

**Mid-Kaweah Groundwater  
Sustainability Agency  
Groundwater Sustainability  
Plan**

Public Comment Summary

December 17, 2019

Prepared for:

Mid-Kaweah Groundwater Sustainability  
Agency

Prepared by:

Stantec Consulting Services, Inc.

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# MID-KAWEAH GROUNDWATER SUSTAINABILITY AGENCY GROUNDWATER SUSTAINABILITY PLAN PUBLIC COMMENT SUMMARY

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## ABBREVIATIONS

DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
Matrix	Comment and Comment Response Matrix
MCR	Multiple Comment Response
MKGSA	Mid-Kaweah Groundwater Sustainability Agency
SGMA	Sustainable Groundwater Management Act of 2014

# **MID-KAWEAH GROUNDWATER SUSTAINABILITY AGENCY GROUNDWATER SUSTAINABILITY PLAN PUBLIC COMMENT SUMMARY**

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Summary

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## **ATTACHMENTS**

Attachment A – Notice to Cities and Counties in the Plan Area

Attachment B – Comment Letters Received on Draft Groundwater Sustainability Plan

Attachment C – Mid-Kaweah GSA Board Meeting Presentation (Nov. 12, 2019)

Attachment D – Mid-Kaweah Groundwater Sustainability Plan Comment and Comment Response Matrix

Attachment E – Tragedy of the Aquifer

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## 1.0 INTRODUCTION

This Public Comment Summary (Summary) describes the process and tools used by the Mid-Kaweah Groundwater Sustainability Agency (MKGSA) to solicit, review, and respond to public and stakeholder comments on its Draft Groundwater Sustainability Plan (GSP); and notify cities and counties within the plan area of MKGSA's intent to adopt the GSP. These public review and notification processes were developed pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA) and the California Department of Water Resources' (DWR) Groundwater Sustainability Plan Emergency Regulations, developed in May 2016.

California Code of Regulations §355.4 provides the basis for DWR's determination of a GSP's compliance with SGMA and whether a GSP is likely to achieve the sustainability goal for the basin. As part of this criteria, DWR will consider:

*(10) Whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan. (§ 355.4(b)(10))*

This document reviews MKGSA actions to notify the public and other interested parties of the availability of the Draft GSP; the period and approach to receive comments to the Draft GSP; and the approach to review, consider and respond to technical and policy comments submitted by the public and other interested parties.

## 1.1 DOCUMENT FORMAT

This Summary is comprised of the following four sections:

- Section 1 – Introduction: Section 1 provides an overview of the purpose and structure of the document, as well as describes the GSP evaluation criteria for addressing comments on the GSP.
- Section 2 – Commenting Process: Section 2 describes the public comment process for the Draft GSP and method by which the MKGSA notified cities and counties within the plan area of the proposed plan.
- Section 3 – Submitted Comments: Section 3 provides an overview of comment letters received on the Draft GSP during the public comment period. The comment letters in their entirety are included as **Attachment B** to this Summary.
- Section 4 – Comment Management and Review: Section 4 describes how the MKGSA reviewed and responded to comment letters received during the public comment period, including the processes for identifying and categorizing individual comments and responding to comments that raised credible technical and policy issues. This section also describes the tool used to manage the comments and comment responses. A copy of the final Matrix is provided at **Attachment C** to this document.

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## 2.0 COMMENTING PROCESS

The MKGSA Board of Directors authorized release of the Draft GSP on July 31, 2019, for a 45-day public comment period that ended September 16, 2019. The Draft GSP was posted on the MKGSA website, as well made available for review at multiple public locations. Written comments on the Draft GSP were accepted by U.S. Mail, hand-delivery or submittal to the Agency's email address at [midkaweah@gmail.com](mailto:midkaweah@gmail.com). This section further describes the Draft GSP notification and public comment process. In addition, it describes the method by which MKGSA notified cities and counties of availability of the Draft GSP, pursuant to California Water Code § 10728.4.

### 2.1 DRAFT GSP RELEASE AND PUBLIC COMMENT PERIOD

The MKGSA solicited public comments from individuals, agencies, and organizations representing beneficial uses and users of groundwater described in Water Code § 10723.2; as well as any other interested members of the public. The Draft GSP was released for public review and comment on Wednesday, July 31, 2019. This marked the beginning of a 45-day public comment period, which ended at 5 p.m. on Monday, September 16, 2019. The MKGSA notified interested parties and members of the public of the release of the Draft GSP and public comment period through posting on the MKGSA website and an email sent out through the Kaweah Groundwater Communications Portal ([www.kaweahgcp.com](http://www.kaweahgcp.com)).

The Draft GSP was available for review on the MKGSA website throughout the public comment period. In addition, hard copies of the documents were made available for review at the following public locations:

- Tulare County Library, located at 200 W. Oak Ave., Visalia
- City of Tulare Library, located at 475 N. M St., Tulare
- Tulare irrigation District, located at 6826 Avenue 240, Tulare

Members of the public were provided multiple methods to provide comment on the Draft GSP. Hard copies of comments could be sent, or hand delivered to the MKGSA mailing address:

- MKGSA, c/o Paul Hendrix; 144 S. L Street, Suite N; Tulare, CA 93274.

Electronic copies of comment could be submitted to the MKGSA email address at [midkaweah@gmail.com](mailto:midkaweah@gmail.com).

### 2.2 NOTICE TO CITIES AND COUNTIES

SGMA (as chaptered in California Water Code § 10728.4) requires that:

*A groundwater sustainability agency may adopt or amend a groundwater sustainability plan after a public hearing, held at least 90 days after providing notice to a city or county within the area of the proposed plan or amendment. The groundwater sustainability agency shall review and consider comments from any city or county that receives notice pursuant to this section and shall consult with a city or county that requests consultation within 30 days of receipt of the notice. Nothing in this section is intended to preclude an agency and a city or county from otherwise consulting or commenting regarding the adoption or amendment of a plan.*

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Pursuant these regulations, the MKGSA notified cities and counties within the GSP area of the its intention to adopt the GSP at least 90 days before adoption of the Final GSP. This notification included a letter sent to the cities of Tulare and Visalia and the county of Tulare on August 13, 2019, provided as **Attachment A** to this Summary. As a courtesy, the MKGSA also provided notice to the California Water Service Co., which serves as the municipal and industrial water purveyor in the City of Visalia. In addition to the letter, cities and counties were notified about release of the Draft GSP via postings on the MKGSA website and the Kaweah Groundwater Communications Portal. The MKGSA did not receive any formal requests for consultation pursuant to § 10728.4.

## 2.3 INTERNAL PEER REVIEW PROCESSES

External to the public comment process managed by MKGSA, some members of the MKGSA Joint Powers Authority conducted internal peer review of the Public Draft GSP as a component the member's review of the document. These peer review processes included retention of consultant services to provide an administrative level review of the Draft GSP. Members that conducted this review included the City of Visalia and the Tulare Irrigation District. The Tulare Irrigation District additionally held 12 "Landowner Roundtable" meetings. The District's purpose for these meetings was to present the Draft GSP to its customers in groups of no more than 12 and receive their comments and observations of the GSP and factors that may affect the District. This input served to inform the District during its administrative review of the Draft GSP.

Eleven of the 12 Landowner Roundtable meetings were designated for District grower/members. One meeting was conducted on request of Self-Help Enterprises with a goal to engage private well operators in Okieville/Highland Acres, an unincorporated community that is developing a small community water system in partnership with Tulare Irrigation District. These meetings were held from August 14 to August 27, 2019, at the District's office in Tulare. Participants of these meetings were advised that comments shared during these meetings were external to the public comment process managed by MKGSA. Participants were encouraged to submit written comments to the MKGSA as they feel appropriate. A total of 66 grower/members participated in the meetings. No private well operators in the Okieville/Highland Acres community accepted the meeting invitation.

Information collected during these meetings was summarized by District staff and provided to MKGSA management and support staff for informational purposes. This information as considered by staff during preparation of the Final Draft GSP, but not formally responded by the MKGSA Advisory Committee. Below is the District's summary of the comments and observations it collected during the Landowner Roundtable meetings.

- How are we accounting for dairy flows? Several dairy landowners explained the complicated nature of moving flows from the confined animal facility to crops for nutrient management and irrigation purposes. They wanted to know if the allocation of groundwater applied to the confined animal space and under SGMA can we limit their pumping to a confined animal facility, which may cause harm to their cows.
- There was a great deal of concern with "white area" pumping surrounding the MKGSA and if we had identified the parcels. Further discussion revolved around how to address over pumping in "white areas" and what will be the timing for the reduction in pumping in these areas.
- We will need to look at each monitoring well carefully to ensure that we allow for an appropriate Minimum Threshold and Measurable Objective that allows for significant declines in dry years. I used KSB-038 as an example and several growers noted that historic readings were below the Minimum Threshold.

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- We need to determine/define what are the actions during a drought period.
- Are we measuring our levels dropping below a Minimum Threshold on a rolling average or just an annual reading? If 1/3 of our wells go below the MT, does SWRCB immediately step in or do we get one year to bring the levels up?
- Some growers are concerned that we are painting too rosy of a picture and that DWR and the SWRCB will not see our work in the same way. I think we need to STRONGLY encourage DWR to collaborate (interactive feedback) during the review process to ensure we are properly explaining our approach and current status.
- Growers fear that DWR and the SWRCB will simply move the bar in regards to acceptance of our plan and sustainability.
- Some growers brought up the City of Corcoran well field. We need to locate this well field and identify if they are pumping from within the MKGSA or GKGSA out to an adjacent GSA.
- The growers are concerned that we are indicating that we have a surplus, but our groundwater levels are declining. Although we have ideas of what is causing it, we may need to devote some thought in the document to walking DWR through a thought process that shows that we are not the problem. The question then becomes, do we throw in who we think it is?
- There was a great deal of discussion and concern that if our groundwater levels continue to decline due to outside forces, the subbasin will be put in probation. Will MKGSA be exposed to the SWRCB fees and enforcement?
- Growers are supportive of moving towards a metering program. They are fearful of using the data for reporting to the State, however, they do recognize the benefits of having a meter on their well.
- Growers are also supportive of an allocation and marketing program to provide the flexibility needed under SGMA.
- One grower had an idea to run the metering, allocation and marketing program under a third-party non-profit model. This would keep the data private and allow it to operate in support of our SGMA goals.

## 3.0 THERE WERE A FEW QUESTIONS OF HOW WE INTEND TO PAY FOR OUR PROJECTS AND ANNUAL COSTS.SUBMITTED COMMENTS

The MKGSA received 13 comment letters on the Draft GSP during the public comment period. Four letters were submitted by individual contributors. Nine letters were submitted from organizations representing beneficial uses and users of groundwater in the region, including state agencies, local and regional governments, private and public water purveyors, and organizations representing disadvantaged communities. **Table 1**, shown below, provides the list of comments that were received on the Draft GSP, organized stakeholder name alphabetically by commenter name. Copies of each comment are provided as **Attachment B** to this Summary.

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**Table 1. Submitted Comments**

Commenter or Agency Name	Commenter Type	Date Comment was Received
Bill Huott	Individual Contributor	8/10/19
California Department of Fish and Wildlife	State Agency	9/12/19
California Water Service	Water Purveyor	9/16/19
Edward Henry	Individual Contributor	9/3/19
Kevin Layne	Individual Contributor	8/13/19
Kings County Water District	Water Purveyor	9/16/19
Leadership Counsel for Justice and Accountability	Non-Governmental Organization	9/16/19
Richard Garcia	Individual Contributor	9/16/19
Self-Help Enterprises	Non-Governmental Organization	9/16/19
The Nature Conservancy	Non-Governmental Organization	9/9/19
Tulare County Resource Management Agency	Local/Regional Government	9/16/19
Various Non-Profit Organizations	Non-Governmental Organization	9/16/19
Westchester Group	Non-Governmental Organization	9/13/19

Following conclusion of the public comment period, MKGSA Board Member and City of Visalia Council Member Greg Collins, provided his fellow board members a two-page document titled “Tragedy of the Aquifer” as an informational item during the Board’s Oct. 8, 2019, meeting. The discussion item included a high-level review of seven suggested approaches to replenish the aquifer. No formal Board vote was taken on the document. The document was referred to staff, presented to the Advisory Committee, and included in this Summary as **Attachment E**.

## 4.0 COMMENT REVIEW AND RESPONSE

This section describes the process and tools the MGKSA used to review and respond to comments on the Draft GSP. Following the close of the public comment period, the MKGSA reviewed each comment letter to identify individual comments on the Draft GSP. Of the 13 letters received, MKGSA staff identified 197 issue-specific comments applicable to the GSP. To organize and manage the review of issue-specific comments, staff created a database, or matrix, that allowed for the categorization, grouping, and response to comments. This comment management approach is described below.

### 4.1 COMMENT MANAGEMENT

This subsection describes the process MKGSA used to categorize each of the comment letters received on the Draft GSP and identify issue-specific comments for review and response. Of those 13 letters received, a total of 197 issue-specific comments applicable to the Draft GSP were identified. Each comment was assigned an individual comment identification number and entered into the database referred to as the Mid-Kaweah GSP Comment and Comment Response Matrix (Matrix), further described below. MKGSA staff then used the Matrix to group technical or policy issues raised on the GSP, identify potential changes to the GSP to address comments, and develop comment responses.

#### 4.1.1 Comment and Comment Response Matrix

The Matrix is an Excel-based database developed and used by MKGSA staff and consultants to categorize and respond to comments submitted on the Draft GSP. **Table 2**, shown below, describes the types of information included in the Matrix. A copy of the completed Matrix is provided as **Attachment D** to this Summary.

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Table 2. Mid-Kaweah Groundwater Sustainability Plan Comment and Comment Response Matrix Columns

Matrix Column	Column Description
Author	Name of agency or organization that signed or submitted the comment letter.
Sub-Category	Topic within the Draft GSP that the comment identifies with, describes, or otherwise raises questions about.
Comment Identification Number (CIN)	Unique identifier assigned to each comment received. A single comment letter may contain multiple individual comments, each with its own comment identification number.
Multiple Comment Response (MCR) number	Comments that were similar in scope were grouped together based on the GSP sections or content they discussed. Each group of comments were assigned an MCR number, identified here.
Priority	Comment grouping to facilitate structured review by Advisory Committee and MKGSA staff.
Description	Short description of the main topic or issues raised in the comment.
Code/Regulation	The code or regulation cited in the comment, if applicable.
Comment	Copies of the comment text directly from the comment letter.
Staff Summary of Comment	Short description of MKGSA and consultant staff's understanding of the comment as it pertains to the GSP.
Response/Recommended Action	Response or recommended action to address the comment.
Response Location in GSP	Location in Draft GSP text changes were made in response to comment, if applicable.

Key:

GSA = Groundwater Sustainability Agency

GSP = Groundwater Sustainability Plan

## 4.1.2 Sub-Categories

To aid the comment management process, MKGSA staff and consultants assigned all comments a sub-category based on primary topic or issue the topic raised. The sub-categories were used to sort comments by topic and assign the appropriate subject-matter expert to develop the comment response. **Table 3** provides a list of the comment sub-categories.

**Table 3. Groundwater Sustainability Plan Comment Sub-Categories**

Acronym	Sub-Category
AL	Pumping Allocations/Metering/De Minimus Extractors/Water Marketing/Extraction – Water Accounting Framework
DC	Disadvantaged Communities/Rural Domestic Users
GA	GSA Organization
GE	General
GL	Groundwater Levels
GS	Groundwater Storage
GP	County General Plan
HM	Hydrogeologic Modeling
IS	Interconnected Surface Waters/ Groundwater Ecosystems/Environmental Beneficial Users – Dependent
LS	Land Subsidence
MA	Management Areas
MU	Municipal Land/Water Use
OR	Groundwater Sustainability Plan Organization
PM	Projects and Management Actions
PO	Public Outreach
SB	Subbasin Characteristics

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WB	Water Budget/Water Accounting Framework
WI	Well Inventory
WR	Water Resources/Water Rights
WQ	Water Quality

## 4.1.3 Multiple Comment Response

Comments of a similar nature were additionally assigned a “Multiple Comment Response” or MCR. A MCR is a single response that applies to multiple comments of a similar nature. **Table 4**, shown below, provides a brief description of each MCR number.

**Table 4. Defined Multiple Comment Response Numbers**

MCR Number	Definition
MCR-1	Phreatophyte extraction definition incorrect
MCR-2	GL Minimum Threshold Definition inconsistent
MCR-3	Non-applicability of ISWs/GDEs, surface water elevation/flow rate depletion data to substantiate
MCR-4	GL lowering Impacts on ISWs/GDEs
MCR-5	Kaweah Subbasin area calculation inconsistent
MCR-6	Prioritization of Water Quality Degradation in Projects/Management Actions
MCR-7	Sustainability goal/Inclusion of environmental beneficial users
MCR-8	Identification/Mapping of ISWs/GDEs
MCR-9	Inventory of GDE vegetation types
MCR-10	GL Minimum thresholds and GDEs
MCR-11	Multiple benefit Projects and Management Actions
MCR-12	Management Areas – GDEs and DACs
MCR-13	GL Minimum thresholds impact on DACs
MCR-14	Rural domestic drinking assistance program
MCR-15	GS/GL relation
MCR-16	Impacts of ISW depletion on deliveries
MCR-17	Identification/mapping of DACs w/ Recharge/Wells/Contaminant Plumes/Monitoring
MCR-18	WQ Monitoring for DACs/rural domestic
MCR-19	Water Accounting Surplus vs Water Budget Deficit, Apparent Contradiction
MCR-20	Water Budget/Water Accounting Framework Definition Inconsistent
MCR-21	Sustainability Goal/Sustainable Management Criteria: Inclusion of DACs/Rural Domestic Beneficial Users
MCR-22	Public Outreach: DACs
MCR-23	Public Outreach: Future, General

Key:

DAC = Disadvantaged Communities  
 GDE = Groundwater Dependent Ecosystem  
 GL = Groundwater Levels  
 GS = Groundwater Storage  
 ISW = Interconnected Surface Waters  
 MCR = Multiple Comment Response  
 WQ = Water Quality

## 4.1.4 Comment Priority

Following completion of Sub-category and MCR assignments to comments, MKGSA staff and consultants conducted a detailed evaluation of the scope, relevance and importance of each individual comment. As part of this evaluation, staff and consultants amended the database to include a draft response to each comment and the applicable GSP

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section. Though this activity, staff and consultants conducted an initial grouping, or prioritization, of these comments based, in part, on their applicability § 355.4(b)(10). These groupings are further described below.

- **“Priority 1”:** Comments were categorized as Priority 1 if they primarily raised editorial issues or could be addressed without requiring further technical evaluations or significant changes to the GSP text. For example, if a comment indicated that a certain passage or section of the GSP could be improved through a closer editorial review, it was given a Priority 1 status. Of the 197 comments, 103 were categorized as Priority 1 comments and addressed directly by MKGSA and consultant staff.
- **“Priority 2”:** Comments were categorized Priority 2 if they required additional evaluation or significant changes to the GSP and considered valid technical or policy issues for focused review. This included comments that referred to content and themes included throughout the GSP and would require more consideration revisions to address. Of the 197 comments received, 75 comments were categorized as Priority 2.
- **Priority 3:** Comments were categorized Priority 3 if they raised substantial technical or policy issues most likely to be subject to § 355.4(b)(10). Of the 197 comments received, 19 were categorized as Priority 3.

## 4.2 REVIEW AND RESPONSE

This subsection describes the approach and process MKGSA and consultant staff used to review, respond, and address comments received on the Draft GSP and approval of amendments to the Draft GSP. This review and response process include a series of public meetings of the MKGSA Advisory Committee and a presentation to the MKGSA Board of Directors. These meetings, and their focus, are as follows:

### 4.2.1 Comment Overview and Response Process Workshop

On Oct. 4, 2019, the MKGSA Advisory Committee held a publicly noticed meeting to take stock of all public comments and to discuss the process by which the comments would be grouped and prioritized. The Committee was prepared to hold several more meetings to reach a consensus vote on a recommendation to the GSA board at its November meeting on how the comments would be recognized and responded to in the draft GSP.

### 4.2.3 Priority 3 Comment Workshop

On Oct. 15, 2019, the MKGSA Advisory Committee held a publicly noticed meeting to review and respond to comments MKGSA staff and consultants had identified as Priority 3 comments. Committee members were additionally invited to amend the priority designations of Priority 1 and 2 comments. No Priority 1 or 2 comments were nominated for Priority 3 status. The 19 comments identified as Priority 3 fell into one of the four sub-categories identified in **Table 5**:

**Table 5. Priority 3 Comments**

Acronym	Sub-Category	No. Comments
DC	Disadvantaged Communities/Rural Domestic Users	6
GL	Groundwater Levels	2
IS	Interconnected Surface Waters/ Groundwater Ecosystems/Environmental Beneficial Users – Dependent	9
WQ	Water Quality	2

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Through a facilitated session, the MKGSA staff, consultants and the Advisory Committee reviewed and provided staff direction, as appropriate, to amend each of the 19 staff-developed responses. These Committee-endorsed amendments were provided to MKGSA staff and consultants for completion and follow-on presentation.

## 4.2.4 Priority 2 Comment Workshop

On Oct. 22, 2019, the MKGSA Advisory Committee held a publicly noticed meeting to review and respond to comments MKGSA staff and consultants had identified as Priority 2 comments. Committee members were additionally invited to amend the priority designations of Priority 1 comments or revisit responses to Priority 3 comments from the prior workshop. No Priority 1 comments were nominated, and Priority 3 responses were retained as-is. The 75 comments identified as Priority 2 fell into 13 categories as listed in **Table 6**.

**Table 6. Priority 2 Comments**

Acronym	Sub-Category	No. Comments
AL	Pumping Allocations/Metering/De Minimus Extractors/Water Marketing/Extraction – Water Accounting Framework	3
DC	Disadvantaged Communities/Rural Domestic Users	5
GL	Groundwater Levels	10
GS	Groundwater Storage	3
HM	Hydrogeologic Modeling	2
IS	Interconnected Surface Waters/ Groundwater Ecosystems/Environmental Beneficial Users – Dependent	20
LS	Land Subsidence	2
MA	Management Areas	4
PM	Projects and Management Actions	3
SB	Subbasin Characteristics	1
WB	Water Budget/Water Accounting Framework	9
WR	Water Resources/Water Rights	12
WQ	Water Quality	1

To facilitate review of these comments, the Advisory Committee accepted staff recommendation to apply the Oct. 4 decisions of Priority 3 comments to Priority 2 comments of the same four categories. This led to a facilitated discussion on review of staff responses to 28 comments in the remaining 9 sub-categories. These Committee-endorsed amendments were provided to MKGSA staff and consultants for completion and follow-on presentation.

## 4.2.5 Comment and Response Recommendations Workshop

On Nov. 5, 2019, the MKGSA Advisory Committee held a publicly noticed meeting to review, modify and approve revisions to comments per Committee direction provided during Oct. 4, Oct. 15 and Oct. 22 workshops. To facilitate this discussion, the consultant team summarized the 94 comments and responses identified as Priority 2 and 3 into four comment “themes” for their review, modification and approval. These themes are as follows:

- Stream Flow Depletion/Groundwater Dependent Ecosystem
- Water Budget/Water Accounting/Misc.
- Small Well Groundwater Level Impacts
- Groundwater Quality Impacts

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These themes, available in detail in **Attachment C**, sought to summarize the major findings and decisions identified in the prior workshops. Committee members were asked to review, debate and modify each theme, before voting to accept the content as the body's recommendation to the MKGSA Board of Directors as guidance to modify the GSP. The Committee completed this activity for the five comment themes and approved each by a unanimous vote.

### 4.2.6 Board of Director Recommendation

On Nov. 12, 2019, the MKGSA Board of Directors held a publicly noticed meeting to receive the recommendation of its Advisory Committee to amendments of the Draft GSP. The Board presentation was led by Advisory Committee Chairman Blake Wilbur, with support of MKGSA staff and consultants. The presentation (**Attachment C**) included a detailed review of each of the five comment theme areas, and a review of the deliberative process and decision of the Advisory Committee. The Board thanked the Chairman and the committee for its efforts and accepted the recommendation on a unanimous vote.

**ATTACHMENT A**  
**NOTICE TO CITIES AND COUNTIES IN THE**  
**PLAN AREA**



Mid-Kaweah Groundwater Sustainability Agency

August 13, 2019

Denise England – Water Resources Program Director  
County of Tulare  
2800 W. Burrel Avenue  
Visalia, California 93291

Subject: Notice of Intent to Adopt GSP

Dear Ms. England:

The Mid-Kaweah Groundwater Sustainability Agency (GSA) hereby provides notice to the County of Tulare of its intent to adopt the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan (GSP or Plan) no earlier than 90 days upon your receipt of this notice. Considerations to adopt this document shall occur as part of a public hearing to be held on or before December 10, 2019. Once adopted, the Plan will govern sustainable groundwater management activities within the jurisdictional boundaries of the GSA for that portion of the Kaweah Subbasin (DWR Groundwater Basin No. 5-22.11). California Water Code §10728.4, pursuant to passage of the Sustainable Groundwater Management Act of 2014, obligates distribution of this notice to any city or county whose jurisdictional area lies within the area of the proposed Plan (see attached map of Mid-Kaweah GSA).

Entities that receive this notice may request to consult on the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan. These requests must be received within 30 calendar days upon receipt of this notice. Written requests for consultation shall be delivered to the person and GSA office address identified below. Requests may also be E-mailed to [jph@midkawah.org](mailto:jph@midkawah.org).

To view the schedule for the public hearing and other outreach activities to receive comments on the Plan, to download a copy of the Public Draft GSP, or receive other information, visit the website [www.midkawah.org](http://www.midkawah.org).

Sincerely,

J. Paul Hendrix  
Manager

Attachment



Mid-Kaweah Groundwater Sustainability Agency

August 13, 2019

Tammy Kelly – District Manager  
California Water Service Company  
216 N. Valley Oaks Drive  
Visalia, California 93292

Subject: Notice of Intent to Adopt GSP

Dear Ms. Kelly:

The Mid-Kaweah Groundwater Sustainability Agency (GSA) hereby provides notice to the Calif. Water Service Company of its intent to adopt the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan (GSP or Plan) no earlier than 90 days upon your receipt of this notice. Considerations to adopt this document shall occur as part of a public hearing to be held on or before December 10, 2019. Once adopted, the Plan will govern sustainable groundwater management activities within the jurisdictional boundaries of the GSA for that portion of the Kaweah Subbasin (DWR Groundwater Basin No. 5-22.11). California Water Code §10728.4, pursuant to passage of the Sustainable Groundwater Management Act of 2014, obligates distribution of this notice to any city or county whose jurisdictional area lies within the area of the proposed Plan (see attached map of Mid-Kaweah GSA). Mid-Kaweah has also chosen to provide said notice to Calif. Water Services Company, given its role as the water purveyor for the City of Visalia, a member of this GSA.

Entities that receive this notice may request to consult on the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan. These requests must be received within 30 calendar days upon receipt of this notice. Written requests for consultation shall be delivered to the person and GSA office address identified below. Requests may also be E-mailed to [jph@midkawah.org](mailto:jph@midkawah.org).

To view the schedule for the public hearing and other outreach activities to receive comments on the Plan, to download a copy of the Public Draft GSP, or receive other information, visit the website [www.midkawah.org](http://www.midkawah.org).

Sincerely,

J. Paul Hendrix  
Manager

Attachment



Mid-Kaweah Groundwater Sustainability Agency

August 13, 2019

Randy Groom – City Manager  
City of Visalia  
220 N. Santa Fe Street  
Visalia, California 93291

Subject: Notice of Intent to Adopt GSP

Dear Mr. Groom:

The Mid-Kaweah Groundwater Sustainability Agency (GSA) hereby provides notice to the City of Visalia of its intent to adopt the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan (GSP or Plan) no earlier than 90 days upon your receipt of this notice. Considerations to adopt this document shall occur as part of a public hearing to be held on or before December 10, 2019. Once adopted, the Plan will govern sustainable groundwater management activities within the jurisdictional boundaries of the GSA for that portion of the Kaweah Subbasin (DWR Groundwater Basin No. 5-22.11). California Water Code §10728.4, pursuant to passage of the Sustainable Groundwater Management Act of 2014, obligates distribution of this notice to any city or county whose jurisdictional area lies within the area of the proposed Plan (see attached map of Mid-Kaweah GSA).

Entities that receive this notice may request to consult on the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan. These requests must be received within 30 calendar days upon receipt of this notice. Written requests for consultation shall be delivered to the person and GSA office address identified below. Requests may also be E-mailed to [jph@midkawah.org](mailto:jph@midkawah.org).

To view the schedule for the public hearing and other outreach activities to receive comments on the Plan, to download a copy of the Public Draft GSP, or receive other information, visit the website [www.midkawah.org](http://www.midkawah.org).

Sincerely,

J. Paul Hendrix  
Manager

Attachment



Mid-Kaweah Groundwater Sustainability Agency

August 13, 2019

Rob A. Hunt – City Manager  
City of Tulare  
411 E. Kern Avenue  
Tulare, California 93274

Subject: Notice of Intent to Adopt GSP

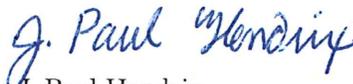
Dear Mr. Hunt:

The Mid-Kaweah Groundwater Sustainability Agency (GSA) hereby provides notice to the City of Tulare of its intent to adopt the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan (GSP or Plan) no earlier than 90 days upon your receipt of this notice. Considerations to adopt this document shall occur as part of a public hearing to be held on or before December 10, 2019. Once adopted, the Plan will govern sustainable groundwater management activities within the jurisdictional boundaries of the GSA for that portion of the Kaweah Subbasin (DWR Groundwater Basin No. 5-22.11). California Water Code §10728.4, pursuant to passage of the Sustainable Groundwater Management Act of 2014, obligates distribution of this notice to any city or county whose jurisdictional area lies within the area of the proposed Plan (see attached map of Mid-Kaweah GSA).

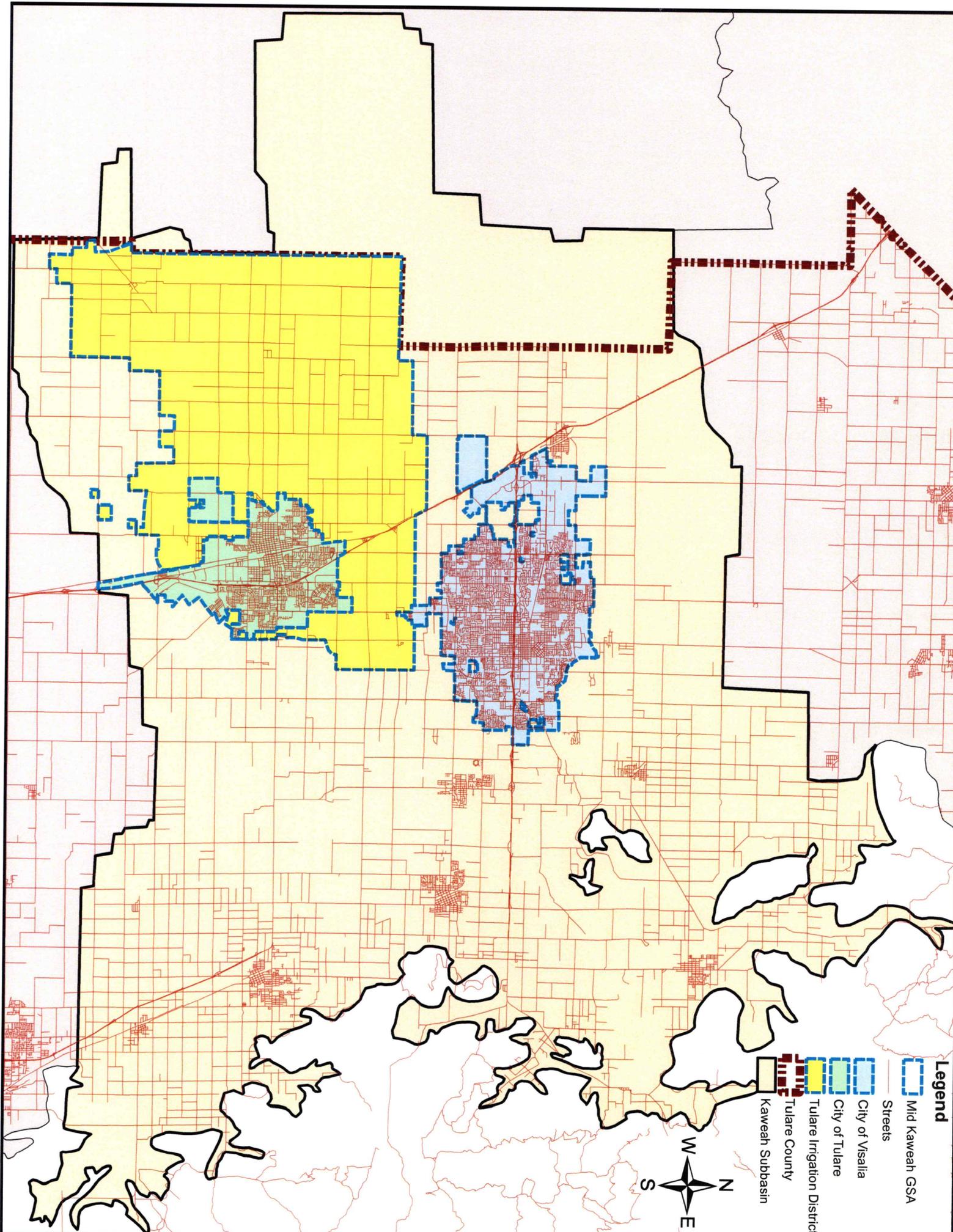
Entities that receive this notice may request to consult on the 2020 Mid-Kaweah GSA Groundwater Sustainability Plan. These requests must be received within 30 calendar days upon receipt of this notice. Written requests for consultation shall be delivered to the person and GSA office address identified below. Requests may also be E-mailed to [jph@midkawah.org](mailto:jph@midkawah.org).

To view the schedule for the public hearing and other outreach activities to receive comments on the Plan, to download a copy of the Public Draft GSP, or receive other information, visit the website [www.midkawah.org](http://www.midkawah.org).

Sincerely,

  
J. Paul Hendrix  
Manager

Attachment



**Legend**

Mid Kaweah GSA

Streets

City of Visalia

City of Tulare

Tulare Irrigation District

Tulare County

Kaweah Subbasin



**ATTACHMENT B**  
**COMMENT LETTERS RECEIVED ON DRAFT**  
**GROUNDWATER SUSTAINABILITY PLAN**



**Public comment water sustainability**

1 message

**"B. "Clean is Less Mean" H."** <whuott2013@gmail.com>

Sat, Aug 10, 2019 at 11:20 AM

To: midkaweah@gmail.com

We need to create a reservoir that was the natural way thus valley was constructed and discovered.  
A Tulare lake size reservoir, all this water should never flush to the ocean!  
Never did, it filled Tulare Lake!  
Come on.  
We has a good year but now we could have seven years drought!  
No cushion, no backup, no reservoir!

Bill Huott  
Visalia.

Sent from my iPad

BH-001



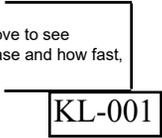
**GSP**

1 message

**Layne, Kevin** <kevin.layne@farmcreditwest.com>  
To: "midkaweah@gmail.com" <midkaweah@gmail.com>

Tue, Aug 13, 2019 at 5:18 PM

I just reviewed your recently released GPS. Has anyone put together an abridged version with the highlights that I could easily share with my customers and coworkers? I'd love to see something that explained how many acres of recharge basins were going to be added and how many acre feet they would drink, how much pumping is going to have to decrease and how fast, and how many acres are expected to come out of production and the timeline for that.



Thanks,

Kevin

CONFIDENTIALITY NOTICE: This e-mail transmission may contain confidential information. This information is solely for the use of the individual(s) or entity to whom or which it was intended. If not an intended recipient, any review, copying, printing, disclosure, distribution or any other use is strictly prohibited. If you have received this email in error, please immediately notify the sender by reply e-mail. Please delete this e-mail from your files if you are not the intended recipient. Thank you. This institution is an equal opportunity provider and employer.

Comments to the Public Review Draft of the MKGSA  
Groundwater Sustainability Plan (GSP)

Submitted on September 3, 2019

A handwritten signature in blue ink that reads "Edward T. Henry, DVM". The signature is written in a cursive style with a horizontal line underneath it.

Edward T. Henry, DVM

**Page 1-1**

**1.1.2 Executive Summary**

1.1.2—“*occupying some 700 sq miles*”. Simple calculation: 700 sq miles x 640 acre/sq mile = 448,000 acres within the KSB. Current accepted KSB acreage is 441,000 acres. So which figure is the most accurate? If the 441,000 acres is correct, then the “*occupying some 700 sq miles*” needs to be changed to “689 sq miles” to be more accurate (441,000 acres divided by 640 acre per sq mile = 689 sq miles).

EH-001

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**Page 1-2**

Top of the page—should add in “*possible degraded individual septic systems as the result of age, poor maintenance, and/or lack of routine service.*” See attachment from Washington State Department of Health, *How Nitrogen from Septic Systems Can Harm Water Quality*.

<https://www.doh.wa.gov/Portals/1/Documents/4450/337-142-Nitrogen-Removal-from-OSS-FactSheet.pdf> (See Attachment A)

EH-002

Would add in “minimum” threshold (MT) and “measurable” objective (MO).

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**Page 1-4**

1.4.1—Kaweah Subbasin (696 sq miles). By calculation: 696 sq miles x 640 acres/sq mile = 445,000 which is different than section 1.1.2 at “*700 sq miles*” which calculates/equates to 448,000 acres in the KSB. There needs to be agreement and accuracy on the total acreage within the KSB.

EH-003

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**Page 1-9**

**Figures 1-6 (Domestic) and 1-7 (Production).** Both of these figures show these two types of wells within the jurisdictional boundaries of Tulare and Visalia. With specific regard to **Figure 1-7 (Production)**, it is surprising that there are agriculture production wells within the jurisdictional boundaries of both of these cities. Is this data accurate?

EH-004

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**Page 1-15**

**1.4.3.3 City of Tulare General Plan**

*The Conservation and Open Space Element of the Tulare General Plan also addresses the issue of water resources for the City. One of the element’s objectives is to “ensure a reliable, adequate water supply to sustain a high quality of life, while protecting and enhancing the environment.”*

EH-005

In this section of the MKGSA GSP in the Tulare General Plan it states: *to “ensure a reliable, adequate water supply to sustain a high quality of life, while protecting and enhancing the environment.”* “**protecting and enhancing the [Tulare’s] environment**” to include the city’s “urban forest” is critical to *“a high quality of life”*. What is an “urban forest”? First, there are two major components—the public “urban forest” (parks and other city-owned trees, major shrubs and plants for which the city is charged with caring for and maintaining), and the private “urban forest” (residential, commercial, industrial, institutional trees and major shrubs and plants). One should not have priority of the other as both are very important to a city’s overall general health and well-being. An “urban forest” can be defined and should include all major trees, shrubs and plants within a city’s jurisdictional boundaries. It’s that flora environment within a city which would be very difficult and costly to replace in the short-term no matter who owns them.

Unfortunately many (probably greater than 75%) of a city’s “urban forest” trees (public and private) are “lawn trees”. Lawn trees are those trees that at being watered secondarily to lawns—they only receive water because the lawn is being watered—they are direct beneficiaries of the lawn watering. If there are major mandatory reductions in outdoor landscape and lawn watering, then those trees won’t receive adequate water and will become stressed and subject to a variety of stress-related diseases and infestations and possibly die. Lawns are easily rejuvenated by just reapplying water and possibly over-seeding but once major trees and shrubs are lost, they are expensive to remove and replace plus it’ll be years before they (replacements) reach maturity and provide maximum “urban forest” benefits. Dead mature tree removal is expensive costing anywhere from \$800 to \$1,200 per tree. This will be an added financial burden to residential homeowners especially since Tulare is designated as a “disadvantage community” (see **Page 1-25, 1.5.2.11 Disadvantaged Communities** *“The City of Tulare has been identified as a Disadvantaged Community,...”*). The use of a city’s municipal groundwater supply is a “reasonable and beneficial” of water in order to have a viable “urban forest”.

“Environmental Stewardship” is term originally coined by UC Davis. With regard to a city’s “urban forest”, this term has application in that there are two important components. One is “Conservation” and the other is “Preservation”. Conservation of a city’s groundwater supply must be balanced with the Preservation of a city’s “urban forest”. With SGMA the focus is sustainability of groundwater but little consideration has been given to preservation of a city’s “urban forest” (as well as agriculture’s “rural forest”). Draconian mandatory reductions in outdoor landscape water usage will have devastating affects on a city’s (Tulare and Visalia) “urban forest”. A resultant massive die-off in the range of 20-40% or more of trees (and major shrubs and plants) is unacceptable for any city—there has to be a balance, an “Environmental Stewardship” approach (Conservation + Preservation).

There needs to be a “Double E” approach for Tulare (and Visalia) in order to maintain and have its “urban forests” thrive. The first “E” is for Education. Educate the residents of Tulare just how important the city’s “urban forest” is. Educate them on water conservation and efficiency measures such as “Cycle-Soak” watering regimes that can be

applied to outdoor landscape water usage (<https://crconserve.com/188/Cycle-Soak> Note: this website is listed only as an example of the educational and informational resources available on the internet regarding “Cycle-Soak” methods. Search by “Cycle-Soak” or “Cycle & Soak”), and the “Tree Ring Irrigation Contraption—TRIC”, (<https://ccuh.ucdavis.edu/tric>). (Note: there are soaker hose setups of various lengths that will do the same thing as TRIC that can be purchased for substantially less than the TRIC product at Lowe’s, The Home Depot, Tractor Supply, etc.) Posts of this sort of information and/or web links to this information should be on the city’s website. Use informational flyers in the city’s utility bill several times annually. Use social media. Engage with the UC Cooperation Extension’s Tulare-Kings County Master Garden Program as an additional educational resource. ([https://ucanr.edu/sites/UC\\_Master\\_Gardeners/](https://ucanr.edu/sites/UC_Master_Gardeners/) and [https://ucanr.edu/sites/UC\\_Master\\_Gardeners/Drought\\_Information/](https://ucanr.edu/sites/UC_Master_Gardeners/Drought_Information/))

The second “E” is for Enforcement. Unfortunately, Education will not reach all residents, businesses, etc. For those that are just not informed (or don’t want to be) or are just plain defiant regarding water usage, this approach usually is a good incentive—it hits their wallet. There’s lots of unnecessary water wastage and abuse daily—water running in the gutter—not just some over-spray onto a driveway or sidewalk which is often unavoidable but 10s to 100s of gallons unnecessarily flowing into the gutter, and watering off-schedule and at the wrong time of day particularly when evaporation rates are the highest. This wastage/abuse is not limited to the private sector, it’s also seen on the city’s side—they’re guilty too. They need to get their own house in order before being too heavy handed on the private sector. Hopefully after the first citation there will be an incentive to come onboard with the Educational portion of the “Double E” approach.

A number of cities in California have a department or division of Urban Forestry. Visalia has a Parks & Urban Forestry Division but not Tulare—Parks only but not Urban Forestry. One recommendation is that Tulare rapidly moves forward in establishing an Urban Forestry Division.

Here is a small list of benefits attributed to maintaining a city’s “urban forest”:

--Trees (all plants) produce oxygen, clean the air, cool the air and reduce global warming by removing CO<sub>2</sub> (remember that CO<sub>2</sub> is plant food—without it there wouldn’t be trees and other plants including the vegetables we eat).

--Trees and sidewalk gardens reduce flooding and water pollution

--Trees and sidewalk gardens increase revenues in shopping districts

--Trees make the wait for a bus feel shorter. The more mature trees are present, the shorter the wait time is perceived.

--Street trees and sidewalk gardens create a physical and mental barrier between the street and the sidewalk, keeping pedestrians, children and pets out of harm’s way.

- Street trees and sidewalk gardens provide a natural habitat for birds and insects.
- Street trees absorb traffic noise and increase privacy.
- Street trees and sidewalk gardens build neighborhood and civic pride.

For a more extensive list of resources on this topic, do a Google search on “the value of an urban forest”.

Tulare’s groundwater usage compared to the Sustainable Yield for the KSB is only 2.7% (Tulare annually pumps slightly less than 18,000 AF—data from the City of Tulare. The Sustainable Yield for the KSB is approximately 660,000 AF—date from MKGSA GSP—Public Review Draft, Page 6-3 Table 6-2: GSA Apportionment. Calculations: 18,000 AF divided by 660,000 AF = 2.7% of Sustainable Yield.) Looking at Tulare’s groundwater pumping relative to the Total Net Extraction for the KSB is 2.25% (18,000 AF divided by 798,400 AF from Table 32, Page 109, Basin Setting Components Draft March 2019 Revision) and for the MKGSA, Tulare’s percentage is 9.36% as a percent of the Total Net Extraction (18,000 AF divided by 192,200 AF from Table 2-1, Page 2-3, MKGSA GSP—Public Review DRAFT).

Lastly, the average annual groundwater pumped from 2010-2017 on an AF/acre of land [within their respective jurisdictional boundaries] for Tulare and Visalia was 1.30 AF/acre and 1.32 AF/acre, respectively. Whereas during that same time period the total applied water for crop irrigation purposes within the Tulare Irrigation District (TID) was approximately 3.20 AF/acre with 2.14 AF/acre coming from groundwater pumping. The two cities, individually, are pumping about 39% less groundwater than the growers in the TID. If the Sustainable Yield (SY) on an AF/acre basis within the KSB is around 1.50 AF/acre (660,000 total AF SY for KSB divided by 441,000 total acres within the KSB = 1.496 rounded up to 1.50 AF/acre) then both cities pumped less than the SY on an AF/acre basis: Tulare at 1.30 AF/acre and Visalia at 1.32 AF/acre versus 1.50 AF/acre for the KSB. (NOTE: Data on groundwater pumping was obtained directly for the City of Tulare, the City of Visalia, and the TID for that time period 2010-2017.)

To impose heavy-handed restrictions of outdoor landscape usage is grossly unnecessary and would have very negative impacts on maintaining the viability of Tulare’s “urban forest”. It is hoped that the City of Tulare recognizes the “reasonable and beneficial use” of landscape watering, and now the State needs to be convinced of its importance also. California cities are easy targets as they are required to report groundwater pumping (metered pumping), and to impose cutbacks in the area of 30% is only a fraction of all groundwater pumping. The Public Policy Institute of California (PPIC) has stated that urban water usage is only about 10%-12% of the total water usage in California. The above comments could also be included in **1.5.2 -- Beneficial Uses and Users on Page 1-23.**

At the bottom of the page, “...*Communication & Engagement (C&E) Plan, developed by Stantec for MKGSA and adopted on August 14, 2018 and included as Appendix 1C.*” The posted document in **Appendix 1C** has a date of August 7, 2018, Draft: Version 4, rather than the **August 14<sup>th</sup>** date cited in the above quoted text. There should or must be a later version to reflect the noted date of August 14, 2018, as the database of the August 7, 2018 document is definitely not up-to-date. The last entry in that database of August 7, 2018, is the Waksache Tribe. In **Appendix D: Communications and Engagement Activities Database** version that I have there are a number of **Organization Names** following the Waksache Tribe entry. Those missing organizations in the August 7, 2018 version are in my version are the: Tulare County Agricultural Commissioner; University of California Cooperative Extension (Tulare and Kings County Master Gardener Program); University of California Davis Veterinary Medicine Teaching and Research Center; Western United Dairymen; Milk Producers Council; and the California Milk Advisory Board.

EH-006

Also it’s probably too late for this version of the MKGSA GSP draft, but in the future it would be very helpful when a **Figure, Table, Appendix**, etc. is referenced that one could move the cursor to that item and click on it and it would take you directly to that item. Right now, one has to get out of a document and search in the Table of Contents in order to go to the referenced item(s)—very inconvenient and time consuming. I had to do a lot of searching (and time consuming) to find **Appendix 1C** noted above. Clicking directly on **Appendix 1C** would have been much more efficient.

Also see **Page 1-26**, the last sentence of the last paragraph. “*All outreach efforts and engagement activities were tracked in a Community Engagement and Activities Database (CE & AD) that was continuously monitored and updated, consistent with DWR Emergency Regulations §354.10 (b) and §354.10 (d).*” As noted above, the Communications and Engagement Activities Database is not up-to-date.

**1.5.2.6 Municipal and Industrial Well Operators**

“*The City of Tulare and the City of Visalia account for about 20 and 30 percent of the land area within the MKGSA, respectively.*” More accurately, Tulare’s land area within the MKGSA is **12.7%** (13,631 acres divided by 107,000 acres in MKGSA) and Visalia’s land area is **21.7%** (23,197 acres divided by 107,000 acres in MKGSA) for a total urban acreage of approximately 37,000 acres or **35%** (~37,000 acres divided by 107,000 acres) of the MKGSA acreage.

EH-007

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**Page 2-2**

**2.3 GSA Water Budget**

In the first sentence of the second paragraph starting with “...*Section 6 of this GSP...*” – after “Section 6” should insert reference to **Table 6.2** so as to read “...Section 6 **in Table 6.2** of this GSP...”. By adding in **Table 6.2** makes for better clarity.

EH-008

Also see on **Page 6-3 (Section 6 Water Supply Accounting)** in the last sentence, “...*Yet, as acknowledged in Section 2 of this Plan,...*”, reference to **Table 2-1** should be inserted after “Section 2” so as to read “...*Yet, as acknowledged in Section 2 in Table 2-1 of this Plan,...*”. By adding in **Table 2-1** makes for better clarity.

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**Page 2-4**

**2.4 Management Areas**

With regards to the 4<sup>th</sup> bullet point, “*Financial contributions by each Member towards projects may depend on an evaluation of existing water management agreements among them and on the water accounting framework (Section 6) which will define the water budget components of each Member. These contributions may not be equal and would therefore vary depending on the management area.*”. It states that “*the water accounting framework (Section 6) which will define the water budget components of each Member.*”. Can further explanation be given as to how the “water [supply] accounting framework” (WSAF), **Table 6-2 in Section 6**, will define the “water budget”, **Table 2-1 in Section 2**? How are they related? I thought each one was independent of the other—the WSAF being based on a legal construct concept/definition whereas the water budget is the physical movement of water? It is curious that by combing those two figures for the MKGSA there is essentially a 50,000 AF range (swing) from a +38,000 AF surplus in the WSAF (**Table 6-2**) to a -13,000 AF deficit in water budget (**Table 2-1**). So is/are WSAF data/inputs considered the independent variable (driver), and then the water budget would then be considered the dependent variable of the WSAF? With the approximate -13,000 AF deficit in the water budget is this the more realistic figure/calculation that should be used by the three management areas (Tulare, Visalia, & TID) when establishing Minimum Thresholds and Measurable Objectives?

EH-009

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**Page 3-3**

**3.2.1 Causes leading to Undesirable Results**

At the end of the first sentence should add after “...*interconnected surface waters...*” the 6<sup>th</sup> Undesirable Result which is “*seawater intrusion*”. All 6 Undesirable Results (UR) should be listed in this opening sentence as seawater intrusion is the last listed UR in section **3.2.1.6 Seawater Intrusion** at the bottom of the page.

EH-010

### 3.2.1.1 Groundwater Levels

From the Sustainable Management Criteria – BMP document, November 2017, page 4, under the heading ***Sustainability Indicators***, the first indicator, “Chronic lowering of groundwater levels...” I would like to add a direct quote from there to the end of the sentence at the top of **Page 3.4** from this section of the BMP which states, “***Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.***” A lot of people on these GSA boards, committees, etc. are not aware of the above "wiggle room" statement allowed by the State--this is a very important point. To me, the State recognizes that agriculture may have to overdraft during a declared drought period in order to be economically sustainable but then it must make-up for that overdraft in normal and wet years. After all, the primary purpose of SGMA is to stop the chronic lowering of our groundwater, and we have until 2040 to bring our groundwater into sustainability.

EH-011

In **Section 3.2.1.1 Groundwater Levels** should now read, “*Undesirable results associated with groundwater level declines are caused by over-pumping or nominal groundwater recharge operations during drought periods such that groundwater levels fall and remain below minimum thresholds. Over-pumping and lack of recharge is area specific, and some GSA Management Areas experience greater adverse impacts than others. [However], Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.*” . (Note: The bold, italic insert above is from the Sustainable Management Criteria – BMP document, November 2017, page 4)

Also note that on **Page 5-2, Section 5.3.1.2 Undesirable Results** has the complete text for the definition of undesirable results for groundwater elevations (including the “...***Overdraft during a period of drought...***” caveat sentence for additional clarification): “***Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.***”

-----  
Page 3-4

### 3.2.1.3 Land Subsidence

It states, “...***Over-pumping during drought periods, which may result in new lows in terms of groundwater elevations, is of particular concern based on current scientific understanding of subsidence trends in this region. Regional correlations of water levels***”

EH-012

*v. subsidence trends remain difficult to ascertain... ” and yet on Page 4-6, Section 4.2.3 Representative Monitoring, in the second sentence of the second paragraph it states, “...The USGS and DWR have utilized changes in groundwater elevations to estimate changes in storage and have demonstrated a correlation between groundwater elevation and subsidence... ”. This appears to infer a stronger correlation of groundwater elevations and subsidence than what was stated in Section 3.2.1.3 where it states, “...Regional correlations of water levels v. subsidence trends remain difficult to ascertain... ”. So for the Kaweah Subbasin, in general, and the MKGSA, in particular, how strong is the correlation? Because of differential subsidence and regional effects on critical infrastructure, groundwater elevations may or may not have a good or strong correlation with land subsidence—it that correct? It’s my understanding that within the KSB there are some regions of strong correlations for groundwater elevations and land subsidence, and for other regions the correlations are quite weak? Is the language in those two sections in conflict with each other?*

EH-012  
(contd.)

Also see Page 4-15, Section 4.10.1.3 Land Subsidence Data Gaps where it states, “...Additionally, there was not sufficient data to find a good correlation between pumping and land surface subsidence... ”. With this text there is some conflicting information to the casual reader on the relationship between groundwater elevations [due to pumping] and land subsidence. (NOTE: Perhaps I’m “beating a dead horse” here with semantics and parsing words in those three above referenced sections on the correlation between groundwater elevations and land subsidence. What will DWR accept here? As noted there are data gaps and perhaps by 2025 with better monitoring sites and technology there will be a better understanding of that relationship between groundwater elevations and subsidence whether for better or worse—meaning a more positive correlation or a less positive one, or good in one region and not good in another.)

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Page 5-2

### 5.3 Minimum Thresholds

#### 5.3.1 Minimum Thresholds – Lowered Groundwater Levels

##### 5.3.1.1 Overview

In the third sentence of the first paragraph should be inserted “**minimum threshold (MT)**” before “...groundwater..” so as to read, “...If any of the representative monitoring wells fall below the **minimum threshold (MT)** groundwater elevation in its respective zone, undesirable results could occur...”.

EH-013

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Page 5-5

### Table 5-3: Summary of Groundwater Level Sustainability Management Criteria for MKGS

In the first row under the heading of Well ID, KSB-0922, and under the Measurable Objective heading, the fmsl figure/number is listed as a minus 19 (-19) which is incorrect as it should be positive 19 fmsl. In Appendix 5B Groundwater Level

EH-014

**Sustainable Management Criteria Hydrographs** the first hydrograph is for well **KSB-0922** which definitely shows a Measurable Objective of +19 fmsl and not a negative figure. Of the 42 listed Well IDs in **Table 5-3**, well **KSB-0922** is the only well I compared or cross-checked the numbers to the hydrographs shown in **Appendix 5-B**. (Due to the tediousness of going completely through each well in that table and comparing/cross-checking them to the hydrographs, and the time constraints of thoroughly going through this GSP, I did not examine the data for each of the other 41 wells listed. Hopefully well **KSB-0922** is the only well in **Table 5-3** in incorrect data.)

EH-014  
(contd.)

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**Section 5 Appendices:**

Although the following comments may be out of contextual order but while in **Section 5 Appendices** (from above), I also looked at **Appendix 5D: Water Storage Additions – An Alternative Approach**. In **Figure 1: Hypothetical Representation of Measurable and Optimal Objectives** (on the last page), the four **Interim Milestone** numbers in parenthesis are shown as positive numbers. Shouldn't they be listed as negative numbers as all are below zero (0) with regards to storage depletion on the y-axis? They should be -21, -33, -40, & -42 TAF. Also the **Storage Depletion** label/units in parenthesis should be (TAF) rather than the (AF) as currently shown.

EH-015

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**Page 5-7**

In the paragraph beginning with the sentence, "...*The results of this well impact analysis...*", there is reference to "...*Figure 5-2 is an example plot showing 144 domestic wells in Hydrogeologic Zone 2...*". None of the plots and statistical well summaries categorized by zone (1-10) have listings by **Figures** which makes it difficult to locate what is listed as **Figure 5-2**. Can this be corrected to add a **Figure x.x**, accordingly, to each of the plot and statistical well summaries? Also not seeing the well impact evaluation summaries referred to in the following sentence, "...*The well impact evaluation summaries for all zones (Appendix 5C) indicate that 18 percent of agricultural wells, 9 percent of public wells, and 21 percent of rural residential wells including domestic wells...*". There is no summary for all zones—only plots by each zone without **Figure x.x** assignments.

EH-016

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**Page 5-13**

**5.3.3 Minimum Threshold– Degraded Water Quality**  
**5.3.3.3 Minimum Thresholds**

In the next to the last sentence of the last paragraph of this section on degraded water quality (**Page 5-13**) it states, "...*The relationship between groundwater levels and degradation trends, if any, is site-specific.*". At the June 14, 2019, meeting of the GKGSAs Combine Meeting of the Rural Communities Committee and Stakeholder Committee, Agenda Item 4 (handout), there were a total of 13 data graphs presented from various HZs in the KSB: 3 for Arsenic and 10 for Nitrates. All 13 graphs showed either a very poor correlation and/or no correlation between groundwater levels and water quality

EH-017

for those 2 constituents/substances. It is paramount that all GSAs in the KSB are not in some way or another held “hostage” to [degraded] water quality issues. This lack of correlation may perhaps be unique to the KSB (but doubtful), and water quality issues should not be the driver of projects and management actions that would have a positive outcome on preventing the undesirable results of other sustainability indicators, particularly groundwater levels, groundwater storage, and land subsidence.

EH-017  
(contd.)

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**Page 5-20**

**5.4.1 Groundwater Level Measurable Objectives**

In the third to the last sentence in the last paragraph on Page 5-20, it states, “...MKGSA anticipates that coordination will focus on the Management Areas where water budgets remain in deficit, depending on degree...”. Obviously there is a water budget for the MKGSA but are there also individual waters budgets for the 3 Management Areas—City of Tulare, City of Visalia, and TID? If there are separate water budgets for each Management Area, when will they be published? This is the first I’ve heard of additional water budgets [within the MKGSA], and I may be totally mis-reading that sentence.

EH-018

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**Page 5-21**

**5.4.2 Groundwater Storage Measurable Objectives**

In the second sentence of the paragraph following the bullet points it states, “...**Figure 5-3** shows the results of this analysis indicating that the measurable objective has 641,000 AF in storage at 2040, and the optimal objective has 1,356,000 AF in storage at 2040...”. When going back to **Figure 5-3** on **Page 5-10**, that figure shows the Optimal Objective at 1,340,000 AF rather than the number of 1,356,000 AF cited above—that’s a difference of 16,000 AF (which is almost the amount of groundwater pumped annually by the City of Tulare at roughly 18,000 AF). Which number is correct?

EH-019

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**Page 5-21**

**5.4.3 Water Quality Measurable Objectives**

In the second sentence of first paragraph under the heading, **5.4.3 Water Quality Measurable Objectives** it states, “...All future projects and management actions implemented by the MKGSA are designed to avoid causing further groundwater quality degradation...”. It’s my firm understanding that the primary charge of SGMA is to stop the chronic lowering of groundwater which will be accomplished through projects and management actions. Projects and management actions most likely will always benefit groundwater quality but there’s also a small risk that somehow it (water quality) may be negatively impacted such as unintentional plume migration. I’m very concerned that stating “...all future projects and management action...are designed to avoid causing further groundwater water degradation...” could be a potential segue into litigation through misinterpretation, and that sentence should be stricken from this GSP in the final

EH-020

document version for submission to DWR. Again, the design of future projects and management actions should be heavily geared towards the sustainability indicators of chronic lowering of groundwater levels, loss of groundwater storage, and land subsidence through preventing or eliminating those undesirable results—hopefully groundwater quality will be a [secondary] beneficiary of those projects and management actions, and not the primary focus as currently stated above. Again, it should be noted that there is a very poor correlation between groundwater levels and water quality (for Arsenic and Nitrates) as shown in the graphical data presented at the meeting of the GKGSA’s Combine Meeting of the Rural Communities Committee and Stakeholder Committee on June 14, 2019 (see reference to **Page 5-13** above.)

EH-020  
(contd.)

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**Page 5-23 Table 5-3**

In **Table 5-3** in the **Measurable Objective** column there are no units, i.e. “inches”, nor is that a timeframe. Can those additions be made to the **Measurable Objective** column? Also it’s not clear as to how the **Measurable Objective** numbers were determined.

EH-021

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**Page 6-4**

**6. Water Supply Accounting**

**6.3 Water Accounting Framework Allocation**

In the third sentence of the first paragraph it states, “...*Whereas the average water accounting framework water balance is positive, the comparable hydrogeologic water budget is negative by about 13,000 AF...*”. After the word “positive” should insert “**at around 38,000 AF**”, in order to be consistent with the negative “13,000 AF”. With the insert “**at around 38,000 AF**” that sentence would now read, “...*Whereas the average water accounting framework water balance is positive **at around 38,000 AF**, the comparable hydrogeologic water budget is negative by about 13,000 AF...*”. This would help the reader to see both the positive and negative number for better clarity.

EH-022

With regard to **Figure 6.1**, several additions would make this figure more understandable. First the label on the y-axis needs to be **Groundwater Storage**, and the “*Change in Acre-Feet*” needs to be in parenthesis, “(*Change in Acre-Feet*)”. Lastly, to the right of the two horizontal lines, in the upper line, **Shared/Owner Ave**, put in the 38,000 AF figure to reflect what is in the text above, and for the lower line, **Hydrogeologic Ave**, put in the negative/minus -13,000 AF, again to be consistent with the text description above on **Page 6.4** and give the reader better clarity of that figure.

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**Page 7-1**

**7. Projects and Management Actions**

**7.1 Summary**

EH-023

In the first sentence (4<sup>th</sup> line) of the second paragraph on **Page 7.1** it states, “...*future urban and agricultural conservation,...*” and yet on **Page 7.2**, in the **Table/Chart** under the column heading, **Management Actions:**, for the bullet point, **Agricultural Water Conservation and Management Program**, none of the four boxes are checked for the 4 Sustainability Indicators and states, **Not Applicable**, whereas the bullet point, **Urban Water Conservation Program**, 2 of the Sustainability Indicators, **GW Levels and Reduction in Storage**, are checked. Why does the **Agricultural Water Conservation and Management Program** get a pass on conservation? I would have thought that all 4 Sustainability Indicator boxes for the **Agricultural Water Conservation and Management Program** would have been checked—after all agriculture is by far and away the largest extractor of groundwater. This is not to pit ag versus urban but putting an unrealistic burden on urban areas (cities) is counter productive. I’ll refer you back to my comments on Pages 2 through 4 regarding the “urban forest” and the actual urban water usage.

EH-023  
(contd.)

Also under the heading of **Extraction Measurement Program** it states **Not Applicable**. Although SGMA doesn’t require “metering”, the regulatory agencies will never fully have an accounting of groundwater extraction until there is metering. All the “players” who have “straws in the punch bowl” need to be metered at some point—realistically by 2025. Meters will be part of the costs of doing business. Those “players” who are designated or self-designated as “*de minimis*” (less than 2 AF annually) need to prove they are truly *de minimis*, and the only accurate and reliable way to demonstrate that is by being metered. Yes, one could argue that the *de minimis* user’s groundwater extraction is probably less than 5% of the total groundwater pumped but again if the regulatory agencies want to know ALL extractors and to have equality, then metering is the only answer. Right now the small 3-5 acre “ranchettes” will get a pass on SGMA whereas a city resident (and I’m a definite *de minimis* user) may have draconian reductions impose on outdoor landscape usage for my “urban forest”.

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Page 7-33

## 7. Projects and Management Actions

### 7.4.2 Groundwater Extraction Allocation Implementation

#### 7.4.2.2 Status of Implementation

In the first sentence of the first paragraph it states, “...*As identified in GSP Section 6.1, the MKGSA’s water budget shortfall is estimated to be fairly negligible..*”. After “*fairly negligible*” consider inserting “*by about -13,000 AF...*” so as to read, “...*As identified in GSP Section 6.1, the MKGSA’s water budget shortfall is estimated to be fairly negligible by about -13,000 AF...*”. Then in the second sentence of the same paragraph after the word “...*surplus...*” consider inserting “*at around 38,000 AF*” so as to read, “...*a surplus at around 38,000 AF is in fact inferred based on preliminary water accounting framework...*” By inserting those figures/numbers in those two sentences would give the reader more clarity regarding the actual numbers, and would spare [the reader] the need and time to refer back to Section 6.1 in order to verify those numbers—just makes for an easier read.

EH-024

In the third sentence of that same paragraph there is a major typo reference/category—**water budget** versus **water accounting framework**. It states in part, “...*hydrogeologic evaluations will continue to determine the reason for the differences between the water budget surplus and the conditions of decline..*”. That’s incorrect as it’s not the “...*water budget surplus...*” which in fact has a deficit by about -13,000 AF but rather it’s the “...*water accounting framework...*” that has a 38,000 AF surplus. With the correction that portion of the sentence should now read, *hydrogeologic evaluations will continue to determine the reason for the differences between the water accounting framework surplus and the conditions of decline..*”.

EH-024  
(contd.)

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**Page 7-34**

### **7.4.2.3 Permitting and Regulatory Compliance**

In the second sentence of the first paragraph it states, “...*this initial phase of an allocation program shall exclude those well owners who extract less than two AF per year (i.e., de minimis extractors)...*”. Again, I will challenge how a *de minimis extractor* will be identified? So if one lives in the county (not within the jurisdictional boundaries of a city—i.e. Tulare or Visalia) on a 2-3 acre parcel with a half-dozen head of beef cattle, a couple of horses, irrigated pasture(s), some fruit and nut trees, a vegetable garden, a ½ acre green lawn, etc. that will be declared a *de minimis extractor*—there’s no way that parcel/residence is a *de minimis extractor*? I live in Tulare on just under 1/3 of an acre, and I am definitely a *de minimis* user of groundwater. But because I’m within the jurisdictional boundary of Tulare, I won’t have the same rights [to use that groundwater] as a *de minimis extractor*. Granted I don’t have the risks of a well going dry or potentially degraded water quality or other well associated operation and maintenance concerns as one who has a domestic well in the county but something is wrong with this picture. Make *de minimis extractors* prove they are truly *de minimis*—keep the playing field level and equitable. Meter the *de minimis extractor*.

EH-025

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**Page 7-41**

### **7.4.6 Urban Water Conservation**

#### **7.4.6.3 Permitting and Regulatory Compliance**

In the third line of that paragraph it states, “...*mandates of a 20 percent reduction in urban per capita water usage by 2020...*”. What is the base year for the reduction? During the drought years 2012-2016, cities were mandated by the governor to cut the water usage by 28-32% from the base year of 2013. Will 2013 be used again as the base year?

EH-026

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**Page 7-43**

The last bullet point at the bottom of the page states, “...*A determination by the GSA to not regulate any de minimis extractor, i.e., any well owner pumping two acre-feet or less annually...*”. Again, I’ll voice my concern that in fact a “...*de minimis extractor...*” should have to prove the *de minimis extractor* designation or classification—metering will be the only way to validate such a claim.

EH-027

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**Page 7-46**

**7.5 Implementation**

**7.5.1 Implementation Schedule**

In the first sentence of the first paragraph on **Page 7-46** (below **Figure 7-5**) it states, “...*coupled with this GSA’s assigned share of the Subbasin water budget as articulated in Section 6 of this Plan...*”. Isn’t it the **water accounting framework** which present in **Section 6**? Instead of referring to the “*water budget*” shouldn’t replacing the term *water budget* with the term *water accounting framework* be more correct/accurate as it is articulated on **Page 6-3** in **Section 6** of this Plan, in **Table 6-2** and **Table 6-3**.

EH-028

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**Page 7-48**

In the first paragraph below **Table 7-1**, the third sentence states, “...*This range of recharge accomplishments is depicted in the “Cumulative Added Storage” bandwidth on Figure 7-5...*” It should read **Figure 7.6**, not **Figure 7-5**.

EH-029

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**Page 7-50**

**7.6 Benefits Analyses**

**7.6.1 Surplus Water Recharge Analysis**

At the bottom 1/3 of **Table 7.2** under the heading, **Combined**, it has “**SVP Surplus**”—shouldn’t read “**CVP Surplus**”?

EH-030

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**Page 7-51**

In the paragraph below **Table 7-3** in the second sentence of that paragraph it states, “...*Technical Memorandum (TM) “Estimate of Future Friant Division Supplies For Use in Groundwater Sustainability Plans,” Friant Water Authority, December 2018, included as an appendix to the Basin Setting report...*”. To facilitate easier location of this Technical Memorandum (TM), it should be noted or referenced that this document is in **Appendix D. Friant Water Authority Future Water Supply Study, of Section 2 Appendices – 2A Kaweah Subbasin Basin Setting Componets**. At the MKGSA

EH-031

website the **Basin Setting Components** document, due to its MB size, is split—**Pages 1-200 (23.2MB)** and **Pages 200-373 (20.4MB)**. The Friant document, referenced, above is in the second half, **Pages 200-373**, and is the very last document listed.

EH-031  
(contd.)

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**Page 8-1**

**8. DWR Reporting**

**8.1 Annual Reporting Summary**

EH-032

In the first paragraph note that September only has 30 days.

“...which will be *WY 2019 (October 1, 2018 to **September 31**, 2019)*...”



# How Nitrogen from Septic Systems Can Harm Water Quality



## Why do we care?

Septic systems, also known as on-site sewage systems (OSS), are designed to reduce pollution by treating the solids, pathogens, organics, and ammonium (a form of nitrogen) in human waste before it is discharged to the soil. By design, bacteria consume ammonium and convert it to nitrate either in the drainfield or through aeration.

Wastewater treated by a properly functioning OSS generally contains significant amounts of nitrate. After leaving a properly functioning drainfield, nitrified effluent flows through soil.

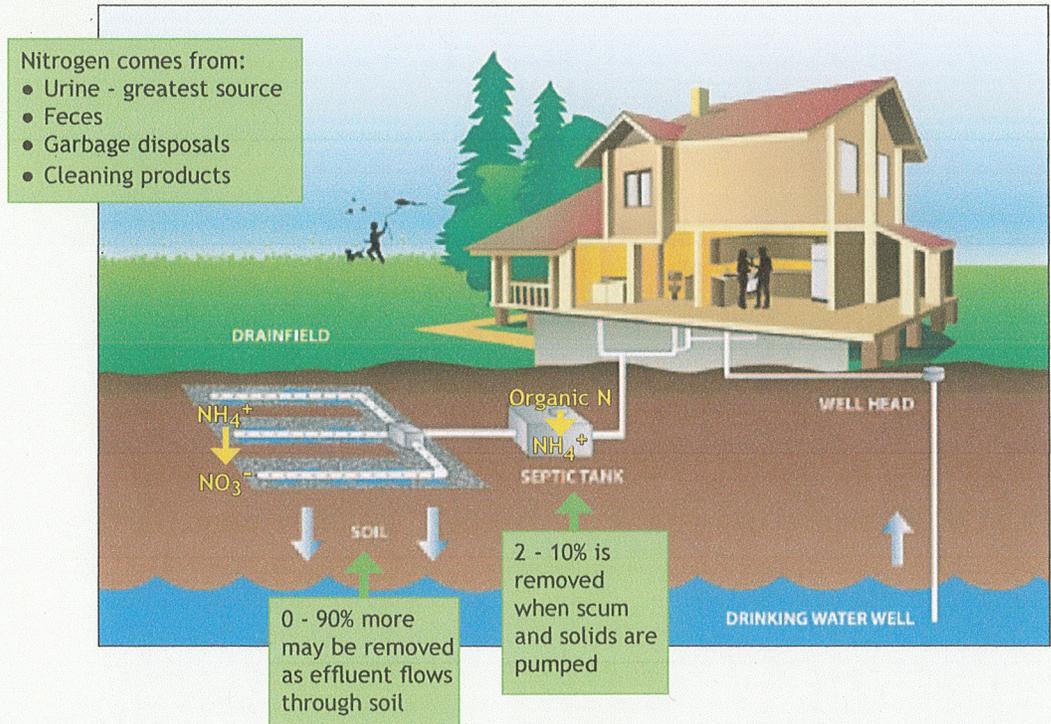
What happens to nitrates in soil is highly variable. It may be used by plants, flow to ground or surface water, or be consumed by bacteria. The amount of nitrate removed after leaving the drainfield varies between 0 and 90% depending on site conditions.

An improperly functioning OSS can result in excessive ammonium/ammonia or nitrates discharged to the soil, where it can flow to groundwater or surface water and cause problems.

**Moderate levels of nitrate** in drinking water can cause [blue baby syndrome and other adverse health effects](#). Excess nitrate can also harm the environment by increasing algal growth and decreasing oxygen levels in [Puget Sound and lakes](#).

## How do on-site systems treat nitrogen from human waste?

Nitrogen removal in wastewater varies depending on the type and concentration of the waste and the type of OSS used to treat it. Nitrogen concentrations are generally between 50 and 60 milligrams per liter (mg/L) in domestic wastewater but can be higher if a home uses low-flow fixtures or if the waste is coming from a school, campground, or office building. The drawing below shows nitrogen transformations as effluent flows through an OSS.



# How Nitrogen from Septic Systems Can Harm Water Quality



Some nitrogen that enters the septic tank is removed when the scum and solids are pumped from the tank. In most OSS, oxygen loving bacteria convert ammonium to nitrate in the drainfield. This process is called “nitrification” and the effluent becomes “nitrified.”

Advanced systems that aerate and recirculate wastewater can remove even more nitrogen (up to 60 percent). In the Puget Sound region only about 20 percent of OSS are advanced systems. Systems that include oxygen-free conditions in part of the treatment process can remove over 90 percent of nitrogen through a process called denitrification. Denitrification converts nitrate to nitrogen gas which is released to the air. Denitrification requires a type of bacteria that grow in oxygen-free conditions. Very few nitrogen reducing systems are used in the Puget Sound region. Some advanced systems are registered to remove nitrogen.

A properly designed drainfield can also increase nitrogen removal. Characteristics such as the size of the drainfield, the rate wastewater is released to soil, the depth of soil, how the wastewater is applied and distributed (such as drip irrigation or trenches, gravity or pressure), and vegetation management over the drainfield can all influence what happens to the nitrogen once it enters and eventually leaves the drainfield.

## What is the role of soil?

Nitrogen removal in the soil is highly variable. Denitrification and plant uptake of nitrates are the two ways soil can remove nitrogen from wastewater. A deeper, moist, finer textured soil will generally remove more nitrogen than a shallow coarse soil. Nitrates move slower through fine soils and have more opportunity to be used as food by plants. Fine moist soils also allow the growth of bacteria required for denitrification. This is especially true in the wet climates of western Washington and Puget Sound.

## Denitrification treatment system study

Recognizing the need for more treatment options to affordably reduce nitrogen in wastewater, we collaborated with the University of Washington to study the performance of three public domain treatment systems.

The 2013 study evaluated the effectiveness of the three systems listed in the table below and the recirculating gravel filter (RGF) as a stand-alone system with the goal of reducing total nitrogen concentrations in wastewater below 20 mg/L. For more details on the study go to our [Denitrification Verification Project web page](#).

The three treatment processes reduced effluent nitrogen concentrations well below the goal of an annual average of 20 mg/L and the RGF achieved a 51 percent reduction to levels just above the target concentration.

Treatment Process	Average Total Influent Nitrogen Concentration	Average Effluent Nitrogen Concentrations				Total Nitrogen Removal
		NH3-N (mg/L)	NOx-N (mg/L)	Organic N (mg/L)	Total N (mg/L)	
Recirculating Gravel Filter (RGF)	48.6 mg/L	0.7	20.9	2.2	23.9	51%
Vegetated RGF		4.1	9.5	1.6	15.1	69%
Enhanced RGF		6.8	0.6	1.3	8.6	82%
Vegetated Woodchip RGF		0.5	2.4	1.1	4.0	92%

The Pacific Northwest Salmon Center installed an RGF woodchip bed systems to further document their long-term performance. To learn more about PNSC’s project go to their [OSS nitrogen reduction web page](#).

## Addendum on September 5, 2019

Page 7-33

### 7.4.2.2 Status of Implementation

In the third sentence of the first paragraph there is an additional correction which was missed in my original comments' submission on September 3, 2019, and it states, "...*Despite the **water budget surplus**, as evidenced in Section 2 (Basin Setting **Appendix 2A**), groundwater levels and storage have been in decline within the Mid-Kaweah area...*". In fact, there is not a **water budget surplus** as stated above (go to the MKGSA website and see **Section 2 Appendices 2A, Page 109, Table 32**, which shows a **-77.6 TAF** deficit for the entire Kaweah Subbasin), but rather it's the **water accounting framework** which shows a surplus within the MKGSA of around **38 TAF** in **Section 6 – Water Supply Accounting** (on **Page 6-3, Table 6-3** of this **GSP**). Later in that same sentence it states, "...*and hydrogeologic evaluations will continue to determine the reason for the differences between the **water budget surplus** and the conditions of decline...*". Again, it's the **water accounting framework** which shows a surplus (~**38 TAF**) and not the **water budget** (~ **-13 TAF**—see **Page 2-3, Table 2-1** of this **GSP**). With those corrections that sentence should now read as follows, "...*Despite the ~~water budget~~ **water accounting framework surplus**, as evidenced in ~~Section 2 (Basin Setting Appendix 2A)~~ **Section 6 – Water Supply Accounting** (on **Page 6-3, Table 6-3**) of this **GSP**, groundwater levels and storage have been in decline within the Mid-Kaweah area and hydrogeologic evaluations will continue to determine the reason for the differences between the ~~water budget~~ **water accounting framework surplus** and the conditions of decline...*".

I'm concerned that there is incorrect interchangeable usage of the terms **water budget** and **water accounting framework** and will confuse the causal reader. On **Page 2-2, 2.3 GSA Water Budget**, there's a good definition and the current estimate of the MKGSA **water budget**: "...*This localized **water budget** represents the estimated physical movement of water in and out of the MKGSA area on an annual basis and provides an average for the 21-year period. During that period, **average groundwater storage depletions were 12.6 thousand acre-feet (TAF) per year** due to a combination of water management activities within the GSA as well as influences from neighboring GSAs both in the Kaweah Subbasin and in neighboring subbasins...*". Also on **Page 2-2** there is a good definition of the **water accounting framework** [which is specifically addressed on **Page 6-3, Table 6-2 and Table 6-3** of this **GSP**] and shows an **Imputed Balance (Table 6-3)** surplus within the Mid-Kaweah area of approximately **37.8 thousand acre-feet (TAF)** per year: "...*To apportion responsibilities for the development of projects and management actions (extraction reductions), Section 6 of this GSP segregates groundwater inflows based on a **legal construct of native, foreign, and salvaged components**. These components are proportionately assigned to each of the three Subbasin GSAs. This construct and apportionment were considered and accepted by each GSA and represent a preliminary **water accounting framework** to be further discussed and refined during the first five-year assessment of this GSP...*". These two components/entities are calculated quite differently, and should not be loosely interchanged particularly when one is negative and the other is positive.

## Addendum #2 on September 7, 2019

## Page 5-11

### 5.3.3 Minimum Threshold– Degraded Water Quality

#### 5.3.3.1 Overview

While in the process of doing an extensive word search on “projects’ and “management actions”, a second identical sentence to the one on **Page 5-21, section 5.4.3 Water Quality Measurable Objectives** was found (obviously an oversight on my part when I first read this GSP) which states, “...*All future projects and management actions implemented by the MKGSA will be designed to avoid causing further groundwater quality degradation...*”. As stated then in my initial GSP comments (submitted on September 3, 2016), this sentence should be stricken from this GSP in the final document version for submission to DWR. I’ll refer the reader of these GSP comments back to my original comments on **Page 5-21** which will apply here also.

Please insert this page between Pages 9 & 10 of my originally submitted comments of September 3, 2019.

#### **Addendum #3 on September 10, 2019**

A general comment on the term “**sustainable yield**” as it is used in the MKGSA GSP. The term “**sustainable yield**” is used a total of 10 times in this GSP but it does not indicate or state an actual numerical value for the “**sustainable yield**” in any of the text.

At many of the KSB’s GSA meetings over the past 6 months it’s been stated by the 3 GSA managers and others, and shown in tabular form that the “**sustainable yield**” is 659,999 AF (660,000 AF rounded up) for the KSB. This is depicted on **Page 6-3, Table 6-2: GSA Apportionment**, of this GSP. (NOTE: This table is also known as the **Water [Supply] Accounting Framework**, and also referred to as the “**Three Buckets**” accounting method) In that table in the lower right-hand corner is the figure of 659,999 which is oftentimes referred to as the “**sustainable yield**” but not specifically labeled as such. I would suggest putting a double asterisks (\*\*) after the 659,999 number. Then below the table add this additional footnote (to the ones already there) with a double asterisks (\*\*). The footnote would then read, “...**\*\*Sustainable Yield for KSB...**”.

Although “**sustainable yield**” is used 10 times, there is no concise definition of the term “**sustainable yield**” found anywhere in this GSP. At the MKGSA website under **Documents in Section 3 Appendices, 3B Sustainable Management Criteria Best Management Practices, 5. KEY DEFINITIONS, Page 34**, it gives the definition of “**sustainable yield**” as follows:

*(w) “Sustainable yield” means the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.*

Perhaps this definition should be inserted in parenthesis the first time the term “**sustainable yield**” (last bullet point) is used in the **1. Introduction, General Information, 1.1.1 Purpose of GSP on Page 1-1**. That last bullet point would now read in part, “...*the sustainability goal and*

*ensure that the Subbasin is ultimately operated within the sustainable yield. (“Sustainable yield” means the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.)...”.*

Please add this Addendum #3 to the last page of my GSP comments which were originally submitted on September 3, 2019.

Edward T. Henry, DVM

**Addendum #4 on September 14, 2019**

**Page 1 of 2**

The term “**hydrogeologic zone(s)**” (AKA **HZs**) is used 14 times in the MKGSA GSP, and yet there is not an actual map/figure of the KSB showing those nine (9) **HZs** of which there are four (4) **HZs** in the MKGSA—1, 2, 4, and 7. An excellent map/figure is found (at the MKGSA website) under **Documents, Section 5 Appendices, Appendix 5A Overview of Application of Hydrogeologic Zones for Development of Groundwater Level Minimum Thresholds, Figure 5.1 on Page A5-1.**

For easy reference by the reader of this GSP, I would suggest imbedding **Figure 5.1** into **Section 2. Basin Setting** at the bottom of **Page 2-5** and above the **Section 2 – Basin Setting** explanation box.

In the first sentence of the third paragraph from the bottom on **Page 2-5**, it reads in part, “...*Each MA’s minimum thresholds have been determined using the hydrogeologic zone mapping...*”, and yet there is no **HZs** map in this GSP. Since the word “...*mapping...*” is used here, this would be an excellent place to include/insert this map/figure. After the word “...*mapping...*”, should be added (**Figure 5.1**), so as to read, “...*Each MA’s minimum thresholds have been determined using the hydrogeologic zone mapping (Figure 5.1)...*”.

In **Appendix 5B Groundwater Level Sustainable Management Criteria Hydrographs** there are approximately 34 hydrographs. In the heading at the top of each hydrograph there is a well designation (plus other information), i.e. **Well KSB-0922**, but it does not identify the **HZ** where that particular well is located. After some prolonged looking, **Well KSB-0922** can be found in **HZ1**. It would be more convenient if the **HZ** for each hydrograph were to be labeled with the **HZ** in the heading as shown in the example below:

	<b>Well KSB-0922 – HZ1</b>
<b>Mid Kaweah GSA</b>	<b>Well ID: CID_038</b>
<b>Layer 3</b>	<b>Aquifer System: Unknown – Model</b>

Also, none of the 34 hydrographs listed in **Appendix 5B** have a **Figure** designation, i.e. **Figure x.xx**, in their lower left-hand corner as do other **Figures** and **Tables** in this GSP and the accompanying **Appendices** at the MKGSA website. Having all **Tables** and **Figures** labeled as such would be more convenient for referencing and cross-checking when needed.

**Addendum #5 on September 15, 2019**

**Page 1 of 3**

In the last sentence of the second complete paragraph down from the top of **Page 5-19** of this GSP it states, “...*This approach is summarized in the bullet list that follows and is illustrated on Figure 5.1 of Appendix 5A:...*”. There is a definite inaccuracy here related to “...**Figure 5.1 of Appendix 5A:...**” as **Figure 5.1** is a map/figure (not a hydrograph) of the **Hydrogeologic Zones** in the KSB (see map/figure below). Could you be referring instead to **Figure 5.2** through **Figure**

**5.5** in **Appendix 5A**, OR RATHER is it in **Appendix 5B** where the first hydrograph (unlabeled—no **Figure** designation) is shown as **Well KSB-0922**? In looking further at the “...*bullet list*...” and in the discussions that follow about the minimum thresholds, measurable objectives, and interim milestones, it seems logical that **Well KSB-0922** is the well being referred to here as the example illustration. But since **Well KSB-0922** does not have a **Figure** designation attached to it, it was confusing initially. (See hydrograph of **Well KSB-0922** on **Page 2 of 2** below.)

In the second sentence of the next to the last paragraph on **Page 5-19** it states, “...*Figure 5-1 shows these criteria at a single well in the southwest area of MKGSA and Appendix 5B includes these criteria for each well*...”. That “...*single well*...” is **Well KSB-0922** which is in **HZ1** (the southwest area of the MKGSA) but it does not have a **Figure 5-1** designation (confusing). All 34 hydrographs in **Appendix 5B** need to be updated with a **Figure** designation, i.e. **Figure x.xx**, in the lower left-hand corner (below the hydrograph) of the each hydrograph for a more concise and easier referencing process.

As mentioned earlier on **Page 2 of 2, Addendum #4** (of these GSP comments) where the example for **Well KSB-0922 – HZ1** is shown (to include the **HZ** number), it is first of all suggested here that the “well title headings” include the **HZ** for all 34 hydrographs. Secondly, it also would be very convenient to have all hydrographs grouped by **Hydrogeologic Zones** for easier referencing in this GSP. Although on **Page 5-2** it states,

“...*one-third of the Subbasin’s representative monitoring sites exceeding minimum thresholds for water levels would constitute an undesirable result*...”, it would be very helpful to know if those exceedances are random within the KSB or even the MKGSA or if one **HZ** is statistically more heavily impacted than another **HZ**. If those exceedances were isolated to a particular **HZ**, then possibly Projects and Management Actions could be specifically tailored to that **HZ** or a region of that **HZ**, and/or the Management Area occupying that **HZ**. There is the possibility the exceedances could occur in only one Management Area of a particular **HZ** (which potentially traverses one or more Management Areas—i.e. **HZ4** which traverses all three Management Areas of the MKGSA) and not throughout an entire **HZ**. As an example, what if the “...*one-third*...” exceedances occurred only in the northeast section of the City of Tulare which is in part of **HZ4**? The whole KSB and the MKGSA should not be penalized in that scenario. In summary, there are several main points here: First, is to identify the **HZ** in which each well resides and add to each well’s “well title headings” which **HZ** it’s located in, and secondly, would be to group the 34 wells by **HZ**.

In the MKGSA GSP in **Table 4-5: Groundwater Level monitoring network Well Summary** on **Page 4-8** there are 43 **Well IDs** listed, and yet in **Appendix 5B** there are hydrographs for only 34 wells. That’s a difference of nine monitoring wells without hydrographs. All nine wells are in the Tulare Irrigation District and have the following **Well ID**: KSB-1320s; KSB-1320d; KSB-1408s; KSB-1408d; KSB-1536s; KSB-1536d; KSB-1545s; KSB-1545d; & KSB-1879. With the

exception of KSB-1879 the other eight wells appear to have good and complete **Well Construction Information** as listed in those three columns of **Table 4-5**. Why are those nine wells which are listed in **Table 4-5** not showing hydrographs in *Appendix 5B*?

Edward T. Henry, DVM

September 9, 2019

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

Submitted via email at midkaweah@gmail.com

Re: Mid-Kaweah Groundwater Subbasin Groundwater Sustainability Plan

Dear Basin Representatives,

The Nature Conservancy (TNC) appreciates the opportunity to comment on the Mid-Kaweah Subbasin Groundwater Sustainability Plan being prepared under the Sustainable Groundwater Management Act (SGMA).

***TNC as a Stakeholder Representative for the Environment***

TNC is a global, nonprofit organization dedicated to conserving the lands and waters on which all life depends. We seek to achieve our mission through science-based planning and implementation of conservation strategies. For decades, we have dedicated resources to establishing diverse partnerships and developing foundational science products for achieving positive outcomes for people and nature in California. TNC was part of a stakeholder group formed by the Water Foundation in early 2014 to develop recommendations for groundwater reform and actively worked to shape and pass SGMA.

Our reason for engaging is simple: California's freshwater biodiversity is highly imperiled. We have lost more than 90 percent of our native wetland and river habitats, leading to precipitous declines in native plants and the populations of animals that call these places home. These natural resources are intricately connected to California's economy providing direct benefits through industries such as fisheries, timber and hunting, as well as indirect benefits such as clean water supplies. SGMA must be successful for us to achieve a sustainable future, in which people and nature can thrive within Mid-Kaweah Subbasin region and California.

We believe that the success of SGMA depends on bringing the best available science to the table, engaging all stakeholders in robust dialog, providing strong incentives for beneficial outcomes and rigorous enforcement by the State of California.

Given our mission, we are particularly concerned about the inclusion of nature, as required, in GSPs. The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at [GroundwaterResourceHub.org](https://GroundwaterResourceHub.org). The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

## **Addressing Nature's Water Needs in GSPs**

SGMA requires that all beneficial uses and users, including environmental users of groundwater, be considered in the development and implementation of GSPs (Water Code § 10723.2).

The GSP Regulations include specific requirements to identify and consider groundwater dependent ecosystems [23 CCR §354.16(g)] when determining whether groundwater conditions are having potential effects on beneficial uses and users. GSAs must also assess whether sustainable management criteria may cause adverse impacts to beneficial uses, which include environmental uses, such as plants and animals. The Nature Conservancy has identified each part of the GSP where consideration of beneficial uses and users are required. That list is available here: <https://groundwaterresourcehub.org/importance-of-gdes/provisions-related-to-groundwater-dependent-ecosystems-in-the-groundwater-s>.

Please ensure that environmental beneficial users are addressed accordingly throughout the GSP. Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decision, and using data collected through monitoring to revise decisions in the future. Over time, GSPs should improve as data gaps are reduced and uncertainties addressed.

To help ensure that GSPs adequately address nature as required under SGMA, The Nature Conservancy has prepared a checklist (**Attachment A**) for GSAs and their consultants to use. The Nature Conservancy believes the following elements are foundational for 2020 GSP submittals. For detailed guidance on how to address the checklist items, please also see our publication, *GDEs under SGMA: Guidance for Preparing GSPs*<sup>1</sup>.

### **1. Environmental Representation**

SGMA requires that groundwater sustainability agencies (GSAs) consider the interests of all beneficial uses and users of groundwater. To meet this requirement, we recommend actively engaging environmental stakeholders by including environmental representation on the GSA board, technical advisory group, and/or working groups. This could include local staff from state and federal resource agencies, nonprofit organizations and other environmental interests. By engaging these stakeholders, GSAs will benefit from access to additional data and resources, as well as a more robust and inclusive GSP.

### **2. Basin GDE and ISW Maps**

SGMA requires that groundwater dependent ecosystems (GDEs) and interconnected surface waters (ISWs) be identified in the GSP. We recommend using the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) provided online<sup>2</sup> by the Department of Water Resources (DWR) as a starting point for the GDE map. The NC Dataset was developed through a collaboration between DWR, the Department of Fish and Wildlife and TNC.

### **3. Potential Effects on Environmental Beneficial Users**

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<sup>1</sup>GDEs under SGMA: Guidance for Preparing GSPs is available at: [https://groundwaterresourcehub.org/public/uploads/pdfs/GWR\\_Hub\\_GDE\\_Guidance\\_Doc\\_2-1-18.pdf](https://groundwaterresourcehub.org/public/uploads/pdfs/GWR_Hub_GDE_Guidance_Doc_2-1-18.pdf)

<sup>2</sup> The Department of Water Resources' Natural Communities Commonly Associated with Groundwater dataset is available at: <https://gis.water.ca.gov/app/NCDatasetViewer/>

SGMA requires that potential effects on GDEs and environmental surface water users be described when defining undesirable results. In addition to identifying GDEs in the basin, The Nature Conservancy recommends identifying beneficial users of surface water, which include environmental users. This is a critical step, as it is impossible to define “significant and unreasonable adverse impacts” without knowing *what* is being impacted. For your convenience, we’ve provided a list of freshwater species within the boundary of the Kaweah Subbasin in **Attachment C**. Our hope is that this information will help your GSA better evaluate the impacts of groundwater management on environmental beneficial users of surface water. We recommend that after identifying which freshwater species exist in your basin, especially federal and state listed species, that you contact staff at the Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Services (NMFS) to obtain their input on the groundwater and surface water needs of the organisms on the GSA’s freshwater species list. We also refer you to The Critical Species LookBook<sup>3</sup> prepared by The Nature Conservancy and partner organizations for additional background information on the water needs and groundwater reliance of critical species. Because effects to plants and animals are difficult and sometimes impossible to reverse, we recommend erring on the side of caution to preserve sufficient groundwater conditions to sustain GDEs and ISWs.

#### **4. Biological and Hydrological Monitoring**

If sufficient hydrological and biological data in and around GDEs is not available in time for the 2020/2022 plan, data gaps should be identified along with actions to reconcile the gaps in the monitoring network.

The Nature Conservancy has thoroughly reviewed the Mid-Kaweah Subbasin Draft GSP. We appreciate the work that has gone into the preparation of various elements of this plan. However, we consider it to be **inadequate** under SGMA since key environmental beneficial uses and users are not adequately identified and considered. In particular, GDEs are not adequately evaluated through existing data or modeling, and no plans are presented for future monitoring to address current data gaps. We recognize that acreage of potential GDEs (220 acres) in the mid-Kaweah subbasin is small compared to acreage of potential GDEs in the entire Kaweah Basin (3488 acres). However, since the Basin Setting section (Appendix 2A) covers the *entire* Kaweah Basin, presenting a complete analysis of the identification of GDEs in the full Kaweah Basin is a necessary first step. Only then can the GDEs in the Mid-Kaweah subbasin be identified and evaluated for ecological importance, noting any data gaps that can be addressed in the future, and considered in the basin’s sustainable management criteria. **Please present a thorough analysis of the identification and evaluation of GDEs in subsequent drafts of the GSP. Once GDEs are identified, they must be considered when defining undesirable results and for further monitoring.**

Our specific comments related to the Mid-Kaweah Subbasin Draft GSP are provided in detail in **Attachment B** and are in reference to the numbered items in **Attachment A**. **Attachment C** provides a list of the freshwater species located in the Kaweah Subbasin. **Attachment D** describes six best practices that GSAs and their consultants can apply when using local groundwater data to confirm a connection to groundwater for DWR’s Natural Communities Commonly Associated with Groundwater Dataset<sup>2</sup>. **Attachment E** provides an overview of a new, free online tool that allows GSAs to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data.

Thank you for fully considering our comments as you develop your GSP.

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<sup>3</sup> The Critical Species LookBook is available at: <https://groundwaterresourcehub.org/sgma-tools/the-critical-species-lookbook/>

Best Regards,

A handwritten signature in black ink, appearing to read "Sandi Matsumoto". The signature is fluid and cursive, with the first name "Sandi" being more prominent.

Sandi Matsumoto  
Associate Director, California Water Program  
The Nature Conservancy

# Attachment A

## Environmental User Checklist

The Nature Conservancy is neither dispensing legal advice nor warranting any outcome that could result from the use of this checklist. Following this checklist does not guarantee approval of a GSP or compliance with SGMA, both of which will be determined by DWR and the State Water Resources Control Board.

GSP Plan Element*		GDE Inclusion in GSPs: Identification and Consideration Elements	Check Box
Admin Info	<b>2.1.5 Notice &amp; Communication</b> <i>23 CCR §354.10</i>	Description of the types of environmental beneficial uses of groundwater that exist within GDEs and a description of how environmental stakeholders were engaged throughout the development of the GSP.	1
Planning Framework	<b>2.1.2 to 2.1.4 Description of Plan Area</b> <i>23 CCR §354.8</i>	Description of jurisdictional boundaries, existing land use designations, water use management and monitoring programs; general plans and other land use plans relevant to GDEs and their relationship to the GSP.	2
		Description of instream flow requirements, threatened and endangered species habitat, critical habitat, and protected areas.	3
		Summary of process for permitting new or replacement wells for the basin, and how the process incorporates any protection of GDEs	4
Basin Setting	<b>2.2.1 Hydrogeologic Conceptual Model</b> <i>23 CCR §354.14</i>	<b>Basin Bottom Boundary:</b> Is the bottom of the basin defined as at least as deep as the deepest groundwater extractions?	5
		<b>Principal aquifers and aquitards:</b> Are shallow aquifers adequately described, so that interconnections with surface water and vertical groundwater gradients with other aquifers can be characterized?	6
		<b>Basin cross sections:</b> Do cross-sections illustrate the relationships between GDEs, surface waters and principal aquifers?	7
	<b>2.2.2 Current &amp; Historical Groundwater Conditions</b> <i>23 CCR §354.16</i>	<b>Interconnected surface waters:</b>	8
		Interconnected surface water maps for the basin with gaining and losing reaches defined (included as a figure in GSP & submitted as a shapefile on SGMA portal).	9
		Estimates of current and historical surface water depletions for interconnected surface waters quantified and described by reach, season, and water year type.	10
	<b>Basin GDE map included</b> (as figure in text & submitted as a shapefile on SGMA Portal).	11	

		If NC Dataset was used:	Basin GDE map denotes which polygons were kept, removed, and added from NC Dataset (Worksheet 1, can be attached in GSP section 6.0).	12	
			The basin's GDE shapefile, which is submitted via the SGMA Portal, includes two new fields in its attribute table denoting: 1) which polygons were kept/removed/added, and 2) the change reason (e.g., why polygons were removed).	13	
			GDEs polygons are consolidated into larger units and named for easier identification throughout GSP.	14	
		If NC Dataset was <i>not</i> used:	Description of why NC dataset was not used, and how an alternative dataset and/or mapping approach used is best available information.	15	
		<b>Description of GDEs included:</b>			16
		Historical and current groundwater conditions and variability are described in each GDE unit.			17
		Historical and current ecological conditions and variability are described in each GDE unit.			18
		Each GDE unit has been characterized as having high, moderate, or low ecological value.			19
		Inventory of species, habitats, and protected lands for each GDE unit with ecological importance (Worksheet 2, can be attached in GSP section 6.0).			20
		<b>2.2.3 Water Budget</b> 23 CCR §354.18	Groundwater inputs and outputs (e.g., evapotranspiration) of native vegetation and managed wetlands are included in the basin's historical and current water budget.		21
Potential impacts to groundwater conditions due to land use changes, climate change, and population growth to GDEs and aquatic ecosystems are considered in the projected water budget.			22		
<b>Sustainable Management Criteria</b>	<b>3.1 Sustainability Goal</b> 23 CCR §354.24	<b>Environmental stakeholders/representatives were consulted.</b>		23	
		Sustainability goal mentions GDEs or species and habitats that are of particular concern or interest.		24	
		Sustainability goal mentions whether the intention is to address pre-SGMA impacts, maintain or improve conditions within GDEs or species and habitats that are of particular concern or interest.		25	
	<b>3.2 Measurable Objectives</b> 23 CCR §354.30	<b>Description of how GDEs were considered and whether the measurable objectives and interim milestones will help achieve the sustainability goal as it pertains to the environment.</b>		26	
	<b>3.3 Minimum Thresholds</b> 23 CCR §354.28	<b>Description of how GDEs and environmental uses of surface water were considered when setting minimum thresholds for relevant sustainability indicators:</b>		27	
		Will adverse impacts to GDEs and/or aquatic ecosystems dependent on interconnected surface waters (beneficial user of surface water) be avoided with the selected minimum thresholds?		28	
		Are there any differences between the selected minimum threshold and state, federal, or local standards relevant to the species or habitats residing in GDEs or aquatic ecosystems dependent on interconnected surface waters?		29	
	<b>3.4 Undesirable Results</b> 23 CCR §354.26	<b>For GDEs, hydrological data are compiled and synthesized for each GDE unit:</b>		30	
		If hydrological data <i>are available</i> within/nearby the GDE	Hydrological datasets are plotted and provided for each GDE unit (Worksheet 3, can be attached in GSP Section 6.0).	31	
			Baseline period in the hydrologic data is defined.	32	

		GDE unit is classified as having high, moderate, or low susceptibility to changes in groundwater.	33	
		Cause-and-effect relationships between groundwater changes and GDEs are explored.	34	
		If hydrological data <i>are not available</i> within/nearby the GDE	Data gaps/insufficiencies are described.	35
			Plans to reconcile data gaps in the monitoring network are stated.	36
		<b>For GDEs, biological data are compiled and synthesized for each GDE unit:</b>		37
		Biological datasets are plotted and provided for each GDE unit, and when possible provide baseline conditions for assessment of trends and variability.		38
		Data gaps/insufficiencies are described.		39
		Plans to reconcile data gaps in the monitoring network are stated.		40
		<b>Description of potential effects on GDEs, land uses and property interests:</b>		41
		Cause-and-effect relationships between GDE and groundwater conditions are described.		42
		Impacts to GDEs that are considered to be "significant and unreasonable" are described.		43
		Known hydrological thresholds or triggers (e.g., instream flow criteria, groundwater depths, water quality parameters) for significant impacts to relevant species or ecological communities are reported.		44
		Land uses include and consider recreational uses (e.g., fishing/hunting, hiking, boating).		45
		Property interests include and consider privately and publicly protected conservation lands and opens spaces, including wildlife refuges, parks, and natural preserves.		46
Sustainable Management Criteria	<b>3.5 Monitoring Network</b> 23 CCR §354.34	Description of whether hydrological data are spatially and temporally sufficient to monitor groundwater conditions for each GDE unit.	47	
		Description of how hydrological data gaps and insufficiencies will be reconciled in the monitoring network.	48	
		Description of how impacts to GDEs and environmental surface water users, as detected by biological responses, will be monitored and which GDE monitoring methods will be used in conjunction with hydrologic data to evaluate cause-and-effect relationships with groundwater conditions.	49	
Projects & Mgmt Actions	<b>4.0. Projects &amp; Mgmt Actions to Achieve Sustainability Goal</b> 23 CCR §354.44	Description of how GDEs will benefit from relevant project or management actions.	50	
		Description of how projects and management actions will be evaluated to assess whether adverse impacts to the GDE will be mitigated or prevented.	51	

\* In reference to DWR's GSP annotated outline guidance document, available at:  
[https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/GD\\_GSP\\_Outline\\_Final\\_2016-12-23.pdf](https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/GD_GSP_Outline_Final_2016-12-23.pdf)

# Attachment B

## TNC Evaluation of the Mid-Kaweah Groundwater Sustainability Plan, Public Review Draft

A complete draft of the Mid-Kaweah Groundwater Sustainability Plan (GSP) was provided for public review on July 31, 2019. This attachment summarizes our comments on the complete public draft GSP, which includes the main GSP file and several separate appendix files. Comments are provided in the order of the checklist items included as Attachment A.

### Checklist Item 1 - Notice & Communication (23 CCR §354.10)

- [Section 1.5.2 Beneficial Uses and Users (p. 1-23 to 1-25)]
  - Surface water users and the following groups were listed as Beneficial Users: “Environmental and ecosystem interests in MKGSA include representatives of the Tulare Basin Wildlife Partners, Sierra Club Mineral King Group, and Sequoia Riverlands Trust (p. 1-25).” **Please identify whether or not the following beneficial uses and users of groundwater in the subbasin are present: Protected Lands, including preserves, refuges, conservation areas, recreational areas; and other protected lands; and Public Trust Uses, including wildlife, aquatic habitat, fisheries, and recreation.**
  - The types and locations of environmental uses, species and habitats supported, and the designated beneficial environmental uses of surface waters that may be affected by groundwater extraction in the Subbasin should be specified. **To identify environmental users, please refer to the following:**
    - Natural Communities Commonly Associated with Groundwater dataset (NC Dataset) - <https://gis.water.ca.gov/app/NCDatasetViewer/>
    - The list of freshwater species located in the Kaweah Subbasin in Attachment C of this letter. Please take particular note of the species with protected status.

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### Checklist Items 2 to 4 - Description of general plans and other land use plans relevant to GDEs and their relationship to the GSP (23 CCR §354.8).

- [Section 1.4.3 General Plans in Plan Area (p. 1-12 to 1-16)]
  - This section should include a discussion of General Plan goals and policies related to the protection and management of GDEs and aquatic resources that could be affected by groundwater withdrawals, rather than being limited to goals and policies directly related to groundwater resources as the Tulare General Plan does. **Please include a discussion of how implementation of the GSP may affect and be coordinated with General Plan policies**

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**and procedures regarding the protection of wetlands, aquatic resources and other GDEs and ISWs.**

- This section should identify Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) within the Subbasin and if they are associated with critical, GDE or ISW habitats. **Please identify all relevant HCPs and NCCPs within the Subbasin, and address how GSP implementation will coordinate with the goals of these HCPs or NCCPs.**
- The Open Space and Conservation Element of the City of Visalia’s General Plan includes (p. 1-14 to 1-15):
  - “1. Protect, restore and enhance a continuous corridor of native riparian vegetation along Planning Area waterways, including the St. Johns River; Mill, Packwood, and Cameron Creeks; and segments of other creeks and ditches where feasible, in conformance with the Parks and Open Space diagram of this General Plan.
  - 2. Establish design and development standards for new projects in waterway corridors to preserve and enhance irrigation capabilities, if provided, and the natural riparian environment along these corridors. In certain locations or where conditions require it, alternative designs may be appropriate (e.g., terraced seating or a planted wall system)
  - 3. Place special emphasis on the protection and enhancement of the St. Johns River Corridor by establishing extensive open space land along both sides
  - 4. Where no urban development exists, maintain a minimum riparian habitat development setback from the discernible top of the bank: 50 feet for both sides of the Mill, Packwood, and Cameron Creek corridors and 25 feet for both sides of Modoc, Persian, and Mill Creek ditches. Where riparian trees are located within 100 feet of the discernible top of the banks of the creek corridors and 50 feet from the banks for the ditches, the setback shall be wide enough to include five feet outside the drip line of such trees. Restore and enhance the area within the setback with native vegetation as follows:
    - a. Where existing development or land committed to development prohibits the 50-foot setback on Mill, Packwood, and Cameron Creek corridors, provide the maximum amount of land available for a development setback
    - b. Where existing development or land committed to development prohibits the 25-foot setback along Modoc, Persian, and Mill Creek ditches, provide the maximum amount of land available for a development setback.”

**Please specify if any of these areas are potential GDEs and describe how they are managed.**

- Please refer to The Critical Species LookBook<sup>4</sup> to review and discuss the potential groundwater reliance of critical species in the basin. **Please include a discussion regarding the management of critical habitat for these aquatic species and its relationship to the GSP.**

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<sup>4</sup>The Critical Species LookBook is available at: <https://groundwaterresourcehub.org/sgma-tools/the-critical-species-lookbook/>

NC-002  
(contd.)