the monitoring schedule for all COCs identified in the GSPs, and revise the monitoring schedule to sample all COC for each RMS at least annually.</td>
<td>180 days</td>
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<tr>
<td>Clarify how the LTRIDGSA intends to establish SMCs for RMS not identified as specific wells.</td>
<td>180 days</td>
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<tr>
<td>Clarify which form of nitrogen will be monitored for purposes of compliance with the SMCs.</td>
<td>180 Days</td>
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<tr>
<td>Develop long-term access agreements for RMWs owners and operators and identify who the owners are in §4.2.3.4.</td>
<td>180 days</td>
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<tr>
<td>Action</td>
<td>Timeframe</td>
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<tr>
<td>Clarify how pH will be measured.</td>
<td>180 days</td>
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<tr>
<td>Clarify how much data will be considered sufficient for purposes of calculating the 10-year baseline and describe what methodology will be used if baseline values are nondetect.</td>
<td>180 days</td>
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<tr>
<td>Clarify how the GSA plans to align groundwater monitoring efforts and the sustainable management criteria with any emerging contaminants of concern and new MCLs.</td>
<td>180 days</td>
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<tr>
<td><strong>Project and Management Actions</strong></td>
<td></td>
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<tr>
<td>Clearly identify how and under what conditions pumping restrictions could be implemented.</td>
<td>180 days</td>
</tr>
<tr>
<td>Include a Drinking Water Well Mitigation Program.</td>
<td>180 days</td>
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<tr>
<td>Clarify whether a reduction in pumping is anticipated, and by how much.</td>
<td>180 days</td>
</tr>
<tr>
<td>Include all details required by the regulations for the P&amp;MA s identified in the Plan and explicitly describe how risks to water quality will be evaluated and monitored as a part of the development of the specific recharge projects.</td>
<td>180 days</td>
</tr>
<tr>
<td>The GSP should discuss any uncertainties that may affect the P&amp;MA s and the effect this would have on LTRIDGSA’s ability to reach sustainability by 2040 and to maintain water levels pursuant to the SMCs.</td>
<td>180 days</td>
</tr>
<tr>
<td>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.</td>
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<tr>
<td>Fix inconsistencies about what P&amp;MA s are planned that exist between the Plan and the Tule Subbasin Setting.</td>
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